2023 ANNUAL WATER QUALITY REPORT

FOR THE

JONES COUNTY SANITARY LANDFILL

53-SDP-1-76C
JONES COUNTY, IOWA

by:
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February, 2024

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Engineering Management

6038-23A.320

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Certification

Prepared by: ______________________________ Date: 2-23-2024

Printed: Todd Whipple, CPG

Section 1.0 Background Information

1.1 Report Format

Table 1 through Table 16 are attached to this report and satisfy the IDNR requirement to provide the tables to meet the IDNR format requirements (Special Provision 5.g.) included in Revised Permit #6, dated April 13, 2022 (Doc #102804).

1.2 Report Priority

Review of water quality data is considered low priority. This report concludes that detection, assessment, and corrective action monitoring should continue in accordance with the Permit.

Exceedances of the Prediction Limits continue to be detected at MW-6. MW-6 remains in the Assessment Monitoring network.

MW-15 is designated as a Supplemental Well and continues to demonstrate impact for arsenic, cobalt, and benzene. MW-22 is the designated attenuation zone point of compliance (AZPOC) well located beyond the limits of impact and is the effective point of compliance for the facility. Arsenic, cobalt, and benzene are undetected or detected below the site prediction limits at MW-22 and the Upper Confidence Limit for each compound is below groundwater protection standards (GWPS).

Corrective action monitoring will continue at LPZ-6, MW-15, and the gas vents in accordance with the Permit.

1.3 Period of Report Coverage

Water quality data evaluation is based on a running compilation of data beginning April 20, 2015. A variance was approved August 28, 2012 (Doc #73888) and authorized the facility to conduct groundwater monitoring in accordance with IAC 567-113.10(4) and 113.10(5). Statistical evaluations herein are based on the 2023 water quality data collected April 14, 2023; July 10, 2023; and October 18, 2023.

1.4 Current Site Map

Figure 1 and Figure 2 are attached illustrating the current site features, monitoring well locations, vent locations, and gas monitoring locations.

1.5 Site Status and Applicable Rules

Site Location

The Jones County Sanitary Landfill is located on about 50 acres in NE 1/4 SE 1/4 sec. 36, T. 85 N., R. 3 W., Jones County, Iowa (Figure 1). The landfill was closed in October 2007. The facility operates under the Iowa Department of Natural Resources (IDNR) Permit Number 53-SDP-01-76C.

Landfill Layout
The site is situated in gently rolling terrain and adjacent properties are cultivated farm ground. Surface runoff from the site follows site topography and flows radially from the closed landfill area. The site drainage ultimately ends up in Mineral Creek to the south of the site.

The facility includes a closed landfill area that was closed in 2007 with a 4' soil cap. The Transfer Station is located approximately 1,000 feet north of the closed landfill facility.

Applicable Rules
Groundwater monitoring at the site is conducted in accordance with Iowa Administrative Code (IAC) 567-113 as per the variance approved August 28, 2012 (Doc #73888).

1.6 Summary of Hydrologic Monitoring System Plan (HMSP)

The HMSP includes seven (7) monitoring wells in accordance with Revised Permit #6, dated April 13, 2022 (Doc #102804). MW-12 is the designated background well for the facility. Downgradient monitoring wells include MW-6, MW-11, MW-16, MW-20, and MW-22. MW-15 is included as a Supplemental well within the attenuation zone plume. Figure 3 is the Groundwater Contour Map for the site.

Corrective Action Monitoring Points related to the approved Corrective Action Plan (CAP) include leachate piezometer LPZ-6 and the twelve (12) gas vents (E1-E6 and W1-W6) associated with the vent trenches (Figure 4).

Monitoring wells MW-4, MW-18, MW-19, and MW-21 are retained for water elevation measurements. The Site Plan and the approved monitoring network are illustrated on Figure 1 and Figure 2. The current HMSP is summarized in Table 1. The HMSP Implementation Schedule for 2024 is itemized in Table 2.

MONITORING WELL MAINTENANCE PERFORMANCE REEVALUATION

Table 3 outlines the status of well performance and maintenance activities performed as required by IAC 567-113.10(2) f.

High & Low Water Levels
Current year water elevation data is included on Table 4. Historic water elevation data is included in the Table 4A. The maximum depth to water and the minimum depth to water are included in the tables. The Groundwater Contour Map (Figure 3) dated October 18, 2023 is included with this report. The Groundwater Contour Map illustrates the water table surface and the effects of the topography.

Well Depth & Sedimentation
Well depth measurements were made on October 18, 2023. Review of the well depth data included on Table 4 indicate that well sedimentation is estimated to be less than one (1) foot at all site monitoring wells.

Well Recharge Rates & Chemistry
The originally measured horizontal hydraulic conductivity testing results (1991) for each site monitoring well is included on Table 4. The horizontal hydraulic conductivities ranged between 10^{-4} cm/sec and 10^{-7} cm/sec.

Field recovery data recorded April 7, 2020 indicated that the monitoring wells recovered to at least 90% recovery within 6 hours after purging. The exception was at MW-12 and MW-16, where greater than 24 hours were required for the wells to recover. Field recovery data recorded April 4, 2022 (Table 4) confirms similar findings recorded in 2020.

Well recovery information indicates that recharge to the individual wells remained sufficient to promote collection of representative water quality samples and the wells were functioning as intended. Monitoring well recharge reevaluation is due biennially according to 113.10(2)"f", and should be evaluated again in 2024.

Based on the apparent static condition of the water surfaces across the site, it appears that the semi-annual water elevation data is sufficient to adequately monitor the hydrologic condition of the site. Further, the wells are interpreted to be appropriately located to detect any impact, should it occur. No changes or modifications to the site monitoring wells are recommended.

Section 2.0 Reporting Period Monitoring Activities

Prior to August 28, 2012, monitoring was performed according to Iowa Administrative Code 567-103 and 113 that predates current IAC 567, Chapter 113. For a summary of testing performed under the previous rule see document #82296. In addition, full Appendix II samples were collected from five (5) of the seven (7) HMSP monitoring wells in March, 2009. A summary of the Appendix II sample collection events at each well is included on Table 2. A comprehensive summary of all sampling episodes to date are included on the Table 2A.

Field sampling information for the April 14, 2023; July 10, 2023; and October 18, 2023 sampling episodes is included on the field forms (IDNR Form 542-1322) in Appendix A.

A comprehensive summary of Analytical Data for the episodes between April 20, 2015 and October 18, 2023 is included on Table 9.

2.1 Current Detection Monitoring Activities

The background well is MW-12. Downgradient detection monitoring wells for this facility include MW-11, MW-16, MW-20, and MW-22. It is recognized that inclusion of an additional background monitoring well would better represent spatial variability that may exist across the facility.

2.2 Current Assessment Monitoring Activities

Assessment monitoring wells include MW-6. MW-6 has had three (3) rounds of full Appendix II sampling performed to date, with the most recent collected on April 16, 2019. Full Appendix II sampling is scheduled for April, 2024 (Table 2).

2.3 Corrective Action Monitoring

The Closed Landfill has been retrofitted with a leachate collection toe drain system on the north and east sides of the fill in order to control seeps. The landfill base slopes down from west to east. Note that the leachate collection toe drain system is located downgradient of MW-15. The leachate collection toe drain system has not been accepted by IDNR as a Corrective Action related to water quality at MW-15.

Monitoring Well MW-15 is designated as a Supplemental Monitoring Point within the attenuation zone approved as a part of the corrective action plan (CAP). MW-22 is the AZPOC monitoring well located beyond the attenuation zone and is now the effective point of compliance for the east side of the landfill.

Time Series Plots are utilized to evaluate changes in water quality over time at Supplemental Well MW-15.

Section 3.0 Data Evaluation and Summary

Statistical Evaluations are prepared by Otter Creek Environmental Services for each monitoring episode. The Groundwater Statistics Report for the Jones County Sanitary Landfill, First Semi-Annual Monitoring Event in 2023, dated May, 2023 is included in Appendix B.1. The Groundwater Statistics Report for the Jones County Sanitary Landfill, Second Semi-Annual Monitoring Event in 2023, dated November, 2023 is included in Appendix B.2.

The Keystone Analytical Reports for the laboratory testing April 14, 2023; July 10, 2023; and October 18, 2023 are included in Appendix C.

QUALITY ASSURANCE/QUALITY CONTROL

A blind duplicate sample was collected at MW-12 during the April 14, 2023 sampling episode. A blind duplicate was collected at MW-11 during the October 18, 2023 sampling episode.

The purpose of the field duplicate is to evaluate the precision of sample collection and analysis process from the field through the laboratory. The calculation of the Relative Percent Difference (RPD) for duplicate pair results is used as a means to evaluate the precision.

The Quality Control (QC) limit for the RPD on field duplicates is established at thirty percent (30%) for duplicate pairs that have reported concentrations five (5) times greater than the laboratory Reporting Limit. For samples and respective duplicates with reported analyte concentrations nearer the Reporting Limit, the RPD calculations demonstrate greater variability and the RPD can be very large. RPD values are considered non-representative in the following conditions:

a) Both the original and the duplicate results are less than five (5) times the Reporting Limit.
b) One or both results are qualified, flagged, or estimated.
c) One or both results are non-detected.

The results of the blind duplicate and the monitoring well results for April 14, 2023 and October 18, 2023 were within the limits established and indicate that the data quality is acceptable without restriction.

BACKGROUND DATA VALIDATION

On July 10, 2014 an unnumbered Permit Amendment and Memo was issued by the IDNR regarding turbidity (Doc # 80715). A TSS and Field Turbidity Evaluation Report was prepared and submitted on August 18, 2015 (Doc# 84119) and was approved by IDNR on September 16, 2016 (Doc #87164). The TSS and Field Turbidity Evaluation Report includes a recommendation to retain only the data collected by "No-Purge" methods beginning April 20, 2015. The background data utilized in the current statistical evaluation is indeed restricted to data collected from April 20, 2015 to the present.

A summary table of field measured turbidity is included in Appendix D. The background data collected by "No-Purge" methods is documented to have field turbidity measurements that fall in the range of 0.18 to 4.46 NTU and meets the turbidity goals stated in the July 10, 2014, unnumbered Permit Amendment and Memo that was issued by the IDNR regarding turbidity (Doc # 80715).

Upgradient Data, Table 1, Attachment B, to the Spring and Fall 2023 Statistical Evaluation Reports (Appendix B.1 and B.2) include a summary of the background data. The site prediction limits established in the Spring and Fall 2023 Statistical Evaluation Reports (Appendix B.1 and B.2) are based on the validated background. The calculated Prediction Limits are summarized on Table 5, Attachment B, to the Spring and Fall 2023 Statistical Evaluation Reports (Appendix B.1 and B.2) and in Table 5 herein.

GROUNDWATER PROTECTION STANDARDS (GWPS)

The Statewide Standards for Protected Groundwater as published in IAC 567, Chapter 137, are utilized as the Groundwater Protection Standards (GWPS) for all compounds, except cobalt. Table 5 indicates that the prediction limit for cobalt *exceeds* the published IAC 567, Chapter 137 Statewide Standard:

Compound	***Prediction Limit***	***IAC 137 GWPS***
Cobalt	2.6 ug/L	2.1 ug/L

The Site-Specific GWPS should not be set lower than the Site Prediction Limit calculated from the site background data. For this report, the prediction limit of 2.6 ug/L is utilized as the Site-

Specific GWPS for cobalt at this site. For all other compounds the published IAC 567, Chapter 137 Statewide Standard are utilized as the GWPS.

STATISTICALLY SIGNIFICANT INCREASES (SSI)

The detected concentration of each compound is compared to the current site prediction limit for each respective compound calculated based on the background data set. A detected concentration for a compound that is in excess of the calculated site prediction limit is recorded as a Statistically Significant Increase (SSI) at detection monitoring wells.

Since the Prediction limit for VOC is set at the laboratory Method Reporting Limit, any VOC detection is recorded as an SSI. Table 6 is a summary of all compounds at site monitoring wells that have exceeded a *current* prediction limit in 2023.

MW-11, MW-16, MW-20, and MW-22 remain in the detection monitoring system.

Prediction limit exceedances are recorded at MW-6 which is already included in the assessment monitoring system. Table 7 includes an on-going summary of compound detections that exceed the prediction limits (highlighted in light brown) at MW-6.

Exceedances of the Prediction Limit at a well that is in the Assessment Monitoring System or the Corrective Action Monitoring System is not an SSI, instead the exceedance is further evaluated by Confidence Interval Statistics.

Exceedance of the Prediction Limits for the current year is summarized on Table 1 and Table 6. A running summary of recorded Prediction Limit exceedances by year is included in Appendix E.

This letter serves as notice to the operating record in accordance with IAC 567-113.10(5)c.

A summary of current inorganic prediction limit exceedances is included on page 3 of each respective Otter Creek Report (Appendix B.1 and B.2). A summary of current VOC SSI is included on page 4 of the respective Otter Creek Reports (Appendix B.1 and B.2). Table 1, Attachment C to the Statistical Evaluation Report completed following the October, 2023 sampling event (Appendix B.2) is a comprehensive summary of historic VOC detections that exceed the prediction limit (set at the laboratory method reporting limit).

ASSESSMENT MONITORING SUMMARY

Special Provision 5f of the Revised Permit #6, dated April 13, 2022 (Doc #102804) allows a five (5) year frequency for full Appendix II sampling (due again in 2024). The on-going supplemental sampling includes Appendix I plus all detected Appendix II compounds per 113.10(6)B.2.

Dichlorofluoromethane and bis (2-ethylhexyl)phthalate are the only compounds detected to date beyond the Appendix I list of testing parameters. Dichlorofluoromethane and bis (2-ethylhexyl) phthalate have not been detected for the past several years at MW-6 (since 2017) and the supplemental sampling for dichlorofluoromethane and bis (2-ethylhexyl)phthalate did not occur in 2023. The full Appendix II sampling at MW-6 is scheduled to occur during the April, 2024 sampling episode (Table 2).

MW-15 is designated as a Supplemental Well and there is no requirement for ongoing sampling for the full Appendix II list.

The summary of assessment monitoring detections to date is presented in Appendix F. The full Appendix II sampling episodes are highlighted in green in the tables in Appendix F.

STATISTICALLY SIGNIFICANT LEVELS (SSL)

The compounds with detections that exceed site prediction limits (see Table 6 and Table 7) are utilized to calculate the Confidence Interval (the 95% lower confidence limits (LCL) and the 95% upper control limits (UCL)) in accordance with the 2009 Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities by US EPA. The 95% LCL values are compared to applicable GWPS. Any 95% LCL value that exceeds an applicable GWPS is recorded as an SSL. All wells with a recorded SSL require the plume of impact to be defined in the horizontal and vertical directions and require completion of an Assessment of Corrective Action (ACM).

The Confidence Intervals (95% LCL and 95% UCL) are calculated during each statistical evaluation based on the most recent four (4) data points. The 95% LCL evaluation is presented in Table 7. The yellow highlights in Table 7 indicate an exceedance of the GWPS. Wells included in the 95% LCL evaluation is limited to MW-6, the only well where an SSI has been recorded.

There are no SSL recorded for the facility.

DELINEATION & ASSESSMENT OF CORRECTIVE MEASURES (ACM)

Preliminary plume delineation for arsenic, cobalt, and benzene in the vicinity of MW-15 was submitted July 25, 2014 (Doc# 80862). The findings document that the extent of impact in the horizontal and vertical directions is limited. Review of the water quality results for 2016-2023 confirm that the site conditions are unchanged.

An Assessment of Corrective Measures (ACM) Report was submitted to IDNR on November 27, 2019 (Doc #96470) and approved by IDNR on May 5, 2020 (Doc #97672). The Corrective Action Plan dated July 9, 2020 (Doc #98246) for the selected remedy was approved in Revised Permit #4, dated August 14, 2020 (Doc #98248). Construction of the selected remedy (gas vent trenches) was completed in April, 2021. Construction documentation was submitted to IDNR on May 7, 2021 (Doc #100434). The construction documentation was approved by Revised Permit #5, dated May 13, 2021 (Doc #100487).

CORRECTIVE ACTION MONITORING & EVALUATIONS

MW-15 is a Supplemental Well within the attenuation zone and MW-22 is the designated attenuation zone point of compliance (AZPOC). The results from MW-15 are to be evaluated to gauge the effectiveness of the remedy over time.

Although MW-15 is not a compliance point for the site, water quality within the attenuation zone is required to be monitored for changes over time as attenuation progresses. Time Series Plots for MW-15 are included in Appendix G and illustrate decreasing trends for several parameters (cobalt, 1,4-dichlorobenzene, benzene, chloroethane, ethylbenzene, and xylenes).

Compliance is monitored at MW-22. Arsenic, cobalt, and benzene at MW-22 (AZPOC) are undetected or detected below the respective prediction limits for arsenic, cobalt, and benzene.

The remedy was approved August 14, 2020, so the remedy has reached completion.

Tabulation and graphing of leachate quality over time at LPZ-6 is included in Table 12. Note that a limited number of results exist. Review of leachate quality indicates that the recorded concentrations of arsenic, cobalt, and benzene appear to vary seasonally and exceed the GWPS at times.

Semi-annual monitoring of the gas vents (Figure 4) is performed, beginning April 22, 2021. The vent gas concentrations (in % Lower Explosive Limits (LEL)) are tabulated and graphed in Table 13. There is not sufficient data recorded at this time to evaluate trends.

Dissolved methane, ethane, ethene and alkalinity and pH are evaluated in both leachate (LPZ-6) and in the impacted well (Supplemental Well MW-15). The recorded concentrations are tabulated and graphed in Table 14. Currently insufficient data is available to evaluate long-term changes in water/leachate quality. It is noted that ethane and ethene have remained undetected to date.

Section 4.0 Leachate Collection System Performance Evaluation

Leachate System Performance
As per Special Provision X.11 of the Closure Permit dated September 4, 2008 (Doc# 30396), the Jones County Sanitary Landfill is exempt from installing a leachate collection system based on the completed and certified site risk assessment. However, to control visual surface leachate seeps a leachate collection system was installed in the fall of 1994. The initial collection system extends along the entire east side of the site (the landfill base slopes from west to east) with a series of collection laterals spaced at approximately 100 foot intervals extending into the waste mass. The system was extended from the northeast corner to the northwest corner of the site in 1998. A lift station is located at the low point along the east waste boundary and pumps the collected leachate into one of two 10,000-gallon underground leachate storage tanks (total leachate storage capacity is 20,000 gallons). The perimeter leachate collection system was designed to control surface leachate seeps and not necessarily designed to lower leachate levels within the landfill.

A replacement pump with a dial-up alarm system was installed in the leachate lift station in 2017. Cleanouts were also installed on the leachate force main to allow future cleaning of the force main as needed. A pump in the leachate pump station was replaced in 2020.

A map is included in Appendix H showing the approximate locations of the leachate collection system.

Special Provision 12.c. of Revised Permit #6 (Doc #102804) requires leachate level measurements to be completed semi-annually in LPZ-6. The location of LPZ-6 is shown on the figures in this report. Current and historical measurements of LPZ-6 are summarized in Table 15.

Based on the above measurements, there appears to be leachate mounding within the waste mass which is typical for closed facilities. The leachate collection system is a perimeter collection drain as opposed to an underdrain system and has been effective in controlling leachate seepage. Note that leachate thickness values typically range from 3 to 9 feet, depending upon the season and the year. Depth to the base of LPZ-6 was measured by HLW in 2015, 2018, 2020, and 2022.

Leachate Treatment and Testing
The collected leachate is pumped into tanker trucks and hauled to the Cedar Rapids Water Pollution Control Facility (WPCF) for treatment and disposal. In 2023, no leachate was hauled to the Cedar Rapids WPCF. Hauling is scheduled to begin early in 2024. The Cedar Rapids WPCF does not require a leachate analysis for disposal.

Leachate Line Cleaning
The LCP lines were cleaned in the Summer of 2023. As per IDNR regulations, the lines should be cleaned every 3 years (next cleaning will be tentatively scheduled for 2026).

Performance Evaluation
No modifications to the leachate collection system are recommended for 2024.

Section 5.0 Gas Monitoring

Explosive gas monitoring was conducted in 2023 per 113.9(2) and Special Provision 10 of the Revised Permit #6, dated April 13, 2022 (Doc #102804).

Gas Monitoring was performed on a semi-annual frequency. The following ambient air and subsurface monitoring points are included in the approved GMSP, as illustrated on Figure 1 and Figure 2.

GP-1 -	subsurface
GP-2 -	subsurface
GP-3 -	subsurface
GP-4	subsurface
MW-6 -	subsurface
MW-11 -	subsurface
Old Office -	breathing zone
Old Shop -	breathing zone
Site Perimeter -	breathing zone

A summary table of gas monitoring is included as Table 16. Table 16 includes an assessment of the exposed screen at MW-6 and MW-11.

Explosive gas concentrations are recorded as percent lower explosive limit (%LEL) and were below actionable levels during the monitoring episodes.

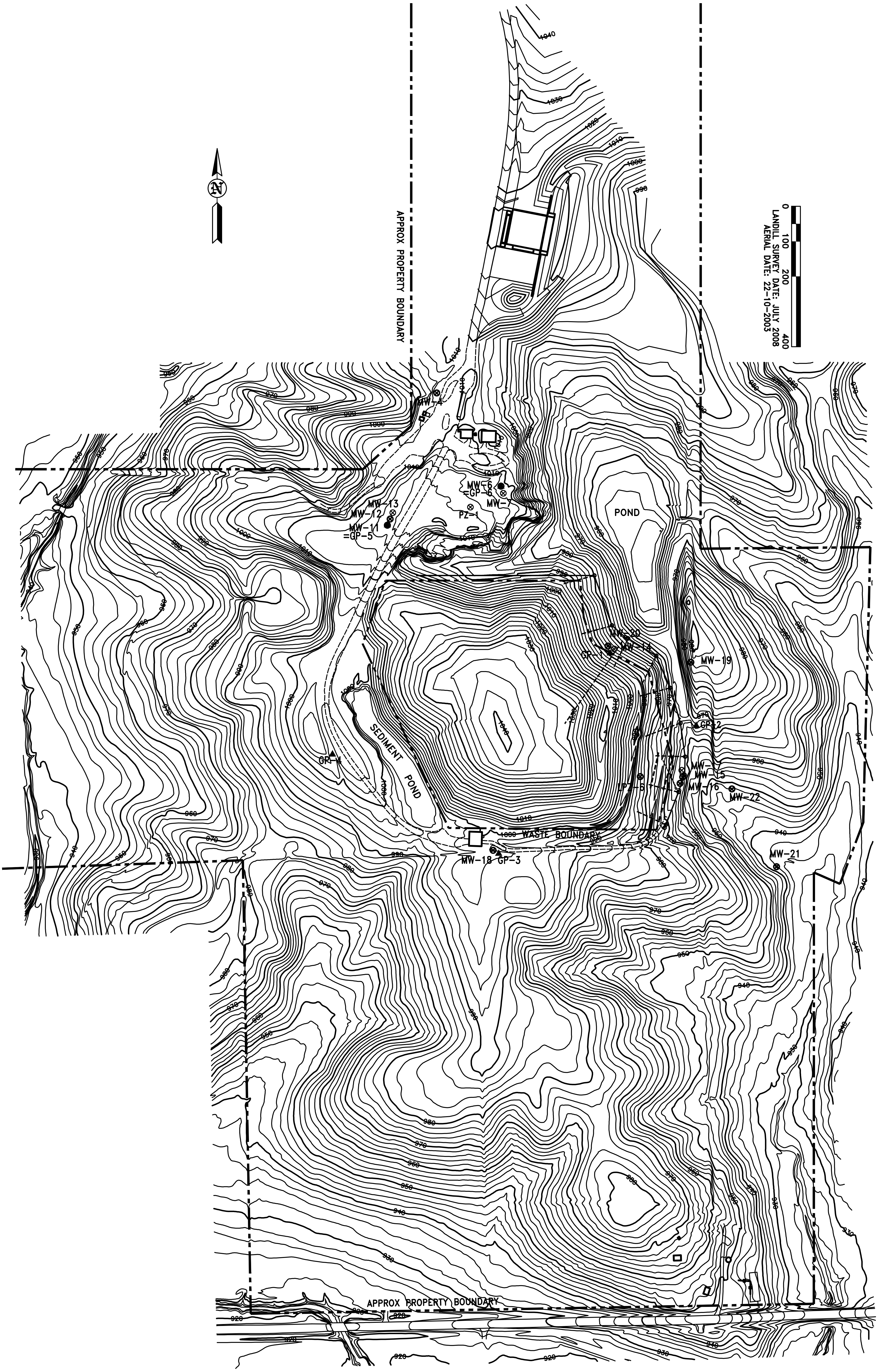
Section 6.0 Recommendations

This report concludes that detection, assessment, and corrective action monitoring should continue in accordance with the approved HMSP. MW-11, MW-12, MW-16, MW-20, and MW-22 should remain in detection monitoring. MW-6 should remain in Assessment Monitoring. MW-15 is a Supplemental Monitoring Well. LPZ-6 and Vents E1-E6 and W1-W6 are assigned to the Corrective Action Monitoring Plan.

Leachate should be hauled in 2024. Leachate lines should be cleaned in 2026.

Gas monitoring should continue in accordance with the permit provisions and the GMSP.

Figures



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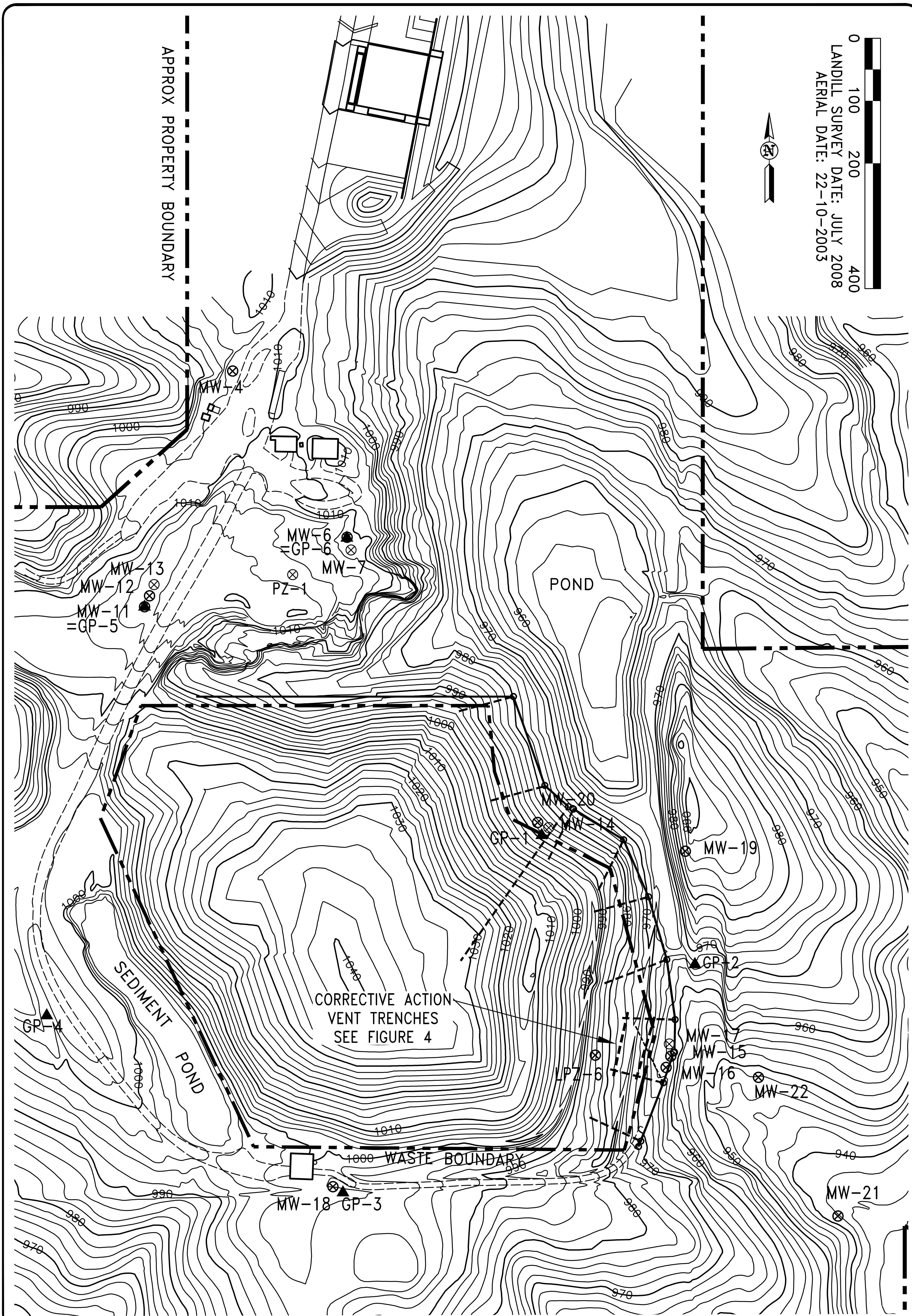
SITE PLAN
TOTAL PROPERTY
JONES COUNTY SANITARY LANDFILL
ANAMOSA, IOWA

FIGURE:	1	
REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6038	10-28-23



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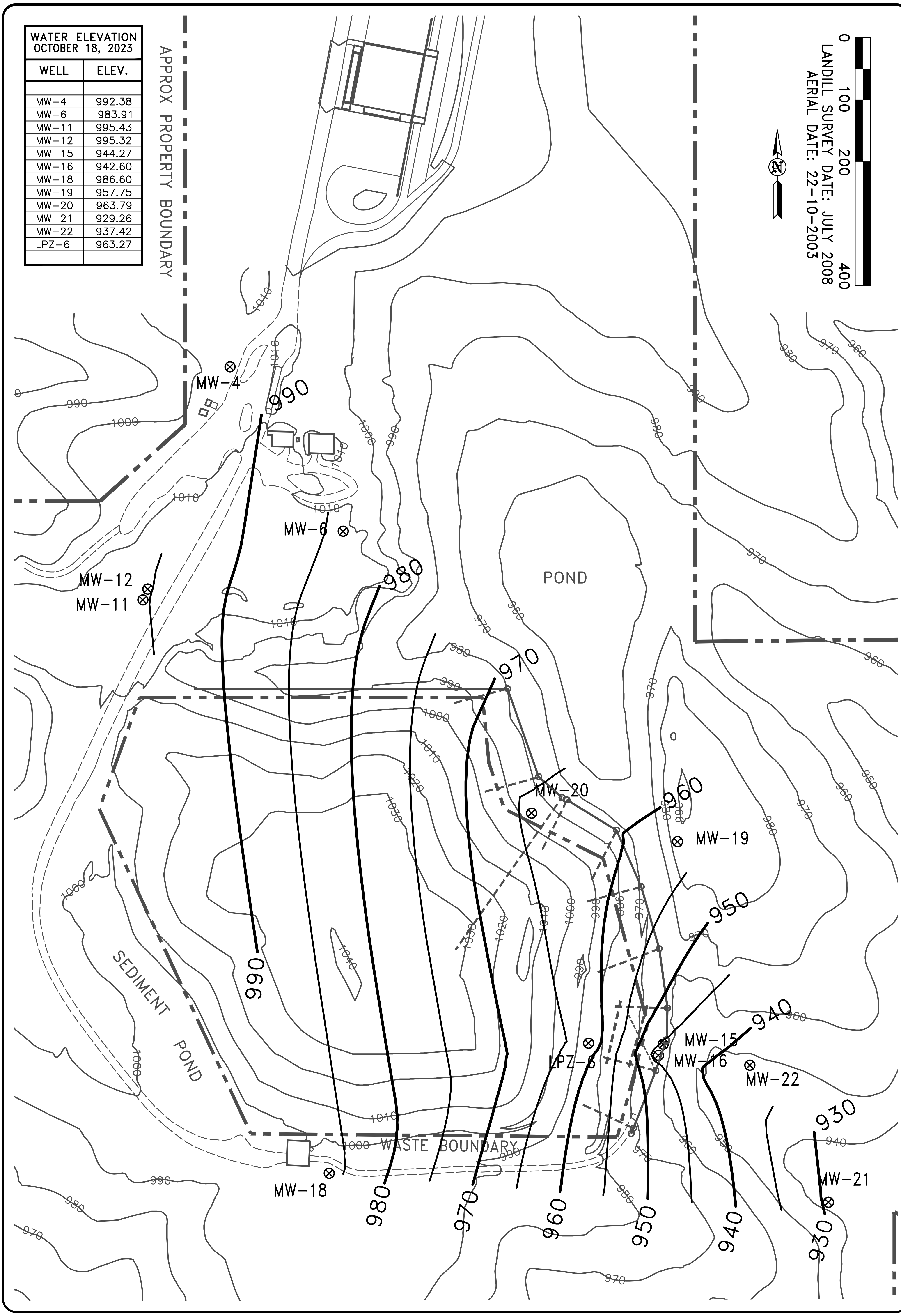
SITE PLAN – LANDFILL VICINITY AND GAS PROBE LOCATION MAP

JONES COUNTY SANITARY LANDFILL
ANAMOSA, IOWA

FIGURE:	2	
REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6038	DATE 10-28-23

WATER ELEVATION
OCTOBER 18, 2023

WELL	ELEV.
MW-4	992.38
MW-6	983.91
MW-11	995.43
MW-12	995.32
MW-15	944.27
MW-16	942.60
MW-18	986.60
MW-19	957.75
MW-20	963.79
MW-21	929.26
MW-22	937.42
LPZ-6	963.27



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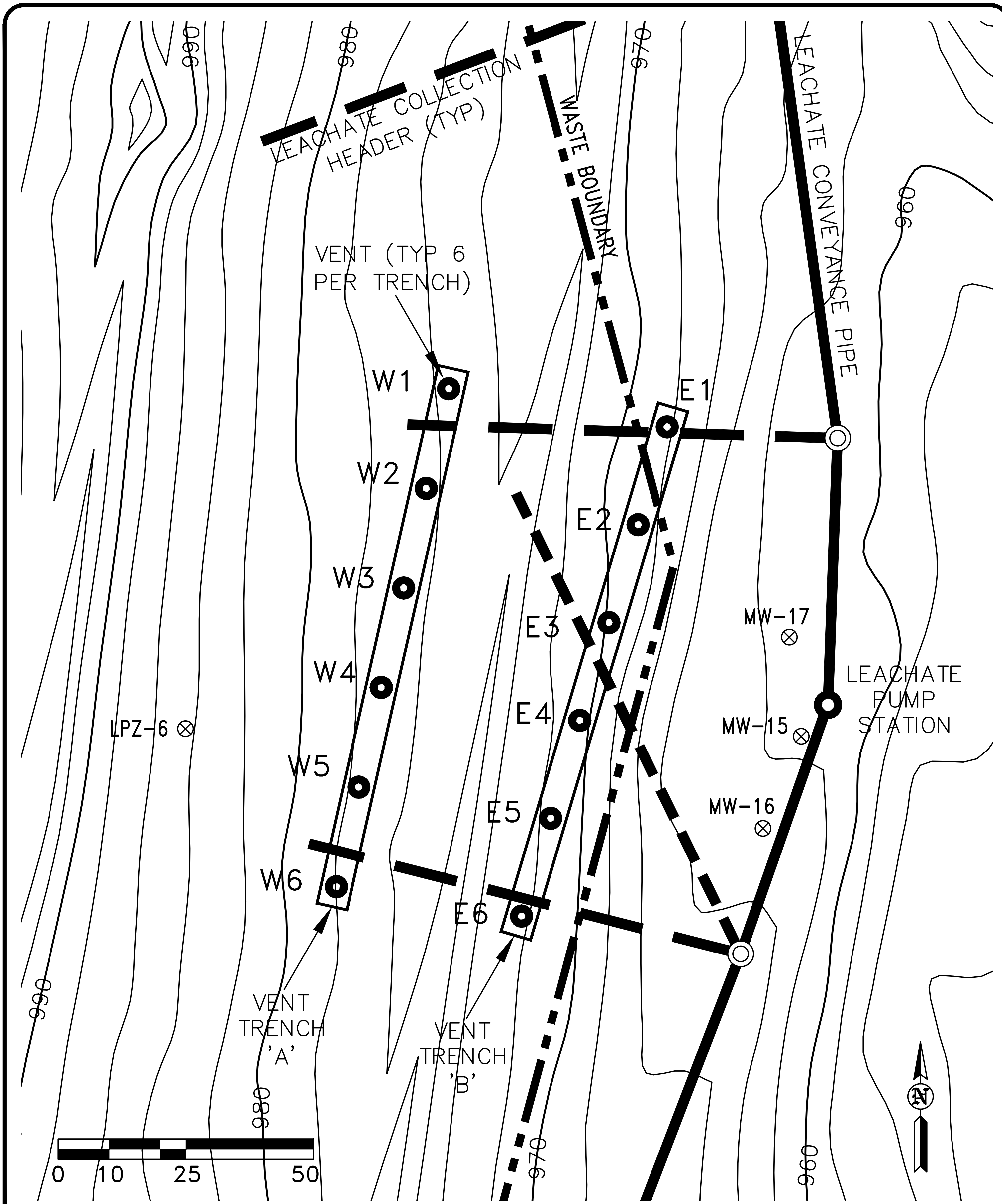
GROUNDWATER CONTOURS

JONES COUNTY SANITARY LANDFILL
ANAMOSA, IOWA

FIGURE:	3	
REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6038	DATE 10-28-23



HLW Engineering Group	CORRECTIVE ACTION VENT TRENCHES JONES COUNTY SANITARY LANDFILL ANAMOSA, IOWA	FIGURE: 4		
		REVISION	NO.	DATE
		DRAWN DRA	PROJECT NO. 6038	DATE 10-28-23

Tables
(in IDNR Format)

Table 1 – Monitoring Program Summary

Table 1
Monitoring Program Summary
Annual Water Quality Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Monitoring Well	Formation	Current Monitoring Program	Change for next sampling event	Historic - Constituents w/ SSI	Current Spring - Constituents w/ SSI	Current Fall - Constituents w/ SSI	Historic - Constituents w/ SSL	Current Spring - Constituents w/ SSL	Current Fall - Constituents w/ SSL	Total # of Samples in each monitoring program since April 20, 2015		
										Detection	Assessment	Corrective Action
MW-12 (b)	Glacial Till	Background	NC	None	None	None	None	None	None	19	0	0
MW-6	Glacial Till	Assessment	NC	**barium, cadmium, cobalt, copper, nickel, bis(2ethylhexyl)phthalate, dichlorofluoromethane**	None	**barium, copper**	None	None	None	0	19	0
MW-11	Glacial Till	Detection	NC	None	None	None	None	None	None	18	0	0
MW-15	Glacial Till	**Supplemental Well**	NC	**N/A**	**N/A**	**N/A**	**arsenic, cobalt, benzene**	**N/A**	**N/A**	0	0	18
MW-16	Glacial Till	Detection	NC	None	None	None	None	None	None	18	0	0
MW-20	Glacial Till	Detection	NC	None	None	None	None	None	None	18	0	0
MW-22	Glacial Till	**AZPOC Well - detection**	NC	None	None	None	None	None	None	18	0	0
LPZ-6	Municipal Waste	**Corrective Action**	NC	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	0	0	6
Vent E1-E6 & W1-W6	Municipal Waste	**Corrective Action**	NC	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	0	0	6

Table 2 – Monitoring Program Implementation Schedule

Table 2
Monitoring Program Implementation Schedule
Annual Water Quality Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Monitoring Well	Recent Sampling Dates and Constituents	Upcoming Sampling Dates and Constituents		Full Appendix II Sample Dates	
		April, 2024	October, 2024	Previously Collected	Next Event
MW-12 (b)		Appendix I	Appendix I	March, 2009	N/A
MW-6		**Appendix II**	Appendix I	March, 2009; March, 2014; April, 2019	April, 2024
MW-11	**See Table 2A**	Appendix I	Appendix I		N/A
MW-15		Appendix I (1)	Appendix I	March, 2009; March, 2013; March, 2014; April, 2019	N/A
MW-16		Appendix I	Appendix I		N/A
MW-20		Appendix I	Appendix I	March, 2009	N/A
MW-22		Appendix I	Appendix I	March, 2009	N/A
LPZ-6		Appendix I VOC (1,2)	---		
Vent E1-E6 & W1-W6		%LEL	%LEL		

(b) background well

(1) = dissolved methane, ethane, and ethene and alkalinity and pH.

(2) = arsenic (total), cobalt (total), ammonia (N), sulfate, chloride, TDS, BOD5

Table 2A – Summary of Well Testing to Date

Table 2A -- Itemized Summary of Hydrologic Monitoring (to date)
Expanded list, [benzene, chloroethane, chlorobenzene, 1,4 dichlorobenzene, ethylbenzene, toluene and xylenes, and metals – arsenic, barium, cadmium, chromium, cobalt, copper, lead, nickel, thallium, vanadium, and zinc]; App I, Appendix I; App II, Appendix II; A, Appendix I related.

2005

WELL	March	September
MW-6	e	e and f
MW-11	e	e and f
MW-12	e	e and f
MW-15	e	e and f
	arsenic & benzene	App I
MW-16	e	e and f
MW-20	e	e and f
MW-21		e and f + arsenic & benzene

2006-2008

	March	September
MW-6	e	e and f
MW-11	e	e and f
MW-12	e	e and f
MW-15	e	e and f
	expanded list	expanded list
MW-20	e	e and f
MW-22	d and e	d, e and f
	expanded list	expanded list

2009

	March	June	July	August	October
MW-6	d(1)+**App II**	A	A	d(2)+A	A
MW-11	d(1)			d(2)	
MW-12	d(1)+**App II**			d(2)	
MW-15	d(1)+**App II**	A	A	d(2)+A	A
	expanded list			expanded list	
MW-16	d(1)			d(2)	
MW-20	d(1)+**App II**	A	A	d(2)+A	A
MW-22	d(1)+**App II**	A	A	d(2)+A	A
	expanded list			expanded list	

2010

	March	June	September
MW-6	d(1) + A	A	d(2) + A
MW-11	d(1)		d(2)
MW-12	d(1) + A		d(2)
MW-15	d(1) + A	A	d(2) + A
	expanded list		expanded list
MW-16	d(1)		d(2)
MW-20	d(1) + A	A	d(2) + A
MW-22	d(1) + A	A	d(2) + A
	expanded list		expanded list

2011

	March	September
MW-6	d(1) + A	d(2) + A
MW-11	d(1)	d(2)
MW-12	d(1) + A	d(2)
MW-15	d(1) + A expanded list	d(2) + A expanded list
MW-16	d(1)	d(2)
MW-20	d(1) + A	d(2) + A
MW-22	d(1) + A expanded list	d(2) + A expanded list
2012		
MW-6	d(1) + A	App I
MW-11	d(1)	App I
MW-12	d(1) + A	App I
MW-15	d(1) + A expanded list	App I
MW-16	d(1)	App I
MW-20	d(1) + A	App I
MW-22	d(1) + A expanded list	App I
2013		
MW-6	App I	App I
MW-11	App I	App I
MW-12	App I	App I
MW-15	**App II**	App I + bis(2-ethylhexyl)phthalate
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I	App I
2014		
MW-6	**App II**	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-11	App I	App I
MW-12	App I	App I
MW-15	**App II**	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I	App I

2015

	April	July	October
MW-6	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane	bis(2-ethylhexyl)phthalate	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-11	App I		App I
MW-12	App I		App I
MW-15	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane		App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-16	App I		App I
MW-20	App I		App I
MW-22	App I		App I

2016

	April	October
MW-6	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-11	App I	App I
MW-12	App I	App I
MW-15	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane	NT

2017

	April	October
MW-6	App I	App I
	bis(2-ethylhexyl)phthalate	bis(2-ethylhexyl)phthalate
	dichlorodifluoromethane	dichlorodifluoromethane
MW-11	App I	App I
MW-12	App I	App I
MW-15	App I	App I
	bis(2-ethylhexyl)phthalate	bis(2-ethylhexyl)phthalate
	dichlorodifluoromethane	dichlorodifluoromethane
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I	App I
	bis(2-ethylhexyl)phthalate	bis(2-ethylhexyl)phthalate
	dichlorodifluoromethane	dichlorodifluoromethane

2018

	January	April	October
MW-6	Resample	App I	App I
	Barium	bis(2-ethylhexyl)phthalate	bis(2-ethylhexyl)phthalate
	Cobalt	dichlorodifluoromethane	dichlorodifluoromethane
	nickel		
MW-11	N/A	App I	App I
MW-12	N/A	App I	App I
MW-15	N/A	App I	App I
		bis(2-ethylhexyl)phthalate	bis(2-ethylhexyl)phthalate
		dichlorodifluoromethane	dichlorodifluoromethane
MW-16	N/A	App I	App I
MW-20	N/A	App I	App I
MW-22	Resample	Arsenic	Arsenic
	Zinc	Cobalt	Cobalt
		Benzene	Benzene

2019

	April	October
MW-6	**App II**	App I
		bis(2-ethylhexyl)phthalate
		dichlorodifluoromethane
MW-11	App I	App I
MW-12	App I	App I
MW-15	**App II**	App I
		bis(2-ethylhexyl)phthalate
		dichlorodifluoromethane
		methane, ethane, ethene, alkalinity, pH
MW-16	App I	App I
MW-20	App I	App I
MW-22	Arsenic	Arsenic
	Cobalt	Cobalt
	Benzene	Benzene

2020	April	October
MW-6	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane
MW-11	App I	App I
MW-12	App I	App I
MW-15	App I bis(2-ethylhexyl)phthalate dichlorodifluoromethane	App I, Note 1
MW-16	App I	App I
MW-20	App I	App I
MW-22	Arsenic Cobalt Benzene	App I
LPZ-6	-----	App I VOC, Note 1, Note 2

2021	April	October
MW-6	App I	App I
MW-11	App I	App I
MW-12	App I	App I
MW-15	App I	App I, Note 1
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I	App I
LPZ-6	App I VOC, Note 2	App I VOC, Note 1, Note 2

2022	April	October
MW-6	App I	App I
MW-11	App I	App I
MW-12	App I	App I
MW-15	App I, Note 1	App I
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I	App I
LPZ-6	App I VOC, Note 1, Note 2	App I VOC

2023	April	October
MW-6	App I	App I
MW-11	App I	App I
MW-12	App I	App I
MW-15	App I, Note 1	App I
MW-16	App I	App I
MW-20	App I	App I
MW-22	App I	App I
LPZ-6	App I VOC, Note 1, Note 2	App I VOC

Note 1 = dissolved methane, ethane, ethene, pH, alkalinity
Note 2 = As (total), Co (Total), ammonia (N), sulfate, chloride, TDS, BOD5

Table 3 – Monitoring Well Maintenance Performance Reevaluation Schedule

Table 3
Monitoring Well Maintenance and Performance Revaluation Schedule
Annual Water Quality Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Compliance with:	Monitoring Calendar Years									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
567 IAC 113.10(2)"f"(1) high and low water levels (bi-annual)	X	x	X	X	X	X	X	X	X	X
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths (historic = 1 per 5 years; current = bi-annual)	X	X	X	X	X	X	X	X	X	X
567 IAC 113.10(2)"f"(3) well depths (annual)	X	X	X	X	X	X	X	X	X	X
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry (bi-annual)	X		X		X	X		X		X
Waste separation from ground water 113.6(2)"l"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Compliance with:	Monitoring Calendar Years									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
567 IAC 113.10(2)"f"(1) high and low water levels (bi-annual)	X	P	P	P	P	P	P	P	P	P
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths (historic = 1 per 5 years; current = bi-annual)	X	P	P	P	P	P	P	P	P	P
567 IAC 113.10(2)"f"(3) well depths (annual)	X	P	P	P	P	P	P	P	P	P
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry (bi-annual)		P		P		P		P		P
Waste separation from ground water 113.6(2)"l"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

X = completed
P = Planned
N/A = Not Applicable

Table 4 – Monitoring Well Maintenance Performance Reevaluation Summary

Table 4
Monitoring Well Maintenance and Performance Summary
Annual Water Quality Report
Jones County Sanitary Landfill
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Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth	Hydraulic Cond.	Most Recent Recharge Rate	
					4/14/2023	**10/18/2023**	Discrepancy (ft)	(cm/sec)/date	**4/4/2022**	Change
MW-12	1018.98	981.11	47.87	Groundwater Level (ft)	17.04	23.66	0.17	0.0000005 1991	Full recovery in >24 hour	None percieved
				Groundwater Elevation (Ft MSL)	1001.94	995.32				
				Measured Well Depth (ft)	47.7	47.7				
				Submerged (+) or Exposed screen (-)	20.83	14.21				
MW-6	1012.71	995.93	36.78	Groundwater Level (ft)	17.53	28.8	0.13	0.00001 1991	Full recovery in 6 hour	None percieved
				Groundwater Elevation (Ft MSL)	995.18	983.91				
				Measured Well Depth (ft)	36.65	36.65				
				Submerged (+) or Exposed screen (-)	-0.75	-12.02				
MW-11	1019.23	1007.83	26.4	Groundwater Level (ft)	17.33	23.8	0.05	0.000003 1991	Full recovery in 6 hour	None percieved
				Groundwater Elevation (Ft MSL)	1001.9	995.43				
				Measured Well Depth (ft)	26.35	26.35				
				Submerged (+) or Exposed screen (-)	-5.93	-12.4				
MW-15	964.04	944.4	29.81	Groundwater Level (ft)	14.50	19.77	0.21	0.0001 1991	Full recovery in 2 hours	None percieved
				Groundwater Elevation (Ft MSL)	949.54	944.27				
				Measured Well Depth (ft)	29.6	29.6				
				Submerged (+) or Exposed screen (-)	5.14	-0.13				
MW-16	964.58	920.91	53.67	Groundwater Level (ft)	15.02	21.98	0.07	0.0000001 1991	Full recovery in >24 hour	None percieved
				Groundwater Elevation (Ft MSL)	949.56	942.6				
				Measured Well Depth (ft)	53.6	53.6				
				Submerged (+) or Exposed screen (-)	28.65	21.69				
MW-20	977.6	969.5	18.1	Groundwater Level (ft)	3	13.81	0.1	0.000001 1991	Full recovery in 12 hour	None percieved
				Groundwater Elevation (Ft MSL)	974.6	963.79				
				Measured Well Depth (ft)	18	18				
				Submerged (+) or Exposed screen (-)	5.1	-5.71				
MW-22	950.92	941.42	19.5	Groundwater Level (ft)	6.33	13.5	0.1	No Record 2006	Full recovery in 2 hour	None percieved
				Groundwater Elevation (Ft MSL)	944.59	937.42				
				Measured Well Depth (ft)	19.4	19.4				
				Submerged (+) or Exposed screen (-)	3.17	-4				

Table 4A – Historic Water Level Summary

Table 4A
Water Level Summary
Annual Water Quality Report
Jones County Sanitary Landfill
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	12/28/92	3/30/93	6/28/93	9/22/93	3/31/94
MW-6	19.0	991.7	**Depth (ft)**	12.74	16.57	11.80	12.72	15.16
1012.71	34.0	976.7	**Elev. (ft)**	999.97	996.14	1000.91	999.99	997.55
MW-11	8.0	1008.7	**Depth (ft)**	14.21	19.20	11.78	15.48	19.28
1019.23	23.0	993.7	**Elev. (ft)**	1005.02	1000.03	1005.02	1003.75	999.95
MW-12	35.0	981.8	**Depth (ft)**	14.05	19.54	----	15.45	19.11
1018.98	45.0	971.8	**Elev. (ft)**	1004.93	999.44	----	1003.53	999.87
MW-15	8.0	954.2	**Depth (ft)**	16.92	18.18	14.83	17.11	16.49
964.04	28.0	934.2	**Elev. (ft)**	947.12	945.86	949.21	946.93	947.55
MW-16	41.0	921.4	**Depth (ft)**	18.09	19.82	----	18.19	18.14
964.58	51.0	911.4	**Elev. (ft)**	946.49	944.76	964.58	946.39	946.44
MW-20	5.5	970.1	**Depth (ft)**	5.61	3.11	5.23	4.60	4.21
977.60	15.5	960.1	**Elev. (ft)**	971.99	974.49	972.37	973.00	973.39
MW-22	7.0	941.4	**Depth (ft)**	----	----	----	----	----
950.92	17.0	931.4	**Elev. (ft)**	----	----	----	----	----
MW-4	14.0	995.3	**Depth (ft)**	13.54	17.61	14.50	14.89	17.58
1011.36	29.0	980.3	**Elev. (ft)**	997.82	993.75	996.86	996.47	993.78
MW-18	9.1	987.3	**Depth (ft)**					
999.46	24.1	972.3	**Elev. (ft)**					
MW-19	32.0	956.5	**Depth (ft)**					
988.53	47.0	941.5	**Elev. (ft)**					
MW-21	16.5	929.7	**Depth (ft)**					
943.10	23.5	919.7	**Elev. (ft)**					
LPZ-6	17.3	963.3	**Depth (ft)**					
980.57	27.3	953.3	**Elev. (ft)**					
				12/28/92	**3/30/93**	**6/28/93**	**9/22/93**	**3/31/94**

Table 4A
Water Level Summary
Annual Water Quality Report
Jones County Sanitary Landfill
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 10/5/94	4/15/95	9/19/95	4/2/96	9/5/96	2/28/97	9/11/97	3/21/98
MW-6	19.0	991.7	**Depth (ft)**	18.60	15.40	17.60	17.60	16.85	16.16	18.65	12.28
1012.71	34.0	976.7	**Elev. (ft)**	994.11	997.31	995.11	995.11	995.86	996.55	994.06	1000.43
MW-11	8.0	1008.7	**Depth (ft)**	21.18	19.14	19.80	21.50	19.40	19.72	20.49	15.12
1019.23	23.0	993.7	**Elev. (ft)**	998.05	1000.09	999.43	997.73	999.83	999.51	998.74	1004.11
MW-12	35.0	981.8	**Depth (ft)**	21.31	21.10	19.88	21.70	19.39	19.85	20.46	16.5
1018.98	45.0	971.8	**Elev. (ft)**	997.67	997.88	999.10	997.28	999.59	999.13	998.52	1002.48
MW-15	8.0	954.2	**Depth (ft)**	18.43	16.84	18.50	18.35	19.90	18.33	18.42	12.75
964.04	28.0	934.2	**Elev. (ft)**	945.61	947.20	945.54	945.69	944.14	945.71	945.62	951.29
MW-16	41.0	921.4	**Depth (ft)**	19.95	19.70	19.82	19.80	19.49	19.05	19.51	16.09
964.58	51.0	911.4	**Elev. (ft)**	944.63	944.88	944.76	944.78	945.09	945.53	945.07	948.49
MW-20	5.5	970.1	**Depth (ft)**	5.53	3.98	6.10	4.25	10.31	6.05	6.18	2.63
977.60	15.5	960.1	**Elev. (ft)**	972.07	973.62	971.50	973.35	967.29	971.55	971.42	974.97
MW-22	7.0	941.4	**Depth (ft)**	—	—	—	—	—	—	—	—
950.92	17.0	931.4	**Elev. (ft)**	—	—	—	—	—	—	—	—
MW-4	14.0	995.3	**Depth (ft)**	16.73	12.86	17.42	18.10	16.20	16.92	15.80	11.71
1011.36	29.0	980.3	**Elev. (ft)**	994.63	998.50	993.94	993.26	995.16	994.44	995.56	999.65
MW-18	9.1	987.3	**Depth (ft)**								
999.46	24.1	972.3	**Elev. (ft)**								
MW-19	32.0	956.5	**Depth (ft)**								
988.53	47.0	941.5	**Elev. (ft)**								
MW-21	16.5	929.7	**Depth (ft)**								
943.10	23.5	919.7	**Elev. (ft)**								
LPZ-6	17.3	963.3	**Depth (ft)**								
980.57	27.3	953.3	**Elev. (ft)**								
				10/5/94	**4/15/95**	**9/19/95**	**4/2/96**	**9/5/96**	**2/28/97**	**9/11/97**	**3/21/98**

Table 4A
Water Level Summary
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 9/12/98	3/20/99	9/3/99	3/10/00	9/16/00	3/22/01	9/11/01
MW-6	19.0	991.7	**Depth (ft)**	15.86	14.73	18.36	20.49	21.49	11.75	20.93
1012.71	34.0	976.7	**Elev. (ft)**	996.85	997.98	994.35	992.22	991.22	1000.96	991.78
MW-11	8.0	1008.7	**Depth (ft)**	18.71	18.74	20.99	22.16	20.38	13.26	21.39
1019.23	23.0	993.7	**Elev. (ft)**	1000.52	1000.49	998.24	997.07	998.85	1005.97	997.84
MW-12	35.0	981.8	**Depth (ft)**	18.5	19.23	21.01	22.48	20.34	15.31	21.26
1018.98	45.0	971.8	**Elev. (ft)**	1000.48	999.75	997.97	996.50	998.64	1003.67	997.72
MW-15	8.0	954.2	**Depth (ft)**	18.81	13.99	18.38	18.59	18.55	11.21	18.23
964.04	28.0	934.2	**Elev. (ft)**	945.23	950.05	945.66	945.45	945.49	952.83	945.81
MW-16	41.0	921.4	**Depth (ft)**	18.83	16.44	18.83	19.86	19.15	15.34	19.20
964.58	51.0	911.4	**Elev. (ft)**	945.75	948.14	945.75	944.72	945.43	949.24	945.38
MW-20	5.5	970.1	**Depth (ft)**	7.21	4.08	9.27	4.76	4.73	1.75	8.83
977.60	15.5	960.1	**Elev. (ft)**	970.39	973.52	968.33	972.84	972.87	975.85	968.77
MW-22	7.0	941.4	**Depth (ft)**	----	----	----	----	----	----	----
950.92	17.0	931.4	**Elev. (ft)**	----	----	----	----	----	----	----
MW-4	14.0	995.3	**Depth (ft)**	15.66	13.94	16.98	18.09	16.65	10.37	16.83
1011.36	29.0	980.3	**Elev. (ft)**	995.70	997.42	994.38	993.27	994.71	1000.99	994.53
MW-18	9.1	987.3	**Depth (ft)**							
999.46	24.1	972.3	**Elev. (ft)**							
MW-19	32.0	956.5	**Depth (ft)**							
988.53	47.0	941.5	**Elev. (ft)**							
MW-21	16.5	929.7	**Depth (ft)**							
943.10	23.5	919.7	**Elev. (ft)**							
LPZ-6	17.3	963.3	**Depth (ft)**							
980.57	27.3	953.3	**Elev. (ft)**							
				9/12/98	**3/20/99**	**9/3/99**	**3/10/00**	**9/16/00**	**3/22/01**	**9/11/01**

Table 4A
Water Level Summary
Annual Water Quality Report
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 3/16/02	9/12/02	4/1/03	9/5/03	3/25/04	9/3/04	3/17/05	9/1/05	4/6/06
MW-6	19.0	991.7	**Depth (ft)**	16.39	15.96	20.70	23.59	12.35	18.81	18.06	26.02	19.85
1012.71	34.0	976.7	**Elev. (ft)**	996.32	996.75	992.01	989.12	1000.36	993.90	994.65	986.69	992.86
MW-11	8.0	1008.7	**Depth (ft)**	21.52	19.06	22.36	21.80	18.30	20.36	21.15	22.69	22.70
1019.23	23.0	993.7	**Elev. (ft)**	997.71	1000.17	996.87	997.43	1000.93	998.87	998.08	996.54	996.53
MW-12	35.0	981.8	**Depth (ft)**	22.11	19.39	22.53	21.84	19.60	20.39	21.12	22.89	23.11
1018.98	45.0	971.8	**Elev. (ft)**	996.87	999.59	996.45	997.14	999.38	998.59	997.86	996.09	995.87
MW-15	8.0	954.2	**Depth (ft)**	15.45	18.47	18.50	18.52	12.78	18.25	15.61	18.58	13.80
964.04	28.0	934.2	**Elev. (ft)**	948.59	945.57	945.54	945.52	951.26	945.79	948.43	945.46	950.24
MW-16	41.0	921.4	**Depth (ft)**	18.84	17.92	19.53	19.44	17.22	18.74	16.91	19.93	18.54
964.58	51.0	911.4	**Elev. (ft)**	945.74	946.66	945.05	945.14	947.36	945.84	947.67	944.65	946.04
MW-20	5.5	970.1	**Depth (ft)**	2.46	6.86	2.53	9.38	1.98	4.85	3.29	7.76	2.02
977.60	15.5	960.1	**Elev. (ft)**	975.14	970.74	975.07	968.22	975.62	972.75	974.31	969.84	975.58
MW-22	7.0	941.4	**Depth (ft)**	----	----	----	----	----	----	----	----	5.10
950.92	17.0	931.4	**Elev. (ft)**	----	----	----	----	----	----	----	----	945.82
MW-4	14.0	995.3	**Depth (ft)**	15.42	16.09	18.02	16.98	13.13	15.07	16.7	16.08	13.53
1011.36	29.0	980.3	**Elev. (ft)**	995.94	995.27	993.34	994.38	998.23	996.29	994.66	995.28	997.83
MW-18	9.1	987.3	**Depth (ft)**									
999.46	24.1	972.3	**Elev. (ft)**									
MW-19	32.0	956.5	**Depth (ft)**									
988.53	47.0	941.5	**Elev. (ft)**									
MW-21	16.5	929.7	**Depth (ft)**									
943.10	23.5	919.7	**Elev. (ft)**									
LPZ-6	17.3	963.3	**Depth (ft)**									
980.57	27.3	953.3	**Elev. (ft)**									

3/16/02 9/12/02 4/1/03 9/5/03 3/25/04 9/3/04 3/17/05 9/1/05 4/6/06

Table 4A
Water Level Summary
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 9/7/06	3/14/07	9/19/07	3/25/08	9/5/08	3/6/09	8/31/09	3/15/10
MW-6	19.0	991.7	**Depth (ft)**	21.79	15.62	20.81	13.25	20.11	18.09	13.96	14.43
1012.71	34.0	976.7	**Elev. (ft)**	990.92	997.09	991.90	999.46	992.60	994.62	998.75	998.28
MW-11	8.0	1008.7	**Depth (ft)**	9.29	14.63	20.71	12.72	19.87	19.81	11.69	13.17
1019.23	23.0	993.7	**Elev. (ft)**	1009.94	1004.60	998.52	1006.51	999.36	999.42	1007.54	1006.06
MW-12	35.0	981.8	**Depth (ft)**	19.27	18.30	20.25	13.27	19.61	19.70	13.12	14.43
1018.98	45.0	971.8	**Elev. (ft)**	999.71	1000.68	998.73	1005.71	999.37	999.28	1005.86	1004.55
MW-15	8.0	954.2	**Depth (ft)**	20.45	12.99	18.55	11.51	18.51	15.84	12.09	11.54
964.04	28.0	934.2	**Elev. (ft)**	943.59	951.05	945.49	952.53	945.53	948.20	951.95	952.50
MW-16	41.0	921.4	**Depth (ft)**	18.69	17.89	19.35	15.28	18.49	17.91	17.51	15.29
964.58	51.0	911.4	**Elev. (ft)**	945.89	946.69	945.23	949.30	946.09	946.67	947.07	949.29
MW-20	5.5	970.1	**Depth (ft)**	4.24	1.89	4.78	1.95	4.88	2.73	1.74	2.20
977.60	15.5	960.1	**Elev. (ft)**	973.36	975.71	972.82	975.65	972.72	974.87	975.86	975.40
MW-22	7.0	941.4	**Depth (ft)**	8.95	2.77	10.38	2.81	10.50	5.40	3.16	2.89
950.92	17.0	931.4	**Elev. (ft)**	941.97	948.15	940.54	948.11	940.42	945.52	947.76	948.03
MW-4	14.0	995.3	**Depth (ft)**	15.35	16.67	15.98	14.51	15.09	17.42	11.81	12.29
1011.36	29.0	980.3	**Elev. (ft)**	996.01	994.69	995.38	996.85	996.27	993.94	999.55	999.07
MW-18	9.1	987.3	**Depth (ft)**								
999.46	24.1	972.3	**Elev. (ft)**								
MW-19	32.0	956.5	**Depth (ft)**								
988.53	47.0	941.5	**Elev. (ft)**								
MW-21	16.5	929.7	**Depth (ft)**								
943.10	23.5	919.7	**Elev. (ft)**								
LPZ-6	17.3	963.3	**Depth (ft)**								
980.57	27.3	953.3	**Elev. (ft)**								
				9/7/06	**3/14/07**	**9/19/07**	**3/25/08**	**9/5/08**	**3/6/09**	**8/31/09**	**3/15/10**

Table 4A
Water Level Summary
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 9/14/10	3/11/11	9/7/11	3/14/12	9/1/12	4/1/13	9/9/13
MW-6	19.0	991.7	Depth (ft)	19.08	14.42	21.78	14.99	26.35	20.69	23.45
1012.71	34.0	976.7	Elev. (ft)	993.63	998.29	990.93	997.72	986.36	992.02	989.26
MW-11	8.0	1008.7	Depth (ft)	19.53	15.26	21.17	15.68	22.74	22.48	21.00
1019.23	23.0	993.7	Elev. (ft)	999.70	1003.97	998.06	1003.55	996.49	996.75	998.23
MW-12	35.0	981.8	Depth (ft)	18.94	16.13	21.04	16.60	22.73	22.65	20.80
1018.98	45.0	971.8	Elev. (ft)	1000.04	1002.85	997.94	1002.38	996.25	996.33	998.18
MW-15	8.0	954.2	Depth (ft)	18.50	11.21	18.72	11.61	19.12	11.71	18.84
964.04	28.0	934.2	Elev. (ft)	945.54	952.83	945.32	952.43	944.92	952.33	945.20
MW-16	41.0	921.4	Depth (ft)	17.25	16.18	19.17	16.39	20.65	18.09	19.36
964.58	51.0	911.4	Elev. (ft)	947.33	948.40	945.41	948.19	943.93	946.49	945.22
MW-20	5.5	970.1	Depth (ft)	7.19	2.21	7.41	2.15	9.05	2.11	9.95
977.60	15.5	960.1	Elev. (ft)	970.41	975.39	970.19	975.45	968.55	975.49	967.65
MW-22	7.0	941.4	Depth (ft)	8.43	1.80	10.50	5.24	12.66	6.39	11.06
950.92	17.0	931.4	Elev. (ft)	942.49	949.12	940.42	945.68	938.26	944.53	939.86
MW-4	14.0	995.3	Depth (ft)	16.45	13.2	15.89	13.18	16.05	18.2	17.68
1011.36	29.0	980.3	Elev. (ft)	994.91	998.16	995.47	998.18	995.31	993.16	993.68
MW-18	9.1	987.3	Depth (ft)							
999.46	24.1	972.3	Elev. (ft)							
MW-19	32.0	956.5	Depth (ft)							
988.53	47.0	941.5	Elev. (ft)							
MW-21	16.5	929.7	Depth (ft)							
943.10	23.5	919.7	Elev. (ft)							
LPZ-6	17.3	963.3	Depth (ft)							
980.57	27.3	953.3	Elev. (ft)							
				9/14/10	3/11/11	9/7/11	3/14/12	9/1/12	4/1/13	9/9/13

Table 4A
Water Level Summary
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 3/30/14	9/19/14	4/20/15	10/5/15	4/5/16	10/5/16	4/4/17	10/3/17
MW-6	19.0	991.7	**Depth (ft)**	20.35	15.69	18.35	19.77	16.14	18.03	14.79	23.51
1012.71	34.0	976.7	**Elev. (ft)**	992.36	997.02	994.36	992.94	996.57	994.68	997.92	989.20
MW-11	8.0	1008.7	**Depth (ft)**	22.58	16.47	21.45	21.00	16.07	19.24	16.43	21.35
1019.23	23.0	993.7	**Elev. (ft)**	996.65	1002.76	997.78	998.23	1003.16	999.99	1002.80	997.88
MW-12	35.0	981.8	**Depth (ft)**	22.70	17.09	21.50	20.93	16.11	19.02	18.33	21.16
1018.98	45.0	971.8	**Elev. (ft)**	996.28	1001.89	997.48	998.05	1002.87	999.96	1000.65	997.82
MW-15	8.0	954.2	**Depth (ft)**	12.51	16.43	16.70	19.05	14.30	17.86	11.35	20.10
964.04	28.0	934.2	**Elev. (ft)**	951.53	947.61	947.34	944.99	949.74	946.18	952.69	943.94
MW-16	41.0	921.4	**Depth (ft)**	19.20	18.59	18.70	20.41	15.96	17.89	16.26	20.04
964.58	51.0	911.4	**Elev. (ft)**	945.38	945.99	945.88	944.17	948.62	946.69	948.32	944.54
MW-20	5.5	970.1	**Depth (ft)**	2.21	4.31	1.90	6.15	2.40	5.06	1.96	10.02
977.60	15.5	960.1	**Elev. (ft)**	975.39	973.29	975.70	971.45	975.20	972.54	975.64	967.58
MW-22	7.0	941.4	**Depth (ft)**	6.51	7.00	7.00	10.98	6.25	---	4.71	12.21
950.92	17.0	931.4	**Elev. (ft)**	944.41	943.92	943.92	939.94	944.67	950.92	946.21	938.71
MW-4	14.0	995.3	**Depth (ft)**	18.35	14.46	---	16.33	15.20	16.15	14.53	17.18
1011.36	29.0	980.3	**Elev. (ft)**	993.01	996.90	1011.36	995.03	996.16	995.21	996.83	994.18
MW-18	9.1	987.3	**Depth (ft)**	12.10	11.35	15.15	15.35	11.65	13.44	11.00	17.95
999.46	24.1	972.3	**Elev. (ft)**	987.36	988.11	984.31	984.11	987.81	986.02	988.46	981.51
MW-19	32.0	956.5	**Depth (ft)**	31.59	25.65	25.95	27.04	21.33	23.15	20.72	27.44
988.53	47.0	941.5	**Elev. (ft)**	956.94	962.88	962.58	961.49	967.20	965.38	967.81	961.09
MW-21	16.5	929.7	**Depth (ft)**	4.61	5.65	4.15	8.06	4.53	---	4.10	9.69
943.10	23.5	919.7	**Elev. (ft)**	938.49	937.45	938.95	935.04	938.57	943.10	939.00	933.41
LPZ-6	17.3	963.3	**Depth (ft)**	17.00	16.58	18.49	18.40	16.80	16.87	13.95	18.40
980.57	27.3	953.3	**Elev. (ft)**	963.57	963.99	962.08	962.17	963.77	963.70	966.62	962.17
				3/30/14	**9/19/14**	**4/20/15**	**10/5/15**	**4/5/16**	**10/5/16**	**4/4/17**	**10/3/17**

Table 4A
Water Level Summary
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	Date 4/10/18	10/12/18	4/16/19	9/30/19	4/7/20	10/7/20	4/22/21	10/5/21
MW-6	19.0	991.7	**Depth (ft)**	18.08	13.07	15.89	19.03	15.42	18.48	15.13	26.20
1012.71	34.0	976.7	**Elev. (ft)**	994.63	999.64	996.82	993.68	997.29	994.23	997.58	986.51
MW-11	8.0	1008.7	**Depth (ft)**	20.75	10.02	17.38	19.86	14.01	16.95	13.50	22.59
1019.23	23.0	993.7	**Elev. (ft)**	998.48	1009.21	1001.85	999.37	1005.22	1002.28	1005.73	996.64
MW-12	35.0	981.8	**Depth (ft)**	21.25	10.95	17.50	20.45	13.97	16.42	13.05	22.47
1018.98	45.0	971.8	**Elev. (ft)**	997.73	1008.03	1001.48	998.53	1005.01	1002.56	1005.93	996.51
MW-15	8.0	954.2	**Depth (ft)**	15.45	11.16	13.60	17.46	13.75	17.51	11.00	19.61
964.04	28.0	934.2	**Elev. (ft)**	948.59	952.88	950.44	946.58	950.29	946.53	953.04	944.43
MW-16	41.0	921.4	**Depth (ft)**	19.41	16.05	15.22	19.99	15.65	18.18	14.09	21.03
964.58	51.0	911.4	**Elev. (ft)**	945.17	948.53	949.36	944.59	948.93	946.40	950.49	943.55
MW-20	5.5	970.1	**Depth (ft)**	2.20	2.03	2.15	2.02	2.15	7.03	3.13	10.44
977.60	15.5	960.1	**Elev. (ft)**	975.40	975.57	975.45	975.58	975.45	970.57	974.47	967.16
MW-22	7.0	941.4	**Depth (ft)**	7.24	5.45	6.03	7.73	5.97	8.44	5.22	13.25
950.92	17.0	931.4	**Elev. (ft)**	943.68	945.47	944.89	943.19	944.95	942.48	945.70	937.67
MW-4	14.0	995.3	**Depth (ft)**	17.96	11.10	15.80	13.13	14.25	15.29	13.76	17.75
1011.36	29.0	980.3	**Elev. (ft)**	993.40	1000.26	995.56	998.23	997.11	996.07	997.60	993.61
MW-18	9.1	987.3	**Depth (ft)**	12.21	8.20	10.54	12.74	9.95	13.21	10.29	18.70
999.46	24.1	972.3	**Elev. (ft)**	987.25	991.26	988.92	986.72	989.51	986.25	989.17	980.76
MW-19	32.0	956.5	**Depth (ft)**	30.20	20.41	19.15	26.87	21.14	25.63	17.85	28.92
988.53	47.0	941.5	**Elev. (ft)**	958.33	968.12	969.38	961.66	967.39	962.90	970.68	959.61
MW-21	16.5	929.7	**Depth (ft)**	5.07	3.98	4.17	5.71	4.24	7.15	4.16	11.12
943.10	23.5	919.7	**Elev. (ft)**	938.03	939.12	938.93	937.39	938.86	935.95	938.94	931.98
LPZ-6	17.3	963.3	**Depth (ft)**	15.55	15.52	17.03	15.40	15.45	17.10	16.60	22.45
980.57	27.3	953.3	**Elev. (ft)**	965.02	965.05	963.54	965.17	965.12	963.47	963.97	958.12
				4/10/18	**10/12/18**	**4/16/19**	**9/30/19**	**4/7/20**	**10/7/20**	**4/22/21**	**10/5/21**

Table 4A
Water Level Summary
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Monitor Well/ TOC Elev. (ft)	Screened Interval Depth (ft)	Elev. (ft)	Water Level	4/4/22	10/5/22	4/14/23	10/18/23	Max	Min	Mean/ Std. Dev.	
MW-6	19.0	991.7	**Depth (ft)**	17.65	23.05	17.53	28.80	*28.80*	*11.75*	*17.99*	**MW-6**
1012.71	34.0	976.7	**Elev. (ft)**	995.06	989.66	995.18	983.91	*1000.96*	*983.91*	*994.72*	
MW-11	8.0	1008.7	**Depth (ft)**	19.21	20.38	17.33	23.80	*23.80*	*9.29*	*18.52*	**MW-11**
1019.23	23.0	993.7	**Elev. (ft)**	1000.02	998.85	1001.90	995.43	*1009.94*	*996.49*	*1000.67*	
MW-12	35.0	981.8	**Depth (ft)**	20.19	20.09	17.04	23.66	*23.66*	*10.95*	*19.14*	**MW-12**
1018.98	45.0	971.8	**Elev. (ft)**	998.79	998.89	1001.94	995.32	*1008.03*	*995.87*	*999.84*	
MW-15	8.0	954.2	**Depth (ft)**	11.80	18.88	14.50	19.77	*20.45*	*11.00*	*16.20*	**MW-15**
964.04	28.0	934.2	**Elev. (ft)**	952.24	945.16	949.54	944.27	*953.04*	*943.59*	*947.84*	
MW-16	41.0	921.4	**Depth (ft)**	18.63	20.28	15.02	21.98	*21.98*	*14.09*	*18.25*	**MW-16**
964.58	51.0	911.4	**Elev. (ft)**	945.95	944.30	949.56	942.60	*964.58*	*943.55*	*946.64*	
MW-20	5.5	970.1	**Depth (ft)**	1.70	9.24	3.00	13.81	*13.81*	*1.74*	*4.65*	**MW-20**
977.60	15.5	960.1	**Elev. (ft)**	975.90	968.36	974.60	963.79	*975.86*	*967.16*	*972.95*	
MW-22	7.0	941.4	**Depth (ft)**	5.33	10.70	6.33	13.50	*13.50*	*1.80*	*7.16*	**MW-22**
950.92	17.0	931.4	**Elev. (ft)**	945.59	940.22	944.59	937.42	*950.92*	*937.67*	*943.98*	
MW-4	14.0	995.3	**Depth (ft)**	13.70	17.24	16.31	18.98	*18.98*	*10.37*	*15.50*	**MW-4**
1011.36	29.0	980.3	**Elev. (ft)**	997.66	994.12	995.05	992.38	*1011.36*	*993.01*	*996.12*	
MW-18	9.1	987.3	**Depth (ft)**	8.45	16.65	11.23	12.86	*18.70*	*8.20*	*12.74*	**MW-18**
999.46	24.1	972.3	**Elev. (ft)**	991.01	982.81	988.23	986.60	*991.26*	*980.76*	*986.72*	
MW-19	32.0	956.5	**Depth (ft)**	30.42	27.10	23.43	30.78	*31.59*	*17.85*	*24.57*	**MW-19**
988.53	47.0	941.5	**Elev. (ft)**	958.11	961.43	965.10	957.75	*970.68*	*956.94*	*963.97*	
MW-21	16.5	929.7	**Depth (ft)**	3.91	9.67	4.25	13.84	*13.84*	*3.98*	*5.76*	**MW-21**
943.10	23.5	919.7	**Elev. (ft)**	939.19	933.43	938.85	929.26	*943.10*	*931.98*	*937.70*	
LPZ-6	17.3	963.3	**Depth (ft)**	13.30	18.00	15.65	17.30	*22.45*	*13.95*	*16.97*	**LPZ-6**
980.57	27.3	953.3	**Elev. (ft)**	967.27	962.57	964.92	963.27	*966.62*	*958.12*	*963.60*	
				4/4/22	**10/5/22**	**4/14/23**	**10/18/23**	**Max**	**Min**	**Mean/**	

Table 5 – Background and GWPS Summary

Table 5
Background and GWPS Summary
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Interwell Background Well (MW-12)

Inorganics - Appendix I										
Constituent	**Units**	**Model Type**	**Samples - N**	**Detections**	**Mean**	**SD**	**Prediction Limit**	**Confidence**	**GWPS**	**Source**
Antimony (Sb)	µg/l	nonparametric	19	1			3.5000	0.97	6	SS
Arsenic (As)	µg/l	nonparametric	19	0			4.0000	0.97	10	SS
Barium (Ba)	µg/l	normal	19	**19**	260.1579	22.6428	319.4242		2000	SS
Beryllium (Be)	µg/l	nonparametric	19	0			4.0000	0.97	4	SS
Cadmium (Cd)	µg/l	nonparametric	19	0			0.8000	0.97	5	SS
Chromium (Cr)	µg/l	nonparametric	19	0			8.0000	0.97	100	SS
Cobalt (Co)	µg/l	nonparametric	19	1			2.6000	0.97	**2.6**	**Site**
Copper (Cu)	µg/l	nonparametric	19	0			4.0000	0.97	1300	SS
Lead (Pb)	µg/l	nonparametric	19	0			4.0000	0.97	15	SS
Nickel (Ni)	µg/l	nonparametric	19	3			13.4000	0.97	100	SS
Selenium (Se)	µg/l	nonparametric	19	0			4.0000	0.97	50	SS
Silver (Ag)	µg/l	nonparametric	19	0			4.0000	0.97	100	SS
Thallium (Tl)	µg/l	nonparametric	19	0			2.0000	0.97	2	SS
Vanadium (V)	µg/l	nonparametric	19	0			20.0000	0.97	35	SS
Zinc (Zn)	µg/l	nonparametric	19	6			27.2000	0.97	2000	SS

VOC - Appendix I										
Constituent	**Units**	**Model Type**	**Samples - N**	**Detections**	**Mean**	**SD**	**Prediction Limit**	**Confidence**	**GWPS**	**Source**
All	µg/l	DQR	19	0	<1	<1	<1	<1	various	SS

= Prediction limit exceeds the GWPS. A Site-Specific GWPS is warranted

see attached information for notes

* The prediction limit for thallium is artifically elevated based on the historic elevated Method Reporting Limit (MRL) of 4.0 ug/L utilized by the laboratory. The MRL is now set at 2.0 ug/L.

Table 6 – Summary of Detections

Table 6
Summary of Well/Detected Constituent Pairs that Exceed the Prediction Limit
Annual Water Quality Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Date	Well	Constituent	Units	Most recent result	Background Standard
10/18/2023	MW-6	Barium	ug/L	431	319.4
10/18/2023	MW-6	Copper	ug/L	4.1	4.0

Table 7 – Summary of Ongoing and Newly Identified SSI

KEY:	SSI	SSL LCL>GWPS

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	GWPS Limit (ug/L)	Initial Exceedance	Resamples Due	5th Background Sample
MW-6	Barium	10/5/2016	231.00	328.64	221.979	2,000	NA	NA	10/5/2016
MW-6	Barium	4/4/2017	154.00	328.64	140.273	2,000	NA	NA	10/5/2016
MW-6	Barium	10/3/2017	573.00	328.64	121.038	2,000	10/3/2017	1/3/2018	10/5/2016
MW-6	Barium	1/3/2018	613.00	328.64	121.038	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	4/10/2018	435.00	328.64	199.468	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	10/12/2018	289.00	328.64	304.596	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	4/16/2019	274.00	324.18	217.059	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	9/30/2019	409.00	321.64	255.25	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	4/7/2020	209.00	318.80	197.143	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	10/7/2020	226.00	316.46	172.911	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	4/22/2021	180.00	314.76	133.957	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	10/5/2021	497.00	322.72	104.815	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	4/4/2022	521.00	320.04	146.698	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	10/5/2022	551.00	322.78	233.850	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	4/14/2023	133.00	321.76	194.657	2,000	10/3/2017	NA	10/5/2016
MW-6	Barium	10/18/2023	431.00	319.42	184.406	2,000	10/3/2017	NA	10/5/2016
MW-6	Cadmium	10/5/2016	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	4/4/2017	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	10/3/2017	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	1/3/2018	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	4/10/2018	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	10/12/2018	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	4/16/2019	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	9/30/2019	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	4/7/2020	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	10/7/2020	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	4/22/2021	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cadmium	10/5/2021	1.10	0.80	0.163	5	NA	NA	10/5/2016
MW-6	Cadmium	4/4/2022	<0.8	0.80	0.163	5	NA	NA	10/5/2016
MW-6	Cadmium	10/5/2022	<0.8	0.80	0.163	5	NA	NA	10/5/2016
MW-6	Cadmium	4/14/2023	<0.8	0.80	0.163	5	NA	NA	10/5/2016
MW-6	Cadmium	10/18/2023	<0.8	0.80	0.400	5	NA	NA	10/5/2016
MW-6	Cobalt	10/5/2016	<0.8	0.80	0.000	2.8	NA	NA	10/5/2016
MW-6	Cobalt	4/4/2017	<0.8	0.80	0.400	2.8	NA	NA	10/5/2016
MW-6	Cobalt	10/3/2017	1.70	0.80	0.000	2.8	10/3/2017	1/3/2018	10/5/2016
MW-6	Cobalt	1/3/2018	1.50	0.80	0.000	2.8	10/3/2017	NA	10/5/2016
MW-6	Cobalt	4/10/2018	<0.8	0.80	0.179	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	10/12/2018	<0.8	0.80	0.179	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	4/16/2019	<0.8	0.80	0.028	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	9/30/2019	0.8	0.80	0.265	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	4/7/2020	0.9	0.80	0.316	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	10/7/2020	0.5	0.80	0.370	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	4/22/2021	0.6	0.80	0.485	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	10/5/2021	4.1	0.80	0.000	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	4/4/2022	<0.8	0.80	0.000	2.1	10/3/2017	NA	10/5/2016
MW-6	Cobalt	10/5/2022	5.3	2.60	0.000	**2.6**	10/3/2017	NA	10/5/2016
MW-6	Cobalt	4/14/2023	<0.4	2.60	0.000	**2.6**	10/3/2017	NA	10/5/2016
MW-6	Cobalt	10/18/2023	2.3	2.60	0.000	**2.6**	10/3/2017	NA	10/5/2016
MW-6	Copper	10/5/2016	<4	4.00	---	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/4/2017	<4	4.00	---	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	10/3/2017	<4	4.00	---	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	1/3/2018	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/10/2018	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	10/12/2018	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/16/2019	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	9/30/2019	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/7/2020	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	10/7/2020	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/22/2021	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	10/5/2021	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/4/2022	<4	4.00	2.000	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	10/5/2022	6.9	4.00	0.343	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	4/14/2023	<4	4.00	0.343	1300	10/5/2022	NA	10/5/2016
MW-6	Copper	10/18/2023	4.1	4.00	1.019	1300	10/5/2022	NA	10/5/2016
MW-6	Nickel	10/5/2016	<4	13.4	1.200	100	NA	NA	10/5/2016
MW-6	Nickel	4/4/2017	<4	13.4	1.002	100	NA	NA	10/5/2016
MW-6	Nickel	10/3/2017	9.3	13.4	0.604	100	NA	NA	10/5/2016
MW-6	Nickel	1/3/2018	9.4	13.4	0.604	100	NA	NA	10/5/2016
MW-6	Nickel	4/10/2018	7.5	13.4	2.959	100	NA	NA	10/5/2016
MW-6	Nickel	10/12/2018	<4	13.4	2.959	100	NA	NA	10/5/2016
MW-6	Nickel	4/16/2019	<4	13.4	0.751	100	NA	NA	10/5/2016
MW-6	Nickel	9/30/2019	8.1	13.4	0.951	100	NA	NA	10/5/2016
MW-6	Nickel	4/7/2020	<4	13.4	0.000	100	NA	NA	10/5/2016
MW-6	Nickel	10/7/2020	<4	13.4	0.000	100	NA	NA	10/5/2016
MW-6	Nickel	4/22/2021	<4	13.4	0.000	100	NA	NA	10/5/2016
MW-6	Nickel	10/5/2021	8.6	13.4	0.000	100	NA	NA	10/5/2016
MW-6	Nickel	4/4/2022	9.1	13.4	0.767	100	NA	NA	10/5/2016
MW-6	Nickel	10/5/2022	10.9	13.4	3.070	100	NA	NA	10/5/2016
MW-6	Nickel	4/14/2023	<4	13.4	3.070	100	NA	NA	10/5/2016
MW-6	Nickel	10/18/2023	10.0	13.4	3.216	100	NA	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/5/2016	<10	6.0	5.000	6	NA	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/4/2017	<10	6.0	5.000	6	NA	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/3/2017	10.00	6.0	3.309	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/10/2018	<6.0	6.0	3.309	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/12/2018	<6.0	6.0	3.309	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/16/2019	<6.0	6.0	3.309	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	9/30/2019	<6.0	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/7/2020	<6.0	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/7/2020	<6.0	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/22/2021	NT	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/5/2021	NT	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/4/2022	NT	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/5/2022	NT	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	4/14/2023	NT	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	Bis(2-ethylhexyl)phthalate	10/18/2023	NT	6.0	3.000	6	10/3/2017	NA	10/5/2016
MW-6	dichlorofluoromethane	10/5/2016	1.0	1.0	0.410	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/4/2017	<1.0	1.0	0.331	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	10/3/2017	<1.0	1.0	0.331	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/10/2018	<1.0	1.0	0.331	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	10/12/2018	<1.0	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/16/2019	<1.0	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	9/30/2019	<1.0	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/7/2020	<1.0	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	10/7/2020	<1.0	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/22/2021	NT	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	10/5/2021	NT	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/4/2022	NT	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	10/5/2022	NT	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	4/14/2023	NT	1.0	0.500	1,000	NA	NA	10/5/2016
MW-6	dichlorofluoromethane	10/18/2023	NT	1.0	0.500	1,000	NA	NA	10/5/2016

Table 7	KEY:	SSI	SSL LCL>GWPS	SSL UCL>GWPS

Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	GWPS Limit (ug/L)	Initial Exceedance	Resamples Due	5th Background Sample
MW-22	Arsenic	4/5/2016	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/4/2017	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	10/3/2017	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/10/2018	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	10/12/2018	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/16/2019	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	9/30/2019	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/7/2020	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	10/7/2020	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/22/2021	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	10/5/2021	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/4/2022	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	10/5/2022	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	4/14/2023	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Arsenic	10/18/2023	<4	4.00	2	10	NA	NA	10/5/2016
MW-22	Cobalt	4/5/2016	<0.8	0.80	0.4	2.8	NA	NA	10/5/2016
MW-22	Cobalt	4/4/2017	<0.8	0.80	0.4	2.8	NA	NA	10/5/2016
MW-22	Cobalt	10/3/2017	<0.8	0.80	0.4	2.8	NA	NA	10/5/2016
MW-22	Cobalt	4/10/2018	<0.8	0.80	0.4	2.8	NA	NA	10/5/2016
MW-22	Cobalt	10/12/2018	<0.8	0.80	0.4	2.1	NA	NA	10/5/2016
MW-22	Cobalt	4/16/2019	<0.8	0.80	0.4	2.1	NA	NA	10/5/2016
MW-22	Cobalt	9/30/2019	<0.8	0.80	0.4	2.1	NA	NA	10/5/2016
MW-22	Cobalt	4/7/2020	<0.4	0.80	0.4	2.1	NA	NA	10/5/2016
MW-22	Cobalt	10/7/2020	<0.4	0.80	0.4	2.1	NA	NA	10/5/2016
MW-22	Cobalt	4/22/2021	<0.4	0.80	0.2	2.1	NA	NA	10/5/2016
MW-22	Cobalt	10/5/2021	<0.4	0.80	0.2	2.1	NA	NA	10/5/2016
MW-22	Cobalt	4/4/2022	<0.4	0.80	0.2	2.1	NA	NA	10/5/2016
MW-22	Cobalt	10/5/2022	**2.5**	2.60	0.000	**2.6**	NA	NA	10/5/2016
MW-22	Cobalt	4/14/2023	<0.4	2.60	0.000	**2.6**	NA	NA	10/5/2016
MW-22	Cobalt	10/18/2023	<0.4	2.60	0.000	**2.6**	NA	NA	10/5/2016
MW-22	Benzene	4/5/2016	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/4/2017	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	10/3/2017	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/10/2018	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	10/12/2018	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/16/2019	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	9/30/2019	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/7/2020	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	10/7/2020	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/22/2021	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	10/5/2021	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/4/2022	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	10/5/2022	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	4/14/2023	<1	1.0	0.5	5	NA	NA	10/5/2016
MW-22	Benzene	10/18/2023	<1	1.0	0.5	5	NA	NA	10/5/2016

Table 8 - Summary of Ongoing and Newly Identified SSL **- (Not Used)**

Table 9 – Analytical Data Summary

Table 9

Analytical Data Summary for LPZ-6

Constituents	Units	4/16/2019	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022	4/14/2023	10/18/2023
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<1	<5	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	<1.0	6.5	6.4	6.0	2.2	6.0	5.3	2.4
2-butanone (mek)	ug/L	<5	<5	<5	<5	<10	<10	<10	<10
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3	mg/L	623	380	442	585	370		571	
Arsenic, total	ug/L	19.3	26.4	<4.0	13.6	13.2		7.7	
Benzene	ug/L	10.5	10.6	9.4	8.8	1.2	9.3	13.6	<1.0
BOD (5 day)	mg/L		17	29	20	20			
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Calcium, total	mg/L	191							
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	2	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L	98.5	106.0	102.0	237.0	20.4		114.0	
Chlorobenzene	ug/L	2.7	2.4	2.0	2.0	<1.0	1.3	1.3	<1.0
Chloroethane	ug/L	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	1.2
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	9.6	17.6	8.5	17.1	6.0		2.6	
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethane	mg/L		<.01						
Ethene	mg/L		<.01						
Ethylbenzene	ug/L	43.6	52.0	27.4	1.6	2.6	2.1	7.4	<1.0
Magnesium, total	mg/L	58							
Methane	mg/L		15.3						
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Nitrogen, ammonia	mg/L		9.99	2.65	7.70	2.14		4.38	
pH	pH		6.6	6.6	6.5	6.8		6.4	
Potassium, total	mg/L	3.1							
Sodium, total	mg/L	33.1							
Solids, total dissolved	mg/L	836	633	763	1000	400		886	
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L	84.4	20.3	78.2	9.6	46.3		16.1	
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	<1.0	1.4	<1.0	<1.0	<1.0	1.0	<1.0	<1.0
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	9.5	99.1	27.5	4.9	2.4	22.3	22.6	3.8

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-11

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	20.6	<10.0
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3	mg/L									
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	ug/L	327	283	293	309	239	265	265	265	310
Benzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L									
Chlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	<4.0	1.5	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Copper, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total	mg/L									
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L	<4.0	6.2	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Potassium, total	mg/L									
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		40	48						
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L									
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	ug/L	<20.0	18.8	12.4	<8.0	<8.0	<8.0	<8.0	<8.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-11

Constituents	10/12/2018	4/16/2019	9/30/2019	12/20/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022
1,1,1,2-tetrachloroethane	<1	<1	<1		<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1		<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1		<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1		<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1		<1	<1	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1		<1	<1	<1	<1	<1
1,2,3-trichloropropane	<1	<1	<1		<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	<1	<1	<1		<5	<5	<5	<5	<5
1,2-dibromoethane	<1	<1	<1		<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1		<1	<1	<1	<1	<1
1,2-dichloroethane	<1	<1	<1		<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1		<1	<1	<1	<1	<1
1,4-dichlorobenzene	<1	<1	<1		<1	<1	<1	<1	<1
2-butanone (mek)	<5	<5	<5		<5	<5	<5	<5	<10
2-hexanone (mbk)	<5	<5	<5		<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5	<5		<5	<5	<5	<5	<5
Acetone	<10.0	<10.0	<10.0		<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile	<5	<5	<5		<5	<5	<5	<5	<5
Alkalinity, as caco3		715							
Antimony, total	<2	<2	<2		<2	<2	<2	<2	<2
Arsenic, total	<4	<4	<4		<4	<4	<4	<4	<4
Barium, total	93	254	355	245	281	284	275	300	314
Benzene	<1	<1	<1		<1	<1	<1	<1	<1
Beryllium, total	<4	<4	<4		<4	<4	<4	<4	<4
Bromochloromethane	<1	<1	<1		<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1		<1	<1	<1	<1	<1
Bromoform	<1	<1	<1		<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1		<1	<1	<1	<1	<1
Cadmium, total	<.8	<.8	<.8		<.8	<.8	<.8	<.8	<.8
Calcium, total		158							
Carbon disulfide	<1	<1	<1		<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1		<1	<1	<1	<1	<1
Chloride		3.6							
Chlorobenzene	<1	<1	<1		<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1		<1	<1	<1	<1	<1
Chloroform	<1	<1	<1		<1	<1	<1	<1	<1
Chloromethane	<1	<1	<1		<1	<1	<1	<1	<1
Chromium, total	<8	<8	<8		<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	<1	<1	<1		<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1		<1	<1	<1	<1	<1
Cobalt, total	<.8	<.8	<.8		<.4	<.4	<.4	<.4	<.4
Copper, total	<4	<4	<4		<4	<4	<4	<4	<4
Dibromochloromethane	<1	<1	<1		<1	<1	<1	<1	<1
Dibromomethane	<1	<1	<1		<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1		<1	<1	<1	<1	<1
Lead, total	<4	<4	<4		<4	<4	<4	<4	<4
Magnesium, total		53.9							
Methyl iodide	<1	<1	<1		<1	<1	<1	<1	<1
Methylene chloride	<5	<5	<5		<5	<5	<5	<5	<5
Nickel, total	<4.0	<4.0	<4.0		<4.0	<4.0	<4.0	<4.0	<4.0
Potassium, total		<1							
Selenium, total	<4	<4	<4		<4	<4	<4	<4	<4
Silver, total	<4	<4	<4		<4	<4	<4	<4	<4
Sodium, total		12.7							
Solids, total dissolved		536							
Solids, total suspended									
Styrene	<1	<1	<1		<1	<1	<1	<1	<1
Sulfate		7.9							
Tetrachloroethylene	<1	<1	<1		<1	<1	<1	<1	<1
Thallium, total	<4	<2	<2		<2	<2	<2	<2	<2
Toluene	<1	<1	<1		<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	<1	<1	<1		<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1		<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5		<5	<5	<5	<5	<5
Trichloroethylene	<1	<1	<1		<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1		<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20		<20	<20	<20	<20	<20
Vinyl acetate	<5	<5	<5		<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1		<1	<1	<1	<1	<1
Xylenes, total	<2	<2	<2		<2	<2	<2	<2	<2
Zinc, total	<20.0	<8.0	<8.0		<20.0	<20.0	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-11

Constituents	10/5/2022	4/14/2023	10/18/2023
1,1,1,2-tetrachloroethane	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1
1,1-dichloroethane	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1
1,2,3-trichloropropane	<1	<1	<1
1,2-dibromo-3-chloropropane	<5	<5	<5
1,2-dibromoethane	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1
1,2-dichloroethane	<1	<1	<1
1,2-dichloropropane	<1	<1	<1
1,4-dichlorobenzene	<1	<1	<1
2-butanone (mek)	<10	<10	<10
2-hexanone (mbk)	<5	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5	<5
Acetone	<10.0	<10.0	<10.0
Acrylonitrile	<5	<5	<5
Alkalinity, as caco3			
Antimony, total	<2	<2	<2
Arsenic, total	<4	<4	<4
Barium, total	234	221	269
Benzene	<1	<1	<1
Beryllium, total	<4	<4	<4
Bromochloromethane	<1	<1	<1
Bromodichloromethane	<1	<1	<1
Bromoform	<1	<1	<1
Bromomethane	<1	<1	<1
Cadmium, total	<.8	<.8	<.8
Calcium, total			
Carbon disulfide	<1	<1	<1
Carbon tetrachloride	<1	<1	<1
Chloride			
Chlorobenzene	<1	<1	<1
Chloroethane	<1	<1	<1
Chloroform	<1	<1	<1
Chloromethane	<1	<1	<1
Chromium, total	<8	<8	<8
Cis-1,2-dichloroethylene	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1
Cobalt, total	1.4	<.4	<.4
Copper, total	<4	<4	<4
Dibromochloromethane	<1	<1	<1
Dibromomethane	<1	<1	<1
Ethylbenzene	<1	<1	<1
Lead, total	<4	<4	<4
Magnesium, total			
Methyl iodide	<1	<1	<1
Methylene chloride	<5	<5	<5
Nickel, total	<4.0	<4.0	<4.0
Potassium, total			
Selenium, total	<4	<4	<4
Silver, total	<4	<4	<4
Sodium, total			
Solids, total dissolved			
Solids, total suspended			
Styrene	<1	<1	<1
Sulfate			
Tetrachloroethylene	<1	<1	<1
Thallium, total	<2	<2	<2
Toluene	<1	<1	<1
Trans-1,2-dichloroethylene	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5
Trichloroethylene	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1
Vanadium, total	<20	<20	<20
Vinyl acetate	<5	<5	<5
Vinyl chloride	<1	<1	<1
Xylenes, total	<2	<2	<2
Zinc, total	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-12

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	7/9/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	19.6
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3	mg/L									
Antimony, total	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	ug/L	310	305	264	269	293	306	274	279	268
Benzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L									
Chlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	<4.0	1.5	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Copper, total	ug/L	7.6	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total	mg/L									
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L	10.6	5.4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Potassium, total	mg/L									
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		5	3						
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L									
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	ug/L	<20.0	<8.0	<8.0	18.1	10.1	<8.0	<8.0	<8.0	<8.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-12

Constituents	4/10/2018	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022
1,1,1,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	<1	<1	<1	<1	<5	<5	<5	<5	<5
1,2-dibromoethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	<5	<5	<5	<5	<5	<5	<5	<5	<10
2-hexanone (mbk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3			486						
Antimony, total	<2.0	<2.0	3.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	273	243	261	253	276	256	252	216	254
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total			120						
Carbon disulfide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride			6.4						
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	<.8	<.8	<.8	<.8	<.4	<.4	<.4	<.4	<.4
Copper, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total			30.2						
Methyl iodide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	13.4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	10.4
Potassium, total			1.4						
Selenium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	<4	<8	<4	<4	<4	<4	<4	<4	<4
Sodium, total			15.1						
Solids, total dissolved			404						
Solids, total suspended									
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate			20						
Tetrachloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	<4	<4	<2	<2	<2	<2	<2	<2	<2
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	27.2	<20.0	<8.0	10.9	<20.0	<20.0	<20.0	<20.0	24.2

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-12

Constituents	10/5/2022	4/14/2023	10/18/2023
1,1,1,2-tetrachloroethane	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1
1,1-dichloroethane	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1
1,2,3-trichloropropane	<1	<1	<1
1,2-dibromo-3-chloropropane	<5	<5	<5
1,2-dibromoethane	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1
1,2-dichloroethane	<1	<1	<1
1,2-dichloropropane	<1	<1	<1
1,4-dichlorobenzene	<1	<1	<1
2-butanone (mek)	<10	<10	<10
2-hexanone (mbk)	<5	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5	<5
Acetone	<10.0	<10.0	<10.0
Acrylonitrile	<5	<5	<5
Alkalinity, as caco3			
Antimony, total	<2.0	<2.0	<2.0
Arsenic, total	<4	<4	<4
Barium, total	219	232	255
Benzene	<1	<1	<1
Beryllium, total	<4	<4	<4
Bromochloromethane	<1	<1	<1
Bromodichloromethane	<1	<1	<1
Bromoform	<1	<1	<1
Bromomethane	<1	<1	<1
Cadmium, total	<.8	<.8	<.8
Calcium, total			
Carbon disulfide	<1	<1	<1
Carbon tetrachloride	<1	<1	<1
Chloride			
Chlorobenzene	<1	<1	<1
Chloroethane	<1	<1	<1
Chloroform	<1	<1	<1
Chloromethane	<1	<1	<1
Chromium, total	<8	<8	<8
Cis-1,2-dichloroethylene	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1
Cobalt, total	2.6	<.4	<.4
Copper, total	<4.0	<4.0	<4.0
Dibromochloromethane	<1	<1	<1
Dibromomethane	<1	<1	<1
Ethylbenzene	<1	<1	<1
Lead, total	<4	<4	<4
Magnesium, total			
Methyl iodide	<1	<1	<1
Methylene chloride	<5	<5	<5
Nickel, total	6.2	<4.0	<4.0
Potassium, total			
Selenium, total	<4	<4	<4
Silver, total	<4	<4	<4
Sodium, total			
Solids, total dissolved			
Solids, total suspended			
Styrene	<1	<1	<1
Sulfate			
Tetrachloroethylene	<1	<1	<1
Thallium, total	<2	<2	<2
Toluene	<1	<1	<1
Trans-1,2-dichloroethylene	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5
Trichloroethylene	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1
Vanadium, total	<20	<20	<20
Vinyl acetate	<5	<5	<5
Vinyl chloride	<1	<1	<1
Xylenes, total	<2	<2	<2
Zinc, total	<20.0	<20.0	21.8

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
(3 4)-methylphenol	ug/L	<8								
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloropropene	ug/L	<1								
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene	ug/L	<8								
1,2,4-trichlorobenzene	ug/L	<1								
1,2-dibromo-3-chloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dinitrobenzene	ug/L	<8								
1,3,5-trinitrobenzene	ug/L	<8								
1,3-dichlorobenzene	ug/L	<1								
1,3-dichloropropane	ug/L	<1								
1,3-dinitrobenzene	ug/L	<8								
1,4-dichlorobenzene	ug/L	3.1	2.9	2.4	2.7	2.2	2.5	2.0	2.8	2.6
1,4-naphthoquinone	ug/L	<8								
1,4-phenylenediamine	ug/L	<8								
1-naphthylamine	ug/L	<8								
2,2-dichloropropane	ug/L	<1								
2,3,4,6-tetrachlorophenol	ug/L	<8								
2,4,5-t	ug/L	<.5								
2,4,5-tp (silvex)	ug/L	<.5								
2,4,5-trichlorophenol	ug/L	<8								
2,4,6-trichlorophenol	ug/L	<8								
2,4-d	ug/L	<2								
2,4-dichlorophenol	ug/L	<8								
2,4-dimethylphenol	ug/L	<8								
2,4-dinitrophenol	ug/L	<8								
2,4-dinitrotoluene	ug/L	<8								
2,6-dichlorophenol	ug/L	<8								
2,6-dinitrotoluene	ug/L	<8								
2-acetylaminofluorene	ug/L	<8								
2-butanone (mek)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-chloronaphthalene	ug/L	<8								
2-chlorophenol	ug/L	<8								
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-methylnaphthalene	ug/L	<8								
2-methylphenol	ug/L	<8								
2-naphthylamine	ug/L	<8								
2-nitroaniline	ug/L	<8								
2-nitrophenol	ug/L	<8								
3,3´-dichlorobenzidine	ug/L	<8								
3,3'-dimethylbenzidine	ug/L	<8								
3-methylcholanthrene	ug/L	<8								
3-nitroaniline	ug/L	<8								
4,4´-ddd	ug/L	<.05								
4,4´-dde	ug/L	<.05								
4,4´-ddt	ug/L	<.05								
4,6-dinitro-2-methylphenol	ug/L	<8								
4-aminobiphenyl	ug/L	<8								
4-bromophenyl phenyl ether	ug/L	<8								
4-chloro-3-methylphenol	ug/L	<8								
4-chloroaniline	ug/L	<8								
4-chlorophenyl phenyl ether	ug/L	<8								
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-nitroaniline	ug/L	<8								
4-nitrophenol	ug/L	<8								
5-nitro-o-toluidine	ug/L	<8								
7,12-dimethylbenz(a)anthracene	ug/L	<8								
Acenaphthene	ug/L	<8								
Acenaphthylene	ug/L	<8								
Acetone	ug/L	<10.0	13.1	51.3	<10.0	<10.0	26.3	<10.0	<10.0	<10.0
Acetonitrile	ug/L	<10								
Acetophenone	ug/L	<8								
Acrolein	ug/L	<10								
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Aldrin	ug/L	<.05								
Alkalinity, as caco3	mg/L									
Allyl chloride	ug/L	<1								
Alpha-bhc	ug/L	<.05								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
(3 4)-methylphenol		<8							
1,1,1,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloropropene		<1							
1,2,3-trichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene		<8							
1,2,4-trichlorobenzene		<1							
1,2-dibromo-3-chloropropane	<1	<1	<1	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dinitrobenzene		<8							
1,3,5-trinitrobenzene		<8							
1,3-dichlorobenzene		<1							
1,3-dichloropropane		<1							
1,3-dinitrobenzene		<8							
1,4-dichlorobenzene	<1.0	<1.0	<1.0	2.0	1.9	1.8	2.1	1.8	2.2
1,4-naphthoquinone		<8							
1,4-phenylenediamine		<8							
1-naphthylamine		<8							
2,2-dichloropropane		<1							
2,3,4,6-tetrachlorophenol		<8							
2,4,5-t		<.5							
2,4,5-tp (silvex)		<.5							
2,4,5-trichlorophenol		<8							
2,4,6-trichlorophenol		<8							
2,4-d		<2							
2,4-dichlorophenol		<8							
2,4-dimethylphenol		<8							
2,4-dinitrophenol		<8							
2,4-dinitrotoluene		<8							
2,6-dichlorophenol		<8							
2,6-dinitrotoluene		<8							
2-acetylaminofluorene		<8							
2-butanone (mek)	<5	<5	<5	<5	<5	<5	<5	<10	<10
2-chloronaphthalene		<8							
2-chlorophenol		<8							
2-hexanone (mbk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-methylnaphthalene		<8							
2-methylphenol		<8							
2-naphthylamine		<8							
2-nitroaniline		<8							
2-nitrophenol		<8							
3,3´-dichlorobenzidine		<8							
3,3'-dimethylbenzidine		<8							
3-methylcholanthrene		<8							
3-nitroaniline		<8							
4,4´-ddd		<.05							
4,4´-dde		<.05							
4,4´-ddt		<.05							
4,6-dinitro-2-methylphenol		<8							
4-aminobiphenyl		<8							
4-bromophenyl phenyl ether		<8							
4-chloro-3-methylphenol		<8							
4-chloroaniline		<8							
4-chlorophenyl phenyl ether		<8							
4-methyl-2-pentanone (mibk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-nitroaniline		<8							
4-nitrophenol		<8							
5-nitro-o-toluidine		<8							
7,12-dimethylbenz(a)anthracene		<8							
Acenaphthene		<8							
Acenaphthylene		<8							
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acetonitrile		<10							
Acetophenone		<8							
Acrolein		<10							
Acrylonitrile	<5	<5	<5	<5	<5	<5	<5	<5	<5
Aldrin		<.05							
Alkalinity, as caco3		562			451	467	445	551	
Allyl chloride		<1							
Alpha-bhc		<.05							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	4/14/2023	10/18/2023
(3 4)-methylphenol		
1,1,1,2-tetrachloroethane	<1	<1
1,1,1-trichloroethane	<1	<1
1,1,2,2-tetrachloroethane	<1	<1
1,1,2-trichloroethane	<1	<1
1,1-dichloroethane	<1	<1
1,1-dichloroethylene	<1	<1
1,1-dichloropropene		
1,2,3-trichloropropane	<1	<1
1,2,4,5-tetrachlorobenzene		
1,2,4-trichlorobenzene		
1,2-dibromo-3-chloropropane	<5	<5
1,2-dibromoethane	<1	<1
1,2-dichlorobenzene	<1	<1
1,2-dichloroethane	<1	<1
1,2-dichloropropane	<1	<1
1,2-dinitrobenzene		
1,3,5-trinitrobenzene		
1,3-dichlorobenzene		
1,3-dichloropropane		
1,3-dinitrobenzene		
1,4-dichlorobenzene	1.9	1.7
1,4-naphthoquinone		
1,4-phenylenediamine		
1-naphthylamine		
2,2-dichloropropane		
2,3,4,6-tetrachlorophenol		
2,4,5-t		
2,4,5-tp (silvex)		
2,4,5-trichlorophenol		
2,4,6-trichlorophenol		
2,4-d		
2,4-dichlorophenol		
2,4-dimethylphenol		
2,4-dinitrophenol		
2,4-dinitrotoluene		
2,6-dichlorophenol		
2,6-dinitrotoluene		
2-acetylaminofluorene		
2-butanone (mek)	<10	<10
2-chloronaphthalene		
2-chlorophenol		
2-hexanone (mbk)	<5	<5
2-methylnaphthalene		
2-methylphenol		
2-naphthylamine		
2-nitroaniline		
2-nitrophenol		
3,3´-dichlorobenzidine		
3,3'-dimethylbenzidine		
3-methylcholanthrene		
3-nitroaniline		
4,4´-ddd		
4,4´-dde		
4,4´-ddt		
4,6-dinitro-2-methylphenol		
4-aminobiphenyl		
4-bromophenyl phenyl ether		
4-chloro-3-methylphenol		
4-chloroaniline		
4-chlorophenyl phenyl ether		
4-methyl-2-pentanone (mibk)	<5	<5
4-nitroaniline		
4-nitrophenol		
5-nitro-o-toluidine		
7,12-dimethylbenz(a)anthracene		
Acenaphthene		
Acenaphthylene		
Acetone	<10.0	<10.0
Acetonitrile		
Acetophenone		
Acrolein		
Acrylonitrile	<5	<5
Aldrin		
Alkalinity, as caco3	422	
Allyl chloride		
Alpha-bhc		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
Anthracene	ug/L	<8								
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arochlor 1016	ug/L	<.1								
Arochlor 1221	ug/L	<.2								
Arochlor 1232	ug/L	<.2								
Arochlor 1242	ug/L	<.2								
Arochlor 1248	ug/L	<.2								
Arochlor 1254	ug/L	<.1								
Arochlor 1260	ug/L	<.1								
Arsenic, total	ug/L	99.5	21.9	178.0	208.0	183.0	153.0	177.0	233.0	142.0
Azobenzene	ug/L	<8								
Barium, total	ug/L	1120	694	1160	1030	1080	1160	1130	1160	598
Benzene	ug/L	10.0	7.4	7.8	5.8	7.7	5.0	6.6	6.2	8.9
Benzo(a)anthracene	ug/L	<8								
Benzo(a)pyrene	ug/L	<8								
Benzo(b)fluoranthene	ug/L	<8								
Benzo(g,h,i)perylene	ug/L	<8								
Benzo(k)fluoranthene	ug/L	<8								
Benzyl alcohol	ug/L	<8								
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Beta-bhc	ug/L	<.05								
Bis (2-chloroethoxy) methane	ug/L	<8								
Bis(2-chloroethyl) ether	ug/L	<8								
Bis(2-chloroisopropyl) ether	ug/L	<8								
Bis(2-ethylhexyl) phthalate	ug/L	85	<10	<10	10	<10	<10	<10	<6	<6
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	ug/L	<8								
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlordane	ug/L	<.1								
Chloride	mg/L									
Chlorobenzene	ug/L	15.4	14.2	13.5	12.8	11.2	14.4	10.4	12.6	11.1
Chlorobenzilate	ug/L	<8								
Chloroethane	ug/L	15.4	16.3	14.1	10.2	12.9	10.6	12.0	8.4	12.3
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroprene	ug/L	<1								
Chromium, total	ug/L	10	<8	<8	<8	<8	<8	<8	<8	<8
Chrysene	ug/L	<8								
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	30.0	19.4	22.3	24.3	21.3	20.1	19.8	22.5	12.3
Copper, total	ug/L	16.3	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Cyanide, total	mg/L	<.005								
Delta-bhc	ug/L	<.05								
Diallate	ug/L	<8								
Dibenzo(a,h)anthracene	ug/L	<8								
Dibenzofuran	ug/L	<8								
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0
Dieldrin	ug/L	<.05								
Diethyl phthalate	ug/L	<8								
Dimethoate	ug/L	<.4								
Dimethylphthalate	ug/L	<8								
Di-n-butyl phthalate	ug/L	<8								
Di-n-octyl phthalate	ug/L	<8								
Dinoseb	ug/L	<.5								
Diphenylamine	ug/L	<8								
Disulfoton	ug/L	<.4								
Endosulfan i	ug/L	<.05								
Endosulfan ii	ug/L	<.05								
Endosulfan sulfate	ug/L	<.05								
Endrin	ug/L	<.05								
Endrin aldehyde	ug/L	<.05								
Ethane	mg/L									
Ethene	mg/L									
Ethyl methacrylate	ug/L	<10								
Ethyl methanesulfonate	ug/L	<8								
Ethylbenzene	ug/L	39.0	15.3	6.5	<1.0	10.5	<1.0	4.9	<1.0	5.1
Famphur	ug/L	<.4								
Fluoranthene	ug/L	<8								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
Anthracene		<8							
Antimony, total	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arochlor 1016		<.1							
Arochlor 1221		<.2							
Arochlor 1232		<.2							
Arochlor 1242		<.2							
Arochlor 1248		<.2							
Arochlor 1254		<.1							
Arochlor 1260		<.1							
Arsenic, total	128.0	125.0	212.0	149.0	168.0	177.0	200.0	143.0	250.0
Azobenzene		<8							
Barium, total	1050	1390	1170	1300	881	868	1180	1000	1170
Benzene	5.6	6.9	3.6	5.1	3.5	6.1	3.0	4.8	4.1
Benzo(a)anthracene		<8							
Benzo(a)pyrene		<8							
Benzo(b)fluoranthene		<8							
Benzo(g,h,i)perylene		<8							
Benzo(k)fluoranthene		<8							
Benzyl alcohol		<8							
Beryllium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Beta-bhc		<.05							
Bis (2-chloroethoxy) methane		<8							
Bis(2-chloroethyl) ether		<8							
Bis(2-chloroisopropyl) ether		<8							
Bis(2-ethylhexyl) phthalate	<6	10	<8	<6					
Bromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate		<8							
Cadmium, total	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total		241							
Carbon disulfide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlordane		<.1							
Chloride		485							
Chlorobenzene	8.7	9.6	9.4	9.0	8.3	7.4	8.1	7.8	6.9
Chlorobenzilate		<8							
Chloroethane	8.6	8.5	8.8	9.0	9.4	9.8	6.3	8.3	7.5
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroprene		<1							
Chromium, total	<8	<8	<8	<8	<8	<8	<8	<8	<8
Chrysene		<8							
Cis-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	22.0	23.7	24.2	19.6	15.0	15.1	20.0	18.4	21.2
Copper, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Cyanide, total		<.005							
Delta-bhc		<.05							
Diallate		<8							
Dibenzo(a,h)anthracene		<8							
Dibenzofuran		<8							
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0					
Dieldrin		<.05							
Diethyl phthalate		<8							
Dimethoate		<.4							
Dimethylphthalate		<8							
Di-n-butyl phthalate		<8							
Di-n-octyl phthalate		<8							
Dinoseb		<.5							
Diphenylamine		<8							
Disulfoton		<.4							
Endosulfan i		<.05							
Endosulfan ii		<.05							
Endosulfan sulfate		<.05							
Endrin		<.05							
Endrin aldehyde		<.05							
Ethane			<.005		<.010				
Ethene			<.005		<.010				
Ethyl methacrylate		<10							
Ethyl methanesulfonate		<8							
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Famphur		<.4							
Fluoranthene		<8							

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	4/14/2023	10/18/2023
Anthracene		
Antimony, total	<2	<2
Arochlor 1016		
Arochlor 1221		
Arochlor 1232		
Arochlor 1242		
Arochlor 1248		
Arochlor 1254		
Arochlor 1260		
Arsenic, total	168.0	166.0
Azobenzene		
Barium, total	783	1350
Benzene	4.2	1.4
Benzo(a)anthracene		
Benzo(a)pyrene		
Benzo(b)fluoranthene		
Benzo(g,h,i)perylene		
Benzo(k)fluoranthene		
Benzyl alcohol		
Beryllium, total	<4	<4
Beta-bhc		
Bis (2-chloroethoxy) methane		
Bis(2-chloroethyl) ether		
Bis(2-chloroisopropyl) ether		
Bis(2-ethylhexyl) phthalate		
Bromochloromethane	<1	<1
Bromodichloromethane	<1	<1
Bromoform	<1	<1
Bromomethane	<1	<1
Butyl benzyl phthalate		
Cadmium, total	<.8	<.8
Calcium, total		
Carbon disulfide	<1	<1
Carbon tetrachloride	<1	<1
Chlordane		
Chloride		
Chlorobenzene	6.5	4.2
Chlorobenzilate		
Chloroethane	4.6	3.8
Chloroform	<1	<1
Chloromethane	<1	<1
Chloroprene		
Chromium, total	<8	<8
Chrysene		
Cis-1,2-dichloroethylene	<1	<1
Cis-1,3-dichloropropene	<1	<1
Cobalt, total	13.1	15.9
Copper, total	<4.0	<4.0
Cyanide, total		
Delta-bhc		
Diallate		
Dibenzo(a,h)anthracene		
Dibenzofuran		
Dibromochloromethane	<1	<1
Dibromomethane	<1	<1
Dichlorodifluoromethane		
Dieldrin		
Diethyl phthalate		
Dimethoate		
Dimethylphthalate		
Di-n-butyl phthalate		
Di-n-octyl phthalate		
Dinoseb		
Diphenylamine		
Disulfoton		
Endosulfan i		
Endosulfan ii		
Endosulfan sulfate		
Endrin		
Endrin aldehyde		
Ethane		
Ethene		
Ethyl methacrylate		
Ethyl methanesulfonate		
Ethylbenzene	<1.0	<1.0
Famphur		
Fluoranthene		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
Fluorene	ug/L	<8								
Gamma-bhc (lindane)	ug/L	<.05								
Heptachlor	ug/L	<.05								
Heptachlor epoxide	ug/L	<.05								
Hexachlorobenzene	ug/L	<4.03 *								
Hexachlorobutadiene	ug/L	<8								
Hexachlorocyclopentadiene	ug/L	<8								
Hexachloroethane	ug/L	<8								
Hexachloropropene	ug/L	<8								
Indeno(1,2,3-cd)pyrene	ug/L	<8								
Isobutanol	mg/L	<1								
Isodrin	ug/L	<8								
Isophorone	ug/L	<8								
Isosafrole	ug/L	<8								
Kepone	ug/L	<8								
Lead, total	ug/L	8.3	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Magnesium, total	mg/L									
Mercury, total	ug/L	<.5								
Methacrylonitrile	ug/L	<1								
Methane	mg/L									
Methapyrilene	ug/L	<8								
Methoxychlor	ug/L	<.05								
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl methacrylate	ug/L	<1								
Methyl methanesulfonate	ug/L	<8								
Methyl parathion	ug/L	<.4								
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene	ug/L	<8								
Nickel, total	ug/L	97.0	67.0	73.3	102.0	70.3	59.8	71.0	101.0	57.8
Nitrobenzene	ug/L	<8								
N-nitrosodiethylamine	ug/L	<8								
N-nitrosodimethylamine	ug/L	<8								
N-nitrosodi-n-butylamine	ug/L	<8								
N-nitroso-di-n-propylamine	ug/L	<8								
N-nitrosodiphenylamine	ug/L	<8								
N-nitrosomethylethylamine	ug/L	<8								
N-nitrosopiperidine	ug/L	<8								
N-nitrosopyrrolidine	ug/L	<8								
O,o,o-triethyl phosphorothioate	ug/L	<.4								
O-toluidine	ug/L	<8								
Parathion	ug/L	<.4								
P-dimethylaminoazobenzene	ug/L	<8								
Pentachlorobenzene	ug/L	<8								
Pentachloronitrobenzene (pcnb)	ug/L	<8								
Pentachlorophenol	ug/L	<8								
pH	pH									
Phenacetin	ug/L	<8								
Phenanthrene	ug/L	<8								
Phenol	ug/L	<8								
Phorate	ug/L	<.4								
Potassium, total	mg/L									
Pronamide	ug/L	<8								
Propionitrile	ug/L	<10								
Pyrene	ug/L	<8								
Safrole	ug/L	<8								
Selenium, total	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	5.2	<4.0	<4.0	<4.0
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		823	128						
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L									
Sulfide, total	mg/L	<.1								
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Thionazin	ug/L	<.4								
Tin, total	ug/L	<20								
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toxaphene	ug/L	<.2								
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
Fluorene		<8							
Gamma-bhc (lindane)		<.05							
Heptachlor		<.05							
Heptachlor epoxide		<.05							
Hexachlorobenzene		<.05							
Hexachlorobutadiene		<8							
Hexachlorocyclopentadiene		<8							
Hexachloroethane		<8							
Hexachloropropene		<8							
Indeno(1,2,3-cd)pyrene		<8							
Isobutanol		<1							
Isodrin		<8							
Isophorone		<8							
Isosafrole		<8							
Kepone		<8							
Lead, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Magnesium, total		107							
Mercury, total		<.5							
Methacrylonitrile		<1							
Methane			5.64		7.15				
Methapyrilene		<8							
Methoxychlor		<.05							
Methyl iodide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl methacrylate		<1							
Methyl methanesulfonate		<8							
Methyl parathion		<.4							
Methylene chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene		<8							
Nickel, total	52.9	70.3	92.8	60.1	65.1	61.8	86.1	63.4	93.6
Nitrobenzene		<8							
N-nitrosodiethylamine		<8							
N-nitrosodimethylamine		<8							
N-nitrosodi-n-butylamine		<8							
N-nitroso-di-n-propylamine		<8							
N-nitrosodiphenylamine		<8							
N-nitrosomethylethylamine		<8							
N-nitrosopiperidine		<8							
N-nitrosopyrrolidine		<8							
O,o,o-triethyl phosphorothioate		<.4							
O-toluidine		<8							
Parathion		<.4							
P-dimethylaminoazobenzene		<8							
Pentachlorobenzene		<8							
Pentachloronitrobenzene (pcnb)		<8							
Pentachlorophenol		<8							
pH					6.6	6.5	6.5	6.6	
Phenacetin		<8							
Phenanthrene		<8							
Phenol		<8							
Phorate		<.4							
Potassium, total		8							
Pronamide		<8							
Propionitrile		<10							
Pyrene		<8							
Safrole		<8							
Selenium, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Silver, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total		92.2							
Solids, total dissolved		1370							
Solids, total suspended									
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate		1.3							
Sulfide, total		<.1							
Tetrachloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	<4	<2	<2	<2	<2	<2	<2	<2	<2
Thionazin		<.4							
Tin, total		<20							
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toxaphene		<.2							
Trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	4/14/2023	10/18/2023
Fluorene		
Gamma-bhc (lindane)		
Heptachlor		
Heptachlor epoxide		
Hexachlorobenzene		
Hexachlorobutadiene		
Hexachlorocyclopentadiene		
Hexachloroethane		
Hexachloropropene		
Indeno(1,2,3-cd)pyrene		
Isobutanol		
Isodrin		
Isophorone		
Isosafrole		
Kepone		
Lead, total	<4.0	<4.0
Magnesium, total		
Mercury, total		
Methacrylonitrile		
Methane		
Methapyrilene		
Methoxychlor		
Methyl iodide	<1	<1
Methyl methacrylate		
Methyl methanesulfonate		
Methyl parathion		
Methylene chloride	<5	<5
Naphthalene		
Nickel, total	67.5	72.1
Nitrobenzene		
N-nitrosodiethylamine		
N-nitrosodimethylamine		
N-nitrosodi-n-butylamine		
N-nitroso-di-n-propylamine		
N-nitrosodiphenylamine		
N-nitrosomethylethylamine		
N-nitrosopiperidine		
N-nitrosopyrrolidine		
O,o,o-triethyl phosphorothioate		
O-toluidine		
Parathion		
P-dimethylaminoazobenzene		
Pentachlorobenzene		
Pentachloronitrobenzene (pcnb)		
Pentachlorophenol		
pH	6.4	
Phenacetin		
Phenanthrene		
Phenol		
Phorate		
Potassium, total		
Pronamide		
Propionitrile		
Pyrene		
Safrole		
Selenium, total	<4.0	<4.0
Silver, total	<4	<4
Sodium, total		
Solids, total dissolved		
Solids, total suspended		
Styrene	<1	<1
Sulfate		
Sulfide, total		
Tetrachloroethylene	<1	<1
Thallium, total	<2	<2
Thionazin		
Tin, total		
Toluene	<1	<1
Toxaphene		
Trans-1,2-dichloroethylene	<1	<1
Trans-1,3-dichloropropene	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5
Trichloroethylene	<1	<1
Trichlorofluoromethane	<1	<1
Vanadium, total	<20	<20
Vinyl acetate	<5	<5
Vinyl chloride	<1	<1

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
Xylenes, total	ug/L	132.0	89.8	58.0	11.8	59.2	19.2	26.1	6.3	56.2
Zinc, total	ug/L	86.9	<8.0	16.6	<8.0	<8.0	14.5	<8.0	8.6	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
Xylenes, total	3.5	4.3	3.1	4.0	10.3	2.3	<2.0	<2.0	<2.0
Zinc, total	<20.0	8.0	10.2	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-15

Constituents	4/14/2023	10/18/2023
Xylenes, total	<2.0	<2.0
Zinc, total	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-16

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	27.9	<10.0
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3	mg/L									
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	ug/L	168.0	111.0	103.0	98.0	96.9	86.5	95.8	87.4	87.7
Benzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L									
Chlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	<4.0	1.2	1.5	<.8	<.8	<.8	<.8	<.8	<.8
Copper, total	ug/L	7.3	4.8	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total	mg/L									
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L	7.7	4.2	4.2	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Potassium, total	mg/L									
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		48	12						
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L									
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	ug/L	31.9	11.0	12.2	9.5	12.1	<8.0	<8.0	<8.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-16

Constituents	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
1,1,1,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	<1	<1	<1	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	<5	<5	<5	<5	<5	<5	<5	<10	<10
2-hexanone (mbk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3		449							
Antimony, total	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	82.6	91.8	109.0	90.8	92.3	89.0	78.7	83.4	95.8
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total		134							
Carbon disulfide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride		1.9							
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	<.8	<.8	<.8	.4	<.4	<.4	<.4	.6	2.2
Copper, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total		40.8							
Methyl iodide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	<4.0	<4.0	11.1	<4.0	<4.0	<4.0	<4.0	5.8	<4.0
Potassium, total		3.9							
Selenium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total		27							
Solids, total dissolved		493							
Solids, total suspended									
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate		54.7							
Tetrachloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	<4	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	<20.0	<8.0	<8.0	<20.0	<20.0	<20.0	<20.0	<20.0	30.7

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-16

Constituents	1/3/2023	4/14/2023	10/18/2023
1,1,1,2-tetrachloroethane		<1	<1
1,1,1-trichloroethane		<1	<1
1,1,2,2-tetrachloroethane		<1	<1
1,1,2-trichloroethane		<1	<1
1,1-dichloroethane		<1	<1
1,1-dichloroethylene		<1	<1
1,2,3-trichloropropane		<1	<1
1,2-dibromo-3-chloropropane		<5	<5
1,2-dibromoethane		<1	<1
1,2-dichlorobenzene		<1	<1
1,2-dichloroethane		<1	<1
1,2-dichloropropane		<1	<1
1,4-dichlorobenzene		<1	<1
2-butanone (mek)		<10	<10
2-hexanone (mbk)		<5	<5
4-methyl-2-pentanone (mibk)		<5	<5
Acetone		<10.0	<10.0
Acrylonitrile		<5	<5
Alkalinity, as caco3			
Antimony, total		<2	<2
Arsenic, total		<4	<4
Barium, total		85.3	84.0
Benzene		<1	<1
Beryllium, total		<4	<4
Bromochloromethane		<1	<1
Bromodichloromethane		<1	<1
Bromoform		<1	<1
Bromomethane		<1	<1
Cadmium, total		<.8	<.8
Calcium, total			
Carbon disulfide		<1	<1
Carbon tetrachloride		<1	<1
Chloride			
Chlorobenzene		<1	<1
Chloroethane		<1	<1
Chloroform		<1	<1
Chloromethane		<1	<1
Chromium, total		<8	<8
Cis-1,2-dichloroethylene		<1	<1
Cis-1,3-dichloropropene		<1	<1
Cobalt, total		<.4	.4
Copper, total		<4.0	<4.0
Dibromochloromethane		<1	<1
Dibromomethane		<1	<1
Ethylbenzene		<1	<1
Lead, total		<4	<4
Magnesium, total			
Methyl iodide		<1	<1
Methylene chloride		<5	<5
Nickel, total		<4.0	<4.0
Potassium, total			
Selenium, total		<4	<4
Silver, total		<4	<4
Sodium, total			
Solids, total dissolved			
Solids, total suspended			
Styrene		<1	<1
Sulfate			
Tetrachloroethylene		<1	<1
Thallium, total		<2	<2
Toluene		<1	<1
Trans-1,2-dichloroethylene		<1	<1
Trans-1,3-dichloropropene		<1	<1
Trans-1,4-dichloro-2-butene		<5	<5
Trichloroethylene		<1	<1
Trichlorofluoromethane		<1	<1
Vanadium, total		<20	<20
Vinyl acetate		<5	<5
Vinyl chloride		<1	<1
Xylenes, total		<2	<2
Zinc, total	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-20

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017	10/3/2017	4/10/2018
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	22.4	<10.0
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3	mg/L									
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	ug/L	124.0	153.0	146.0	154.0	135.0	99.4	110.0	114.0	111.0
Benzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L									
Chlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	<4.0	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Copper, total	ug/L	<4.0	<4.0	4.6	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total	mg/L									
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L	<4.0	<4.0	8.7	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Potassium, total	mg/L									
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		83	6						
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L									
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	ug/L	<20.0	<8.0	15.3	9.2	<8.0	<8.0	<8.0	<8.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-20

Constituents	10/12/2018	4/16/2019	9/30/2019	4/8/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
1,1,1,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	<1	<1	<1	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-butanone (mek)	<5	<5	<5	<5	<5	<5	<5	<10	<10
2-hexanone (mbk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile	<5	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3		437							
Antimony, total	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total	91.9	128.0	105.0	144.0	85.2	112.0	118.0	100.0	114.0
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total		133							
Carbon disulfide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride		18.2							
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	<.8	<.8	<.8	<.4	<.4	<.4	<.4	<.4	1.5
Copper, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Magnesium, total		37							
Methyl iodide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Potassium, total		1.3							
Selenium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Sodium, total		11							
Solids, total dissolved		527							
Solids, total suspended									
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate		77.8							
Tetrachloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	<4	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc, total	<20.0	<8.0	<8.0	<20.0	<20.0	23.4	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-20

Constituents	4/14/2023	10/18/2023
1,1,1,2-tetrachloroethane	<1	<1
1,1,1-trichloroethane	<1	<1
1,1,2,2-tetrachloroethane	<1	<1
1,1,2-trichloroethane	<1	<1
1,1-dichloroethane	<1	<1
1,1-dichloroethylene	<1	<1
1,2,3-trichloropropane	<1	<1
1,2-dibromo-3-chloropropane	<5	<5
1,2-dibromoethane	<1	<1
1,2-dichlorobenzene	<1	<1
1,2-dichloroethane	<1	<1
1,2-dichloropropane	<1	<1
1,4-dichlorobenzene	<1	<1
2-butanone (mek)	<10	<10
2-hexanone (mbk)	<5	<5
4-methyl-2-pentanone (mibk)	<5	<5
Acetone	<10.0	<10.0
Acrylonitrile	<5	<5
Alkalinity, as caco3		
Antimony, total	<2	<2
Arsenic, total	<4	<4
Barium, total	103.0	133.0
Benzene	<1	<1
Beryllium, total	<4	<4
Bromochloromethane	<1	<1
Bromodichloromethane	<1	<1
Bromoform	<1	<1
Bromomethane	<1	<1
Cadmium, total	<.8	<.8
Calcium, total		
Carbon disulfide	<1	<1
Carbon tetrachloride	<1	<1
Chloride		
Chlorobenzene	<1	<1
Chloroethane	<1	<1
Chloroform	<1	<1
Chloromethane	<1	<1
Chromium, total	<8	<8
Cis-1,2-dichloroethylene	<1	<1
Cis-1,3-dichloropropene	<1	<1
Cobalt, total	<.4	<.4
Copper, total	<4.0	<4.0
Dibromochloromethane	<1	<1
Dibromomethane	<1	<1
Ethylbenzene	<1	<1
Lead, total	<4	<4
Magnesium, total		
Methyl iodide	<1	<1
Methylene chloride	<5	<5
Nickel, total	<4.0	<4.0
Potassium, total		
Selenium, total	<4	<4
Silver, total	<4	<4
Sodium, total		
Solids, total dissolved		
Solids, total suspended		
Styrene	<1	<1
Sulfate		
Tetrachloroethylene	<1	<1
Thallium, total	<2	<2
Toluene	<1	<1
Trans-1,2-dichloroethylene	<1	<1
Trans-1,3-dichloropropene	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5
Trichloroethylene	<1	<1
Trichlorofluoromethane	<1	<1
Vanadium, total	<20	<20
Vinyl acetate	<5	<5
Vinyl chloride	<1	<1
Xylenes, total	<2	<2
Zinc, total	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-22

Constituents	Units	3/30/2014	9/19/2014	4/20/2015	10/5/2015	4/5/2016	4/4/2017	10/3/2017	1/3/2018	4/10/2018
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,2-dibromo-3-chloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1		
1,4-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1		
2-butanone (mek)	ug/L	<5	<5	<5	<5	<5	<5	<5		
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5		
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5		
Acetone	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	28.8		
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5		
Alkalinity, as caco3	mg/L									
Antimony, total	ug/L	<2	<2	<2	<2	<2	<2	<2		
Arsenic, total	ug/L	<4	<4	<4	<4	<4	<4	<4		<4
Barium, total	ug/L	225.0	200.0	214.0	213.0	208.0	204.0	192.0		
Benzene	ug/L	<1	<1	<1	<1	<1	<1	<1		<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4		
Bis(2-ethylhexyl) phthalate	ug/L					<10	<10	<6		
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1		
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	<.8	<.8		
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1		
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1		
Chloride	mg/L									
Chlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1		
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Chromium, total	ug/L	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0		
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Cobalt, total	ug/L	<4.0	<.8	<.8	<.8	<.8	<.8	<.8		<.8
Copper, total	ug/L	<4	<4	<4	<4	<4	<4	<4		
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Dichlorodifluoromethane	ug/L					<1	<1	<1		
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Lead, total	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0		
Magnesium, total	mg/L									
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1		
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5		
Nickel, total	ug/L	6.3	4.3	8.2	<4.0	<4.0	<4.0	<4.0		
Potassium, total	mg/L									
Selenium, total	ug/L	<4	<4	<4	<4	<4	<4	<4		
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4		
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		809	30						
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Sulfate	mg/L									
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Thallium, total	ug/L	<4	<4	<4	<4	<4	<4	<4		
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5		
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1		
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1		
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20		
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5		
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1		
Xylenes, total	ug/L	<2	<2	<2	<2	<2	<2	<2		
Zinc, total	ug/L	<20.0	<8.0	<8.0	<8.0	<8.0	<8.0	29.6	<8.0	

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-22

Constituents	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021	10/5/2021	4/4/2022	10/5/2022
1,1,1,2-tetrachloroethane					<1	<1	<1	<1	<1
1,1,1-trichloroethane					<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane					<1	<1	<1	<1	<1
1,1,2-trichloroethane					<1	<1	<1	<1	<1
1,1-dichloroethane					<1	<1	<1	<1	<1
1,1-dichloroethylene					<1	<1	<1	<1	<1
1,2,3-trichloropropane					<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane					<5	<5	<5	<5	<5
1,2-dibromoethane					<1	<1	<1	<1	<1
1,2-dichlorobenzene					<1	<1	<1	<1	<1
1,2-dichloroethane					<1	<1	<1	<1	<1
1,2-dichloropropane					<1	<1	<1	<1	<1
1,4-dichlorobenzene					<1	<1	<1	<1	<1
2-butanone (mek)					<5	<5	<5	<10	<10
2-hexanone (mbk)					<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)					<5	<5	<5	<5	<5
Acetone					<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile					<5	<5	<5	<5	<5
Alkalinity, as caco3		390							
Antimony, total					<2	<2	<2	<2	<2
Arsenic, total	<4	<4	<4	<4	<4	<4	<4	<4	<4
Barium, total					164.0	164.0	169.0	81.4	191.0
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium, total					<4	<4	<4	<4	<4
Bis(2-ethylhexyl) phthalate									
Bromochloromethane					<1	<1	<1	<1	<1
Bromodichloromethane					<1	<1	<1	<1	<1
Bromoform					<1	<1	<1	<1	<1
Bromomethane					<1	<1	<1	<1	<1
Cadmium, total					<.8	<.8	<.8	<.8	<.8
Calcium, total		113							
Carbon disulfide					<1	<1	<1	<1	<1
Carbon tetrachloride					<1	<1	<1	<1	<1
Chloride		13.2							
Chlorobenzene					<1	<1	<1	<1	<1
Chloroethane					<1	<1	<1	<1	<1
Chloroform					<1	<1	<1	<1	<1
Chloromethane					<1	<1	<1	<1	<1
Chromium, total					<8.0	<8.0	<8.0	<8.0	13.4
Cis-1,2-dichloroethylene					<1	<1	<1	<1	<1
Cis-1,3-dichloropropene					<1	<1	<1	<1	<1
Cobalt, total	<.8	<.8	<.8	<.4	<.4	<.4	<.4	<.4	2.5
Copper, total					<4	<4	<4	<4	<4
Dibromochloromethane					<1	<1	<1	<1	<1
Dibromomethane					<1	<1	<1	<1	<1
Dichlorodifluoromethane									
Ethylbenzene					<1	<1	<1	<1	<1
Lead, total					<4.0	<4.0	<4.0	<4.0	<4.0
Magnesium, total		42.1							
Methyl iodide					<1	<1	<1	<1	<1
Methylene chloride					<5	<5	<5	<5	<5
Nickel, total					<4.0	<4.0	<4.0	<4.0	6.8
Potassium, total		<1							
Selenium, total					<4	<4	<4	<4	<4
Silver, total					<4	<4	<4	<4	<4
Sodium, total		11.1							
Solids, total dissolved		441							
Solids, total suspended									
Styrene					<1	<1	<1	<1	<1
Sulfate		27.8							
Tetrachloroethylene					<1	<1	<1	<1	<1
Thallium, total					<2	<2	<2	<2	<2
Toluene					<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene					<1	<1	<1	<1	<1
Trans-1,3-dichloropropene					<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene					<5	<5	<5	<5	<5
Trichloroethylene					<1	<1	<1	<1	<1
Trichlorofluoromethane					<1	<1	<1	<1	<1
Vanadium, total					<20	<20	<20	<20	<20
Vinyl acetate					<5	<5	<5	<5	<5
Vinyl chloride					<1	<1	<1	<1	<1
Xylenes, total					<2	<2	<2	<2	<2
Zinc, total					<20.0	<20.0	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-22

Constituents	1/3/2023	4/14/2023	7/10/2023	10/18/2023
1,1,1,2-tetrachloroethane		<1		<1
1,1,1-trichloroethane		<1		<1
1,1,2,2-tetrachloroethane		<1		<1
1,1,2-trichloroethane		<1		<1
1,1-dichloroethane		<1		<1
1,1-dichloroethylene		<1		<1
1,2,3-trichloropropane		<1		<1
1,2-dibromo-3-chloropropane		<5		<5
1,2-dibromoethane		<1		<1
1,2-dichlorobenzene		<1		<1
1,2-dichloroethane		<1		<1
1,2-dichloropropane		<1		<1
1,4-dichlorobenzene		<1		<1
2-butanone (mek)		<10		<10
2-hexanone (mbk)		<5		<5
4-methyl-2-pentanone (mibk)		<5		<5
Acetone		<10.0		<10.0
Acrylonitrile		<5		<5
Alkalinity, as caco3				
Antimony, total		<2		<2
Arsenic, total		<4		<4
Barium, total		175.0		195.0
Benzene		<1		<1
Beryllium, total		<4		<4
Bis(2-ethylhexyl) phthalate				
Bromochloromethane		<1		<1
Bromodichloromethane		<1		<1
Bromoform		<1		<1
Bromomethane		<1		<1
Cadmium, total		<.8		<.8
Calcium, total				
Carbon disulfide		<1		<1
Carbon tetrachloride		<1		<1
Chloride				
Chlorobenzene		<1		<1
Chloroethane		<1		<1
Chloroform		<1		<1
Chloromethane		<1		<1
Chromium, total	<8.0	<8.0		<8.0
Cis-1,2-dichloroethylene		<1		<1
Cis-1,3-dichloropropene		<1		<1
Cobalt, total		<.4		<.4
Copper, total		<4		<4
Dibromochloromethane		<1		<1
Dibromomethane		<1		<1
Dichlorodifluoromethane				
Ethylbenzene		<1		<1
Lead, total		9.9	<4.0	<4.0
Magnesium, total				
Methyl iodide		<1		<1
Methylene chloride		<5		<5
Nickel, total		<4.0		<4.0
Potassium, total				
Selenium, total		<4		<4
Silver, total		<4		<4
Sodium, total				
Solids, total dissolved				
Solids, total suspended				
Styrene		<1		<1
Sulfate				
Tetrachloroethylene		<1		<1
Thallium, total		<2		<2
Toluene		<1		<1
Trans-1,2-dichloroethylene		<1		<1
Trans-1,3-dichloropropene		<1		<1
Trans-1,4-dichloro-2-butene		<5		<5
Trichloroethylene		<1		<1
Trichlorofluoromethane		<1		<1
Vanadium, total		<20		<20
Vinyl acetate		<5		<5
Vinyl chloride		<1		<1
Xylenes, total		<2		<2
Zinc, total		<20.0		<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	Units	3/30/2014	9/19/2014	9/30/2014	4/20/2015	7/9/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017
(3 4)-methylphenol	ug/L	<8								
1,1,1,2-tetrachloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1		<1		<1	<1	<1	<1
1,1-dichloropropene	ug/L	<1								
1,2,3-trichloropropane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene	ug/L	<8								
1,2,4-trichlorobenzene	ug/L	<1								
1,2-dibromo-3-chloropropane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,2-dibromoethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1		<1		<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1		<1		<1	<1	<1	<1
1,2-dinitrobenzene	ug/L	<8								
1,3,5-trinitrobenzene	ug/L	<8								
1,3-dichlorobenzene	ug/L	<1								
1,3-dichloropropane	ug/L	<1								
1,3-dinitrobenzene	ug/L	<8								
1,4-dichlorobenzene	ug/L	<1	<1		<1		<1	<1	<1	<1
1,4-naphthoquinone	ug/L	<8								
1,4-phenylenediamine	ug/L	<8								
1-naphthylamine	ug/L	<8								
2,2-dichloropropane	ug/L	<1								
2,3,4,6-tetrachlorophenol	ug/L	<8								
2,4,5-t	ug/L	<.6								
2,4,5-tp (silvex)	ug/L	<.6								
2,4,5-trichlorophenol	ug/L	<8								
2,4,6-trichlorophenol	ug/L	<8								
2,4-d	ug/L	<2.6								
2,4-dichlorophenol	ug/L	<8								
2,4-dimethylphenol	ug/L	<8								
2,4-dinitrophenol	ug/L	<8								
2,4-dinitrotoluene	ug/L	<8								
2,6-dichlorophenol	ug/L	<8								
2,6-dinitrotoluene	ug/L	<8								
2-acetylaminofluorene	ug/L	<8								
2-butanone (mek)	ug/L	<5	<5		<5		<5	<5	<5	<5
2-chloronaphthalene	ug/L	<8								
2-chlorophenol	ug/L	<8								
2-hexanone (mbk)	ug/L	<5	<5		<5		<5	<5	<5	<5
2-methylnaphthalene	ug/L	<8								
2-methylphenol	ug/L	<8								
2-naphthylamine	ug/L	<8								
2-nitroaniline	ug/L	<8								
2-nitrophenol	ug/L	<8								
3,3´-dichlorobenzidine	ug/L	<8								
3,3'-dimethylbenzidine	ug/L	<8								
3-methylcholanthrene	ug/L	<8								
3-nitroaniline	ug/L	<8								
4,4´-ddd	ug/L	<.05								
4,4´-dde	ug/L	<.05								
4,4´-ddt	ug/L	<.05								
4,6-dinitro-2-methylphenol	ug/L	<8								
4-aminobiphenyl	ug/L	<8								
4-bromophenyl phenyl ether	ug/L	<8								
4-chloro-3-methylphenol	ug/L	<8								
4-chloroaniline	ug/L	<8								
4-chlorophenyl phenyl ether	ug/L	<8								
4-methyl-2-pentanone (mibk)	ug/L	<5	<5		<5		<5	<5	<5	<5
4-nitroaniline	ug/L	<8								
4-nitrophenol	ug/L	<8								
5-nitro-o-toluidine	ug/L	<8								
7,12-dimethylbenz(a)anthracene	ug/L	<8								
Acenaphthene	ug/L	<8								
Acenaphthylene	ug/L	<8								
Acetone	ug/L	<10.0	<10.0		<10.0		<10.0	<10.0	<10.0	<10.0
Acetonitrile	ug/L	<10								
Acetophenone	ug/L	<8								
Acrolein	ug/L	<10								
Acrylonitrile	ug/L	<5	<5		<5		<5	<5	<5	<5
Aldrin	ug/L	<.05								
Alkalinity, as caco3	mg/L									
Allyl chloride	ug/L	<1								
Alpha-bhc	ug/L	<.05								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	10/3/2017	1/3/2018	4/10/2018	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021
(3 4)-methylphenol					<8				
1,1,1,2-tetrachloroethane	<1		<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1		<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1		<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1		<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	<1		<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	<1		<1	<1	<1	<1	<1	<1	<1
1,1-dichloropropene					<1				
1,2,3-trichloropropane	<1		<1	<1	<1	<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene					<8				
1,2,4-trichlorobenzene					<1				
1,2-dibromo-3-chloropropane	<1		<1	<1	<1	<1	<5	<5	<5
1,2-dibromoethane	<1		<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1		<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	<1		<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	<1		<1	<1	<1	<1	<1	<1	<1
1,2-dinitrobenzene					<8				
1,3,5-trinitrobenzene					<8				
1,3-dichlorobenzene					<1				
1,3-dichloropropane					<1				
1,3-dinitrobenzene					<8				
1,4-dichlorobenzene	<1		<1	<1	<1	<1	<1	<1	<1
1,4-naphthoquinone					<8				
1,4-phenylenediamine					<8				
1-naphthylamine					<8				
2,2-dichloropropane					<1				
2,3,4,6-tetrachlorophenol					<8				
2,4,5-t					<.5				
2,4,5-tp (silvex)					<.5				
2,4,5-trichlorophenol					<8				
2,4,6-trichlorophenol					<8				
2,4-d					<2.0				
2,4-dichlorophenol					<8				
2,4-dimethylphenol					<8				
2,4-dinitrophenol					<8				
2,4-dinitrotoluene					<8				
2,6-dichlorophenol					<8				
2,6-dinitrotoluene					<8				
2-acetylaminofluorene					<8				
2-butanone (mek)	<5		<5	<5	<5	<5	<5	<5	<5
2-chloronaphthalene					<8				
2-chlorophenol					<8				
2-hexanone (mbk)	<5		<5	<5	<5	<5	<5	<5	<5
2-methylnaphthalene					<8				
2-methylphenol					<8				
2-naphthylamine					<8				
2-nitroaniline					<8				
2-nitrophenol					<8				
3,3´-dichlorobenzidine					<8				
3,3'-dimethylbenzidine					<8				
3-methylcholanthrene					<8				
3-nitroaniline					<8				
4,4´-ddd					<.05				
4,4´-dde					<.05				
4,4´-ddt					<.05				
4,6-dinitro-2-methylphenol					<8				
4-aminobiphenyl					<8				
4-bromophenyl phenyl ether					<8				
4-chloro-3-methylphenol					<8				
4-chloroaniline					<8				
4-chlorophenyl phenyl ether					<8				
4-methyl-2-pentanone (mibk)	<5		<5	<5	<5	<5	<5	<5	<5
4-nitroaniline					<8				
4-nitrophenol					<8				
5-nitro-o-toluidine					<8				
7,12-dimethylbenz(a)anthracene					<8				
Acenaphthene					<8				
Acenaphthylene					<8				
Acetone	16.2		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acetonitrile					<10				
Acetophenone					<8				
Acrolein					<10				
Acrylonitrile	<5		<5	<5	<5	<5	<5	<5	<5
Aldrin					<.05				
Alkalinity, as caco3					504				
Allyl chloride					<1				
Alpha-bhc					<.05				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	10/5/2021	4/4/2022	10/5/2022	4/14/2023	10/18/2023
(3 4)-methylphenol					
1,1,1,2-tetrachloroethane	<1	<1	<1	<1	<1
1,1,1-trichloroethane	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	<1	<1	<1	<1	<1
1,1,2-trichloroethane	<1	<1	<1	<1	<1
1,1-dichloroethane	<1	<1	<1	<1	<1
1,1-dichloroethylene	<1	<1	<1	<1	<1
1,1-dichloropropene					
1,2,3-trichloropropane	<1	<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene					
1,2,4-trichlorobenzene					
1,2-dibromo-3-chloropropane	<5	<5	<5	<5	<5
1,2-dibromoethane	<1	<1	<1	<1	<1
1,2-dichlorobenzene	<1	<1	<1	<1	<1
1,2-dichloroethane	<1	<1	<1	<1	<1
1,2-dichloropropane	<1	<1	<1	<1	<1
1,2-dinitrobenzene					
1,3,5-trinitrobenzene					
1,3-dichlorobenzene					
1,3-dichloropropane					
1,3-dinitrobenzene					
1,4-dichlorobenzene	<1	<1	<1	<1	<1
1,4-naphthoquinone					
1,4-phenylenediamine					
1-naphthylamine					
2,2-dichloropropane					
2,3,4,6-tetrachlorophenol					
2,4,5-t					
2,4,5-tp (silvex)					
2,4,5-trichlorophenol					
2,4,6-trichlorophenol					
2,4-d					
2,4-dichlorophenol					
2,4-dimethylphenol					
2,4-dinitrophenol					
2,4-dinitrotoluene					
2,6-dichlorophenol					
2,6-dinitrotoluene					
2-acetylaminofluorene					
2-butanone (mek)	<5	<10	<10	<10	<10
2-chloronaphthalene					
2-chlorophenol					
2-hexanone (mbk)	<5	<5	<5	<5	<5
2-methylnaphthalene					
2-methylphenol					
2-naphthylamine					
2-nitroaniline					
2-nitrophenol					
3,3´-dichlorobenzidine					
3,3'-dimethylbenzidine					
3-methylcholanthrene					
3-nitroaniline					
4,4´-ddd					
4,4´-dde					
4,4´-ddt					
4,6-dinitro-2-methylphenol					
4-aminobiphenyl					
4-bromophenyl phenyl ether					
4-chloro-3-methylphenol					
4-chloroaniline					
4-chlorophenyl phenyl ether					
4-methyl-2-pentanone (mibk)	<5	<5	<5	<5	<5
4-nitroaniline					
4-nitrophenol					
5-nitro-o-toluidine					
7,12-dimethylbenz(a)anthracene					
Acenaphthene					
Acenaphthylene					
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0
Acetonitrile					
Acetophenone					
Acrolein					
Acrylonitrile	<5	<5	<5	<5	<5
Aldrin					
Alkalinity, as caco3					
Allyl chloride					
Alpha-bhc					

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	Units	3/30/2014	9/19/2014	9/30/2014	4/20/2015	7/9/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017
Anthracene	ug/L	<8								
Antimony, total	ug/L	<2	<2		<2		<2	<2	<2	<2
Arochlor 1016	ug/L	<.1								
Arochlor 1221	ug/L	<.2								
Arochlor 1232	ug/L	<.2								
Arochlor 1242	ug/L	<.2								
Arochlor 1248	ug/L	<.2								
Arochlor 1254	ug/L	<.1								
Arochlor 1260	ug/L	<.1								
Arsenic, total	ug/L	<4	<4		<4		<4	<4	<4	<4
Azobenzene	ug/L	<8								
Barium, total	ug/L	612	591		717		479	408	231	154
Benzene	ug/L	<1	<1		<1		<1	<1	<1	<1
Benzo(a)anthracene	ug/L	<8								
Benzo(a)pyrene	ug/L	<8								
Benzo(b)fluoranthene	ug/L	<8								
Benzo(g,h,i)perylene	ug/L	<8								
Benzo(k)fluoranthene	ug/L	<8								
Benzyl alcohol	ug/L	<8								
Beryllium, total	ug/L	<4	<4		<4		<4	<4	<4	<4
Beta-bhc	ug/L	<.05								
Bis (2-chloroethoxy) methane	ug/L	<8								
Bis(2-chloroethyl) ether	ug/L	<8								
Bis(2-chloroisopropyl) ether	ug/L	<8								
Bis(2-ethylhexyl) phthalate	ug/L	36		<10	<10	<10	<10	<10	<10	<10
Bromochloromethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Bromoform	ug/L	<1	<1		<1		<1	<1	<1	<1
Bromomethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Butyl benzyl phthalate	ug/L	<8								
Cadmium, total	ug/L	<.8	<.8		<.8		<.8	<.8	<.8	<.8
Calcium, total	mg/L									
Carbon disulfide	ug/L	<1	<1		<1		<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1		<1		<1	<1	<1	<1
Chlordane	ug/L	<.1								
Chloride	mg/L									
Chlorobenzene	ug/L	<1	<1		<1		<1	<1	<1	<1
Chlorobenzilate	ug/L	<8								
Chloroethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Chloroform	ug/L	<1	<1		<1		<1	<1	<1	<1
Chloromethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Chloroprene	ug/L	<1								
Chromium, total	ug/L	<8	<8		<8		<8	<8	<8	<8
Chrysene	ug/L	<8								
Cis-1,2-dichloroethylene	ug/L	<1	<1		<1		<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1		<1		<1	<1	<1	<1
Cobalt, total	ug/L	<4.0	<.8		10.0		<.8	<.8	<.8	<.8
Copper, total	ug/L	6.0	4.5		4.2		<4.0	<4.0	<4.0	<4.0
Cyanide, total	mg/L	<.005								
Delta-bhc	ug/L	<.05								
Diallate	ug/L	<8								
Dibenzo(a,h)anthracene	ug/L	<8								
Dibenzofuran	ug/L	<8								
Dibromochloromethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	3.5	1.3		1.0		<1.0	<1.0	1.0	<1.0
Dieldrin	ug/L	<.05								
Diethyl phthalate	ug/L	<8								
Dimethoate	ug/L	<.5								
Dimethylphthalate	ug/L	<8								
Di-n-butyl phthalate	ug/L	<8								
Di-n-octyl phthalate	ug/L	<8								
Dinoseb	ug/L	<.6								
Diphenylamine	ug/L	<8								
Disulfoton	ug/L	<.5								
Endosulfan i	ug/L	<.05								
Endosulfan ii	ug/L	<.05								
Endosulfan sulfate	ug/L	<.05								
Endrin	ug/L	<.05								
Endrin aldehyde	ug/L	<.05								
Ethyl methacrylate	ug/L	<10								
Ethyl methanesulfonate	ug/L	<8								
Ethylbenzene	ug/L	<1	<1		<1		<1	<1	<1	<1
Famphur	ug/L	<.5								
Fluoranthene	ug/L	<8								
Fluorene	ug/L	<8								
Gamma-bhc (lindane)	ug/L	<.05								

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	10/3/2017	1/3/2018	4/10/2018	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021
Anthracene					<8				
Antimony, total	<2		<2	<2	<2	<2	<2	<2	<2
Arochlor 1016					<.1				
Arochlor 1221					<.2				
Arochlor 1232					<.2				
Arochlor 1242					<.2				
Arochlor 1248					<.2				
Arochlor 1254					<.1				
Arochlor 1260					<.1				
Arsenic, total	<4		<4	<4	<4	<4	<4	<4	<4
Azobenzene					<8				
Barium, total	573	613	435	289	274	409	209	226	180
Benzene	<1		<1	<1	<1	<1	<1	<1	<1
Benzo(a)anthracene					<8				
Benzo(a)pyrene					<8				
Benzo(b)fluoranthene					<8				
Benzo(g,h,i)perylene					<8				
Benzo(k)fluoranthene					<8				
Benzyl alcohol					<8				
Beryllium, total	<4		<4	<4	<4	<4	<4	<4	<4
Beta-bhc					<.05				
Bis (2-chloroethoxy) methane					<8				
Bis(2-chloroethyl) ether					<8				
Bis(2-chloroisopropyl) ether					<8				
Bis(2-ethylhexyl) phthalate	10		<6	<6	<6	<6	<6	<6	
Bromochloromethane	<1		<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1		<1	<1	<1	<1	<1	<1	<1
Bromoform	<1		<1	<1	<1	<1	<1	<1	<1
Bromomethane	<1		<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate					<8				
Cadmium, total	<.8		<.8	<.8	<.8	<.8	<.8	<.8	<.8
Calcium, total					97.9				
Carbon disulfide	<1		<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1		<1	<1	<1	<1	<1	<1	<1
Chlordane					<.1				
Chloride					28.6				
Chlorobenzene	<1		<1	<1	<1	<1	<1	<1	<1
Chlorobenzilate					<8				
Chloroethane	<1		<1	<1	<1	<1	<1	<1	<1
Chloroform	<1		<1	<1	<1	<1	<1	<1	<1
Chloromethane	<1		<1	<1	<1	<1	<1	<1	<1
Chloroprene					<1				
Chromium, total	<8		<8	<8	<8	<8	<8	<8	<8
Chrysene					<8				
Cis-1,2-dichloroethylene	<1		<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1		<1	<1	<1	<1	<1	<1	<1
Cobalt, total	1.7	1.5	<.8	<.8	<.8	.8	.9	.5	.6
Copper, total	<4.0		<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Cyanide, total					<.005				
Delta-bhc					<.05				
Diallate					<8				
Dibenzo(a,h)anthracene					<8				
Dibenzofuran					<8				
Dibromochloromethane	<1		<1	<1	<1	<1	<1	<1	<1
Dibromomethane	<1		<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0		
Dieldrin					<.05				
Diethyl phthalate					<8				
Dimethoate					<.4				
Dimethylphthalate					<8				
Di-n-butyl phthalate					<8				
Di-n-octyl phthalate					<8				
Dinoseb					<.5				
Diphenylamine					<8				
Disulfoton					<.4				
Endosulfan i					<.05				
Endosulfan ii					<.05				
Endosulfan sulfate					<.05				
Endrin					<.05				
Endrin aldehyde					<.05				
Ethyl methacrylate					<10				
Ethyl methanesulfonate					<8				
Ethylbenzene	<1		<1	<1	<1	<1	<1	<1	<1
Famphur					<.4				
Fluoranthene					<8				
Fluorene					<8				
Gamma-bhc (lindane)					<.05				

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	10/5/2021	4/4/2022	10/5/2022	4/14/2023	10/18/2023
Anthracene					
Antimony, total	<2	<2	<2	<2	<2
Arochlor 1016					
Arochlor 1221					
Arochlor 1232					
Arochlor 1242					
Arochlor 1248					
Arochlor 1254					
Arochlor 1260					
Arsenic, total	<4	<4	<4	<4	<4
Azobenzene					
Barium, total	497	521	551	133	431
Benzene	<1	<1	<1	<1	<1
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Benzyl alcohol					
Beryllium, total	<4	<4	<4	<4	<4
Beta-bhc					
Bis (2-chloroethoxy) methane					
Bis(2-chloroethyl) ether					
Bis(2-chloroisopropyl) ether					
Bis(2-ethylhexyl) phthalate					
Bromochloromethane	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1
Bromoform	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<1
Butyl benzyl phthalate					
Cadmium, total	1.1	<.8	<.8	<.8	<.8
Calcium, total					
Carbon disulfide	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1
Chlordane					
Chloride					
Chlorobenzene	<1	<1	<1	<1	<1
Chlorobenzilate					
Chloroethane	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1
Chloromethane	<1	<1	<1	<1	<1
Chloroprene					
Chromium, total	<8	<8	<8	<8	<8
Chrysene					
Cis-1,2-dichloroethylene	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	<1	<1	<1	<1	<1
Cobalt, total	4.1	.5	5.3	<.4	2.3
Copper, total	<4.0	<4.0	6.9	<4.0	4.1
Cyanide, total					
Delta-bhc					
Diallate					
Dibenzo(a,h)anthracene					
Dibenzofuran					
Dibromochloromethane	<1	<1	<1	<1	<1
Dibromomethane	<1	<1	<1	<1	<1
Dichlorodifluoromethane					
Dieldrin					
Diethyl phthalate					
Dimethoate					
Dimethylphthalate					
Di-n-butyl phthalate					
Di-n-octyl phthalate					
Dinoseb					
Diphenylamine					
Disulfoton					
Endosulfan i					
Endosulfan ii					
Endosulfan sulfate					
Endrin					
Endrin aldehyde					
Ethyl methacrylate					
Ethyl methanesulfonate					
Ethylbenzene	<1	<1	<1	<1	<1
Famphur					
Fluoranthene					
Fluorene					
Gamma-bhc (lindane)					

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	Units	3/30/2014	9/19/2014	9/30/2014	4/20/2015	7/9/2015	10/5/2015	4/5/2016	10/5/2016	4/4/2017
Heptachlor	ug/L	<.05								
Heptachlor epoxide	ug/L	<.05								
Hexachlorobenzene	ug/L	<4.03 *								
Hexachlorobutadiene	ug/L	<8								
Hexachlorocyclopentadiene	ug/L	<8								
Hexachloroethane	ug/L	<8								
Hexachloropropene	ug/L	<8								
Indeno(1,2,3-cd)pyrene	ug/L	<8								
Isobutanol	mg/L	<1								
Isodrin	ug/L	<8								
Isophorone	ug/L	<8								
Isosafrole	ug/L	<8								
Kepone	ug/L	<8								
Lead, total	ug/L	<4	<4		<4		<4	<4	<4	<4
Magnesium, total	mg/L									
Mercury, total	ug/L	<.5								
Methacrylonitrile	ug/L	<1								
Methapyrilene	ug/L	<8								
Methoxychlor	ug/L	<.05								
Methyl iodide	ug/L	<1	<1		<1		<1	<1	<1	<1
Methyl methacrylate	ug/L	<1								
Methyl methanesulfonate	ug/L	<8								
Methyl parathion	ug/L	<.5								
Methylene chloride	ug/L	<5	<5		<5		<5	<5	<5	<5
Naphthalene	ug/L	<8								
Nickel, total	ug/L	13.8	54.6		14.6		7.7	5.5	<4.0	<4.0
Nitrobenzene	ug/L	<8								
N-nitrosodiethylamine	ug/L	<8								
N-nitrosodimethylamine	ug/L	<8								
N-nitrosodi-n-butylamine	ug/L	<8								
N-nitroso-di-n-propylamine	ug/L	<8								
N-nitrosodiphenylamine	ug/L	<8								
N-nitrosomethylethylamine	ug/L	<8								
N-nitrosopiperidine	ug/L	<8								
N-nitrosopyrrolidine	ug/L	<8								
O,o,o-triethyl phosphorothioate	ug/L	<.5								
O-toluidine	ug/L	<8								
Parathion	ug/L	<.5								
P-dimethylaminoazobenzene	ug/L	<8								
Pentachlorobenzene	ug/L	<8								
Pentachloronitrobenzene (pcnb)	ug/L	<8								
Pentachlorophenol	ug/L	<8								
Phenacetin	ug/L	<8								
Phenanthrene	ug/L	<8								
Phenol	ug/L	<8								
Phorate	ug/L	<.5								
Potassium, total	mg/L									
Pronamide	ug/L	<8								
Propionitrile	ug/L	<10								
Pyrene	ug/L	<8								
Safrole	ug/L	<8								
Selenium, total	ug/L	<4	<4		<4		<4	<4	<4	<4
Silver, total	ug/L	<4	<4		<4		<4	<4	<4	<4
Sodium, total	mg/L									
Solids, total dissolved	mg/L									
Solids, total suspended	mg/L		232		58					
Styrene	ug/L	<1	<1		<1		<1	<1	<1	<1
Sulfate	mg/L									
Sulfide, total	mg/L	<.1								
Tetrachloroethylene	ug/L	<1	<1		<1		<1	<1	<1	<1
Thallium, total	ug/L	<4	<4		<4		<4	<4	<4	<4
Thionazin	ug/L	<.5								
Tin, total	ug/L	<20								
Toluene	ug/L	<1	<1		<1		<1	<1	<1	<1
Toxaphene	ug/L	<.2								
Trans-1,2-dichloroethylene	ug/L	<1	<1		<1		<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1		<1		<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5		<5		<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1		<1		<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1		<1		<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20		<20		<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5		<5		<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1		<1		<1	<1	<1	<1
Xylenes, total	ug/L	<2	<2		<2		<2	<2	<2	<2
Zinc, total	ug/L	42.5	98.8		9.1		8.7	9.3	<8.0	<8.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	10/3/2017	1/3/2018	4/10/2018	10/12/2018	4/16/2019	9/30/2019	4/7/2020	10/7/2020	4/22/2021
Heptachlor					<.05				
Heptachlor epoxide					<.05				
Hexachlorobenzene					<.05				
Hexachlorobutadiene					<8				
Hexachlorocyclopentadiene					<8				
Hexachloroethane					<8				
Hexachloropropene					<8				
Indeno(1,2,3-cd)pyrene					<8				
Isobutanol					<1				
Isodrin					<8				
Isophorone					<8				
Isosafrole					<8				
Kepone					<8				
Lead, total	<4		<4	<4	<4	<4	<4	<4	<4
Magnesium, total					31.8				
Mercury, total					<.5				
Methacrylonitrile					<1				
Methapyrilene					<8				
Methoxychlor					<.05				
Methyl iodide	<1		<1	<1	<1	<1	<1	<1	<1
Methyl methacrylate					<1				
Methyl methanesulfonate					<8				
Methyl parathion					<.4				
Methylene chloride	<5		<5	<5	<5	<5	<5	<5	<5
Naphthalene					<8				
Nickel, total	9.3	9.4	7.5	<4.0	<4.0	8.1	<4.0	<4.0	<4.0
Nitrobenzene					<8				
N-nitrosodiethylamine					<8				
N-nitrosodimethylamine					<8				
N-nitrosodi-n-butylamine					<8				
N-nitroso-di-n-propylamine					<8				
N-nitrosodiphenylamine					<8				
N-nitrosomethylethylamine					<8				
N-nitrosopiperidine					<8				
N-nitrosopyrrolidine					<8				
O,o,o-triethyl phosphorothioate					<.4				
O-toluidine					<8				
Parathion					<.4				
P-dimethylaminoazobenzene					<8				
Pentachlorobenzene					<8				
Pentachloronitrobenzene (pcnb)					<8				
Pentachlorophenol					<8				
Phenacetin					<8				
Phenanthrene					<8				
Phenol					<8				
Phorate					<.4				
Potassium, total					1				
Pronamide					<8				
Propionitrile					<10				
Pyrene					<8				
Safrole					<8				
Selenium, total	<4		<4	<4	<4	<4	<4	<4	<4
Silver, total	<4		<4	<8	<4	<4	<4	<4	<4
Sodium, total					10				
Solids, total dissolved					500				
Solids, total suspended									
Styrene	<1		<1	<1	<1	<1	<1	<1	<1
Sulfate					16.4				
Sulfide, total					<.1				
Tetrachloroethylene	<1		<1	<1	<1	<1	<1	<1	<1
Thallium, total	<4		<4	<4	<2	<2	<2	<2	<2
Thionazin					<.4				
Tin, total					<20				
Toluene	<1		<1	<1	<1	<1	<1	<1	<1
Toxaphene					<.2				
Trans-1,2-dichloroethylene	<1		<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1		<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5		<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	<1		<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1		<1	<1	<1	<1	<1	<1	<1
Vanadium, total	<20		<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	<5		<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	<1		<1	<1	<1	<1	<1	<1	<1
Xylenes, total	<2		<2	<2	<2	<2	<2	<2	<2
Zinc, total	<8.0		<20.0	<20.0	<8.0	<8.0	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-6

Constituents	10/5/2021	4/4/2022	10/5/2022	4/14/2023	10/18/2023
Heptachlor					
Heptachlor epoxide					
Hexachlorobenzene					
Hexachlorobutadiene					
Hexachlorocyclopentadiene					
Hexachloroethane					
Hexachloropropene					
Indeno(1,2,3-cd)pyrene					
Isobutanol					
Isodrin					
Isophorone					
Isosafrole					
Kepone					
Lead, total	<4	<4	<4	<4	<4
Magnesium, total					
Mercury, total					
Methacrylonitrile					
Methapyrilene					
Methoxychlor					
Methyl iodide	<1	<1	<1	<1	<1
Methyl methacrylate					
Methyl methanesulfonate					
Methyl parathion					
Methylene chloride	<5	<5	<5	<5	<5
Naphthalene					
Nickel, total	8.6	9.1	10.9	<4.0	10.0
Nitrobenzene					
N-nitrosodiethylamine					
N-nitrosodimethylamine					
N-nitrosodi-n-butylamine					
N-nitroso-di-n-propylamine					
N-nitrosodiphenylamine					
N-nitrosomethylethylamine					
N-nitrosopiperidine					
N-nitrosopyrrolidine					
O,o,o-triethyl phosphorothioate					
O-toluidine					
Parathion					
P-dimethylaminoazobenzene					
Pentachlorobenzene					
Pentachloronitrobenzene (pcnb)					
Pentachlorophenol					
Phenacetin					
Phenanthrene					
Phenol					
Phorate					
Potassium, total					
Pronamide					
Propionitrile					
Pyrene					
Safrole					
Selenium, total	<4	<4	<4	<4	<4
Silver, total	<4	<4	<4	<4	<4
Sodium, total					
Solids, total dissolved					
Solids, total suspended					
Styrene	<1	<1	<1	<1	<1
Sulfate					
Sulfide, total					
Tetrachloroethylene	<1	<1	<1	<1	<1
Thallium, total	<2	<2	<2	<2	<2
Thionazin					
Tin, total					
Toluene	<1	<1	<1	<1	<1
Toxaphene					
Trans-1,2-dichloroethylene	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	<5	<5	<5	<5	<5
Trichloroethylene	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20	<20	<20
Vinyl acetate	<5	<5	<5	<5	<5
Vinyl chloride	<1	<1	<1	<1	<1
Xylenes, total	<2	<2	<2	<2	<2
Zinc, total	<20.0	<20.0	<20.0	20.1	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 10 – Historic SSI and SSL **- (Not Used)**

Table 11 – Corrective Action Trend Analysis **- (Not Used)**

Table 12 – Leachate Quality over time (LPZ-6)

Table 12

Leachate Well LPZ-6 - Leachate Quality over Time

Annual Water Quality Report

Jones County Sanitary Landfill

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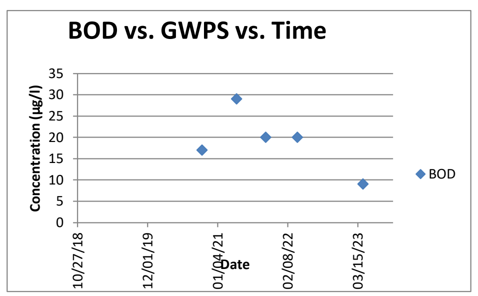
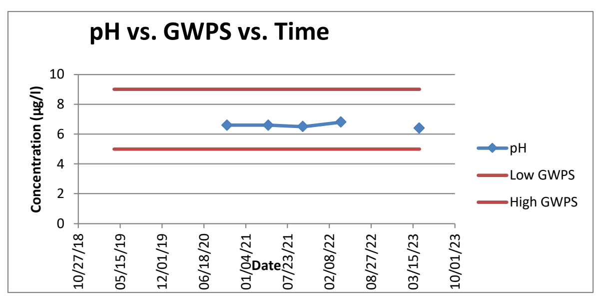
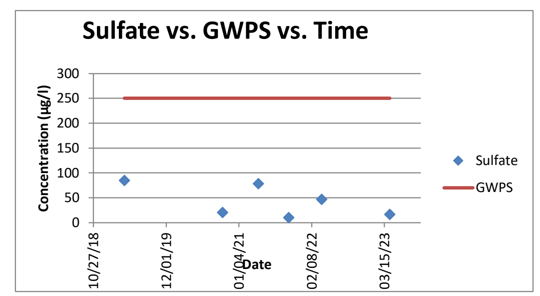
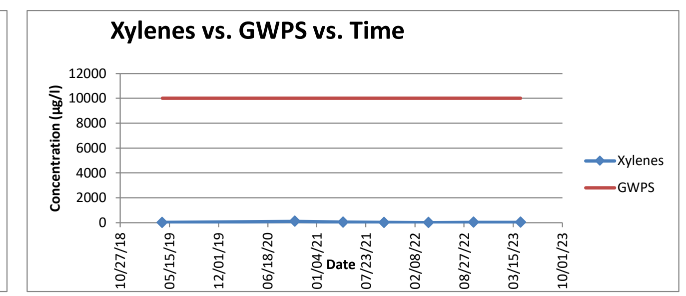
Sample Date	BOD Concentration mg/L	GWPS mg/L	Alkalinity Concentration mg/L	GWPS mg/L	Nitrogen (NH3) Concentration mg/L	GWPS mg/L	pH Concentration mg/L	Low GWPS mg/L	High GWPS mg/L	TDS Concentration mg/L	GWPS mg/L	chloride Concentration mg/L	GWPS mg/L	Sulfate Concentration mg/L	GWPS mg/L
4/16/2019		none	623	none		30		5	9	836	none	98.5	none	84.4	250
10/7/2020	17	none	380	none	9.99	30	6.6	5	9	633	none	106	none	20.3	250
4/22/2021	29	none	442	none	2.65	30	6.6	5	9	763	none	102	none	78.2	250
10/5/2021	20	none	585	none	7.7	30	6.5	5	9	1000	none	237	none	9.6	250
4/4/2022	20	none	370	none	2.14	30	6.8	5	9	400	none	20.4	none	46.3	250
10/5/2022		none		none		30		5	9		none		none		250
4/14/2023	9	none	571	none	4.38	30	6.4	5	9	886	none	114	none	16.1	250

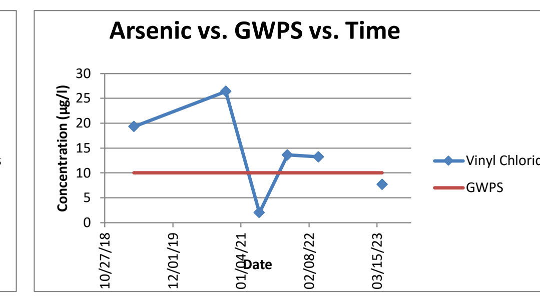
Sample Date	Benzene Concentration ug/L	GWPS ug/L	Ethyl Benzene Concentration ug/L	GWPS ug/L	Xylene Concentration ug/L	GWPS ug/L	1,4-dichlorobenzene Concentration ug/L	GWPS ug/L	Chlorobenzene Concentration ug/L	GWPS ug/L	Arsenic Concentration ug/L	GWPS ug/L	Cobalt Concentration ug/L	GWPS ug/L	Methane Concentration mg/L	GWPS mg/L
4/16/2019	10.5	5	43.6	700	9.5	10000	<1.0	75	2.7	100	19.3	10	9.6	2.1		none
10/7/2020	10.6	5	52	700	99.1	10000	6.5	75	2.4	100	26.4	10	17.6	2.1	15.3	none
4/22/2021	9.4	5	27.4	700	27.5	10000	6.4	75	2	100	2	10	8.5	2.1		none
10/5/2021	8.8	5	1.6	700	4.9	10000	6	75	2	100	13.6	10	17.1	2.1	2.48	none
4/4/2022	1.2	5	2.6	700	2.4	10000	2.2	75	1	100	13.2	10	6	2.1	2.57	none
10/5/2022	9.3	5	2.1	700	22.3	10000	6	75	1.3	100		10		2.1		none
4/14/2023	13.6	5	7.4	700	22.6	10000	5.3	75	1.3	100	7.7	10	2.6	2.1	1.34	none

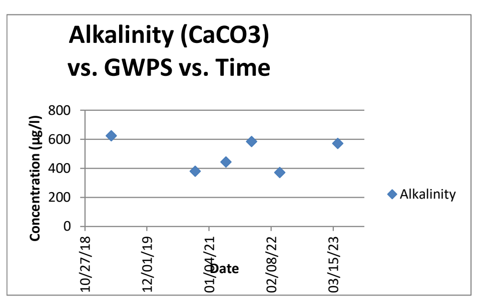


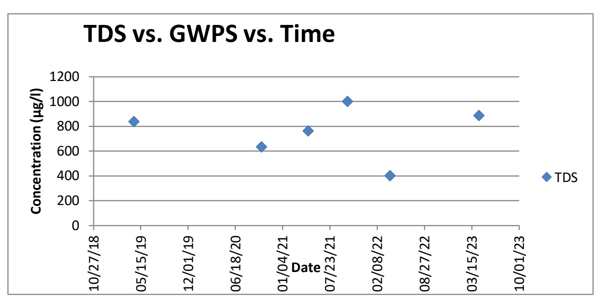


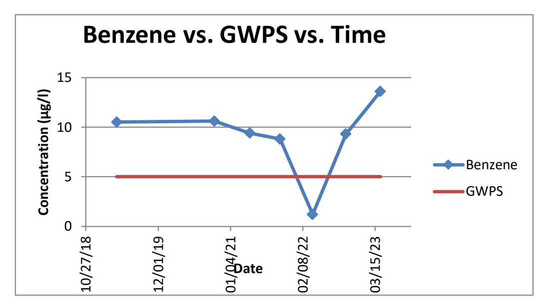


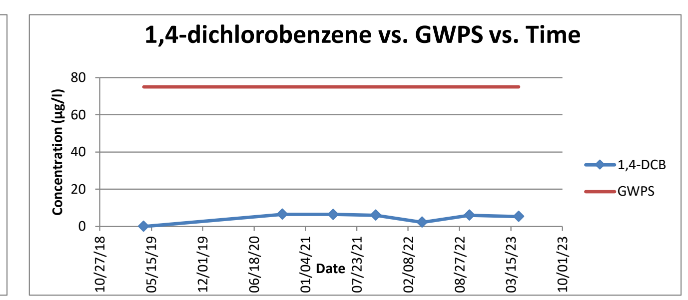


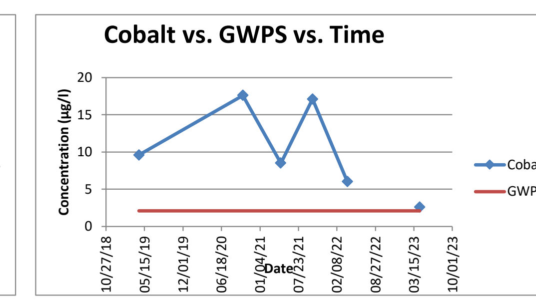


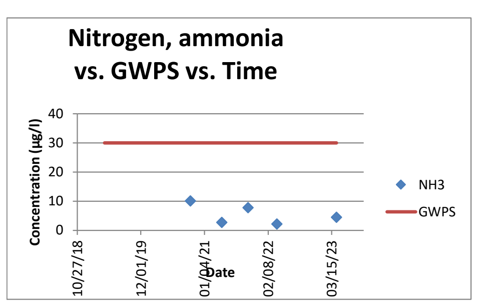


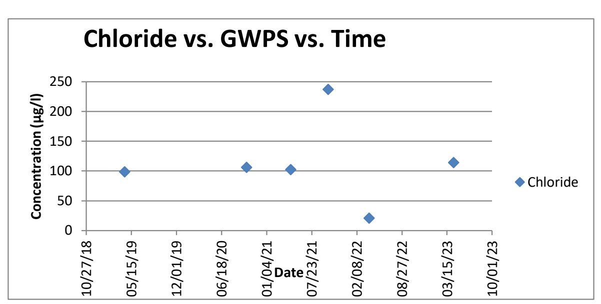


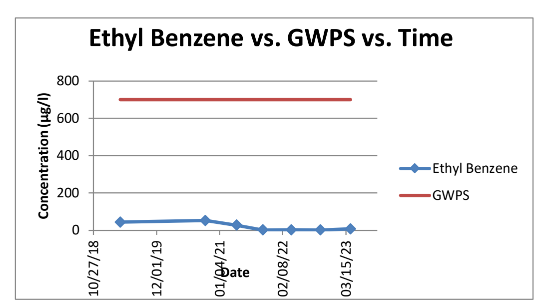


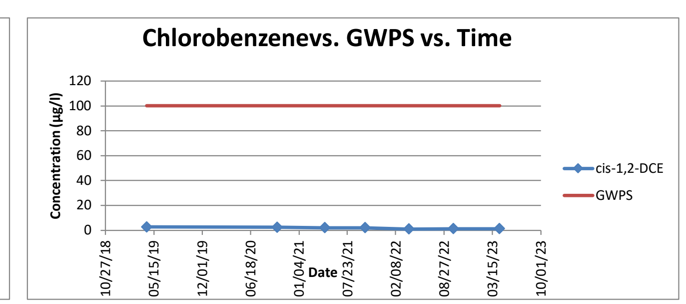












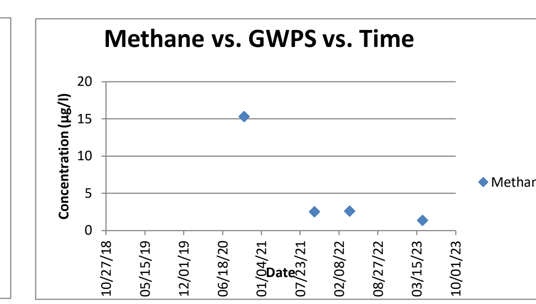


Table 13 – CAMP Vent Gas Evaluation over time

Table 13
CAMP Vent Gas Evaluation
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Jones County Sanitary Landfill
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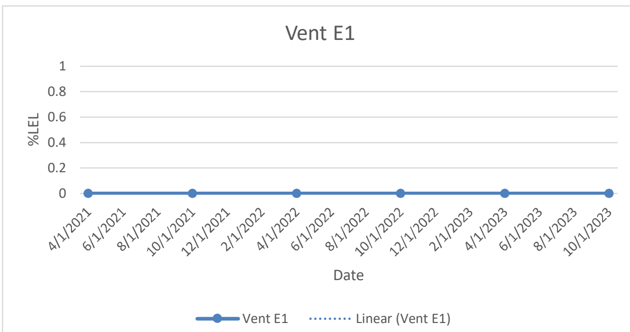
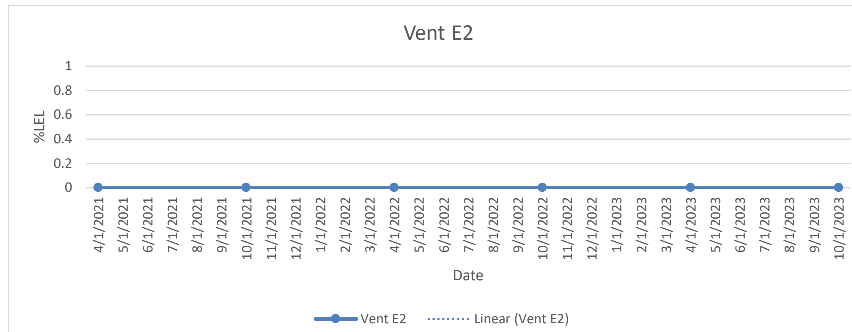
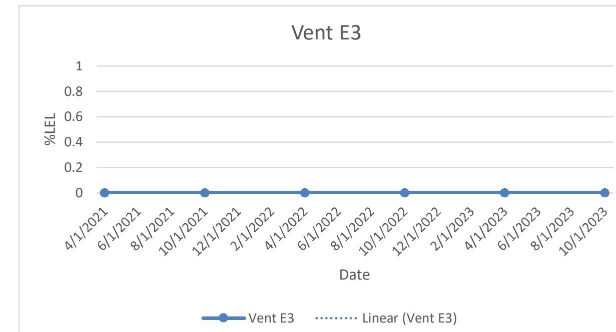
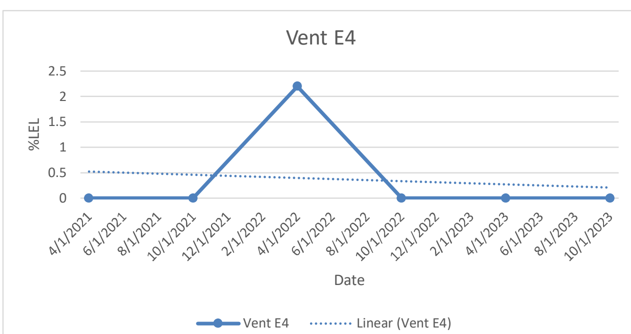
KEY:	101	= a value that exceeds 100% of the LEL

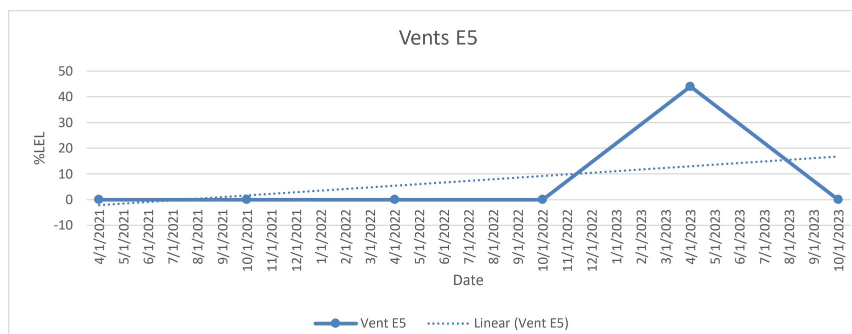
%LEL	North to South						North to South					
Date	Vent E1	Vent E2	Vent E3	Vent E4	Vent E5	Vent E6	Vent W1	Vent W2	Vent W3	Vent W4	Vent W5	Vent W6
4/22/2021	0	0	0	0	0	0	101	0	0	101	90.9	42
10/5/2021	0	0	0	0	0	0	0	0	0	36	0	0
4/4/2022	0	0	0	2.2	0	0	9.2	5.0	0	8.0	0	0
10/5/2022	0	0	0	0	0	0	45	9.2	0	15.9	0	0
4/14/2023	0	0	0	0	44	12.3	101	71.3	58.4	90.3	2.2	0
10/18/2023	0	0	0	0	0	0	33.1	6.2	0	101	0	0

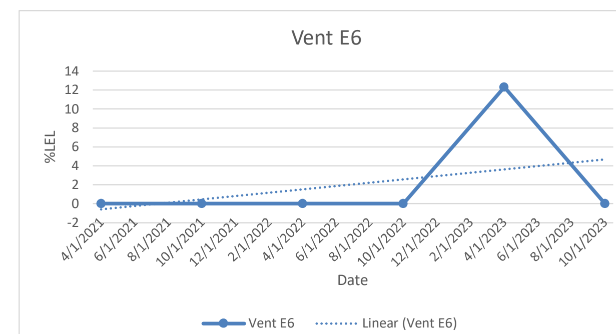


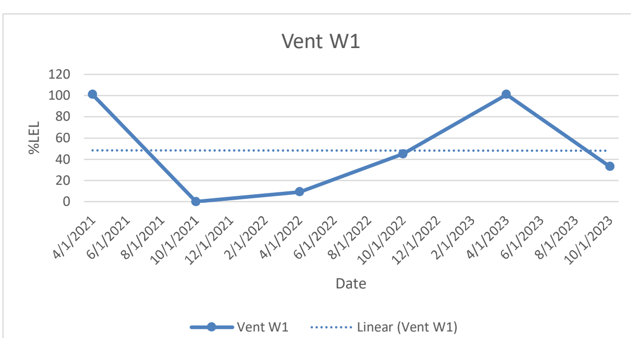


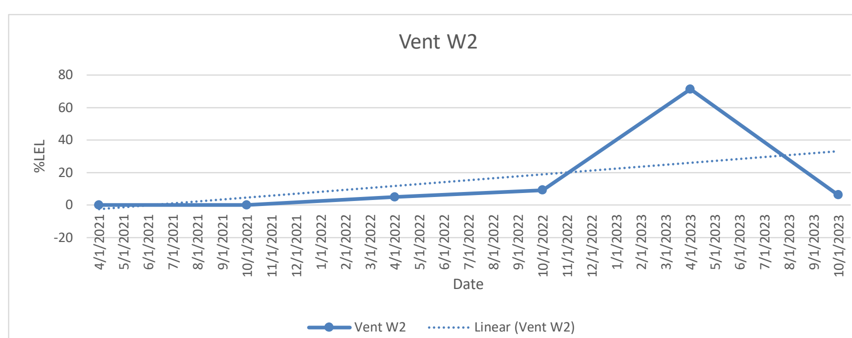


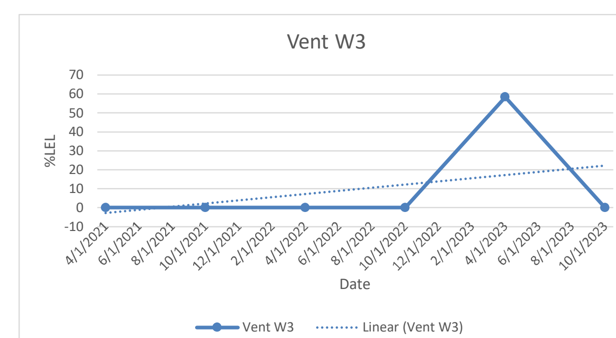


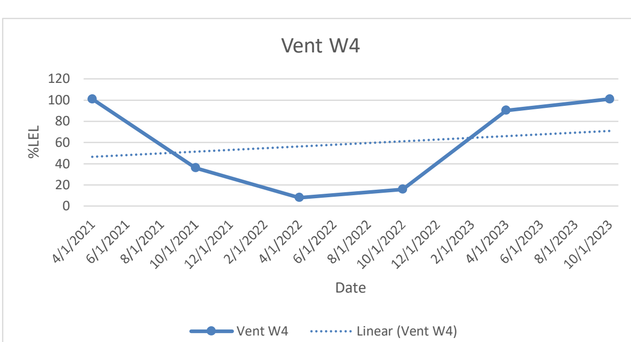


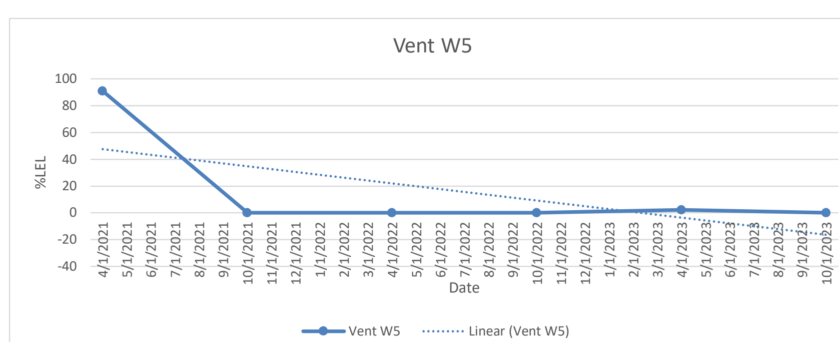












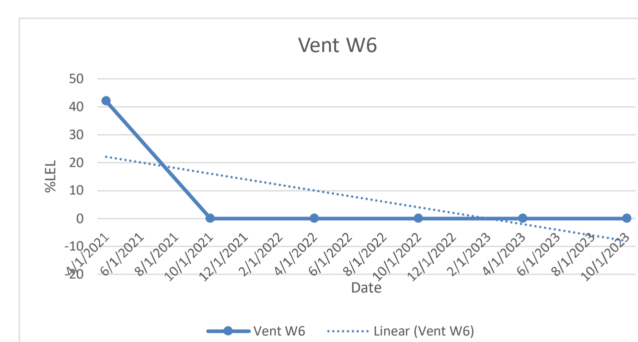


Table 14 – CAMP Methane, Ethane, Ethene, Alkalinity, and pH over time

Table 14

Methane, Ethane, Ethene, Alkalinity, and pH over Time

Annual Water Quality Report

Jones County Sanitary Landfill

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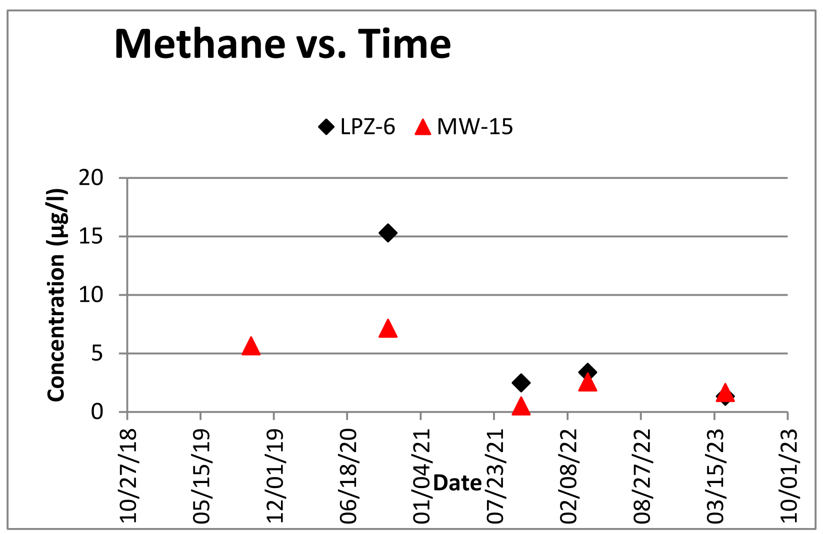
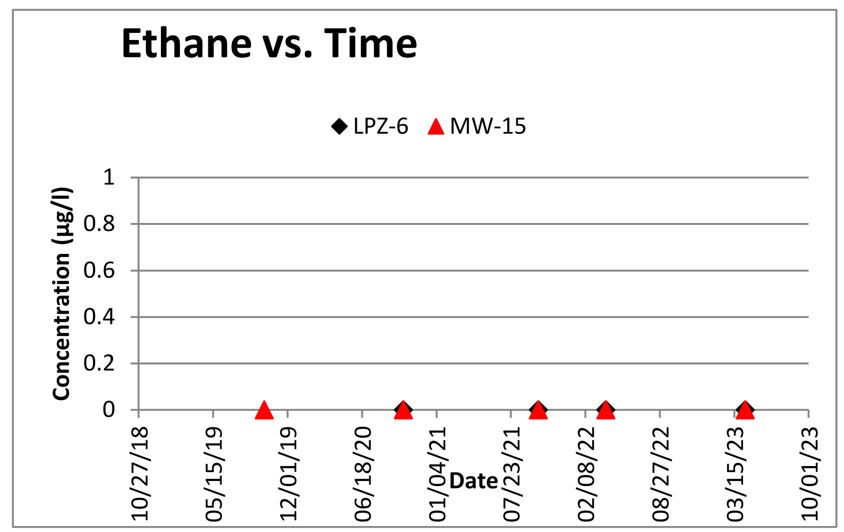
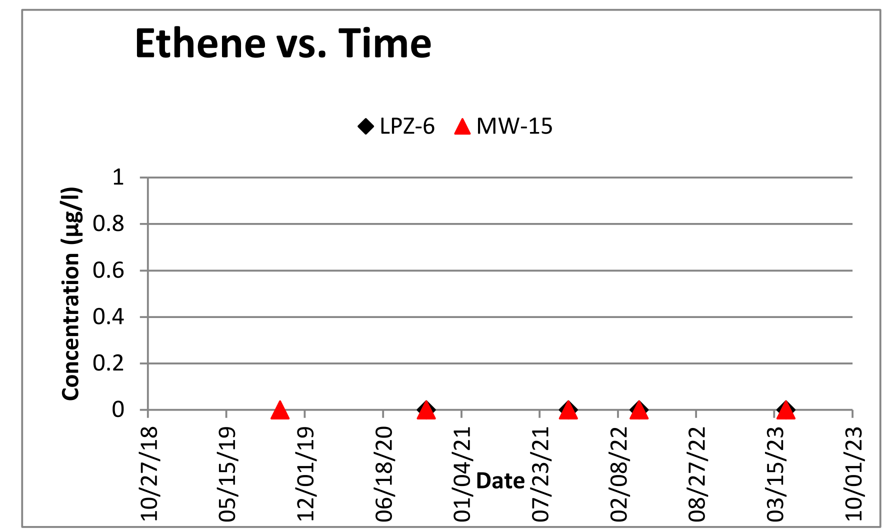
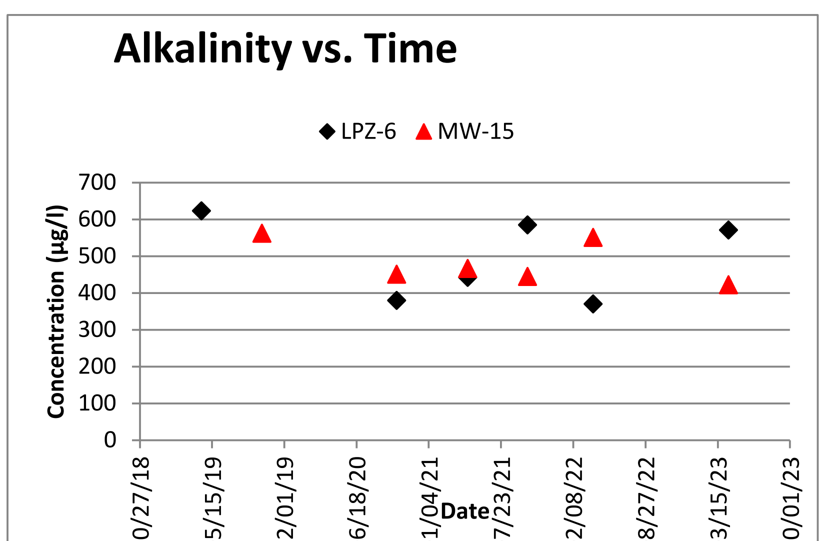
	Methane		Ethane		Ethene		Alkalinity		pH	
	LPZ-6	MW-15	LPZ-6	MW-15	LPZ-6	MW-15	LPZ-6	MW-15	LPZ-6	MW-15
Sample Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
4/16/2019							623			
9/30/2019		5.64		<0.005		<0.005		562		
10/7/2020	15.3	7.15	<0.010	<0.010	<0.010	<0.010	380	451	6.6	6.6
4/22/2021							442	467	6.6	6.5
10/5/2021	2.48	0.514	<0.00828	<0.00828	<0.00773	<0.00773	585	445	6.5	6.6
4/4/2022	3.39	2.57	<0.00828	<0.00828	<0.00773	<0.00773	370	551	6.8	6.6
4/14/2023	1.34	1.67	<0.007	<0.007	<0.010	<0.010	571	422	6.4	6.4









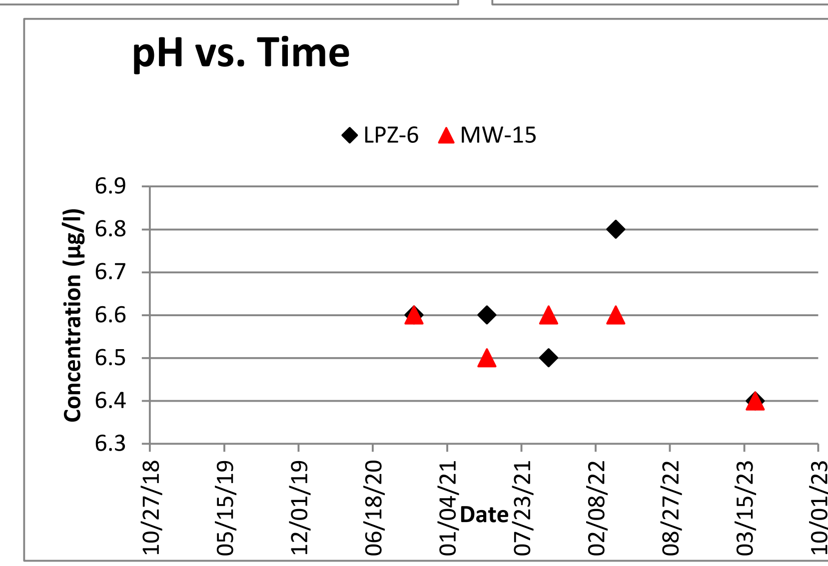


Table 15 – Leachate Summary

Table 15
Leachate Evaluation Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

LPZ-6

Date	Top Casing Elevation	Depth to Liquid (ft)	Leachate Elevation	Landfill Base Elevation	Thickness Leachate (ft)
3/30/2014	979.7	17	962.7	957.55	5.15
9/19/2014	979.7	16.58	963.12	957.55	5.57
3/20/2015	979.7	18.35	961.35	957.55	3.8
4/20/2015	979.7	18.49	961.21	957.55	3.66
7/9/2015	979.7	16.9	962.8	957.55	5.25
10/5/2015	979.7	18.4	961.3	957.55	3.75
2/25/2016	979.7	18.67	961.03	957.55	3.48
4/5/2016	979.7	16.8	962.9	957.55	5.35
7/12/2016	979.7	16.7	963	957.55	5.45
10/5/2016	979.7	16.87	962.83	957.55	5.28
1/11/2017	979.7	18.2	961.5	957.55	3.95
4/4/2017	979.7	13.95	965.75	957.55	8.2
7/10/2017	979.7	15.4	964.3	957.55	6.75
10/3/2017	979.7	18.4	961.3	957.55	3.75
1/3/2018	979.7	22.2	957.5	957.55	-0.05
4/10/2018	979.7	15.55	964.15	957.55	6.6
7/12/2018	979.7	17.05	962.65	957.55	5.1
10/12/2018	979.7	15.52	964.18	957.55	6.63
3/21/2019	979.7	13.9	965.8	957.55	8.25
4/14/2019	979.7	17.03	962.67	957.55	5.12
9/30/2019	979.7	15.4	964.3	957.55	6.75
12/20/2019	979.7	16.63	963.07	957.55	5.52
1/30/2020	979.7	NR	NR	957.55	NR
4/7/2020	979.7	15.45	964.25	957.55	6.7
8/3/2020	979.7	18	961.7	957.55	4.15
10/7/2020	979.7	17.1	962.6	957.55	5.05
1/8/2021	979.7	14.1	965.6	957.55	8.05
4/22/2021	979.7	16.6	963.1	957.55	5.55
10/5/2021	979.7	22.45	957.25	957.55	-0.3
4/4/2022	979.7	13.3	966.4	957.55	8.85
10/5/2022	979.7	18	961.7	957.55	4.15
4/14/2023	979.7	15.65	964.05	957.55	6.5
10/18/2023	979.7	17.3	962.4	957.55	4.85

Table 16 – Gas Monitoring Summary

Table 16
Annual Methane Gas Evaluation Report
Jones County Sanitary Landfill
Permit No. 53-SDP-01-76C

Location/Date	**4/14/23**	**10/18/23**
	% LEL	**% LEL**
#1	0*	0*
#2	0*	0*
#3	0*	0*
#4	0*	0*
#5	0*	0*
Equipment Bldg	0	0
Office - Shop	0	0
MW-6**	0	0
MW-6 Top of Screen Elevation	995.93	995.93
MW-6 Water Elevation	995.18	983.91
MW-6 Exposed Screen (ft)**	0.75	12.02
MW-11**	0	0
MW-11 Top of Screen Elevation	1007.83	1007.83
MW-11 Water Elevation	1001.9	995.43
MW-11 Exposed Screen (ft)	5.93	12.4
GP-1	0	0
GP-2	0	0
GP-3	**16.4**	0
GP-4	0	0

*Explosive gas concentrations were recorded in the breathing zone continuously. The concentrations are reported at each reference location for ease in presentation of data.

**Headspace in monitoring wells was monitored. A negative value for exposed screen indicates that the static water elevation was above the screen.

Appendix A

Field Sampling Forms

JONES COUNTY SANITARY LANDFILL
PERMIT # 53-SDP-01-76

4/4/2023 Sampled by: Todd Whipple Weather conditions: Mostly sunny, breezy, 54-79 degrees

IDNR Form 542-1322

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

Monitoring Well: MW 6 (dg)

GENERAL INFORMATION

TOC	1012.71
Well Depth	36.78
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1012.71
Well Depth	36.78
Top Screen	995.93
Bottom Screen	975.93
Bottom Well	975.93
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	31.00
Top sample	981.71
Bottom sample	977.71
Turbidity(NTU)	1.17

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	8:04	17.53	995.18	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.17
Appendix I	Metals	150	150		1.17
Appendix I	VOC	240	240		1.17
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1012.71
Well Depth	36.78

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/4/2023	8:04	17.53	995.18		0.0	No
After purging				1012.71			
Top of Screen				995.93			
				16.78	feet above (+) or below (-) top screen		
Bottom of Well				975.93			
Bottom of Well	4/4/2023		36.65	976.06			
				0.13	feet sedimentation		
Before Sampling				1012.71			
Before Sampling				1012.71			
Recovery				1012.71			
Recovery				1012.71			
Recovery				1012.71			

IDNR Form 542-1322

Monitoring Well: MW 11 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1019.23
Well Depth	26.40
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1019.23
Well Depth	26.40
Top Screen	1007.83
Bottom Screen	992.83
Bottom Well	992.83
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	20.00
Top sample	999.23
Bottom sample	995.23
Turbidity(NTU)	0.84

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	7:30	17.33	1001.9	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		0.84
Appendix I	Metals	150	150		0.84
Appendix I	VOC	240	240		0.84
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1019.23	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	24.89	Before purging	4/4/2023	7:30	17.33	1001.90		0.0	No
		After purging				1019.23			
		Top of Screen				1007.83			
						11.40	feet above (+) or below (-) top screen		
		Bottom of Well				992.83			
		Bottom of Well	4/4/2023		26.35	992.88			
						0.05	feet sedimentation		
		Before Sampling				1019.23			
		Before Sampling				1019.23			
		Recovery				1019.23			
		Recovery				1019.23			
		Recovery				1019.23			

IDNR Form 542-1322

Monitoring Well: MW 12 (up)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1018.98
Well Depth	47.87
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1018.98
Well Depth	47.87
Top Screen	981.11
Bottom Screen	971.11
Bottom Well	971.11
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	41.00
Top sample	977.98
Bottom sample	973.98
Turbidity(NTU)	2.53

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	7:39	17.04	1001.94	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.53
Appendix I	Metals	150	150		2.53
Appendix I	VOC	240	240		2.53
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1018.98
Well Depth	47.87

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/4/2023	7:39	17.04	1001.94		0.0	No
After purging				1018.98			
Top of Screen				981.11			
				37.87	feet above (+) or below (-) top screen		
Bottom of Well				971.11			
Bottom of Well	4/4/2023		47.70	971.28			
				0.17	feet sedimentation		
Before Sampling				1018.98			
Before Sampling				1018.98			
Recovery				1018.98			
Recovery				1018.98			
Recovery				1018.98			

IDNR Form 542-1322

Monitoring Well: MW 15 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	964.04
Well Depth	29.81
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	964.04
Well Depth	29.81
Top Screen	944.40
Bottom Screen	934.40
Bottom Well	934.40
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	24.00
Top sample	940.04
Bottom sample	936.04
Turbidity(NTU)	11.33

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	9:28	14.5	949.54	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		11.33
Appendix I	Metals	150	150		11.33
Appendix I	VOC	240	240		11.33
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	Methane	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	964.04
Well Depth	29.81

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/4/2023	9:28	14.5	949.54		0.0	No
After purging				964.04			
Top of Screen				944.40			
				19.64	feet above (+) or below (-) top screen		
Bottom of Well				934.40			
Bottom of Well	4/4/2023		29.60	934.44			
				0.04	feet sedimentation		
Before Sampling				964.04			
Before Sampling				964.04			
Recovery				964.04			
Recovery				964.04			
Recovery				964.04			

IDNR Form 542-1322

Monitoring Well: MW 16 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	964.58
Well Depth	53.67
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	964.58
Well Depth	53.67
Top Screen	920.91
Bottom Screen	910.91
Bottom Well	910.91
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	48.00
Top sample	916.58
Bottom sample	912.58
Turbidity(NTU)	2.35

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	9:18	15.02	949.56	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.35
Appendix I	Metals	150	150		2.35
Appendix I	VOC	240	240		2.35
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

`	964.58	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	53.67	Before purging	4/4/2023	9:18	15.02	949.56		0.0	No
		After purging				964.58			
		Top of Screen				920.91			
						43.67	feet above (+) or below (-) top screen		
		Bottom of Well				910.91			
		Bottom of Well	4/4/2023		53.60	910.98			
						0.07	feet sedimentation		
		Before Sampling				964.58			
		Before Sampling				964.58			
		Recovery				964.58			
		Recovery				964.58			
		Recovery				964.58			

IDNR Form 542-1322

Monitoring Well: MW 20 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	977.6
Well Depth	18.10
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	977.6
Well Depth	18.10
Top Screen	969.50
Bottom Screen	959.50
Bottom Well	959.50
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	12.00
Top sample	965.60
Bottom sample	961.60
Turbidity(NTU)	1.27

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	8:38	3	974.6	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.27
Appendix I	Metals	150	150		1.27
Appendix I	VOC	240	240		1.27
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	977.6
Well Depth	18.10

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/4/2023	8:38	3.00	974.60		0.0	No
After purging				977.60			
Top of Screen				969.50			
				8.10	feet above (+) or below (-) top screen		
Bottom of Well				959.50			
Bottom of Well	4/4/2023		18.00	959.60			
				0.10	feet sedimentation		
Before Sampling				977.60			
Before Sampling				977.60			
Recovery				977.60			
Recovery				977.60			
Recovery				977.60			

IDNR Form 542-1322

Monitoring Well: MW 22 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	950.92
Well Depth	19.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	950.92
Well Depth	19.50
Top Screen	941.42
Bottom Screen	931.42
Bottom Well	931.42
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	13.50
Top sample	937.42
Bottom sample	933.42
Turbidity(NTU)	1.23

Date	Time	Water Level	Water Elevation	Notes
4/4/2023	9:00	6.33	944.59	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.23
Appendix I	Metals	150	150		1.23
Appendix I	VOC	240	240		1.23
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	950.92
Well Depth	19.50

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	4/4/2023	9:00	6.33	944.59		0.0	No
After purging				950.92			
Top of Screen				941.42			
				9.50	feet above (+) or below (-) top screen		
Bottom of Well				931.42			
Bottom of Well	4/4/2023		19.4	931.52			
				0.10	feet sedimentation		
Before Sampling				950.92			
Before Sampling				950.92			
Recovery				950.92			
Recovery				950.92			
Recovery				950.92			

4/14/2023

Well	Top PVC Elevation	Depth to water (ft)	Water Elevation
MW 4	1011.36	16.31	995.05
MW 18	999.46	11.23	988.23
MW 19	988.53	23.43	965.1
MW 21	943.1	4.25	938.85

Leachate Piezometer	Top PVC Elevation	Depth to Leachate (ft)	Leachate Elevation	Depth to Bottom (ft)
LPZ-6	980.57	15.65	964.92	27.3

JONES COUNTY SANITARY LANDFILL
PERMIT # 53-SDP-01-76

7/10/2023 Sampled by: Todd Whipple Weather conditions: Sunny, calm, 75 degrees

IDNR Form 542-1322

Monitoring Well: MW 22 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	950.92
Well Depth	19.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	950.92
Well Depth	19.50
Top Screen	941.42
Bottom Screen	931.42
Bottom Well	931.42
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	13.50
Top sample	937.42
Bottom sample	933.42
Turbidity(NTU)	1.46

Date	Time	Water Level	Water Elevation	Notes
7/10/2023	8:16	10.8	940.12	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.46
Appendix I	Metals	250	250		1.46
Appendix I	VOC	120			
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			260	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

		2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
TOC	950.92								
Well Depth	19.50	Before purging	7/10/2023	8:16	10.80	940.12		0.0	No
		After purging				950.92			
		Top of Screen				941.42			
						9.50	feet above (+) or below (-) top screen		
		Bottom of Well				931.42			
		Bottom of Well	7/10/2023		19.4	931.52			
						0.10	feet sedimentation		
		Before Sampling				950.92			
		Recovery				950.92			
		Recovery				950.92			
		Recovery				950.92			
		Recovery				950.92			

JONES COUNTY SANITARY LANDFILL
PERMIT # 53-SDP-01-76

10/18/2023 Sampled by: Todd Whipple Weather conditions: Sunny, breezy, 50 degrees

IDNR Form 542-1322

Monitoring Well: MW 6 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1012.71
Well Depth	36.78
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1012.71
Well Depth	36.78
Top Screen	995.93
Bottom Screen	975.93
Bottom Well	975.93
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	31.00
Top sample	981.71
Bottom sample	977.71
Turbidity(NTU)	6.24

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	9:57	28.8	983.91	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		6.24
Appendix I	Metals	150	150		6.24
Appendix I	VOC	240	240		6.24
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1012.71
Well Depth	36.78

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/18/2023	9:57	28.8	983.91		0.0	No
After purging				1012.71			
Top of Screen				995.93			
				16.78	feet above (+) or below (-) top screen		
Bottom of Well				975.93			
Bottom of Well	10/18/2023		36.65	976.06			
				0.13	feet sedimentation		
Before Sampling				1012.71			
Before Sampling				1012.71			
Recovery				1012.71			
Recovery				1012.71			
Recovery				1012.71			

IDNR Form 542-1322

Monitoring Well: MW 11 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1019.23
Well Depth	26.40
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1019.23
Well Depth	26.40
Top Screen	1007.83
Bottom Screen	992.83
Bottom Well	992.83
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	22.50
Top sample	996.73
Bottom sample	992.73
Turbidity(NTU)	2.90

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	9:09	23.8	995.43	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.90
Appendix I	Metals	150	150		2.90
Appendix I	VOC	240	240		2.90
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1019.23
Well Depth	24.89

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/18/2023	9:09	23.80	995.43		0.0	No
After purging				1019.23			
Top of Screen				1007.83			
				11.40	feet above (+) or below (-) top screen		
Bottom of Well				992.83			
Bottom of Well	10/18/2023		26.35	992.88			
				0.05	feet sedimentation		
Before Sampling				1019.23			
Before Sampling				1019.23			
Recovery				1019.23			
Recovery				1019.23			
Recovery				1019.23			

IDNR Form 542-1322

Monitoring Well: MW 12 (up)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1018.98
Well Depth	47.87
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1018.98
Well Depth	47.87
Top Screen	981.11
Bottom Screen	971.11
Bottom Well	971.11
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	41.00
Top sample	977.98
Bottom sample	973.98
Turbidity(NTU)	1.82

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	9:19	23.66	995.32	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.82
Appendix I	Metals	150	150		1.82
Appendix I	VOC	240	240		1.82
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1018.98
Well Depth	47.87

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/18/2023	9:19	23.66	995.32		0.0	No
After purging				1018.98			
Top of Screen				981.11			
				37.87	feet above (+) or below (-) top screen		
Bottom of Well				971.11			
Bottom of Well	10/18/2023		47.70	971.28			
				0.17	feet sedimentation		
Before Sampling				1018.98			
Before Sampling				1018.98			
Recovery				1018.98			
Recovery				1018.98			
Recovery				1018.98			

IDNR Form 542-1322

Monitoring Well: MW 15 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	964.04
Well Depth	29.81
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	964.04
Well Depth	29.81
Top Screen	944.40
Bottom Screen	934.40
Bottom Well	934.40
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	24.00
Top sample	940.04
Bottom sample	936.04
Turbidity(NTU)	1.91

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	11:13	19.77	944.27	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.91
Appendix I	Metals	150	150		1.91
Appendix I	VOC	240	240		1.91
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	Methane	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	964.04
Well Depth	29.81

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/18/2023	11:13	19.77	944.27		0.0	No
After purging				964.04			
Top of Screen				944.40			
				19.64	feet above (+) or below (-) top screen		
Bottom of Well				934.40			
Bottom of Well	10/18/2023		29.60	934.44			
				0.04	feet sedimentation		
Before Sampling				964.04			
Before Sampling				964.04			
Recovery				964.04			
Recovery				964.04			
Recovery				964.04			

IDNR Form 542-1322

Monitoring Well: MW 16 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	964.58
Well Depth	53.67
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	964.58
Well Depth	53.67
Top Screen	920.91
Bottom Screen	910.91
Bottom Well	910.91
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	48.00
Top sample	916.58
Bottom sample	912.58
Turbidity(NTU)	2.10

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	11:03	21.98	942.6	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		2.10
Appendix I	Metals	150	150		2.10
Appendix I	VOC	240	240		2.10
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

`	964.58	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	53.67	Before purging	10/18/2023	11:03	21.98	942.60		0.0	No
		After purging				964.58			
		Top of Screen				920.91			
						43.67	feet above (+) or below (-) top screen		
		Bottom of Well				910.91			
		Bottom of Well	10/18/2023		53.60	910.98			
						0.07	feet sedimentation		
		Before Sampling				964.58			
		Before Sampling				964.58			
		Recovery				964.58			
		Recovery				964.58			
		Recovery				964.58			

IDNR Form 542-1322

Monitoring Well: MW 20 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	977.6
Well Depth	18.10
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	977.6
Well Depth	18.10
Top Screen	969.50
Bottom Screen	959.50
Bottom Well	959.50
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	14.00
Top sample	963.60
Bottom sample	959.60
Turbidity(NTU)	58.82

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	10:20	13.81	963.79	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		58.82
Appendix I	Metals	150	150		58.82
Appendix I	VOC	240	240		58.82
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

		2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
TOC	977.6								
Well Depth	18.10	Before purging	10/18/2023	10:20	13.81	963.79		0.0	No
		After purging				977.60			
		Top of Screen				969.50			
						8.10	feet above (+) or below (-) top screen		
		Bottom of Well				959.50			
		Bottom of Well	10/18/2023		18.00	959.60			
						0.10	feet sedimentation		
		Before Sampling				977.60			
		Before Sampling				977.60			
		Recovery				977.60			
		Recovery				977.60			
		Recovery				977.60			

IDNR Form 542-1322

Monitoring Well: MW 22 (dg)

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	950.92
Well Depth	19.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	950.92
Well Depth	19.50
Top Screen	941.42
Bottom Screen	931.42
Bottom Well	931.42
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	14.00
Top sample	936.92
Bottom sample	932.92
Turbidity(NTU)	1.51

Date	Time	Water Level	Water Elevation	Notes
10/18/2023	10:50	13.5	937.42	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte		Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10		1.51
Appendix I	Metals	150	150		1.51
Appendix I	VOC	240	240		1.51
Full Appendix II	10 more containers	5620			
TSS	TSS	1000			
Supplemental	BEHP	1 - qt			
Supplemental					
Total			400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	950.92
Well Depth	19.50

2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Before purging	10/18/2023	10:50	13.50	937.42		0.0	No
After purging				950.92			
Top of Screen				941.42			
				9.50	feet above (+) or below (-) top screen		
Bottom of Well				931.42			
Bottom of Well	10/18/2023		19.4	931.52			
				0.10	feet sedimentation		
Before Sampling				950.92			
Before Sampling				950.92			
Recovery				950.92			
Recovery				950.92			
Recovery				950.92			

10/18/2023

Well	Top PVC Elevation	Depth to water (ft)	Water Elevation
MW 4	1011.36	18.98	992.38
MW 18	999.46	12.86	986.6
MW 19	988.53	30.78	957.75
MW 21	943.1	13.84	929.26

Leachate Piezometer	Top PVC Elevation	Depth to Leachate (ft)	Leachate Elevation	Depth to Bottom (ft)
LPZ-6	980.57	17.3	963.27	27.3

Appendix B

Statistical Reports

Appendix B.1 – Spring Statistical Evaluation Report

GROUND WATER STATISTICS

FOR THE

JONES COUNTY SANITARY LANDFILL

First Semi-Annual Monitoring Event in 2023

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May 2023

INTRODUCTION

This report summarizes the results of the statistical analysis used to evaluate the ground water quality data obtained during the first semi-annual monitoring event in 2023 at the Jones County Sanitary Landfill in Anamosa, Iowa. The statistical plan was designed to detect a release from the facility at the earliest indication so that it is protective of human health and the environment. The interwell methodology is described and then applied to the Jones County Sanitary Landfill data. The statistical plan conforms with IAC 567, Chapter 113.10, USEPA Guidance document ("*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance*", March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*.

Ground Water Monitoring Program

The groundwater monitoring network for Jones County Landfill includes upgradient well MW-12 and downgradient detection sample points MW-11, MW-15, MW-16, MW-20, MW-22, and MW-6. Each of the groundwater monitoring wells is to be sampled at least semiannually and analyzed for the detection monitoring parameters listed in 113.10(5), which includes 15 inorganic constituents and 47 organic compounds, summarized in Table 1 below.

Table 1: Detection monitoring constituents listed in Appendix I of IAC 567, Chapter 113.

Organic Compounds:

Acetone	*trans*-1,4-Dichloro-2-butene	Iodomethane
Acrylonitrile	1,1-Dichloroethane	4-Methyl-2-pentanone
Benzene	1,2-Dichloroethane	Styrene
Bromochloromethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	*cis*-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
Bromoform	*trans*-1,2-Dichloroethene	Tetrachloroethene
Carbon disulfide	1,2-Dichloropropane	Toluene
Carbon tetrachloride	*cis*-1,3-Dichloropropene	1,1,1-Trichloroethane
Chlorobenzene	*trans*-1,3-Dichloropropene	1,1,2-Trichloroethane
Chloroethane	Ethylbenzene	Trichloroethene
Chloroform	2-Hexanone	Trichlorofluoromethane
Dibromochloromethane	Bromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane	Chloromethane	Vinyl acetate
1,2-Dibromoethane	Dibromomethane	Vinyl chloride
1,2-Dichlorobenzene	Methylene chloride	Xylenes (Total)
1,4-Dichlorobenzene	2-Butanone	

Inorganic constituents:

Antimony, Total	Chromium, Total	Selenium, Total
Arsenic, Total	Cobalt, Total	Silver, Total
Barium, Total	Copper, Total	Thallium, Total
Beryllium, Total	Lead, Total	Vanadium, Total
Cadmium, Total	Nickel, Total	Zinc, Total

The ground water data obtained during the first semi-annual monitoring event in 2023 are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The prediction limit method was applied to the Jones County Sanitary Landfill data using the DUMPStat® statistical program. Ground water statistics are to be done on the inorganic constituents listed. The organic constituents are compared to maximum contaminant levels (MCLs) or practical quantitation limits (PQLs), in lieu of statistical comparisons to historical concentrations.

Interwell Statistics: Upgradient versus Downgradient Comparisons

Interwell statistics are appropriate when the upgradient and downgradient wells monitor the same ground water formation and there is similar variability in the upgradient and downgradient zones. Site prediction limits are determined by pooling the historical ground water data from hydraulically upgradient wells. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances. The type of prediction limit utilized (e.g., parametric or nonparametric) is based on the detection frequency and the data distribution of each parameter in the background data. The distribution of the background data is tested for normality using the Shapiro-Wilk test (Gibbons, 1994 and USEPA 1992). If the constituent is normally distributed, a normal prediction limit is used. If normality is rejected by the Shapiro-Wilk test, the background data is transformed by taking the natural logarithm. The Shapiro-Wilk test is then reapplied on the transformed data. If it is not rejected, lognormal prediction limits are used. If after transforming the data, normality is still rejected, nonparametric prediction limits are used for that analyte. The nonparametric prediction limit is the largest determination in the background measurements. For constituents where the background detection frequency is greater than 0% but less than 50%, nonparametric prediction limits will be used. If the detection frequency is 0% after eight samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit. As an alternative to nonparametric prediction limits, Poisson prediction limits can be used for small data sets where the detection frequency is less than 25%.

Results of the Interwell Statistics

The background data used in this statistical analysis includes the ground water data collected from ground water well MW-12 during the period from 2015 through the current data. A summary of the background data from monitoring well MW-12 used to determine the site prediction limits, is listed in Attachment B, Table 1 “Upgradient Data”. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 “Most Current Downgradient Monitoring Data”, summarizes the current data from downgradient wells MW-11, MW-15, MW-16, MW-20, MW-22, and MW-6, compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks.

For the most current data, the site prediction limit exceedances detected are summarized in the Table below.

Summary of Prediction Limit Exceedances for the First Semi-Annual Monitoring Event in 2023

Well	Trace Metal	Result	Prediction Limit	Prediction Limit Type	Verified or Awaiting Verification
MW-15	Arsenic, µg/L	168	4.0000	Nonparametric	Verified
	Barium, µg/L	783	321.7630	Normal	Verified
	Cobalt, µg/L	13.1	2.6000	Nonparametric	Verified
	Nickel, µg/L	67.5	13.4000	Nonparametric	Verified
MW-22	Lead, µg/L	9.9	4.0000	Nonparametric	Awaiting Verification

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. With the exception of barium, these constituents are rarely detected in the upgradient wells. With the detection frequencies being less than 50% for all but barium, nonparametric site prediction limits are used for those trace metals.

Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Table 8 is a historical summary of the data at those wells that have indicated an exceedance. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached.

A statistical power curve indicates the expected false assessments for the site as a whole. The false positive rate for interwell analyses is the percentage of failures when the upgradient versus downgradient true mean difference equals zero. False negative rate indicates the chance of missing contamination at a single well for a single constituent. The statistical power is a function of the number of wells included, the number of constituents compared, the detection frequencies, and the data distributions involved. For interwell analysis, the site-wide false positive rate is 11% and the test becomes sensitive to 3 standard deviation unit increases over background.

The verified exceedances were evaluated against the ground water protection standards (GWPS) using confidence limits. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The 95% LCL for arsenic at MW-15 (135.950 µg/L) exceeds the USEPA MCL of 10 µg/L. The 95% LCL for cobalt at MW-15 (13.973 µg/L) exceeds the Iowa Statewide Standard of 2.1 µg/L. The calculated LCLs for the remainder of the verified trace metals are below GWPS.

Volatile Organic Compounds

Volatile Organic Compounds (VOCs) are generally man-made compounds not present in ambient ground water. If VOCs are detected above their statistical limit (i.e., the laboratory PQL or reporting limit), a verification resample will be conducted at the next scheduled sampling event. A statistical exceedance will be indicated if the VOC detection is confirmed by the subsequent monitoring. VOCs detected in the ground water at Jones County Sanitary Landfill during the first semi-annual monitoring event in 2023 are summarized below. Historical VOC detections are summarized in Attachment C.

Organic compounds detected during the first semi-annual monitoring event in 2023

Well	VOC Detected	Result, µg/L	Reporting Limit, µg/L	Verified/ Awaiting Verification	Groundwater Standard, µg/L
MW-15	1,4-Dichlorobenzene	1.9	1	Verified	75[a]
	Benzene	4.2	1	Verified	5[a]
	Chlorobenzene	6.5	1	Verified	100[a]
	Chloroethane	4.6	1	Verified	2,800[b]
LPZ-6	1,4-Dichlorobenzene	5.3	1	Verified	75[a]
	Benzene	13.6	1	Verified	5[a]
	Chlorobenzene	1.3	1	Verified	100[a]
	Ethylbenzene	7.4	1	Verified	700[a]
	Xylenes	22.6	2	Verified	10,000[a]

a - USEPA MCL
b – Iowa Statewide Standard

The verified VOC detections were evaluated against the GWPS using confidence limits (Attachment D). The calculated 95% LCLs of the verified VOCs are below GWPS.

CONCLUSIONS

This report summarizes the statistical analyses used to evaluate the ground water data obtained during the first semi-annual monitoring event in 2023 at Jones County Sanitary Landfill. The ground water data obtained during the first semi-annual monitoring event in 2023 was compared to background using prediction limits (interwell). For the most current data, there are verified site prediction limit exceedances detected for arsenic, barium, cobalt, and nickel at MW-15.

The VOCs were compared to MCLs or PQLs, in lieu of statistical comparisons to historical concentrations. There are verified detections of 1,4-dichlorobenzene, benzene, chlorobenzene, and chloroethane at MW-15 and 1,4-dichlorobenzene, benzene, chlorobenzene, ethylbenzene, and xylenes at LPZ-6.

Attachment A

Summary of the Data obtained during the First Semi-Annual Monitoring Event in 2023

Table 1

Analytical Data Summary for 4/14/2023

Constituents	Units	LPZ-6	MW-11	MW-12	MW-15	MW-16	MW-20	MW-22	MW-6
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	5.3	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0
2-butanone (mek)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, as caco3	mg/L	571			422				
Antimony, total	ug/L		<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L	7.7	<4.0	<4.0	168.0	<4.0	<4.0	<4.0	<4.0
Barium, total	ug/L		221.0	232.0	783.0	85.3	103.0	175.0	133.0
Benzene	ug/L	13.6	<1.0	<1.0	4.2	<1.0	<1.0	<1.0	<1.0
Beryllium, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L		<.8	<.8	<.8	<.8	<.8	<.8	<.8
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L	114							
Chlorobenzene	ug/L	1.3	<1.0	<1.0	6.5	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/L	<1.0	<1.0	<1.0	4.6	<1.0	<1.0	<1.0	<1.0
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L		<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	2.6	<.4	<.4	13.1	<.4	<.4	<.4	<.4
Copper, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	7.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead, total	ug/L		<4.0	<4.0	<4.0	<4.0	<4.0	9.9	<4.0
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L		<4.0	<4.0	67.5	<4.0	<4.0	<4.0	<4.0
Nitrogen, ammonia	mg/L	4.38							
pH	pH	6.4			6.4				
Selenium, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Solids, total dissolved	mg/L	886							
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L	16.1							
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L		<2	<2	<2	<2	<2	<2	<2
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L		<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	22.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, total	ug/L		<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	20.1

* - The displayed value is the arithmetic mean of multiple database matches.

Attachment B

Summary Tables and Graphs for the Interwell Comparisons

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony, total	ug/L	MW-12	04/20/2015	ND	2.0000		
Antimony, total	ug/L	MW-12	07/09/2015	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2015	ND	2.0000		
Antimony, total	ug/L	MW-12	04/05/2016	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2016	ND	2.0000		
Antimony, total	ug/L	MW-12	04/04/2017	ND	2.0000		
Antimony, total	ug/L	MW-12	10/03/2017	ND	2.0000		
Antimony, total	ug/L	MW-12	04/10/2018	ND	2.0000		
Antimony, total	ug/L	MW-12	10/12/2018	ND	2.0000		
Antimony, total	ug/L	MW-12	04/16/2019		3.5000		
Antimony, total	ug/L	MW-12	09/30/2019	ND	2.0000		
Antimony, total	ug/L	MW-12	04/07/2020	ND	2.0000		
Antimony, total	ug/L	MW-12	10/07/2020	ND	2.0000		
Antimony, total	ug/L	MW-12	04/22/2021	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2021	ND	2.0000		
Antimony, total	ug/L	MW-12	04/04/2022	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2022	ND	2.0000		
Antimony, total	ug/L	MW-12	04/14/2023	ND	2.0000		
Arsenic, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Arsenic, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Arsenic, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Barium, total	ug/L	MW-12	04/20/2015		264.0000		
Barium, total	ug/L	MW-12	07/09/2015		269.0000		
Barium, total	ug/L	MW-12	10/05/2015		293.0000		
Barium, total	ug/L	MW-12	04/05/2016		306.0000		
Barium, total	ug/L	MW-12	10/05/2016		274.0000		
Barium, total	ug/L	MW-12	04/04/2017		279.0000		
Barium, total	ug/L	MW-12	10/03/2017		268.0000		
Barium, total	ug/L	MW-12	04/10/2018		273.0000		
Barium, total	ug/L	MW-12	10/12/2018		243.0000		
Barium, total	ug/L	MW-12	04/16/2019		261.0000		
Barium, total	ug/L	MW-12	09/30/2019		253.0000		
Barium, total	ug/L	MW-12	04/07/2020		276.0000		
Barium, total	ug/L	MW-12	10/07/2020		256.0000		
Barium, total	ug/L	MW-12	04/22/2021		252.0000		
Barium, total	ug/L	MW-12	10/05/2021		216.0000		
Barium, total	ug/L	MW-12	04/04/2022		254.0000		
Barium, total	ug/L	MW-12	10/05/2022		219.0000		
Barium, total	ug/L	MW-12	04/14/2023		232.0000		
Beryllium, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Beryllium, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Beryllium, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Cadmium, total	ug/L	MW-12	04/20/2015	ND	0.8000		
Cadmium, total	ug/L	MW-12	07/09/2015	ND	0.8000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium, total	ug/L	MW-12	10/05/2015	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/05/2016	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2016	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/04/2017	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/03/2017	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/10/2018	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/12/2018	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/16/2019	ND	0.8000		
Cadmium, total	ug/L	MW-12	09/30/2019	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/07/2020	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/07/2020	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/22/2021	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2021	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/04/2022	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2022	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/14/2023	ND	0.8000		
Chromium, total	ug/L	MW-12	04/20/2015	ND	8.0000		
Chromium, total	ug/L	MW-12	07/09/2015	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2015	ND	8.0000		
Chromium, total	ug/L	MW-12	04/05/2016	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2016	ND	8.0000		
Chromium, total	ug/L	MW-12	04/04/2017	ND	8.0000		
Chromium, total	ug/L	MW-12	10/03/2017	ND	8.0000		
Chromium, total	ug/L	MW-12	04/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-12	10/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-12	04/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-12	09/30/2019	ND	8.0000		
Chromium, total	ug/L	MW-12	04/07/2020	ND	8.0000		
Chromium, total	ug/L	MW-12	10/07/2020	ND	8.0000		
Chromium, total	ug/L	MW-12	04/22/2021	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2021	ND	8.0000		
Chromium, total	ug/L	MW-12	04/04/2022	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2022	ND	8.0000		
Chromium, total	ug/L	MW-12	04/14/2023	ND	8.0000		
Cobalt, total	ug/L	MW-12	04/20/2015	ND	0.8000		
Cobalt, total	ug/L	MW-12	07/09/2015	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/05/2015	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/05/2016	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/05/2016	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/04/2017	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/03/2017	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/10/2018	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/12/2018	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/16/2019	ND	0.8000		
Cobalt, total	ug/L	MW-12	09/30/2019	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/07/2020	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/07/2020	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	04/22/2021	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/05/2021	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	04/04/2022	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/05/2022		2.6000		
Cobalt, total	ug/L	MW-12	04/14/2023	ND	0.4000	0.8000	***
Copper, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Copper, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Copper, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Copper, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Copper, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Copper, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Copper, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Copper, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Copper, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Copper, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Copper, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Copper, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Copper, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Copper, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Lead, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Lead, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Lead, total	ug/L	MW-12	04/05/2016	ND	4.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Lead, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Lead, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Lead, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Lead, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Lead, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Lead, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Lead, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Lead, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Lead, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Lead, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Lead, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Lead, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Nickel, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Nickel, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Nickel, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Nickel, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Nickel, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Nickel, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Nickel, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Nickel, total	ug/L	MW-12	04/10/2018		13.4000		
Nickel, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Nickel, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Nickel, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Nickel, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Nickel, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Nickel, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Nickel, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Nickel, total	ug/L	MW-12	04/04/2022		10.4000		
Nickel, total	ug/L	MW-12	10/05/2022		6.2000		
Nickel, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Selenium, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Selenium, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Selenium, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Selenium, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Selenium, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Selenium, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Selenium, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Selenium, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Selenium, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Selenium, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Selenium, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Selenium, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Silver, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Silver, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Silver, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Silver, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Silver, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Silver, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Silver, total	ug/L	MW-12	10/12/2018	ND	8.0000	4.0000	**
Silver, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Silver, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Silver, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Silver, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Silver, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Silver, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Silver, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Thallium, total	ug/L	MW-12	04/20/2015	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	07/09/2015	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/05/2015	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/05/2016	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/05/2016	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/04/2017	ND	4.0000	2.0000	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium, total	ug/L	MW-12	10/03/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/10/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/12/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/16/2019	ND	2.0000		
Thallium, total	ug/L	MW-12	09/30/2019	ND	2.0000		
Thallium, total	ug/L	MW-12	04/07/2020	ND	2.0000		
Thallium, total	ug/L	MW-12	10/07/2020	ND	2.0000		
Thallium, total	ug/L	MW-12	04/22/2021	ND	2.0000		
Thallium, total	ug/L	MW-12	10/05/2021	ND	2.0000		
Thallium, total	ug/L	MW-12	04/04/2022	ND	2.0000		
Thallium, total	ug/L	MW-12	10/05/2022	ND	2.0000		
Thallium, total	ug/L	MW-12	04/14/2023	ND	2.0000		
Vanadium, total	ug/L	MW-12	04/20/2015	ND	20.0000		
Vanadium, total	ug/L	MW-12	07/09/2015	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2015	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/05/2016	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2016	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/04/2017	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/03/2017	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-12	09/30/2019	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/07/2020	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/07/2020	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/22/2021	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2021	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/04/2022	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2022	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/14/2023	ND	20.0000		
Zinc, total	ug/L	MW-12	04/20/2015	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	07/09/2015		18.1000		
Zinc, total	ug/L	MW-12	10/05/2015		10.1000		
Zinc, total	ug/L	MW-12	04/05/2016	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	10/05/2016	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	04/04/2017	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	10/03/2017	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	04/10/2018		27.2000		
Zinc, total	ug/L	MW-12	10/12/2018	ND	20.0000		
Zinc, total	ug/L	MW-12	04/16/2019	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	09/30/2019		10.9000		
Zinc, total	ug/L	MW-12	04/07/2020	ND	20.0000		
Zinc, total	ug/L	MW-12	10/07/2020	ND	20.0000		
Zinc, total	ug/L	MW-12	04/22/2021	ND	20.0000		
Zinc, total	ug/L	MW-12	10/05/2021	ND	20.0000		
Zinc, total	ug/L	MW-12	04/04/2022		24.2000		
Zinc, total	ug/L	MW-12	10/05/2022	ND	20.0000		
Zinc, total	ug/L	MW-12	04/14/2023	ND	20.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony, total	ug/L	MW-11	04/14/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-11	04/14/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-11	04/14/2023		221.0000		321.7630
Beryllium, total	ug/L	MW-11	04/14/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-11	04/14/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-11	04/14/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-11	04/14/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-11	04/14/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-11	04/14/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-11	04/14/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-11	04/14/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-11	04/14/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-11	04/14/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-11	04/14/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-11	04/14/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-15	04/14/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-15	04/14/2023		168.0000	***	4.0000
Barium, total	ug/L	MW-15	04/14/2023		783.0000	***	321.7630
Beryllium, total	ug/L	MW-15	04/14/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-15	04/14/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-15	04/14/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-15	04/14/2023		13.1000	***	2.6000
Copper, total	ug/L	MW-15	04/14/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-15	04/14/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-15	04/14/2023		67.5000	***	13.4000
Selenium, total	ug/L	MW-15	04/14/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-15	04/14/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-15	04/14/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-15	04/14/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-15	04/14/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-16	04/14/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-16	04/14/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-16	04/14/2023		85.3000		321.7630
Beryllium, total	ug/L	MW-16	04/14/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-16	04/14/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-16	04/14/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-16	04/14/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-16	04/14/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-16	04/14/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-16	04/14/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-16	04/14/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-16	04/14/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-16	04/14/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-16	04/14/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-16	04/14/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-20	04/14/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-20	04/14/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-20	04/14/2023		103.0000		321.7630
Beryllium, total	ug/L	MW-20	04/14/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-20	04/14/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-20	04/14/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-20	04/14/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-20	04/14/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-20	04/14/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-20	04/14/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-20	04/14/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-20	04/14/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-20	04/14/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-20	04/14/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-20	04/14/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-22	04/14/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-22	04/14/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-22	04/14/2023		175.0000		321.7630
Beryllium, total	ug/L	MW-22	04/14/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-22	04/14/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-22	04/14/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-22	04/14/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-22	04/14/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/14/2023		9.9000	*	4.0000
Nickel, total	ug/L	MW-22	04/14/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-22	04/14/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-22	04/14/2023	ND	4.0000		4.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Thallium, total	ug/L	MW-22	04/14/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-22	04/14/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-22	04/14/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-6	04/14/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-6	04/14/2023		133.0000	**	321.7630
Beryllium, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-6	04/14/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-6	04/14/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-6	04/14/2023	ND	0.4000	**	2.6000
Copper, total	ug/L	MW-6	04/14/2023	ND	4.0000	**	4.0000
Lead, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-6	04/14/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-6	04/14/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-6	04/14/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-6	04/14/2023		20.1000		27.2000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient			Downgradient		
	Detect	N	Proportion	Detect	N	Proportion
Antimony, total	1	18	0.056	0	130	0.000
Arsenic, total	0	18	0.000	43	155	0.277
Barium, total	18	18	1.000	172	172	1.000
Beryllium, total	0	18	0.000	0	130	0.000
Cadmium, total	0	18	0.000	23	160	0.144
Chromium, total	0	18	0.000	22	151	0.146
Cobalt, total	1	18	0.056	78	188	0.415
Copper, total	0	18	0.000	62	170	0.365
Lead, total	0	18	0.000	35	160	0.219
Nickel, total	3	18	0.167	102	171	0.596
Selenium, total	0	18	0.000	14	150	0.093
Silver, total	0	18	0.000	0	130	0.000
Thallium, total	0	18	0.000	0	130	0.000
Vanadium, total	0	18	0.000	23	159	0.145
Zinc, total	5	18	0.278	80	172	0.465

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony, total	1	18	0.056									nonpar
Arsenic, total	0	18	0.000									nonpar
Barium, total	18	18	1.000	0.798	0.205					2.326	normal	normal
Beryllium, total	0	18	0.000									nonpar
Cadmium, total	0	18	0.000									nonpar
Chromium, total	0	18	0.000									nonpar
Cobalt, total	1	18	0.056									nonpar
Copper, total	0	18	0.000									nonpar
Lead, total	0	18	0.000									nonpar
Nickel, total	3	18	0.167	0.903	0.321					2.326	normal	nonpar
Selenium, total	0	18	0.000									nonpar
Silver, total	0	18	0.000									nonpar
Thallium, total	0	18	0.000									nonpar
Vanadium, total	0	18	0.000									nonpar
Zinc, total	5	18	0.278	0.225	0.423					2.326	normal	nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Antimony, total	ug/L	1	18					3.5000	nonpar		0.97
Arsenic, total	ug/L	0	18					4.0000	nonpar	***	0.97
Barium, total	ug/L	18	18	260.4444	23.2638	0.0100	2.6358	321.7630	normal		
Beryllium, total	ug/L	0	18					4.0000	nonpar	***	0.97
Cadmium, total	ug/L	0	18					0.8000	nonpar	***	0.97
Chromium, total	ug/L	0	18					8.0000	nonpar	***	0.97
Cobalt, total	ug/L	1	18					2.6000	nonpar		0.97
Copper, total	ug/L	0	18					4.0000	nonpar	***	0.97
Lead, total	ug/L	0	18					4.0000	nonpar	***	0.97
Nickel, total	ug/L	3	18					13.4000	nonpar		0.97
Selenium, total	ug/L	0	18					4.0000	nonpar	***	0.97
Silver, total	ug/L	0	18					4.0000	nonpar	***	0.97
Thallium, total	ug/L	0	18					2.0000	nonpar	***	0.97
Vanadium, total	ug/L	0	18					20.0000	nonpar	***	0.97
Zinc, total	ug/L	5	18					27.2000	nonpar		0.97

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic, total	ug/L	MW-15	03/06/2009		87.6000	*	4.0000
Arsenic, total	ug/L	MW-15	06/16/2009	ND	4.0000		4.0000
Arsenic, total	ug/L	MW-15	07/13/2009		151.0000	*	4.0000
Arsenic, total	ug/L	MW-15	08/31/2009		54.6000	*	4.0000
Arsenic, total	ug/L	MW-15	10/20/2009		184.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/15/2010		78.4000	*	4.0000
Arsenic, total	ug/L	MW-15	06/10/2010		204.0000	*	4.0000
Arsenic, total	ug/L	MW-15	09/14/2010		209.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/11/2011		87.3000	*	4.0000
Arsenic, total	ug/L	MW-15	09/07/2011		267.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/14/2012		117.0000	*	4.0000
Arsenic, total	ug/L	MW-15	09/01/2012		282.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/01/2013		43.3000	*	4.0000
Arsenic, total	ug/L	MW-15	09/09/2013		187.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/30/2014		99.5000	*	4.0000
Arsenic, total	ug/L	MW-15	09/19/2014		21.9000	*	4.0000
Arsenic, total	ug/L	MW-15	04/20/2015		178.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2015		208.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/05/2016		183.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2016		153.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/04/2017		177.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/03/2017		233.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/10/2018		142.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/12/2018		128.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/16/2019		125.0000	*	4.0000
Arsenic, total	ug/L	MW-15	09/30/2019		212.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/07/2020		149.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/07/2020		168.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/22/2021		177.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2021		200.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/04/2022		143.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2022		250.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/14/2023		168.0000	*	4.0000
Barium, total	ug/L	MW-15	03/06/2009		1390.0000	*	321.7630
Barium, total	ug/L	MW-15	06/16/2009		97.7000		321.7630
Barium, total	ug/L	MW-15	07/13/2009		1260.0000	*	321.7630
Barium, total	ug/L	MW-15	08/31/2009		1060.0000	*	321.7630
Barium, total	ug/L	MW-15	10/20/2009		1440.0000	*	321.7630
Barium, total	ug/L	MW-15	03/15/2010		752.0000	*	321.7630
Barium, total	ug/L	MW-15	06/10/2010		1880.0000	*	321.7630
Barium, total	ug/L	MW-15	09/14/2010		3550.0000	*	321.7630
Barium, total	ug/L	MW-15	03/11/2011		1010.0000	*	321.7630
Barium, total	ug/L	MW-15	09/07/2011		2300.0000	*	321.7630
Barium, total	ug/L	MW-15	03/14/2012		869.0000	*	321.7630
Barium, total	ug/L	MW-15	09/01/2012		2010.0000	*	321.7630
Barium, total	ug/L	MW-15	04/01/2013		596.0000	*	321.7630
Barium, total	ug/L	MW-15	09/09/2013		988.0000	*	321.7630
Barium, total	ug/L	MW-15	03/30/2014		1120.0000	*	321.7630
Barium, total	ug/L	MW-15	09/19/2014		694.0000	*	321.7630
Barium, total	ug/L	MW-15	04/20/2015		1160.0000	*	321.7630
Barium, total	ug/L	MW-15	10/05/2015		1030.0000	*	321.7630
Barium, total	ug/L	MW-15	04/05/2016		1080.0000	*	321.7630
Barium, total	ug/L	MW-15	10/05/2016		1160.0000	*	321.7630
Barium, total	ug/L	MW-15	04/04/2017		1130.0000	*	321.7630
Barium, total	ug/L	MW-15	10/03/2017		1160.0000	*	321.7630
Barium, total	ug/L	MW-15	04/10/2018		598.0000	*	321.7630
Barium, total	ug/L	MW-15	10/12/2018		1050.0000	*	321.7630
Barium, total	ug/L	MW-15	04/16/2019		1390.0000	*	321.7630
Barium, total	ug/L	MW-15	09/30/2019		1170.0000	*	321.7630
Barium, total	ug/L	MW-15	04/07/2020		1300.0000	*	321.7630
Barium, total	ug/L	MW-15	10/07/2020		881.0000	*	321.7630
Barium, total	ug/L	MW-15	04/22/2021		868.0000	*	321.7630
Barium, total	ug/L	MW-15	10/05/2021		1180.0000	*	321.7630
Barium, total	ug/L	MW-15	04/04/2022		1000.0000	*	321.7630
Barium, total	ug/L	MW-15	10/05/2022		1170.0000	*	321.7630
Barium, total	ug/L	MW-15	04/14/2023		783.0000	*	321.7630
Cobalt, total	ug/L	MW-15	04/06/2006		27.0000	*	2.6000
Cobalt, total	ug/L	MW-15	09/07/2006		23.0000	*	2.6000
Cobalt, total	ug/L	MW-15	03/14/2007		23.0000	*	2.6000
Cobalt, total	ug/L	MW-15	09/19/2007		22.0000	*	2.6000
Cobalt, total	ug/L	MW-15	03/25/2008		21.0000	*	2.6000

*   - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt, total	ug/L	MW-15	09/05/2008		24.0000	*	2.6000
Cobalt, total	ug/L	MW-15	03/06/2009		24.7000	*	2.6000
Cobalt, total	ug/L	MW-15	06/16/2009	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-15	07/13/2009		54.0000	*	2.6000
Cobalt, total	ug/L	MW-15	08/31/2009		23.6000	*	2.6000
Cobalt, total	ug/L	MW-15	10/20/2009		23.9000	*	2.6000
Cobalt, total	ug/L	MW-15	03/15/2010		23.0000	*	2.6000
Cobalt, total	ug/L	MW-15	06/10/2010		78.4000	*	2.6000
Cobalt, total	ug/L	MW-15	09/14/2010		145.3667	*	2.6000
Cobalt, total	ug/L	MW-15	03/11/2011		22.2333	*	2.6000
Cobalt, total	ug/L	MW-15	09/07/2011		65.1000	*	2.6000
Cobalt, total	ug/L	MW-15	03/14/2012		21.2000	*	2.6000
Cobalt, total	ug/L	MW-15	09/01/2012		43.8000	*	2.6000
Cobalt, total	ug/L	MW-15	04/01/2013		14.9000	*	2.6000
Cobalt, total	ug/L	MW-15	09/09/2013		22.5000	*	2.6000
Cobalt, total	ug/L	MW-15	03/30/2014		30.0000	*	2.6000
Cobalt, total	ug/L	MW-15	09/19/2014		19.4000	*	2.6000
Cobalt, total	ug/L	MW-15	04/20/2015		22.3000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2015		24.3000	*	2.6000
Cobalt, total	ug/L	MW-15	04/05/2016		21.3000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2016		20.1000	*	2.6000
Cobalt, total	ug/L	MW-15	04/04/2017		19.8000	*	2.6000
Cobalt, total	ug/L	MW-15	10/03/2017		22.5000	*	2.6000
Cobalt, total	ug/L	MW-15	04/10/2018		12.3000	*	2.6000
Cobalt, total	ug/L	MW-15	10/12/2018		22.0000	*	2.6000
Cobalt, total	ug/L	MW-15	04/16/2019		23.7000	*	2.6000
Cobalt, total	ug/L	MW-15	09/30/2019		24.2000	*	2.6000
Cobalt, total	ug/L	MW-15	04/07/2020		19.6000	*	2.6000
Cobalt, total	ug/L	MW-15	10/07/2020		15.0000	*	2.6000
Cobalt, total	ug/L	MW-15	04/22/2021		15.1000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2021		20.0000	*	2.6000
Cobalt, total	ug/L	MW-15	04/04/2022		18.4000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2022		21.2000	*	2.6000
Cobalt, total	ug/L	MW-15	04/14/2023		13.1000	*	2.6000
Nickel, total	ug/L	MW-15	03/06/2009		88.9000	*	13.4000
Nickel, total	ug/L	MW-15	06/16/2009		9.7000		13.4000
Nickel, total	ug/L	MW-15	07/13/2009		161.0000	*	13.4000
Nickel, total	ug/L	MW-15	08/31/2009		64.8000	*	13.4000
Nickel, total	ug/L	MW-15	10/20/2009		71.9000	*	13.4000
Nickel, total	ug/L	MW-15	03/15/2010		70.5000	*	13.4000
Nickel, total	ug/L	MW-15	06/10/2010		211.0000	*	13.4000
Nickel, total	ug/L	MW-15	09/14/2010		536.0000	*	13.4000
Nickel, total	ug/L	MW-15	03/11/2011		86.4000	*	13.4000
Nickel, total	ug/L	MW-15	09/07/2011		261.0000	*	13.4000
Nickel, total	ug/L	MW-15	03/14/2012		78.1000	*	13.4000
Nickel, total	ug/L	MW-15	09/01/2012		137.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/01/2013		45.2000	*	13.4000
Nickel, total	ug/L	MW-15	09/09/2013		88.9000	*	13.4000
Nickel, total	ug/L	MW-15	03/30/2014		97.0000	*	13.4000
Nickel, total	ug/L	MW-15	09/19/2014		67.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/20/2015		73.3000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2015		102.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/05/2016		70.3000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2016		59.8000	*	13.4000
Nickel, total	ug/L	MW-15	04/04/2017		71.0000	*	13.4000
Nickel, total	ug/L	MW-15	10/03/2017		101.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/10/2018		57.8000	*	13.4000
Nickel, total	ug/L	MW-15	10/12/2018		52.9000	*	13.4000
Nickel, total	ug/L	MW-15	04/16/2019		70.3000	*	13.4000
Nickel, total	ug/L	MW-15	09/30/2019		92.8000	*	13.4000
Nickel, total	ug/L	MW-15	04/07/2020		60.1000	*	13.4000
Nickel, total	ug/L	MW-15	10/07/2020		65.1000	*	13.4000
Nickel, total	ug/L	MW-15	04/22/2021		61.8000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2021		86.1000	*	13.4000
Nickel, total	ug/L	MW-15	04/04/2022		63.4000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2022		93.6000	*	13.4000
Nickel, total	ug/L	MW-15	04/14/2023		67.5000	*	13.4000
Lead, total	ug/L	MW-22	03/06/2009		54.4000	*	4.0000
Lead, total	ug/L	MW-22	06/16/2009		20.6000	*	4.0000
Lead, total	ug/L	MW-22	07/13/2009		9.0000	*	4.0000
Lead, total	ug/L	MW-22	08/31/2009		24.2000	*	4.0000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Lead, total	ug/L	MW-22	10/20/2009		33.9000	*	4.0000
Lead, total	ug/L	MW-22	03/15/2010		39.1000	*	4.0000
Lead, total	ug/L	MW-22	06/10/2010		26.2000	*	4.0000
Lead, total	ug/L	MW-22	09/14/2010		95.1000	*	4.0000
Lead, total	ug/L	MW-22	03/11/2011		61.1000	*	4.0000
Lead, total	ug/L	MW-22	09/07/2011		325.0000	*	4.0000
Lead, total	ug/L	MW-22	03/14/2012		15.4000	*	4.0000
Lead, total	ug/L	MW-22	09/01/2012		10.1000	*	4.0000
Lead, total	ug/L	MW-22	04/01/2013		4.3000	*	4.0000
Lead, total	ug/L	MW-22	09/09/2013		4.0000	**	4.0000
Lead, total	ug/L	MW-22	03/30/2014	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	09/19/2014	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/20/2015	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	10/05/2015	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/05/2016	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/04/2017	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	10/03/2017	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	10/07/2020	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/22/2021	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	10/05/2021	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/04/2022	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	10/05/2022	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	04/14/2023		9.9000	*	4.0000
Barium, total	ug/L	MW-6	03/06/2009		626.0000	*	321.7630
Barium, total	ug/L	MW-6	06/16/2009		625.0000	*	321.7630
Barium, total	ug/L	MW-6	07/13/2009		636.0000	*	321.7630
Barium, total	ug/L	MW-6	08/31/2009		505.0000	*	321.7630
Barium, total	ug/L	MW-6	10/20/2009		665.0000	*	321.7630
Barium, total	ug/L	MW-6	03/15/2010		329.0000	*	321.7630
Barium, total	ug/L	MW-6	06/10/2010		644.0000	*	321.7630
Barium, total	ug/L	MW-6	09/14/2010		616.0000	*	321.7630
Barium, total	ug/L	MW-6	03/11/2011		653.0000	*	321.7630
Barium, total	ug/L	MW-6	09/07/2011		606.5000	*	321.7630
Barium, total	ug/L	MW-6	03/14/2012		519.0000	*	321.7630
Barium, total	ug/L	MW-6	09/01/2012		497.0000	*	321.7630
Barium, total	ug/L	MW-6	04/01/2013		665.0000	*	321.7630
Barium, total	ug/L	MW-6	09/09/2013		606.0000	*	321.7630
Barium, total	ug/L	MW-6	03/30/2014		612.0000	*	321.7630
Barium, total	ug/L	MW-6	09/19/2014		591.0000	*	321.7630
Barium, total	ug/L	MW-6	04/20/2015		717.0000	*	321.7630
Barium, total	ug/L	MW-6	10/05/2015		479.0000	*	321.7630
Barium, total	ug/L	MW-6	04/05/2016		408.0000	*	321.7630
Barium, total	ug/L	MW-6	10/05/2016		231.0000		321.7630
Barium, total	ug/L	MW-6	04/04/2017		154.0000		321.7630
Barium, total	ug/L	MW-6	10/03/2017		573.0000	*	321.7630
Barium, total	ug/L	MW-6	01/03/2018		613.0000	*	321.7630
Barium, total	ug/L	MW-6	04/10/2018		435.0000	*	321.7630
Barium, total	ug/L	MW-6	10/12/2018		289.0000		321.7630
Barium, total	ug/L	MW-6	04/16/2019		274.0000		321.7630
Barium, total	ug/L	MW-6	09/30/2019		409.0000	*	321.7630
Barium, total	ug/L	MW-6	04/07/2020		209.0000		321.7630
Barium, total	ug/L	MW-6	10/07/2020		226.0000		321.7630
Barium, total	ug/L	MW-6	04/22/2021		180.0000		321.7630
Barium, total	ug/L	MW-6	10/05/2021		497.0000	*	321.7630
Barium, total	ug/L	MW-6	04/04/2022		521.0000	*	321.7630
Barium, total	ug/L	MW-6	10/05/2022		551.0000	*	321.7630
Barium, total	ug/L	MW-6	04/14/2023		133.0000		321.7630
Cobalt, total	ug/L	MW-6	03/06/2009		5.2000	*	2.6000
Cobalt, total	ug/L	MW-6	06/16/2009	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	07/13/2009	ND	10.0000		2.6000
Cobalt, total	ug/L	MW-6	08/31/2009		5.8000	*	2.6000
Cobalt, total	ug/L	MW-6	10/20/2009	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	03/15/2010	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	06/10/2010	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	09/14/2010	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	03/11/2011	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	09/07/2011		5.8000	*	2.6000
Cobalt, total	ug/L	MW-6	03/14/2012		4.4000	*	2.6000
Cobalt, total	ug/L	MW-6	09/01/2012	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	04/01/2013		6.5000	*	2.6000
Cobalt, total	ug/L	MW-6	09/09/2013		4.2000	*	2.6000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

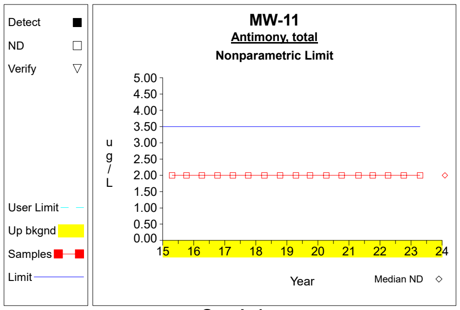
Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

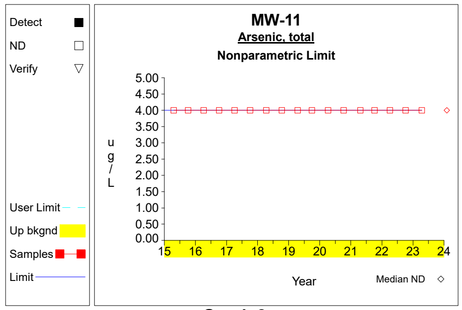
Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt, total	ug/L	MW-6	03/30/2014	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-6	09/19/2014	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	04/20/2015		10.0000	*	2.6000
Cobalt, total	ug/L	MW-6	10/05/2015	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	04/05/2016	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	10/05/2016	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	04/04/2017	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	10/03/2017		1.7000		2.6000
Cobalt, total	ug/L	MW-6	01/03/2018		1.5000		2.6000
Cobalt, total	ug/L	MW-6	04/10/2018	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	10/12/2018	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	04/16/2019	ND	0.8000		2.6000
Cobalt, total	ug/L	MW-6	09/30/2019		0.8000		2.6000
Cobalt, total	ug/L	MW-6	04/07/2020		0.9000		2.6000
Cobalt, total	ug/L	MW-6	10/07/2020		0.5000		2.6000
Cobalt, total	ug/L	MW-6	04/22/2021		0.6000		2.6000
Cobalt, total	ug/L	MW-6	10/05/2021		4.1000	*	2.6000
Cobalt, total	ug/L	MW-6	04/04/2022		0.5000		2.6000
Cobalt, total	ug/L	MW-6	10/05/2022		5.3000	*	2.6000
Cobalt, total	ug/L	MW-6	04/14/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-6	03/06/2009		5.0000	*	4.0000
Copper, total	ug/L	MW-6	06/16/2009		4.9000	*	4.0000
Copper, total	ug/L	MW-6	07/13/2009		12.0000	*	4.0000
Copper, total	ug/L	MW-6	08/31/2009		5.2000	*	4.0000
Copper, total	ug/L	MW-6	10/20/2009	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	03/15/2010	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	06/10/2010	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	09/14/2010		5.0000	*	4.0000
Copper, total	ug/L	MW-6	03/11/2011		4.2000	*	4.0000
Copper, total	ug/L	MW-6	09/07/2011		7.5000	*	4.0000
Copper, total	ug/L	MW-6	03/14/2012		5.4000	*	4.0000
Copper, total	ug/L	MW-6	09/01/2012		6.3000	*	4.0000
Copper, total	ug/L	MW-6	04/01/2013		14.3000	*	4.0000
Copper, total	ug/L	MW-6	09/09/2013		6.0000	*	4.0000
Copper, total	ug/L	MW-6	03/30/2014		6.0000	*	4.0000
Copper, total	ug/L	MW-6	09/19/2014		4.5000	*	4.0000
Copper, total	ug/L	MW-6	04/20/2015		4.2000	*	4.0000
Copper, total	ug/L	MW-6	10/05/2015	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/05/2016	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/05/2016	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/04/2017	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/03/2017	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/10/2018	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/12/2018	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/16/2019	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	09/30/2019	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/07/2020	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/07/2020	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/22/2021	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/05/2021	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/04/2022	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/05/2022		6.9000	*	4.0000
Copper, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

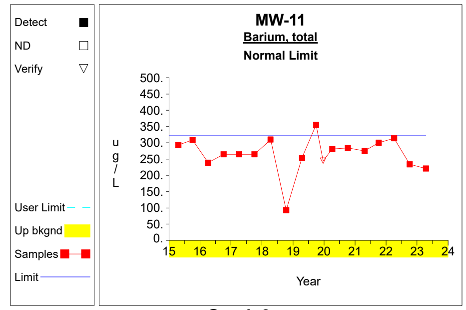
Up vs. Down Prediction Limits



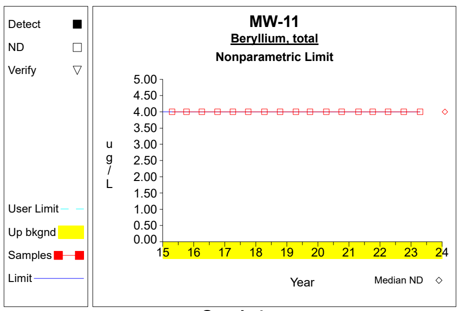
Graph 1



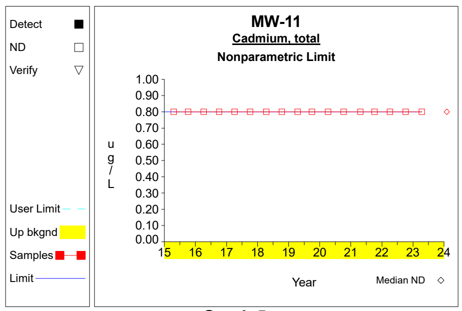
Graph 2



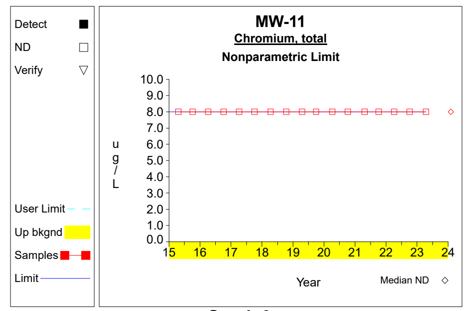
Graph 3



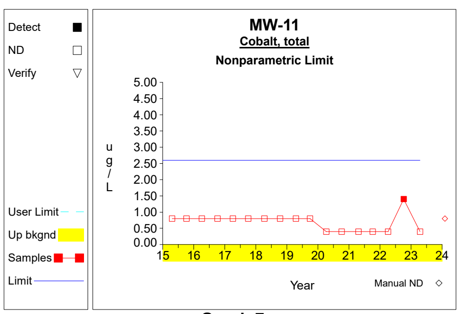
Graph 4



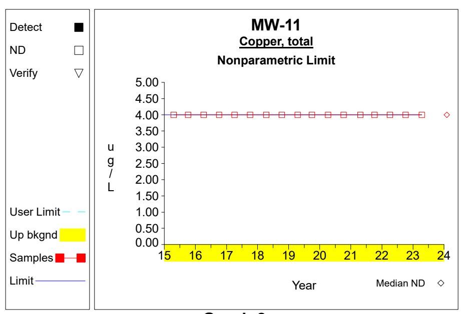
Graph 5



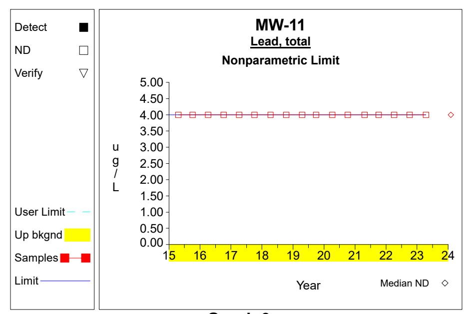
Graph 6



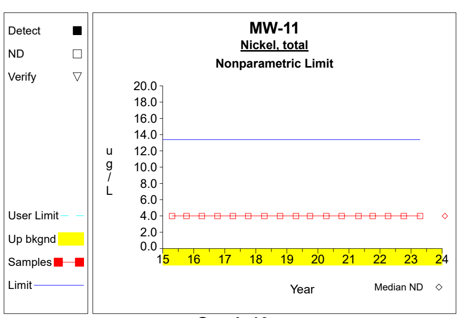
Graph 7



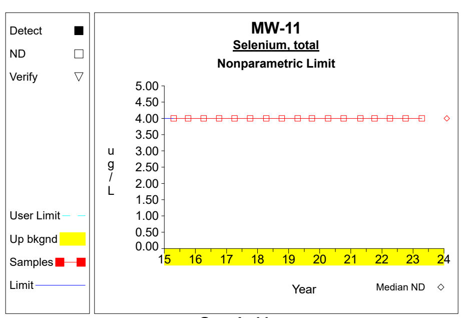
Graph 8



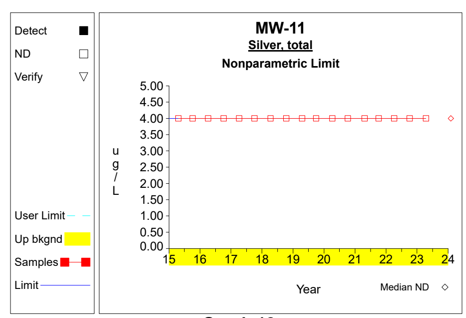
Graph 9



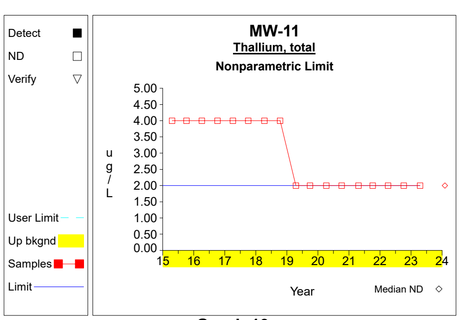
Graph 10



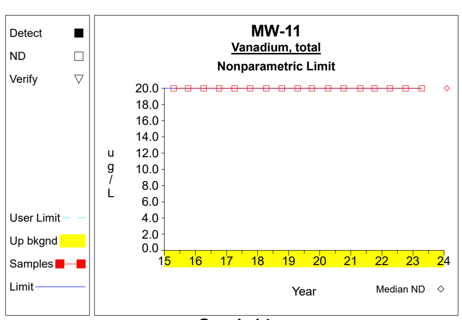
Graph 11



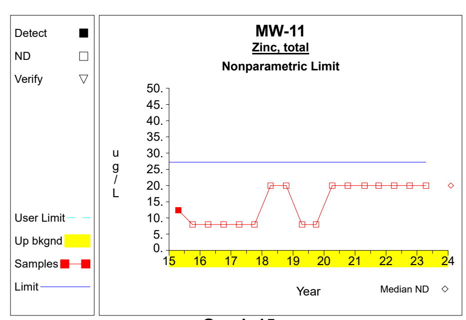
Graph 12



Graph 13

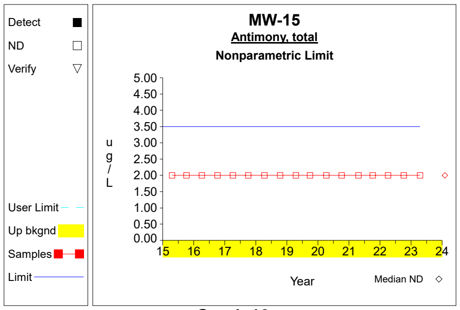


Graph 14

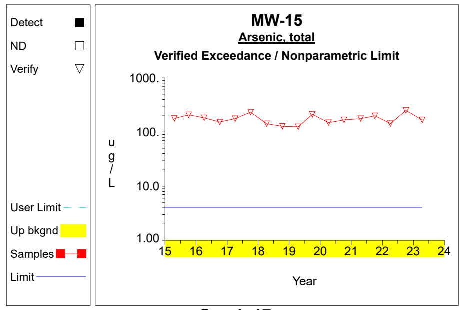


Graph 15

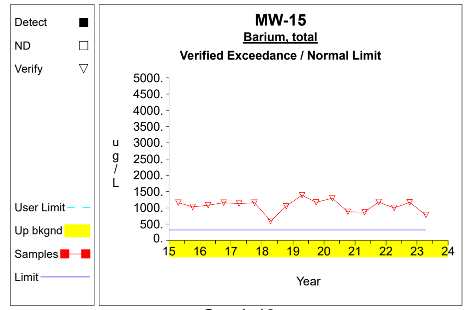
Up vs. Down Prediction Limits



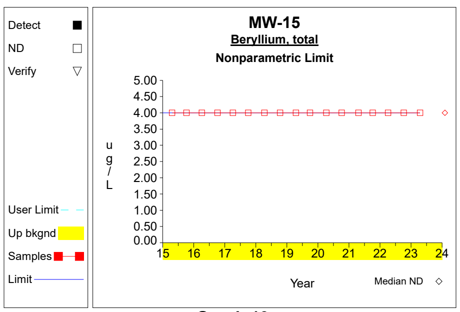
Graph 16



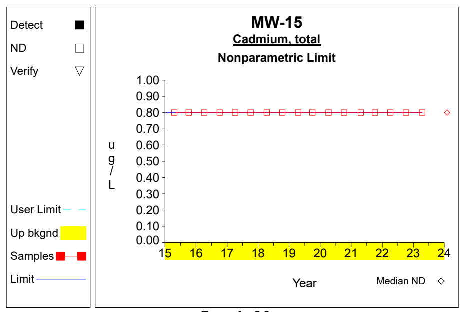
Graph 17



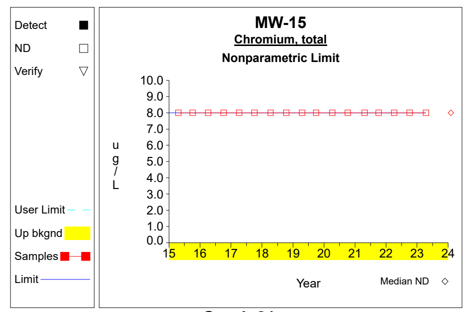
Graph 18



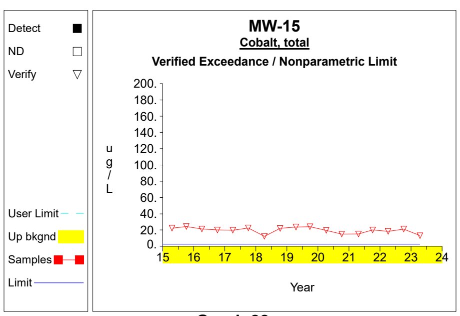
Graph 19



Graph 20



Graph 21



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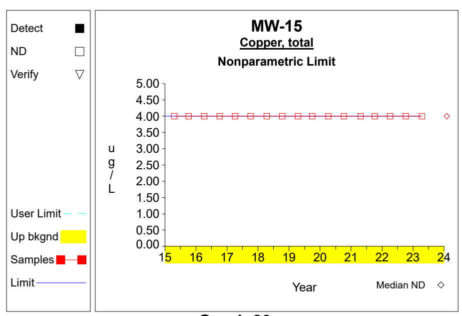

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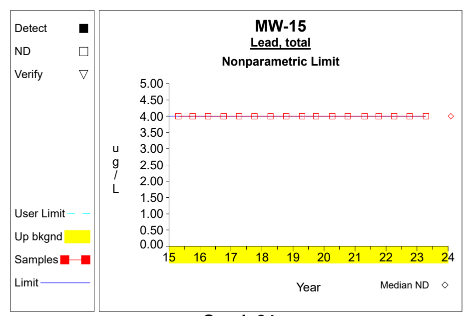

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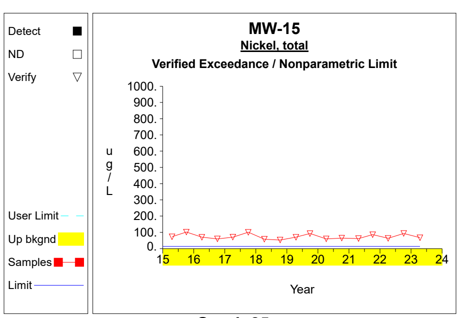

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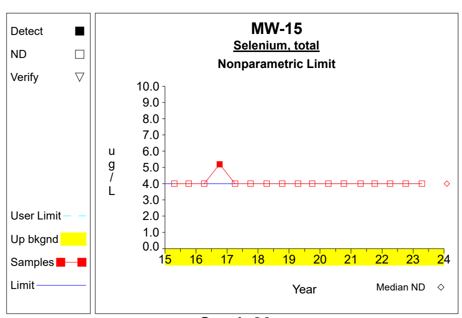

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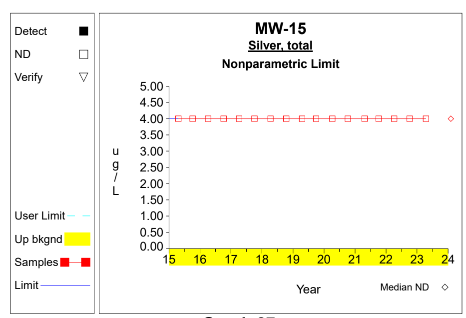

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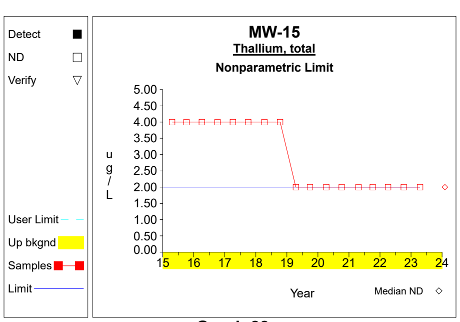

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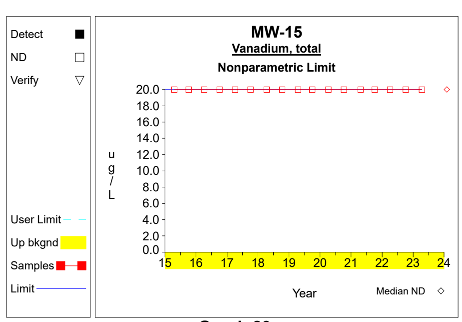

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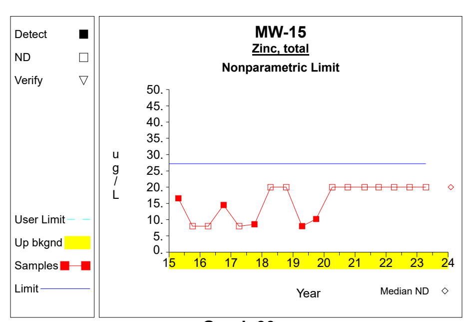

Graph 30

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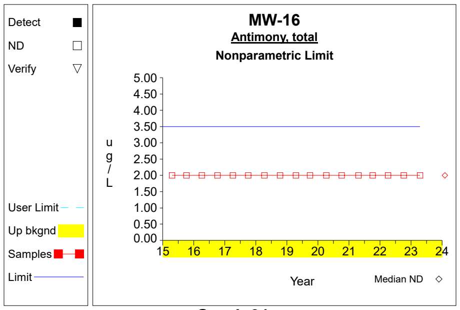
Jones County [GW] May 2023

Up vs. Down Prediction Limits



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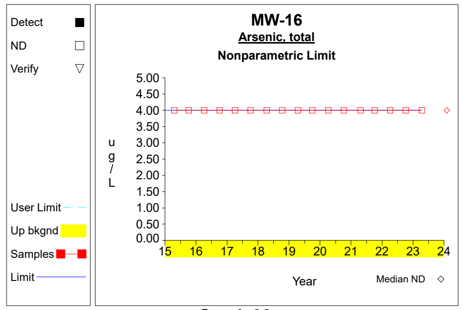
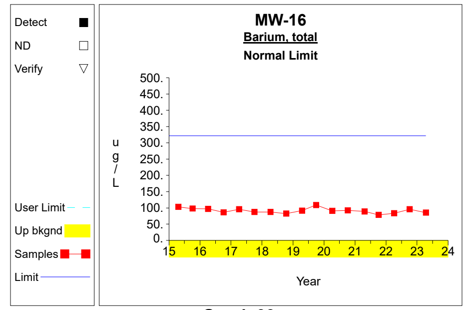


Graph 32



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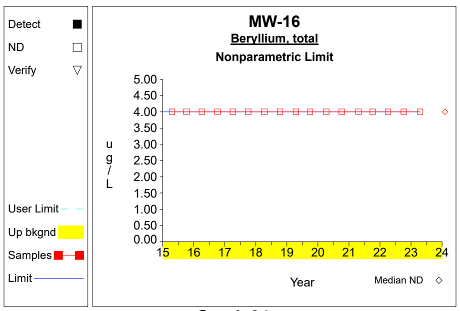

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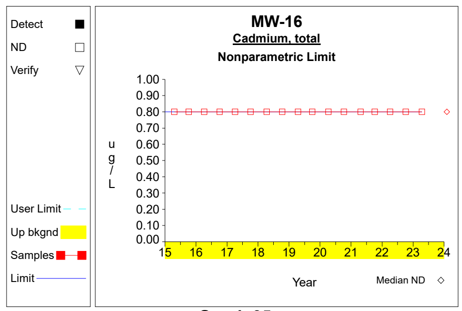

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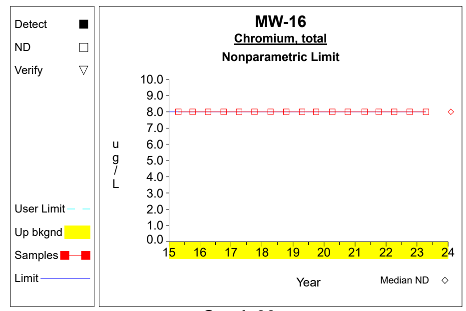

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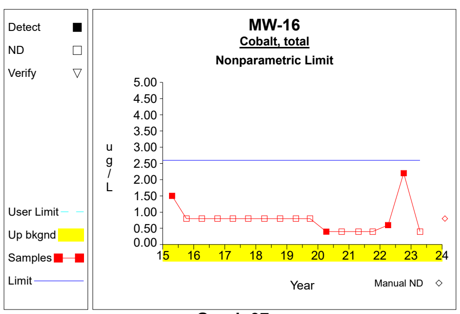

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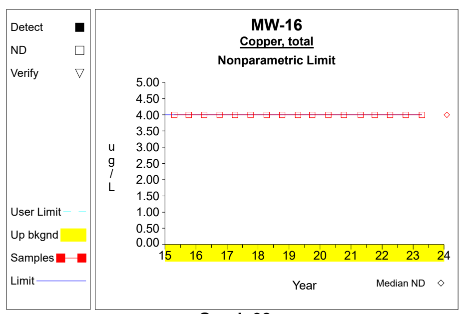

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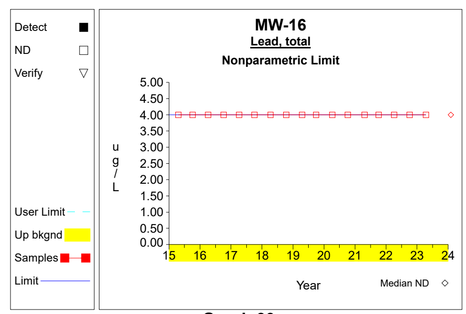

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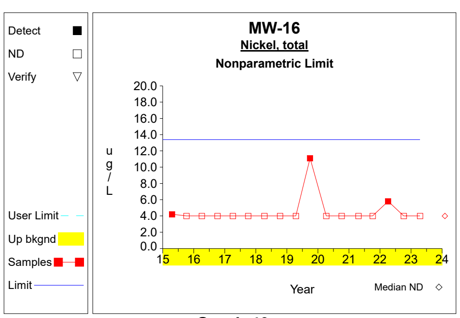

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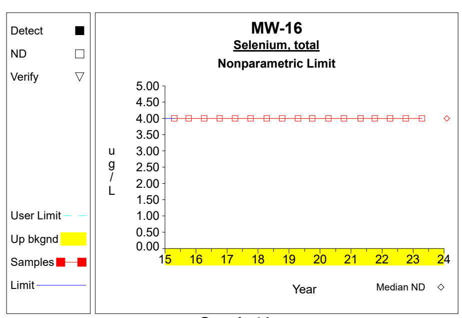

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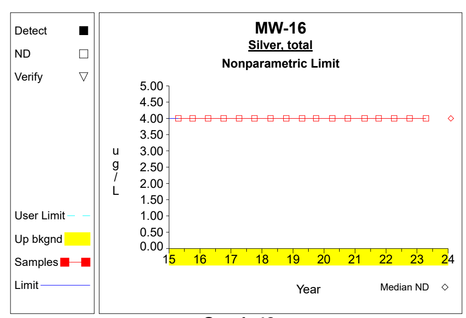

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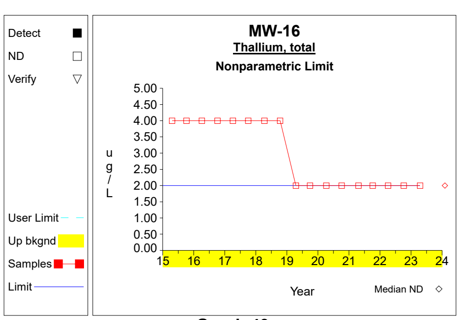

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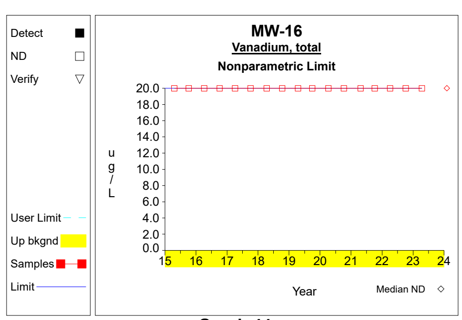

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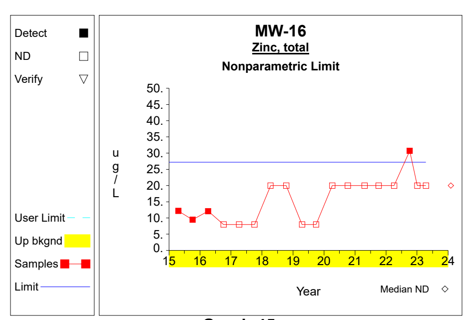

Graph 45

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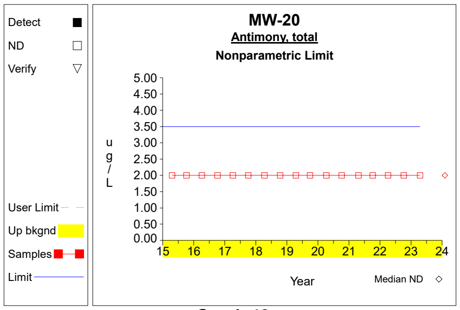
Up vs. Down Prediction Limits



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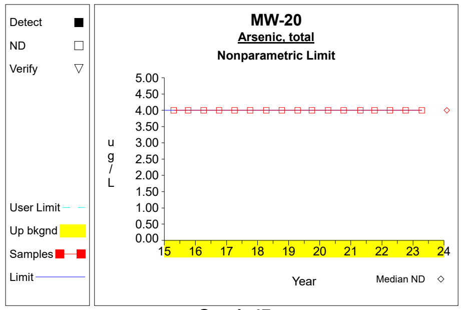

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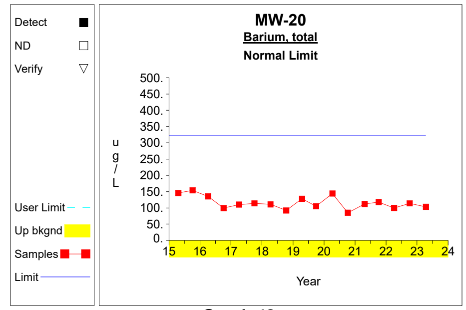

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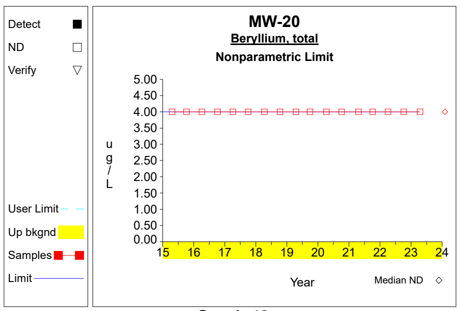
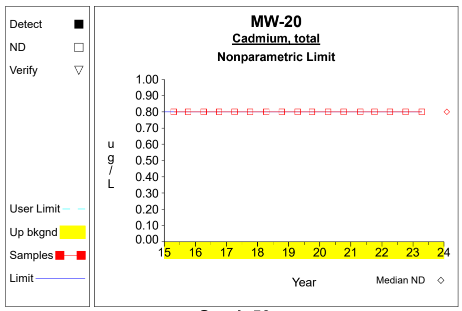


Graph 49



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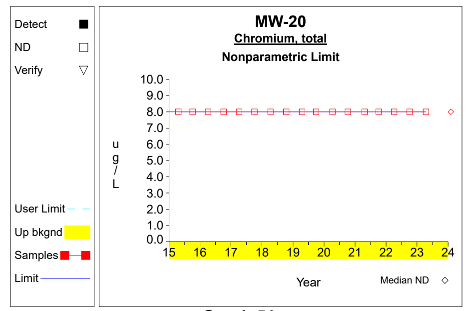

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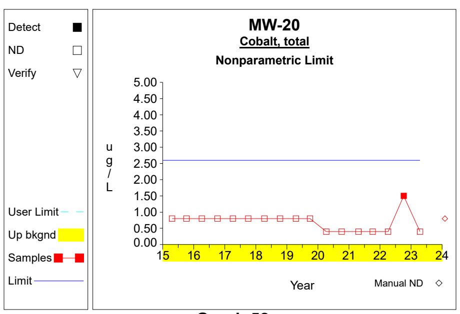

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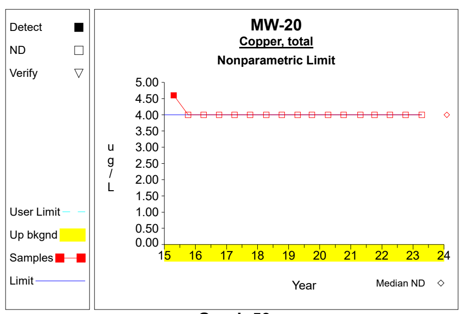

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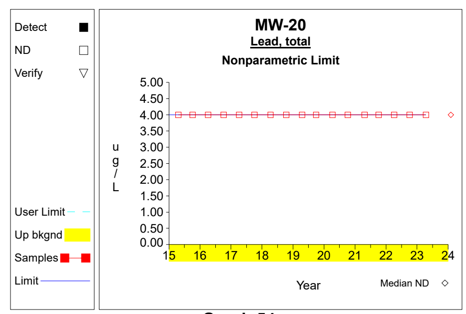
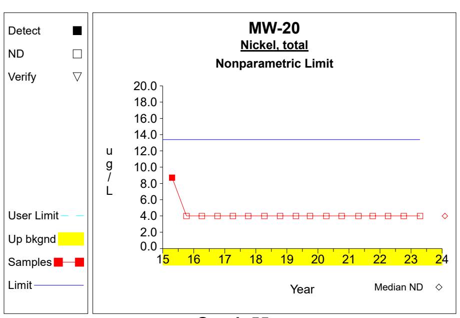


Graph 54



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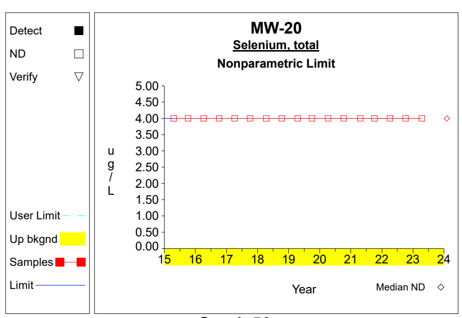

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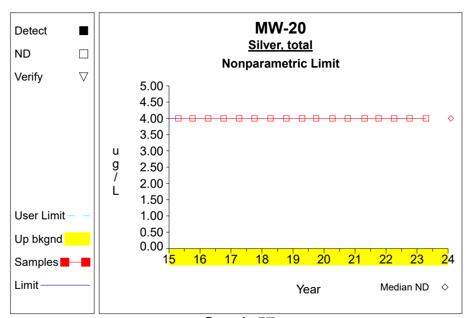

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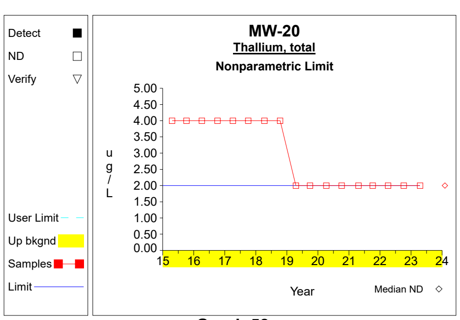

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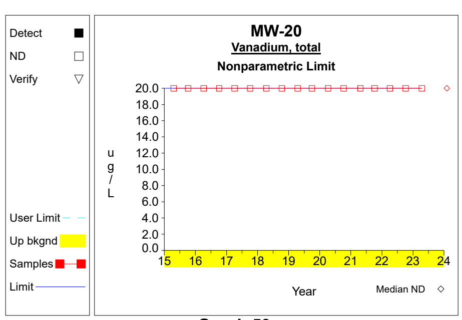
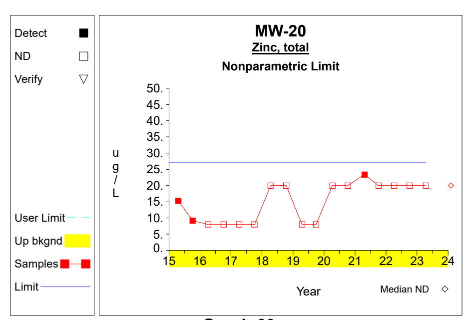


Graph 59



Graph 60

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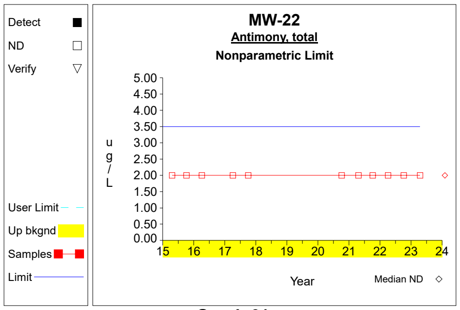
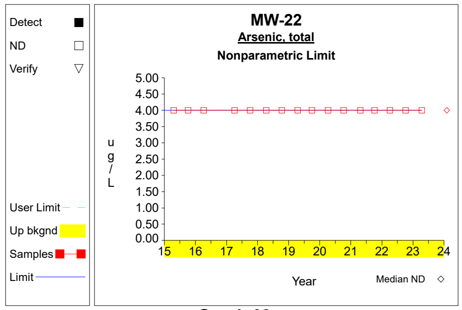
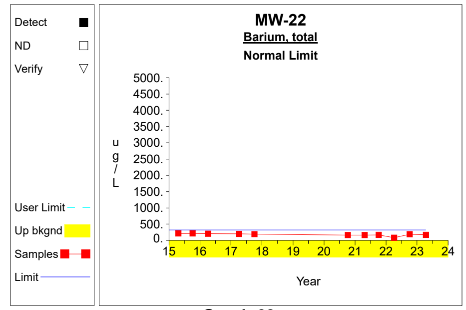
Up vs. Down Prediction Limits



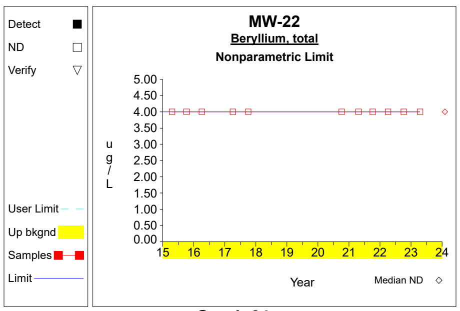
Graph 61



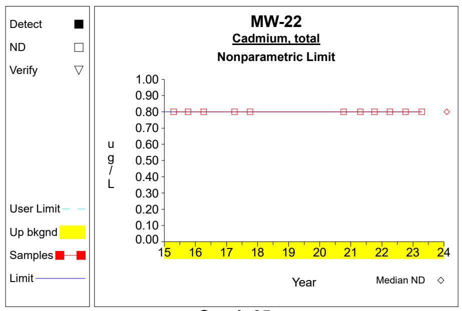
Graph 62



Graph 63



Graph 64



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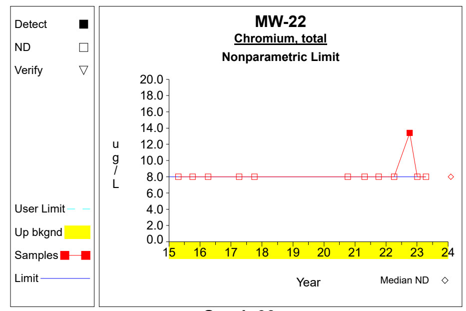

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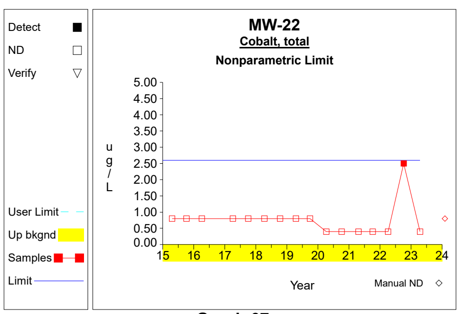

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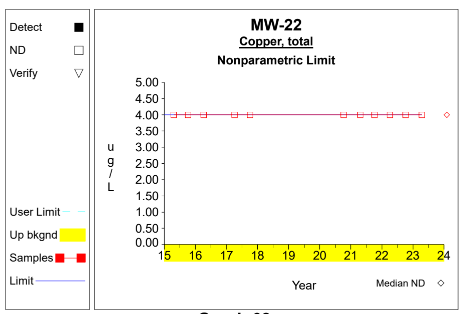

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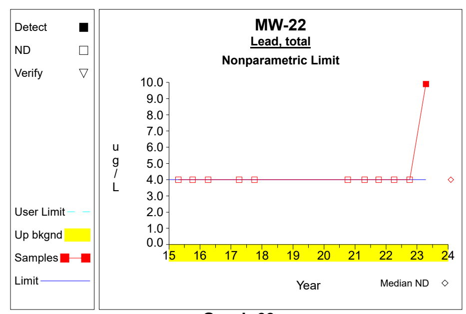

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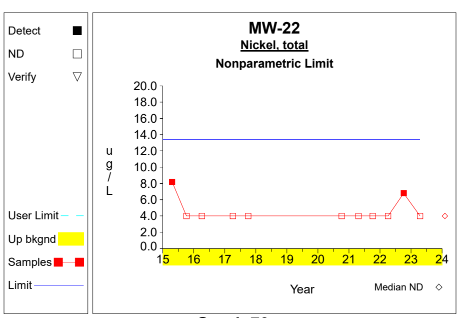

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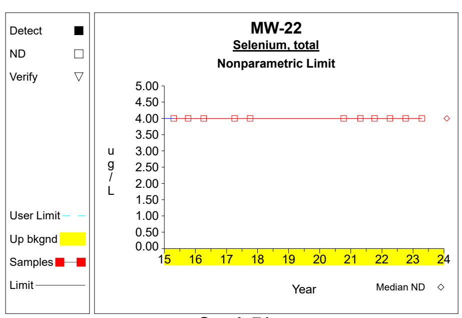

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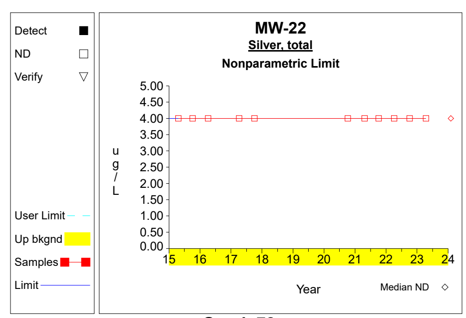

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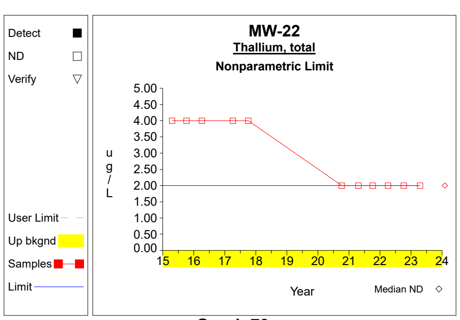

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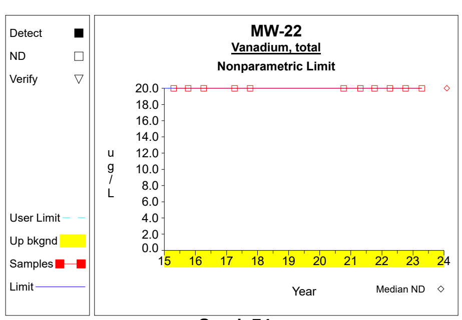

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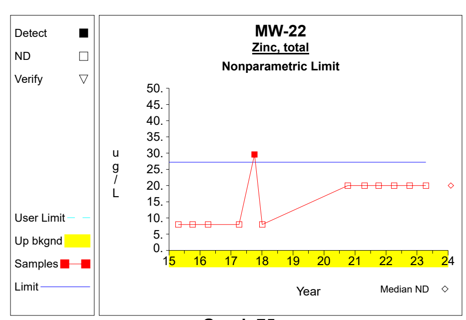
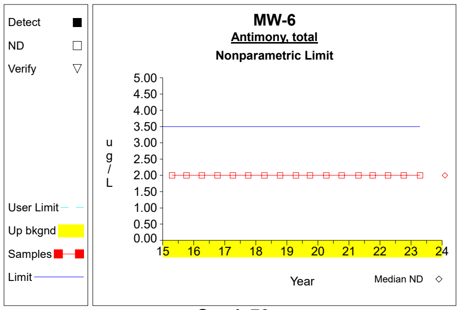
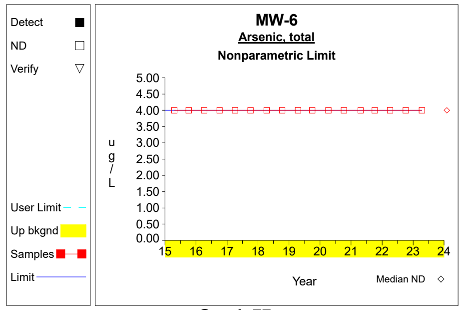


Graph 75

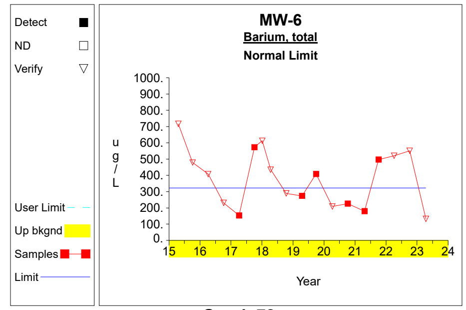
Up vs. Down Prediction Limits



Graph 76



Graph 77



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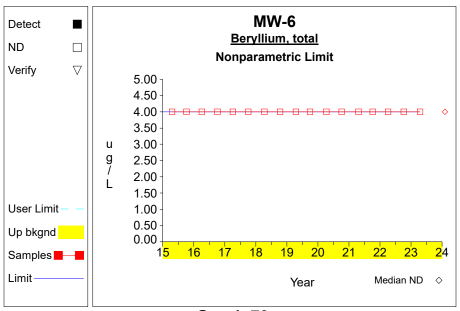

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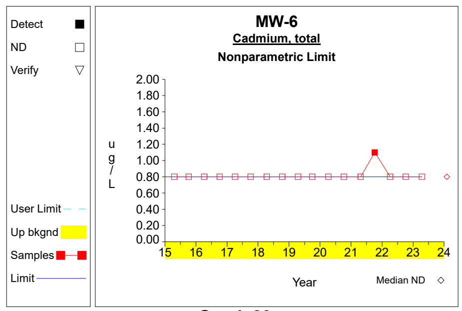

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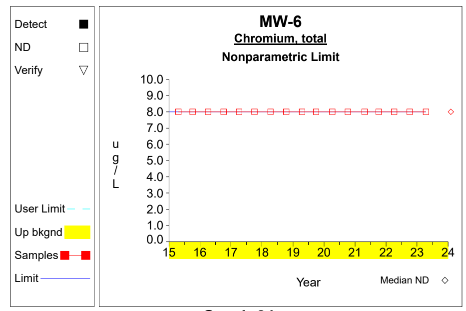
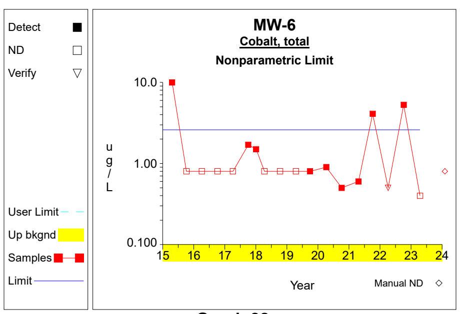
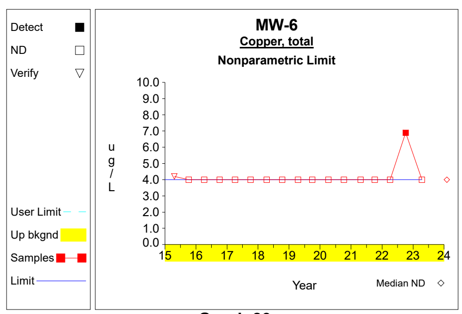


Graph 81



Graph 82



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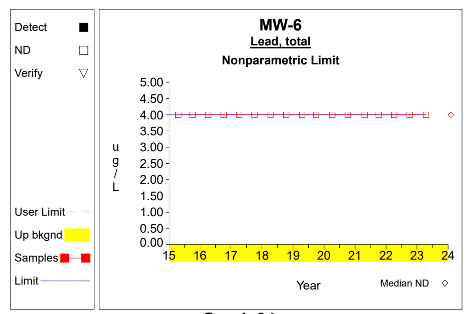
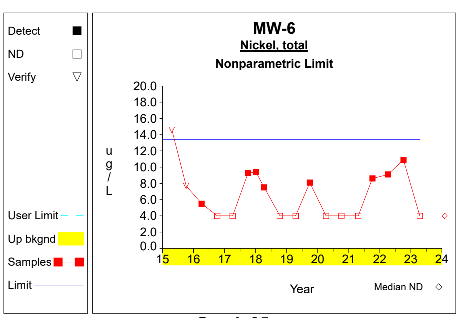
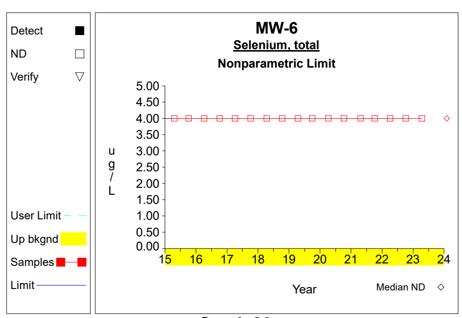


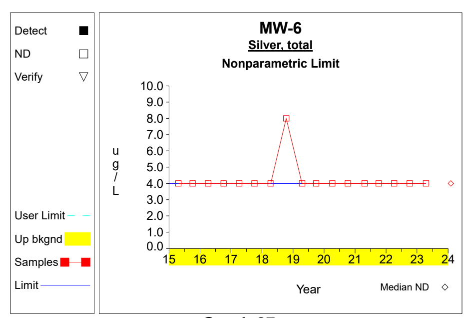
Graph 84



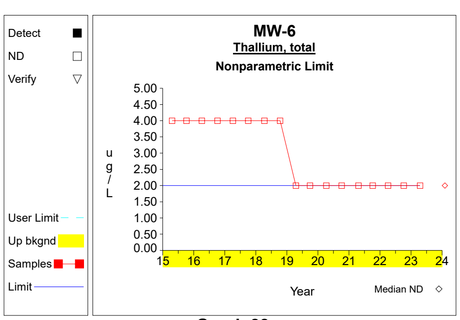
Graph 85



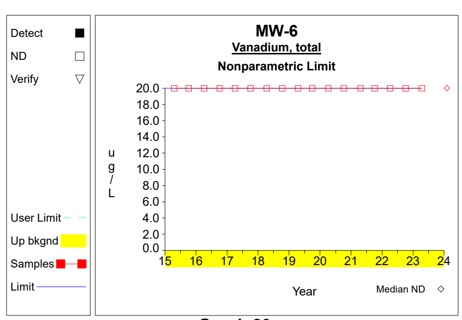
Graph 86



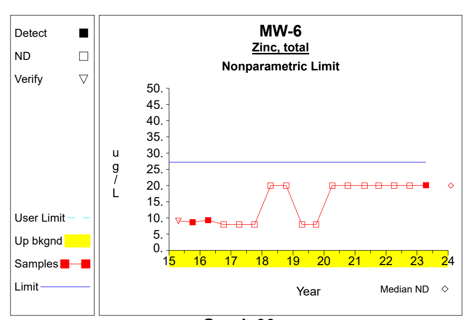
Graph 87



Graph 88



Graph 89



Graph 90

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False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program

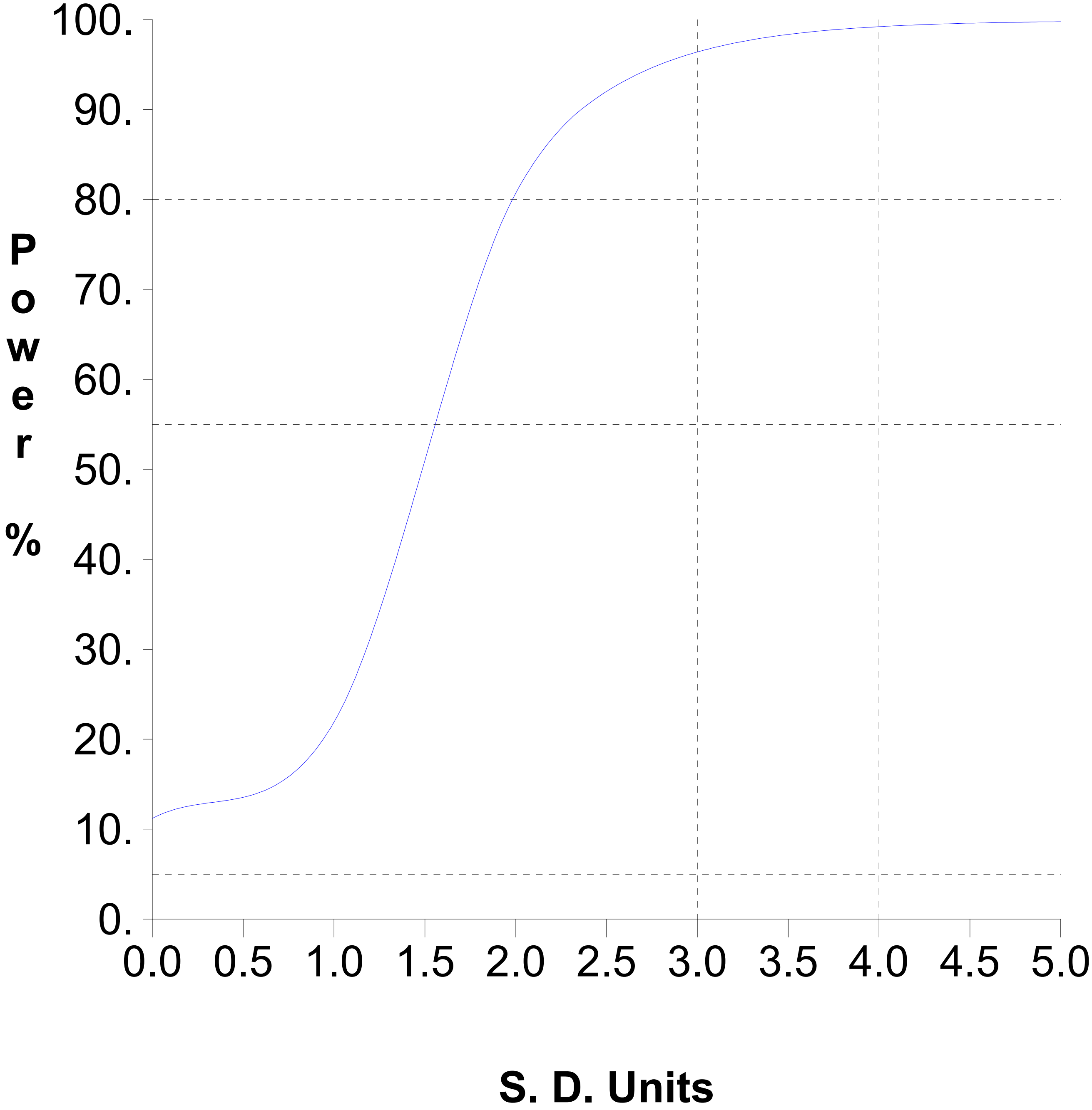


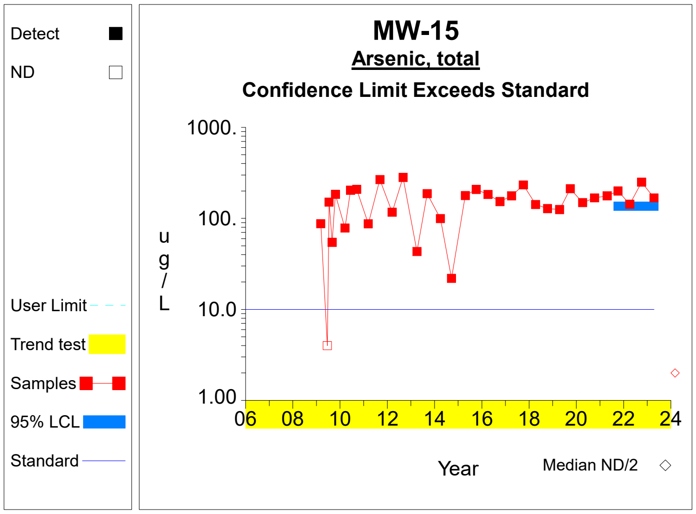
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

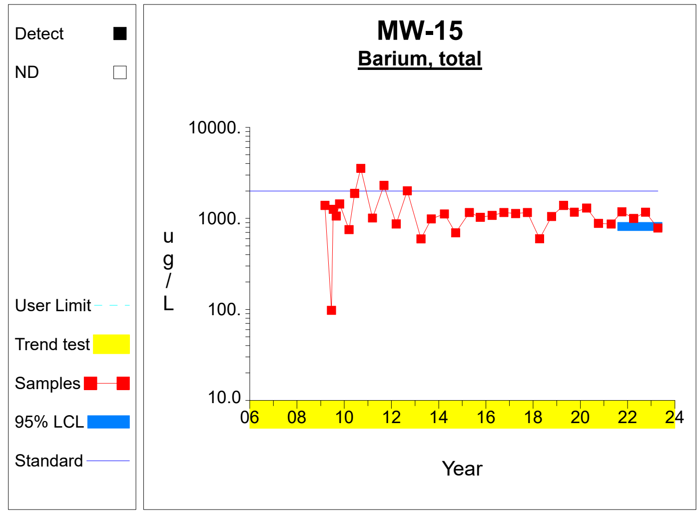
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Arsenic, total	ug/L	MW-15	4	190.250	46.162	1.176	135.950	244.550	10.000		**
Barium, total	ug/L	MW-15	4	1033.250	186.160	1.176	814.272	1252.228	2000.000		
Cobalt, total	ug/L	MW-15	4	18.175	3.572	1.176	13.973	22.377	2.100	dec	**
Lead, total	ug/L	MW-15	4	2.000	0.000	1.176	2.000	2.000	15.000		
Nickel, total	ug/L	MW-15	4	77.650	14.513	1.176	60.578	94.722	100.000		
Arsenic, total	ug/L	MW-16	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-16	4	85.800	7.221	1.176	77.306	94.294	2000.000		
Cobalt, total	ug/L	MW-16	4	0.900	0.872	1.176	0.000	1.925	2.100		
Lead, total	ug/L	MW-16	4	2.000	0.000	1.176	2.000	2.000	15.000		
Nickel, total	ug/L	MW-16	4	2.950	1.900	1.176	0.715	5.185	100.000		
Arsenic, total	ug/L	MW-22	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-22	4	154.100	49.348	1.176	96.052	212.148	2000.000	dec	
Cobalt, total	ug/L	MW-22	4	0.925	1.050	1.176	0.000	2.160	2.100		
Lead, total	ug/L	MW-22	4	3.975	3.950	1.176	0.000	8.621	15.000		
Nickel, total	ug/L	MW-22	4	3.200	2.400	1.176	0.377	6.023	100.000	dec	
Arsenic, total	ug/L	MW-6	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-6	4	425.500	196.247	1.176	194.657	656.343	2000.000	dec	
Cobalt, total	ug/L	MW-6	4	2.575	2.502	1.176	0.000	5.519	2.100		
Lead, total	ug/L	MW-6	4	2.000	0.000	1.176	2.000	2.000	15.000		
Nickel, total	ug/L	MW-6	4	7.650	3.894	1.176	3.070	12.230	100.000	dec	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

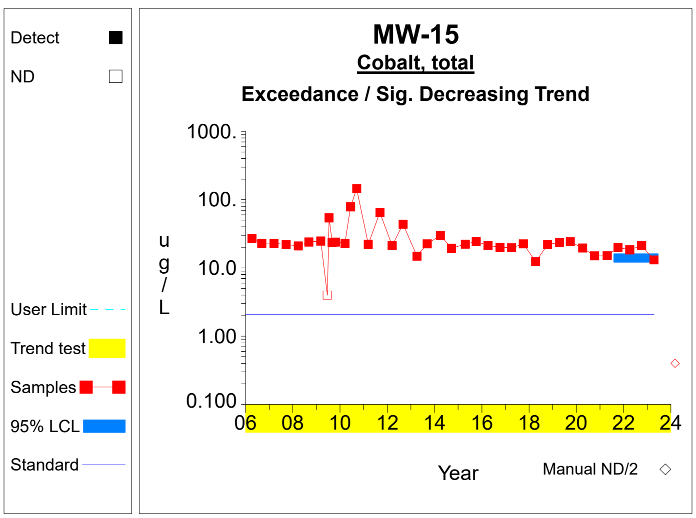
Confidence Limits (Assessment)



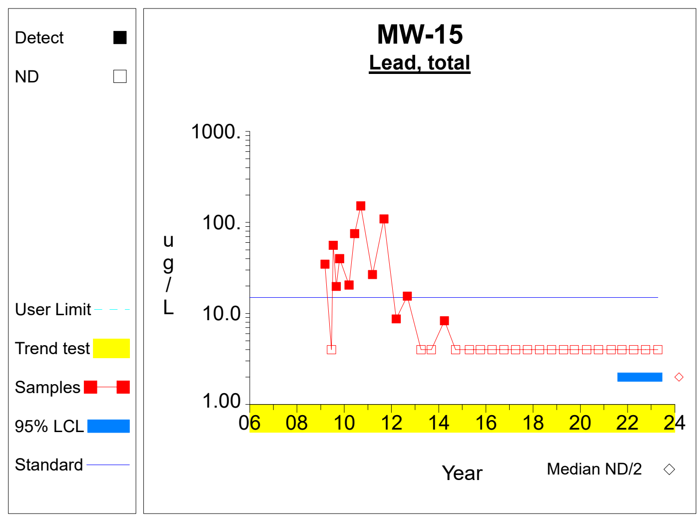
Graph 1



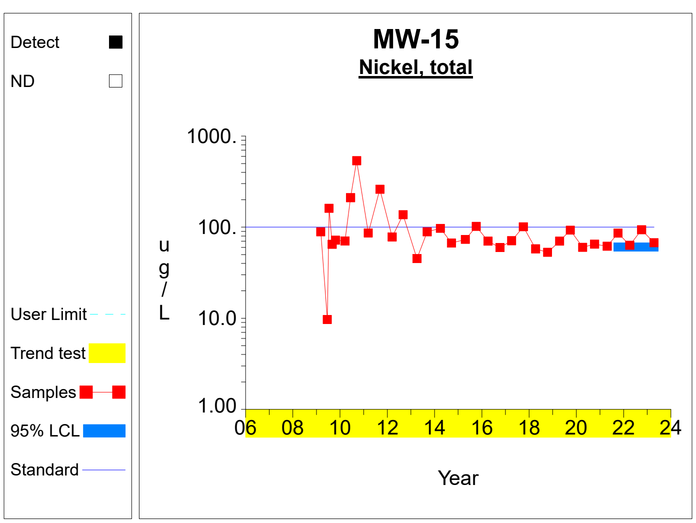
Graph 2



Graph 3

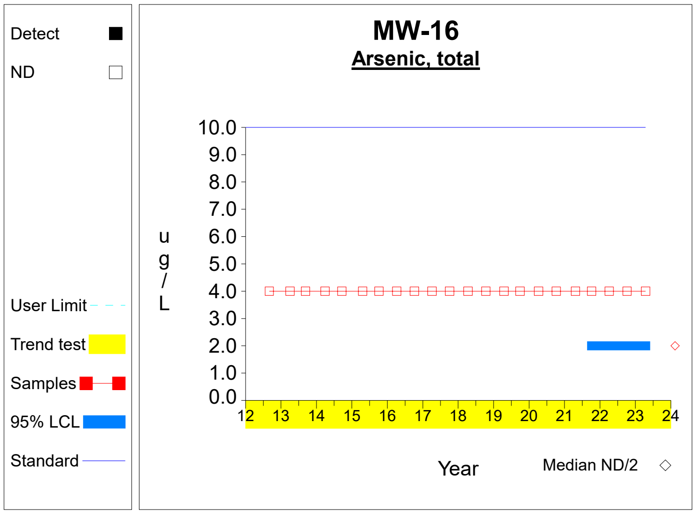


Graph 4

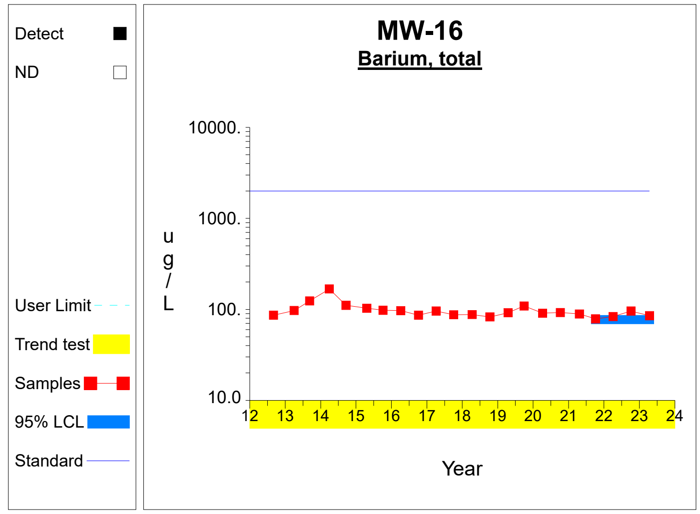


Graph 5

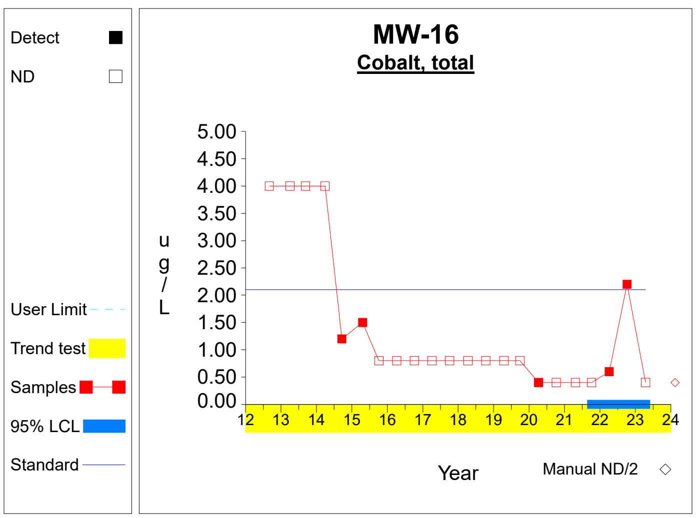
Confidence Limits (Assessment)



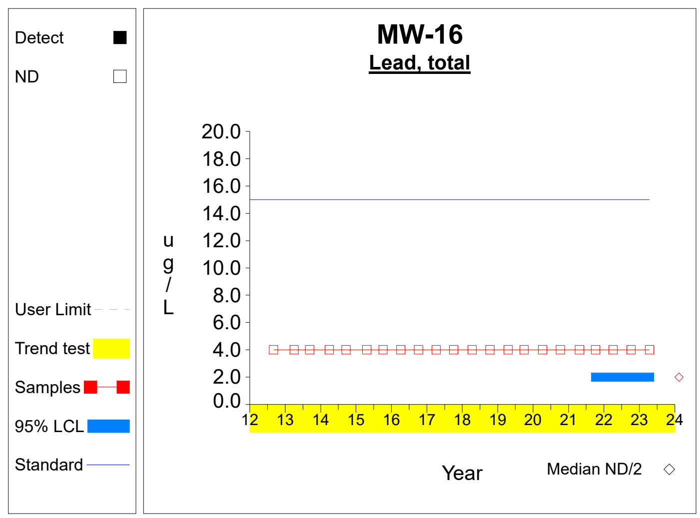
Graph 6



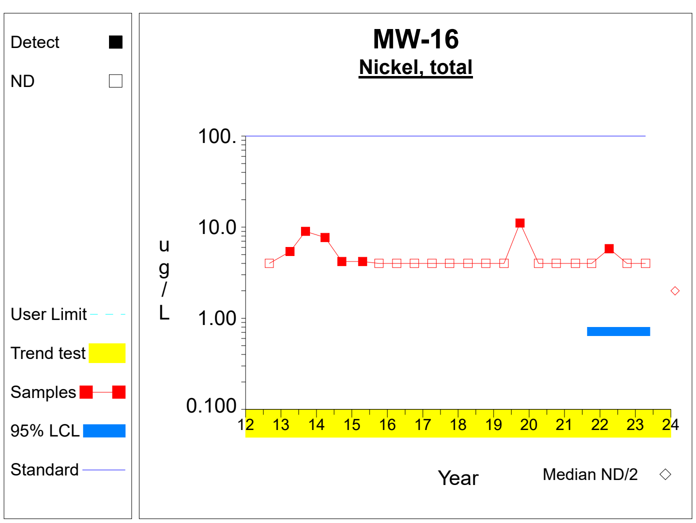
Graph 7



Graph 8

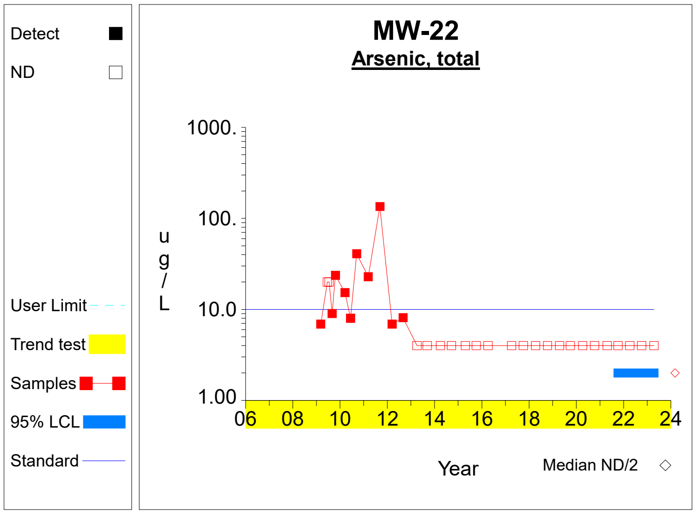


Graph 9

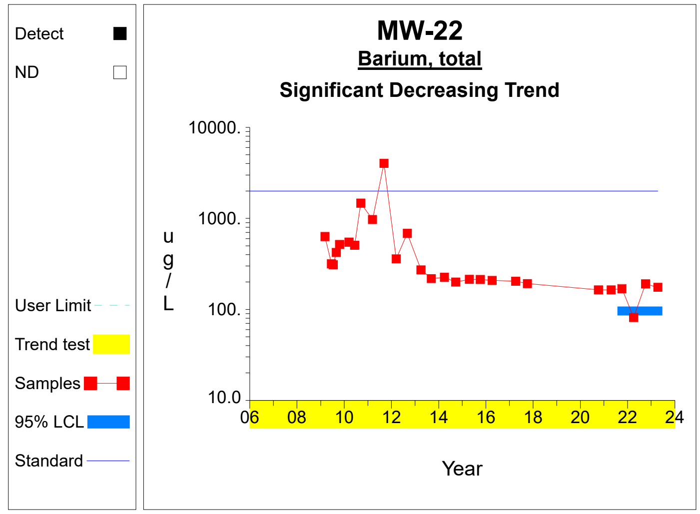


Graph 10

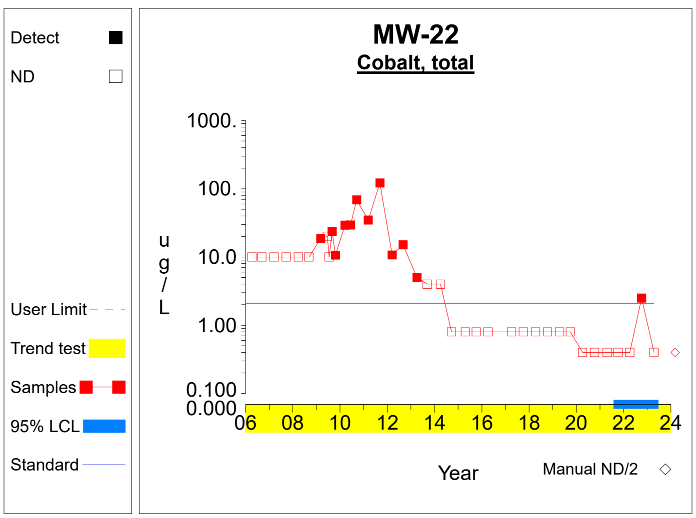
Confidence Limits (Assessment)



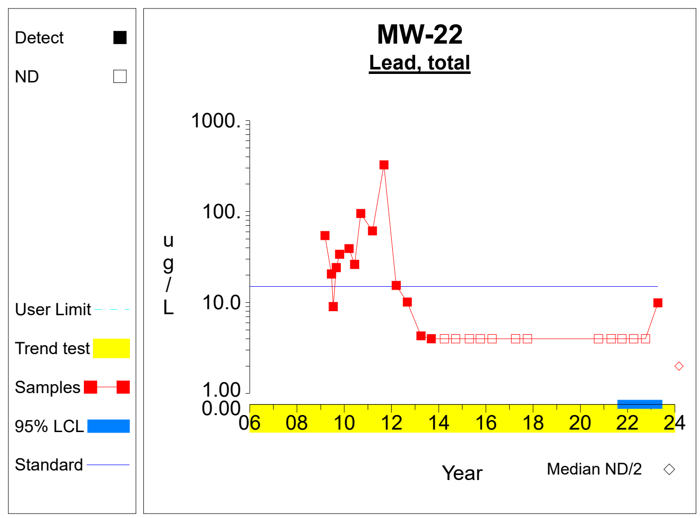
Graph 11



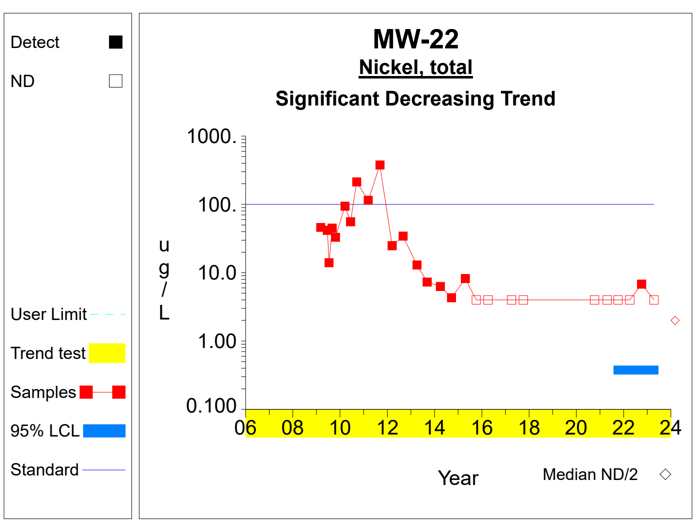
Graph 12



Graph 13

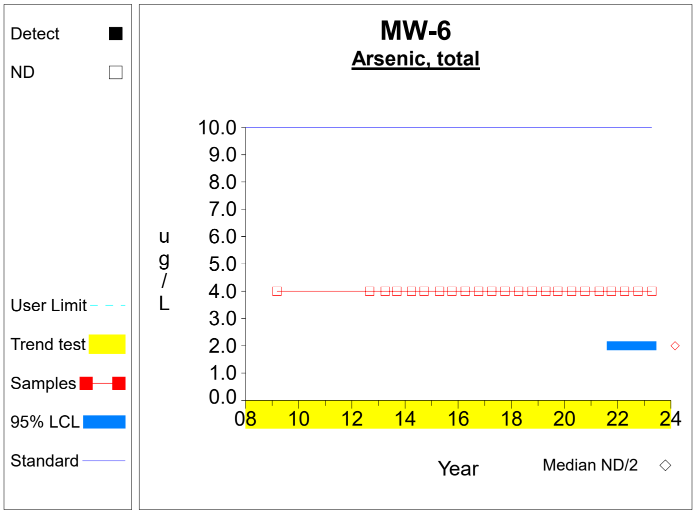


Graph 14

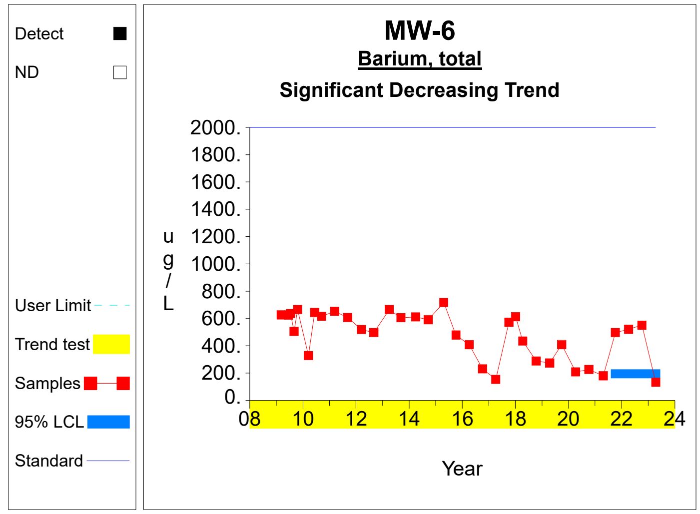


Graph 15

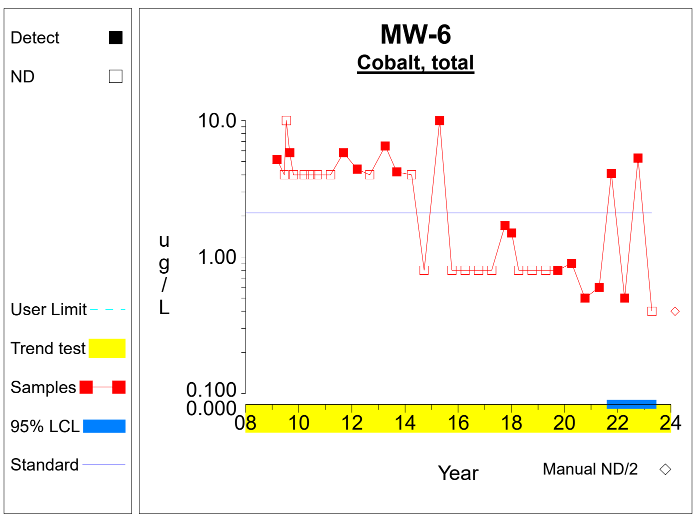
Confidence Limits (Assessment)



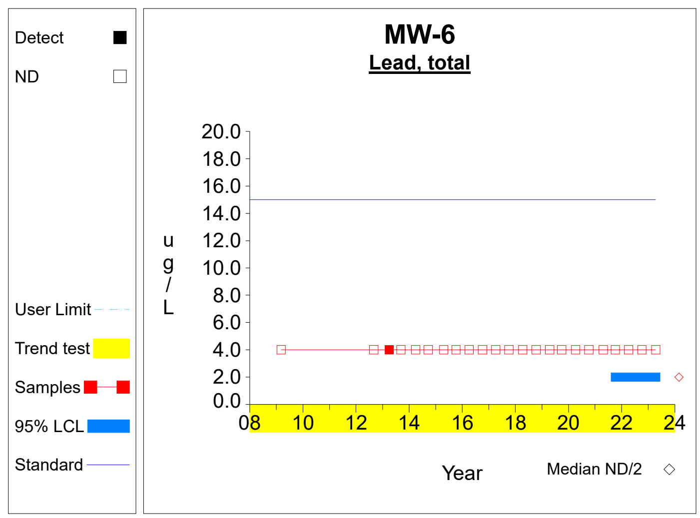
Graph 16



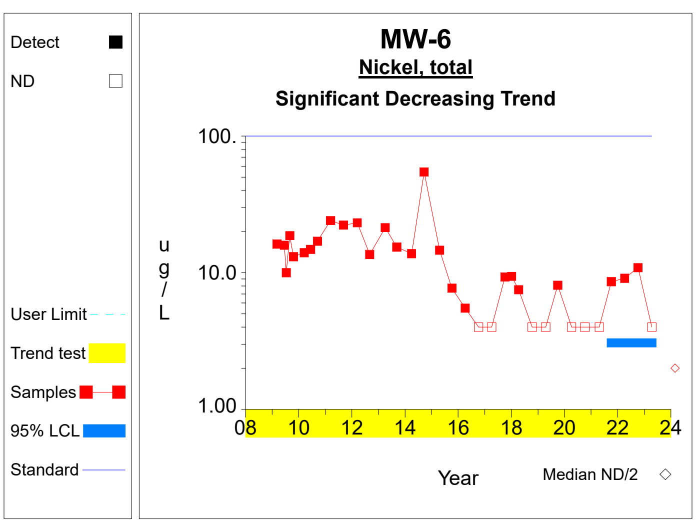
Graph 17



Graph 18



Graph 19



Graph 20

Attachment C

Summary Table of Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,4-dichlorobenzene	LPZ-6	10/07/2020		6.5	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	4/22/2021		6.4	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	10/05/2021		6.0	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	4/04/2022		2.2	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	10/05/2022		6.0	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	4/14/2023		5.3	1.0	ug/L
Benzene	LPZ-6	4/16/2019		10.5	1.0	ug/L
Benzene	LPZ-6	10/07/2020		10.6	1.0	ug/L
Benzene	LPZ-6	4/22/2021		9.4	1.0	ug/L
Benzene	LPZ-6	10/05/2021		8.8	1.0	ug/L
Benzene	LPZ-6	4/04/2022		1.2	1.0	ug/L
Benzene	LPZ-6	10/05/2022		9.3	1.0	ug/L
Benzene	LPZ-6	4/14/2023		13.6	1.0	ug/L
Carbon disulfide	LPZ-6	10/05/2022		2	1	ug/L
Chlorobenzene	LPZ-6	4/16/2019		2.7	1.0	ug/L
Chlorobenzene	LPZ-6	10/07/2020		2.4	1.0	ug/L
Chlorobenzene	LPZ-6	4/22/2021		2.0	1.0	ug/L
Chlorobenzene	LPZ-6	10/05/2021		2.0	1.0	ug/L
Chlorobenzene	LPZ-6	10/05/2022		1.3	1.0	ug/L
Chlorobenzene	LPZ-6	4/14/2023		1.3	1.0	ug/L
Chloroethane	LPZ-6	4/22/2021		1.6	1.0	ug/L
Ethylbenzene	LPZ-6	4/16/2019		43.6	1.0	ug/L
Ethylbenzene	LPZ-6	10/07/2020		52.0	1.0	ug/L
Ethylbenzene	LPZ-6	4/22/2021		27.4	1.0	ug/L
Ethylbenzene	LPZ-6	10/05/2021		1.6	1.0	ug/L
Ethylbenzene	LPZ-6	4/04/2022		2.6	1.0	ug/L
Ethylbenzene	LPZ-6	10/05/2022		2.1	1.0	ug/L
Ethylbenzene	LPZ-6	4/14/2023		7.4	1.0	ug/L
Toluene	LPZ-6	10/07/2020		1.4	1.0	ug/L
Toluene	LPZ-6	10/05/2022		1.0	1.0	ug/L
Xylenes, total	LPZ-6	4/16/2019		9.5	2.0	ug/L
Xylenes, total	LPZ-6	10/07/2020		99.1	2.0	ug/L
Xylenes, total	LPZ-6	4/22/2021		27.5	2.0	ug/L
Xylenes, total	LPZ-6	10/05/2021		4.9	2.0	ug/L
Xylenes, total	LPZ-6	4/04/2022		2.4	2.0	ug/L
Xylenes, total	LPZ-6	10/05/2022		22.3	2.0	ug/L
Xylenes, total	LPZ-6	4/14/2023		22.6	2.0	ug/L
Acetone	MW-11	10/03/2017		20.6	10.0	ug/L
Acetone	MW-12	10/03/2017		19.6	10.0	ug/L
1,4-dichlorobenzene	MW-15	4/06/2006		2.3	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/07/2006		2.4	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/14/2007		2.1	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/19/2007		2.3	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/25/2008		3.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/05/2008		3.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/06/2009		2.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/06/2009		2.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/20/2009		2.7	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/15/2010		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/15/2010		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	6/10/2010		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/14/2010		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/14/2010		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/11/2011		3.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/11/2011		3.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/07/2011		3.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/01/2012		3.6	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/01/2013		1.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/09/2013		3.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/30/2014		3.1	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/19/2014		2.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/20/2015		2.4	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2015		2.7	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/05/2016		2.2	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2016		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/04/2017		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/03/2017		2.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/10/2018		2.6	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/07/2020		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/07/2020		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/22/2021		1.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2021		2.1	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/04/2022		1.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2022		2.2	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/14/2023		1.9	1.0	ug/L
Acetone	MW-15	9/19/2014		13.1	10.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	MW-15	4/20/2015		51.3	10.0	ug/L
Acetone	MW-15	10/05/2016		26.3	10.0	ug/L
Benzene	MW-15	4/06/2006		10.0	1.0	ug/L
Benzene	MW-15	9/07/2006		7.8	1.0	ug/L
Benzene	MW-15	3/14/2007		10.3	1.0	ug/L
Benzene	MW-15	9/19/2007		7.6	1.0	ug/L
Benzene	MW-15	3/25/2008		8.9	1.0	ug/L
Benzene	MW-15	9/05/2008		9.4	1.0	ug/L
Benzene	MW-15	3/06/2009		11.5	1.0	ug/L
Benzene	MW-15	10/20/2009		12.3	1.0	ug/L
Benzene	MW-15	3/15/2010		10.9	1.0	ug/L
Benzene	MW-15	3/15/2010		10.9	1.0	ug/L
Benzene	MW-15	6/10/2010		11.7	1.0	ug/L
Benzene	MW-15	9/14/2010		8.2	1.0	ug/L
Benzene	MW-15	9/14/2010		8.2	1.0	ug/L
Benzene	MW-15	3/11/2011		13.9	1.0	ug/L
Benzene	MW-15	3/11/2011		13.9	1.0	ug/L
Benzene	MW-15	9/07/2011		11.8	1.0	ug/L
Benzene	MW-15	9/01/2012		9.5	1.0	ug/L
Benzene	MW-15	4/01/2013		7.1	1.0	ug/L
Benzene	MW-15	9/09/2013		6.3	1.0	ug/L
Benzene	MW-15	3/30/2014		10.0	1.0	ug/L
Benzene	MW-15	9/19/2014		7.4	1.0	ug/L
Benzene	MW-15	4/20/2015		7.8	1.0	ug/L
Benzene	MW-15	10/05/2015		5.8	1.0	ug/L
Benzene	MW-15	4/05/2016		7.7	1.0	ug/L
Benzene	MW-15	10/05/2016		5.0	1.0	ug/L
Benzene	MW-15	4/04/2017		6.6	1.0	ug/L
Benzene	MW-15	10/03/2017		6.2	1.0	ug/L
Benzene	MW-15	4/10/2018		8.9	1.0	ug/L
Benzene	MW-15	10/12/2018		5.6	1.0	ug/L
Benzene	MW-15	4/16/2019		6.9	1.0	ug/L
Benzene	MW-15	9/30/2019		3.6	1.0	ug/L
Benzene	MW-15	4/07/2020		5.1	1.0	ug/L
Benzene	MW-15	10/07/2020		3.5	1.0	ug/L
Benzene	MW-15	4/22/2021		6.1	1.0	ug/L
Benzene	MW-15	10/05/2021		3.0	1.0	ug/L
Benzene	MW-15	4/04/2022		4.8	1.0	ug/L
Benzene	MW-15	10/05/2022		4.1	1.0	ug/L
Benzene	MW-15	4/14/2023		4.2	1.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	4/01/2013		10	8	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	3/30/2014		85	8	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	10/05/2015		10	10	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	4/16/2019		10	6	ug/L
Chlorobenzene	MW-15	4/06/2006		7.70	1.00	ug/L
Chlorobenzene	MW-15	9/07/2006		9.10	1.00	ug/L
Chlorobenzene	MW-15	3/14/2007		7.80	1.00	ug/L
Chlorobenzene	MW-15	9/19/2007		7.00	1.00	ug/L
Chlorobenzene	MW-15	3/25/2008		6.90	1.00	ug/L
Chlorobenzene	MW-15	9/05/2008		9.00	1.00	ug/L
Chlorobenzene	MW-15	3/06/2009		9.69	1.00	ug/L
Chlorobenzene	MW-15	3/06/2009		9.60	1.00	ug/L
Chlorobenzene	MW-15	10/20/2009		10.80	1.00	ug/L
Chlorobenzene	MW-15	3/15/2010		9.50	1.00	ug/L
Chlorobenzene	MW-15	3/15/2010		9.50	1.00	ug/L
Chlorobenzene	MW-15	6/10/2010		9.40	1.00	ug/L
Chlorobenzene	MW-15	9/14/2010		8.60	1.00	ug/L
Chlorobenzene	MW-15	9/14/2010		8.60	1.00	ug/L
Chlorobenzene	MW-15	3/11/2011		17.40	1.00	ug/L
Chlorobenzene	MW-15	3/11/2011		17.40	1.00	ug/L
Chlorobenzene	MW-15	9/07/2011		14.30	1.00	ug/L
Chlorobenzene	MW-15	9/01/2012		17.00	1.00	ug/L
Chlorobenzene	MW-15	4/01/2013		8.50	1.00	ug/L
Chlorobenzene	MW-15	9/09/2013		17.50	1.00	ug/L
Chlorobenzene	MW-15	3/30/2014		15.40	1.00	ug/L
Chlorobenzene	MW-15	9/19/2014		14.20	1.00	ug/L
Chlorobenzene	MW-15	4/20/2015		13.50	1.00	ug/L
Chlorobenzene	MW-15	10/05/2015		12.80	1.00	ug/L
Chlorobenzene	MW-15	4/05/2016		11.20	1.00	ug/L
Chlorobenzene	MW-15	10/05/2016		14.40	1.00	ug/L
Chlorobenzene	MW-15	4/04/2017		10.40	1.00	ug/L
Chlorobenzene	MW-15	10/03/2017		12.60	1.00	ug/L
Chlorobenzene	MW-15	4/10/2018		11.10	1.00	ug/L
Chlorobenzene	MW-15	10/12/2018		8.70	1.00	ug/L
Chlorobenzene	MW-15	4/16/2019		9.60	1.00	ug/L
Chlorobenzene	MW-15	9/30/2019		9.40	1.00	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-15	4/07/2020		9.00	1.00	ug/L
Chlorobenzene	MW-15	10/07/2020		8.30	1.00	ug/L
Chlorobenzene	MW-15	4/22/2021		7.40	1.00	ug/L
Chlorobenzene	MW-15	10/05/2021		8.10	1.00	ug/L
Chlorobenzene	MW-15	4/04/2022		7.80	1.00	ug/L
Chlorobenzene	MW-15	10/05/2022		6.90	1.00	ug/L
Chlorobenzene	MW-15	4/14/2023		6.50	1.00	ug/L
Chloroethane	MW-15	4/06/2006		21.5	1.0	ug/L
Chloroethane	MW-15	9/07/2006		23.1	1.0	ug/L
Chloroethane	MW-15	3/14/2007		20.2	1.0	ug/L
Chloroethane	MW-15	9/19/2007		15.6	1.0	ug/L
Chloroethane	MW-15	3/25/2008		12.7	1.0	ug/L
Chloroethane	MW-15	9/05/2008		19.1	1.0	ug/L
Chloroethane	MW-15	3/06/2009		16.6	1.0	ug/L
Chloroethane	MW-15	3/06/2009		16.6	1.0	ug/L
Chloroethane	MW-15	10/20/2009		18.9	1.0	ug/L
Chloroethane	MW-15	3/15/2010		17.9	1.0	ug/L
Chloroethane	MW-15	3/15/2010		17.9	1.0	ug/L
Chloroethane	MW-15	6/10/2010		21.2	1.0	ug/L
Chloroethane	MW-15	9/14/2010		14.0	1.0	ug/L
Chloroethane	MW-15	9/14/2010		14.0	1.0	ug/L
Chloroethane	MW-15	3/11/2011		20.7	1.0	ug/L
Chloroethane	MW-15	3/11/2011		20.7	1.0	ug/L
Chloroethane	MW-15	9/07/2011		19.3	1.0	ug/L
Chloroethane	MW-15	9/01/2012		16.4	1.0	ug/L
Chloroethane	MW-15	4/01/2013		11.2	1.0	ug/L
Chloroethane	MW-15	9/09/2013		20.3	1.0	ug/L
Chloroethane	MW-15	3/30/2014		15.4	1.0	ug/L
Chloroethane	MW-15	9/19/2014		16.3	1.0	ug/L
Chloroethane	MW-15	4/20/2015		14.1	1.0	ug/L
Chloroethane	MW-15	10/05/2015		10.2	1.0	ug/L
Chloroethane	MW-15	4/05/2016		12.9	1.0	ug/L
Chloroethane	MW-15	10/05/2016		10.6	1.0	ug/L
Chloroethane	MW-15	4/04/2017		12.0	1.0	ug/L
Chloroethane	MW-15	10/03/2017		8.4	1.0	ug/L
Chloroethane	MW-15	4/10/2018		12.3	1.0	ug/L
Chloroethane	MW-15	10/12/2018		8.6	1.0	ug/L
Chloroethane	MW-15	4/16/2019		8.5	1.0	ug/L
Chloroethane	MW-15	9/30/2019		8.8	1.0	ug/L
Chloroethane	MW-15	4/07/2020		9.0	1.0	ug/L
Chloroethane	MW-15	10/07/2020		9.4	1.0	ug/L
Chloroethane	MW-15	4/22/2021		9.8	1.0	ug/L
Chloroethane	MW-15	10/05/2021		6.3	1.0	ug/L
Chloroethane	MW-15	4/04/2022		8.3	1.0	ug/L
Chloroethane	MW-15	10/05/2022		7.5	1.0	ug/L
Chloroethane	MW-15	4/14/2023		4.6	1.0	ug/L
Dichlorodifluoromethane	MW-15	3/30/2014		2.5	1.0	ug/L
Dichlorodifluoromethane	MW-15	4/04/2017		1.0	1.0	ug/L
Ethylbenzene	MW-15	4/06/2006		37.2	1.0	ug/L
Ethylbenzene	MW-15	9/07/2006		16.7	1.0	ug/L
Ethylbenzene	MW-15	3/14/2007		31.2	1.0	ug/L
Ethylbenzene	MW-15	9/19/2007		9.7	1.0	ug/L
Ethylbenzene	MW-15	3/25/2008		31.2	1.0	ug/L
Ethylbenzene	MW-15	9/05/2008		22.3	1.0	ug/L
Ethylbenzene	MW-15	3/06/2009		67.6	1.0	ug/L
Ethylbenzene	MW-15	3/06/2009		67.6	1.0	ug/L
Ethylbenzene	MW-15	10/20/2009		83.0	1.0	ug/L
Ethylbenzene	MW-15	3/15/2010		60.6	1.0	ug/L
Ethylbenzene	MW-15	3/15/2010		60.6	1.0	ug/L
Ethylbenzene	MW-15	6/10/2010		16.2	1.0	ug/L
Ethylbenzene	MW-15	9/14/2010		22.4	1.0	ug/L
Ethylbenzene	MW-15	9/14/2010		22.4	1.0	ug/L
Ethylbenzene	MW-15	3/11/2011		90.8	1.0	ug/L
Ethylbenzene	MW-15	3/11/2011		90.8	1.0	ug/L
Ethylbenzene	MW-15	9/07/2011		21.8	1.0	ug/L
Ethylbenzene	MW-15	9/01/2012		19.3	1.0	ug/L
Ethylbenzene	MW-15	4/01/2013		31.6	1.0	ug/L
Ethylbenzene	MW-15	9/09/2013		9.0	1.0	ug/L
Ethylbenzene	MW-15	3/30/2014		39.0	1.0	ug/L
Ethylbenzene	MW-15	9/19/2014		15.3	1.0	ug/L
Ethylbenzene	MW-15	4/20/2015		6.5	1.0	ug/L
Ethylbenzene	MW-15	4/05/2016		10.5	1.0	ug/L
Ethylbenzene	MW-15	4/04/2017		4.9	1.0	ug/L
Ethylbenzene	MW-15	4/10/2018		5.1	1.0	ug/L
Toluene	MW-15	4/06/2006		1.1	1.0	ug/L
Toluene	MW-15	9/05/2008		1.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Toluene	MW-15	3/06/2009		2.6	1.0	ug/L
Toluene	MW-15	10/20/2009		3.3	1.0	ug/L
Toluene	MW-15	3/15/2010		1.1	1.0	ug/L
Toluene	MW-15	3/15/2010		1.1	1.0	ug/L
Toluene	MW-15	6/10/2010		1.2	1.0	ug/L
Toluene	MW-15	3/11/2011		1.8	1.0	ug/L
Toluene	MW-15	3/11/2011		1.8	1.0	ug/L
Xylenes, total	MW-15	4/06/2006		188.0	1.0	ug/L
Xylenes, total	MW-15	9/07/2006		84.6	1.0	ug/L
Xylenes, total	MW-15	3/14/2007		126.0	1.0	ug/L
Xylenes, total	MW-15	9/19/2007		50.8	1.0	ug/L
Xylenes, total	MW-15	3/25/2008		150.0	1.0	ug/L
Xylenes, total	MW-15	9/05/2008		91.4	1.0	ug/L
Xylenes, total	MW-15	3/06/2009		342.0	1.0	ug/L
Xylenes, total	MW-15	3/06/2009		342.0	2.0	ug/L
Xylenes, total	MW-15	10/20/2009		430.0	1.0	ug/L
Xylenes, total	MW-15	3/15/2010		302.0	1.0	ug/L
Xylenes, total	MW-15	3/15/2010		302.0	2.0	ug/L
Xylenes, total	MW-15	6/10/2010		117.0	2.0	ug/L
Xylenes, total	MW-15	9/14/2010		116.0	1.0	ug/L
Xylenes, total	MW-15	9/14/2010		116.0	2.0	ug/L
Xylenes, total	MW-15	3/11/2011		444.0	2.0	ug/L
Xylenes, total	MW-15	3/11/2011		444.0	1.0	ug/L
Xylenes, total	MW-15	9/07/2011		84.4	1.0	ug/L
Xylenes, total	MW-15	9/01/2012		93.1	2.0	ug/L
Xylenes, total	MW-15	4/01/2013		105.0	2.0	ug/L
Xylenes, total	MW-15	9/09/2013		70.0	2.0	ug/L
Xylenes, total	MW-15	3/30/2014		132.0	2.0	ug/L
Xylenes, total	MW-15	9/19/2014		89.8	2.0	ug/L
Xylenes, total	MW-15	4/20/2015		58.0	2.0	ug/L
Xylenes, total	MW-15	10/05/2015		11.8	2.0	ug/L
Xylenes, total	MW-15	4/05/2016		59.2	2.0	ug/L
Xylenes, total	MW-15	10/05/2016		19.2	2.0	ug/L
Xylenes, total	MW-15	4/04/2017		26.1	2.0	ug/L
Xylenes, total	MW-15	10/03/2017		6.3	2.0	ug/L
Xylenes, total	MW-15	4/10/2018		56.2	2.0	ug/L
Xylenes, total	MW-15	10/12/2018		3.5	2.0	ug/L
Xylenes, total	MW-15	4/16/2019		4.3	2.0	ug/L
Xylenes, total	MW-15	9/30/2019		3.1	2.0	ug/L
Xylenes, total	MW-15	4/07/2020		4.0	2.0	ug/L
Xylenes, total	MW-15	10/07/2020		10.3	2.0	ug/L
Xylenes, total	MW-15	4/22/2021		2.3	2.0	ug/L
Acetone	MW-16	10/03/2017		27.9	10.0	ug/L
Acetone	MW-20	10/03/2017		22.4	10.0	ug/L
Acetone	MW-22	10/03/2017		28.8	10.0	ug/L
1,1-dichloroethane	MW-6	9/09/2013		2.5	1.0	ug/L
Acetone	MW-6	10/03/2017		16.2	10.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-6	3/30/2014		36	8	ug/L
Bis(2-ethylhexyl) phthalate	MW-6	10/03/2017		10	6	ug/L
Dichlorodifluoromethane	MW-6	3/30/2014		3.5	1.0	ug/L
Dichlorodifluoromethane	MW-6	9/19/2014		1.3	1.0	ug/L
Dichlorodifluoromethane	MW-6	4/20/2015		1.0	1.0	ug/L
Dichlorodifluoromethane	MW-6	10/05/2016		1.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Attachment D

Assessment Statistics for Detected VOCs

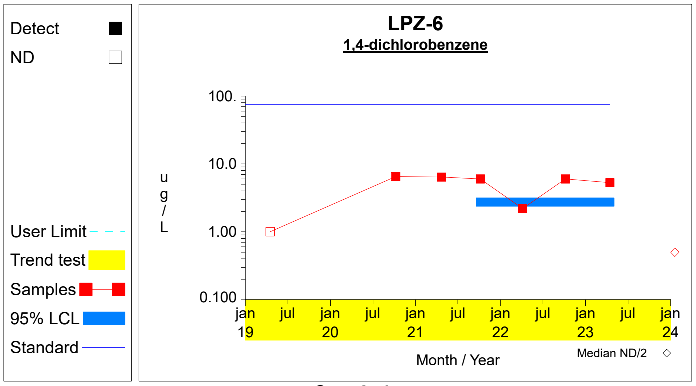
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

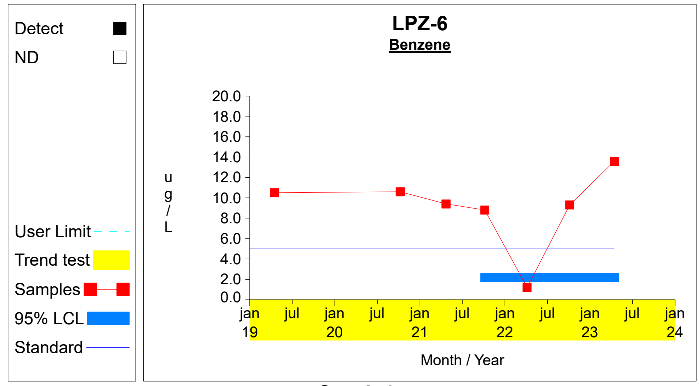
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
1,4-dichlorobenzene	ug/L	LPZ-6	4	4.875	1.814	1.176	2.742	7.008	75.000	
Benzene	ug/L	LPZ-6	4	8.225	5.155	1.176	2.161	14.289	5.000	
Carbon disulfide	ug/L	LPZ-6	4	0.875	0.750	1.176	0.000	1.757	700.000	
Chlorobenzene	ug/L	LPZ-6	4	1.275	0.613	1.176	0.554	1.996	100.000	
Chloroethane	ug/L	LPZ-6	4	0.500	0.000	1.176	0.500	0.500	2800.000	
Ethylbenzene	ug/L	LPZ-6	4	3.425	2.681	1.176	0.271	6.579	700.000	
Toluene	ug/L	LPZ-6	4	0.625	0.250	1.176	0.331	0.919	1000.000	
Xylenes, total	ug/L	LPZ-6	4	13.050	10.903	1.176	0.225	25.875	10000.000	
1,4-dichlorobenzene	ug/L	MW-15	4	2.000	0.183	1.176	1.785	2.215	75.000	
Benzene	ug/L	MW-15	4	4.025	0.750	1.176	3.143	4.907	5.000	dec
Carbon disulfide	ug/L	MW-15	4	0.500	0.000	1.176	0.500	0.500	700.000	
Chlorobenzene	ug/L	MW-15	4	7.325	0.750	1.176	6.443	8.207	100.000	
Chloroethane	ug/L	MW-15	4	6.675	1.609	1.176	4.782	8.568	2800.000	dec
Ethylbenzene	ug/L	MW-15	4	0.500	0.000	1.176	0.500	0.500	700.000	dec
Toluene	ug/L	MW-15	4	0.500	0.000	1.176	0.500	0.500	1000.000	
Xylenes, total	ug/L	MW-15	4	1.000	0.000	1.176	1.000	1.000	10000.000	dec

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

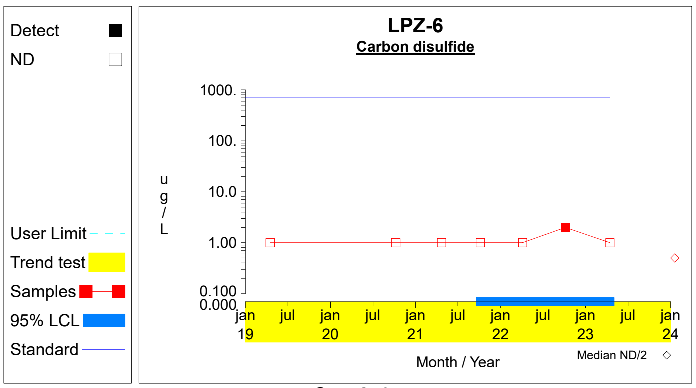
Confidence Limits (Assessment)



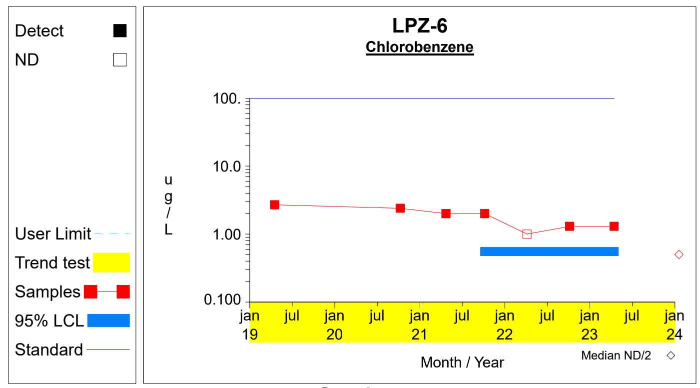
Graph 1



Graph 2



Graph 3



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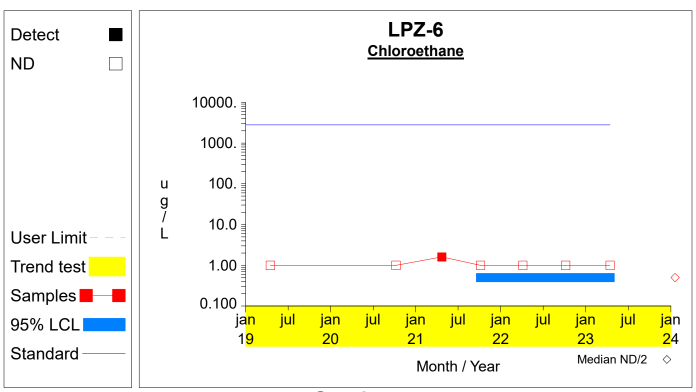

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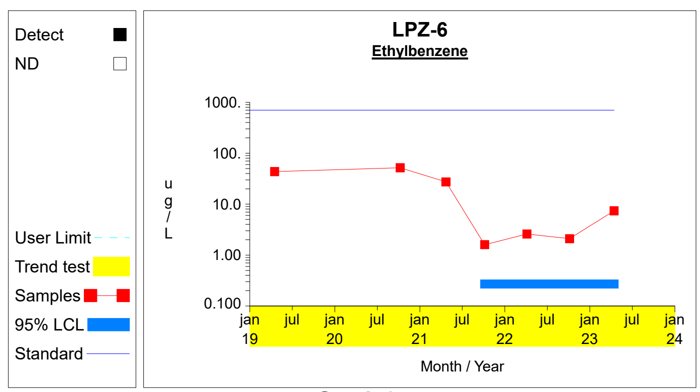

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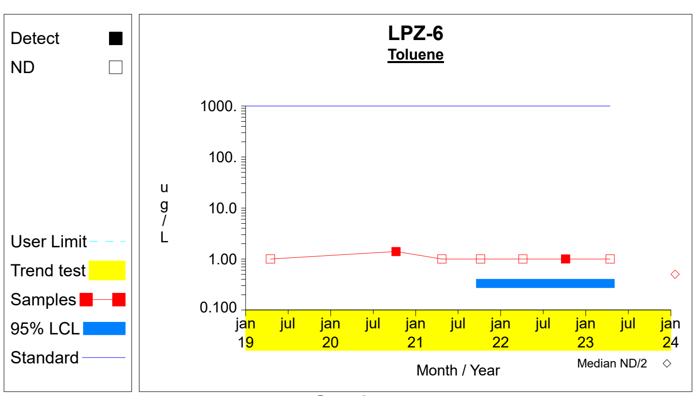

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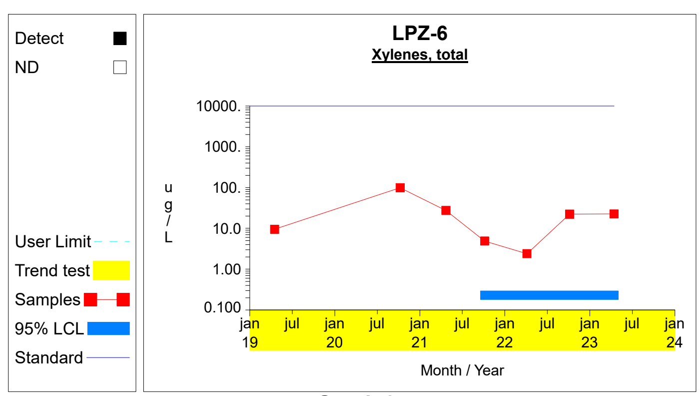
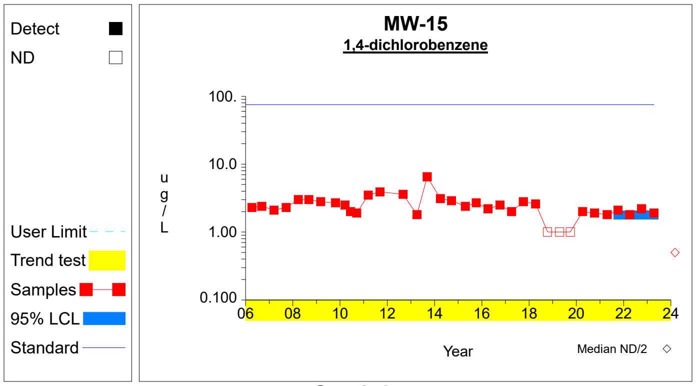


Graph 8

Prepared by: Otter Creek Environmental

Confidence Limits (Assessment)



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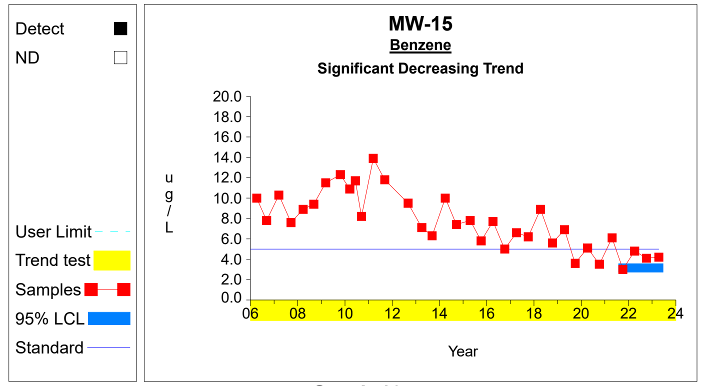
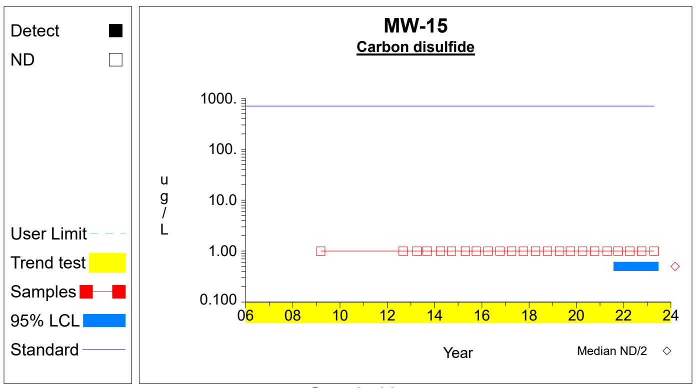
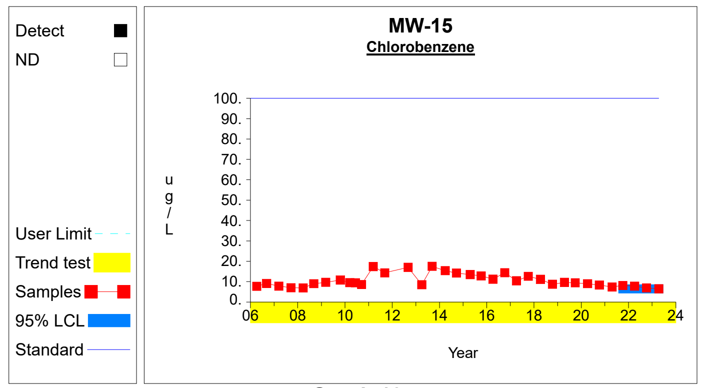


Graph 10



Graph 11



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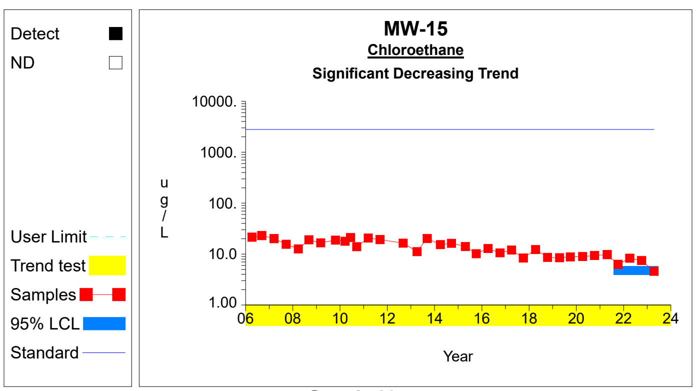
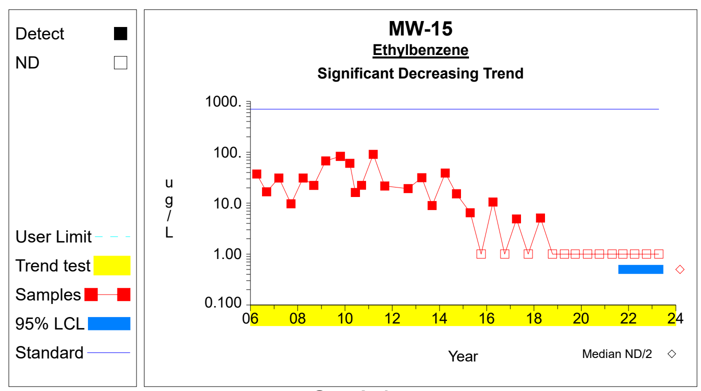
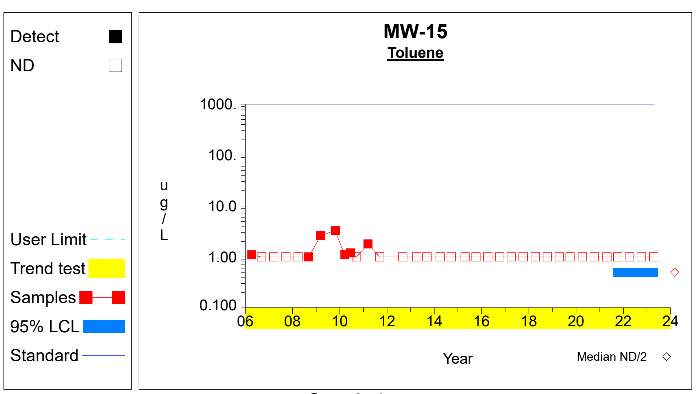


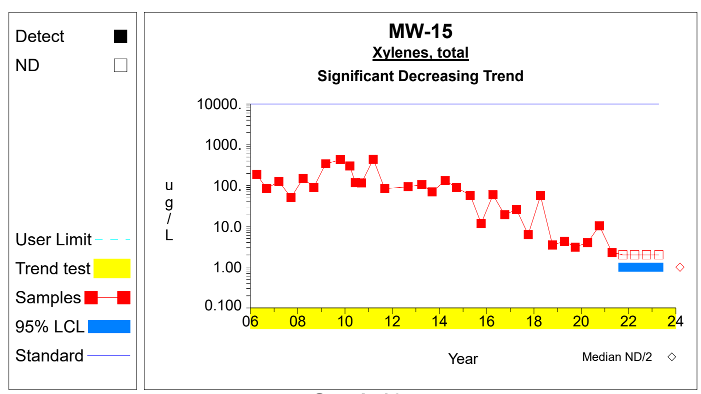
Graph 13



Graph 14



Graph 15



Graph 16

Appendix B.2 – Fall Statistical Evaluation Report

GROUND WATER STATISTICS

FOR THE

JONES COUNTY SANITARY LANDFILL

Second Semi-Annual Monitoring Event in 2023

Prepared for:
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November 2023

INTRODUCTION

This report summarizes the results of the statistical analysis used to evaluate the ground water quality data obtained during the second semi-annual monitoring event in 2023 at the Jones County Sanitary Landfill in Anamosa, Iowa. The statistical plan was designed to detect a release from the facility at the earliest indication so that it is protective of human health and the environment. The interwell methodology is described and then applied to the Jones County Sanitary Landfill data. The statistical plan conforms with IAC 567, Chapter 113.10, USEPA Guidance document ("*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance*", March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*.

Ground Water Monitoring Program

The groundwater monitoring network for Jones County Landfill includes upgradient well MW-12 and downgradient detection sample points MW-11, MW-15, MW-16, MW-20, MW-22, and MW-6. Each of the groundwater monitoring wells is to be sampled at least semiannually and analyzed for the detection monitoring parameters listed in 113.10(5), which includes 15 inorganic constituents and 47 organic compounds, summarized in Table 1 below.

Table 1: Detection monitoring constituents listed in Appendix I of IAC 567, Chapter 113.

Organic Compounds:

Acetone	*trans*-1,4-Dichloro-2-butene	Iodomethane
Acrylonitrile	1,1-Dichloroethane	4-Methyl-2-pentanone
Benzene	1,2-Dichloroethane	Styrene
Bromochloromethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	*cis*-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
Bromoform	*trans*-1,2-Dichloroethene	Tetrachloroethene
Carbon disulfide	1,2-Dichloropropane	Toluene
Carbon tetrachloride	*cis*-1,3-Dichloropropene	1,1,1-Trichloroethane
Chlorobenzene	*trans*-1,3-Dichloropropene	1,1,2-Trichloroethane
Chloroethane	Ethylbenzene	Trichloroethene
Chloroform	2-Hexanone	Trichlorofluoromethane
Dibromochloromethane	Bromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane	Chloromethane	Vinyl acetate
1,2-Dibromoethane	Dibromomethane	Vinyl chloride
1,2-Dichlorobenzene	Methylene chloride	Xylenes (Total)
1,4-Dichlorobenzene	2-Butanone	

Inorganic constituents:

Antimony, Total	Chromium, Total	Selenium, Total
Arsenic, Total	Cobalt, Total	Silver, Total
Barium, Total	Copper, Total	Thallium, Total
Beryllium, Total	Lead, Total	Vanadium, Total
Cadmium, Total	Nickel, Total	Zinc, Total

The ground water data obtained during the second semi-annual monitoring event in 2023 are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The prediction limit method was applied to the Jones County Sanitary Landfill data using the DUMPStat® statistical program. Ground water statistics are to be done on the inorganic constituents listed. The organic constituents are compared to maximum contaminant levels (MCLs) or practical quantitation limits (PQLs), in lieu of statistical comparisons to historical concentrations.

Interwell Statistics: Upgradient versus Downgradient Comparisons

Interwell statistics are appropriate when the upgradient and downgradient wells monitor the same ground water formation and there is similar variability in the upgradient and downgradient zones. Site prediction limits are determined by pooling the historical ground water data from hydraulically upgradient wells. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances. The type of prediction limit utilized (e.g., parametric or nonparametric) is based on the detection frequency and the data distribution of each parameter in the background data. The distribution of the background data is tested for normality using the Shapiro-Wilk test (Gibbons, 1994 and USEPA 1992). If the constituent is normally distributed, a normal prediction limit is used. If normality is rejected by the Shapiro-Wilk test, the background data is transformed by taking the natural logarithm. The Shapiro-Wilk test is then reapplied on the transformed data. If it is not rejected, lognormal prediction limits are used. If after transforming the data, normality is still rejected, nonparametric prediction limits are used for that analyte. The nonparametric prediction limit is the largest determination in the background measurements. For constituents where the background detection frequency is greater than 0% but less than 50%, nonparametric prediction limits will be used. If the detection frequency is 0% after eight samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit. As an alternative to nonparametric prediction limits, Poisson prediction limits can be used for small data sets where the detection frequency is less than 25%.

<u>Results of the Interwell Statistics</u>

The background data used in this statistical analysis includes the ground water data collected from ground water well MW-12 during the period from 2015 through the current data. A summary of the background data from monitoring well MW-12 used to determine the site prediction limits, is listed in Attachment B, Table 1 “Upgradient Data”. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 “Most Current Downgradient Monitoring Data”, summarizes the current data from downgradient wells MW-11, MW-15, MW-16, MW-20, MW-22, and MW-6, compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks.

For the most current data, the site prediction limit exceedances detected are summarized in the Table below.

Summary of Prediction Limit Exceedances for the Second Semi-Annual Monitoring Event in 2023

Well	Trace Metal	Result	Prediction Limit	Prediction Limit Type	Verified or Awaiting Verification
MW-15	Arsenic, µg/L	166	4.0000	Nonparametric	Verified
	Barium, µg/L	1350	319.4242	Normal	Verified
	Cobalt, µg/L	15.9	2.6000	Nonparametric	Verified
	Nickel, µg/L	72.1	13.4000	Nonparametric	Verified
MW-6	Barium, µg/L	431	319.4242	Normal	Awaiting Verification
	Copper, µg/L	4.1	4.0000	Nonparametric	Awaiting Verification

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. With the exception of barium, these constituents are rarely detected in the upgradient wells. With the detection frequencies being less than 50% for all but barium, nonparametric site prediction limits are used for those trace metals.

Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Table 8 is a historical summary of the data at those wells that have indicated an exceedance. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached.

A statistical power curve indicates the expected false assessments for the site as a whole. The false positive rate for interwell analyses is the percentage of failures when the upgradient versus downgradient true mean difference equals zero. False negative rate indicates the chance of missing contamination at a single well for a single constituent. The statistical power is a function of the number of wells included, the number of constituents compared, the detection frequencies, and the data distributions involved. For interwell analysis, the site-wide false positive rate is 11% and the test becomes sensitive to 3 standard deviation unit increases over background.

The verified exceedances were evaluated against the ground water protection standards (GWPS) using confidence limits. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The 95% LCL for arsenic at MW-15 (136.591 µg/L) exceeds the USEPA MCL of 10 µg/L. The 95% LCL for cobalt at MW-15 (13.079 µg/L) exceeds the Iowa Statewide Standard of 2.1 µg/L. The calculated LCLs for the remainder of the verified trace metals are below GWPS.

Volatile Organic Compounds

Volatile Organic Compounds (VOCs) are generally man-made compounds not present in ambient ground water. If VOCs are detected above their statistical limit (i.e., the laboratory PQL or reporting limit), a verification resample will be conducted at the next scheduled sampling event. A statistical exceedance will be indicated if the VOC detection is confirmed by the subsequent monitoring. VOCs detected in the ground water at Jones County Sanitary Landfill during the second semi-annual monitoring event in 2023 are summarized below. Historical VOC detections are summarized in Attachment C.

Organic compounds detected during the second semi-annual monitoring event in 2023

Well	VOC Detected	Result, µg/L	Reporting Limit, µg/L	Verified/ Awaiting Verification	Groundwater Standard, µg/L
MW-15	1,4-Dichlorobenzene	1.7	1	Verified	75[a]
	Benzene	1.4	1	Verified	5[a]
	Chlorobenzene	4.2	1	Verified	100[a]
	Chloroethane	3.8	1	Verified	2,800[b]
LPZ-6	1,4-Dichlorobenzene	2.4	1	Verified	75[a]
	Chloroethane	1.2	1	Awaiting Verification	2,800[b]
	Xylenes	3.8	2	Verified	10,000[a]

a - USEPA MCL
b – Iowa Statewide Standard

The verified VOC detections were evaluated against the GWPS using confidence limits (Attachment D). The calculated 95% LCLs of the verified VOCs are below GWPS.

CONCLUSIONS

This report summarizes the statistical analyses used to evaluate the ground water data obtained during the second semi-annual monitoring event in 2023 at Jones County Sanitary Landfill. The ground water data obtained during the second semi-annual monitoring event in 2023 was compared to background using prediction limits (interwell). For the most current data, there are verified site prediction limit exceedances detected for arsenic, barium, cobalt, and nickel at MW-15.

The VOCs were compared to MCLs or PQLs, in lieu of statistical comparisons to historical concentrations. There are verified detections of 1,4-dichlorobenzene, benzene, chlorobenzene, and chloroethane at MW-15 and 1,4-dichlorobenzene and xylenes at LPZ-6.

Attachment A

Summary of the Data obtained during the Second Semi-Annual Monitoring Event in 2023

Table 1

Analytical Data Summary for 10/18/2023

Constituents	Units	LPZ-6	MW-11	MW-12	MW-15	MW-16	MW-20	MW-22	MW-6
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	2.4	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0
2-butanone (mek)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10	<10
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Antimony, total	ug/L		<2	<2	<2	<2	<2	<2	<2
Arsenic, total	ug/L		<4	<4	166	<4	<4	<4	<4
Barium, total	ug/L		269	255	1350	84	133	195	431
Benzene	ug/L	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0
Beryllium, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L		<.8	<.8	<.8	<.8	<.8	<.8	<.8
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	<1.0	<1.0	<1.0	4.2	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/L	1.2	<1.0	<1.0	3.8	<1.0	<1.0	<1.0	<1.0
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L		<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L		<.4	<.4	15.9	.4	<.4	<.4	2.3
Copper, total	ug/L		<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.1
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L		<4.0	<4.0	72.1	<4.0	<4.0	<4.0	10.0
Selenium, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L		<4	<4	<4	<4	<4	<4	<4
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L		<2	<2	<2	<2	<2	<2	<2
Toluene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L		<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	3.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, total	ug/L		<20.0	21.8	<20.0	<20.0	<20.0	<20.0	<20.0

* - The displayed value is the arithmetic mean of multiple database matches.

Attachment B

Summary Tables and Graphs for the Interwell Comparisons

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony, total	ug/L	MW-12	04/20/2015	ND	2.0000		
Antimony, total	ug/L	MW-12	07/09/2015	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2015	ND	2.0000		
Antimony, total	ug/L	MW-12	04/05/2016	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2016	ND	2.0000		
Antimony, total	ug/L	MW-12	04/04/2017	ND	2.0000		
Antimony, total	ug/L	MW-12	10/03/2017	ND	2.0000		
Antimony, total	ug/L	MW-12	04/10/2018	ND	2.0000		
Antimony, total	ug/L	MW-12	10/12/2018	ND	2.0000		
Antimony, total	ug/L	MW-12	04/16/2019		3.5000		
Antimony, total	ug/L	MW-12	09/30/2019	ND	2.0000		
Antimony, total	ug/L	MW-12	04/07/2020	ND	2.0000		
Antimony, total	ug/L	MW-12	10/07/2020	ND	2.0000		
Antimony, total	ug/L	MW-12	04/22/2021	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2021	ND	2.0000		
Antimony, total	ug/L	MW-12	04/04/2022	ND	2.0000		
Antimony, total	ug/L	MW-12	10/05/2022	ND	2.0000		
Antimony, total	ug/L	MW-12	04/14/2023	ND	2.0000		
Antimony, total	ug/L	MW-12	10/18/2023	ND	2.0000		
Arsenic, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Arsenic, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Arsenic, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Arsenic, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Arsenic, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Barium, total	ug/L	MW-12	04/20/2015		264.0000		
Barium, total	ug/L	MW-12	07/09/2015		269.0000		
Barium, total	ug/L	MW-12	10/05/2015		293.0000		
Barium, total	ug/L	MW-12	04/05/2016		306.0000		
Barium, total	ug/L	MW-12	10/05/2016		274.0000		
Barium, total	ug/L	MW-12	04/04/2017		279.0000		
Barium, total	ug/L	MW-12	10/03/2017		268.0000		
Barium, total	ug/L	MW-12	04/10/2018		273.0000		
Barium, total	ug/L	MW-12	10/12/2018		243.0000		
Barium, total	ug/L	MW-12	04/16/2019		261.0000		
Barium, total	ug/L	MW-12	09/30/2019		253.0000		
Barium, total	ug/L	MW-12	04/07/2020		276.0000		
Barium, total	ug/L	MW-12	10/07/2020		256.0000		
Barium, total	ug/L	MW-12	04/22/2021		252.0000		
Barium, total	ug/L	MW-12	10/05/2021		216.0000		
Barium, total	ug/L	MW-12	04/04/2022		254.0000		
Barium, total	ug/L	MW-12	10/05/2022		219.0000		
Barium, total	ug/L	MW-12	04/14/2023		232.0000		
Barium, total	ug/L	MW-12	10/18/2023		255.0000		
Beryllium, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Beryllium, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Beryllium, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Beryllium, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/05/2022	ND	4.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Beryllium, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Cadmium, total	ug/L	MW-12	04/20/2015	ND	0.8000		
Cadmium, total	ug/L	MW-12	07/09/2015	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2015	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/05/2016	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2016	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/04/2017	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/03/2017	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/10/2018	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/12/2018	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/16/2019	ND	0.8000		
Cadmium, total	ug/L	MW-12	09/30/2019	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/07/2020	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/07/2020	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/22/2021	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2021	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/04/2022	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/05/2022	ND	0.8000		
Cadmium, total	ug/L	MW-12	04/14/2023	ND	0.8000		
Cadmium, total	ug/L	MW-12	10/18/2023	ND	0.8000		
Chromium, total	ug/L	MW-12	04/20/2015	ND	8.0000		
Chromium, total	ug/L	MW-12	07/09/2015	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2015	ND	8.0000		
Chromium, total	ug/L	MW-12	04/05/2016	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2016	ND	8.0000		
Chromium, total	ug/L	MW-12	04/04/2017	ND	8.0000		
Chromium, total	ug/L	MW-12	10/03/2017	ND	8.0000		
Chromium, total	ug/L	MW-12	04/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-12	10/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-12	04/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-12	09/30/2019	ND	8.0000		
Chromium, total	ug/L	MW-12	04/07/2020	ND	8.0000		
Chromium, total	ug/L	MW-12	10/07/2020	ND	8.0000		
Chromium, total	ug/L	MW-12	04/22/2021	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2021	ND	8.0000		
Chromium, total	ug/L	MW-12	04/04/2022	ND	8.0000		
Chromium, total	ug/L	MW-12	10/05/2022	ND	8.0000		
Chromium, total	ug/L	MW-12	04/14/2023	ND	8.0000		
Chromium, total	ug/L	MW-12	10/18/2023	ND	8.0000		
Cobalt, total	ug/L	MW-12	04/20/2015	ND	0.8000		
Cobalt, total	ug/L	MW-12	07/09/2015	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/05/2015	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/05/2016	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/05/2016	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/04/2017	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/03/2017	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/10/2018	ND	0.8000		
Cobalt, total	ug/L	MW-12	10/12/2018	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/16/2019	ND	0.8000		
Cobalt, total	ug/L	MW-12	09/30/2019	ND	0.8000		
Cobalt, total	ug/L	MW-12	04/07/2020	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/07/2020	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	04/22/2021	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/05/2021	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	04/04/2022	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/05/2022		2.6000		
Cobalt, total	ug/L	MW-12	04/14/2023	ND	0.4000	0.8000	***
Cobalt, total	ug/L	MW-12	10/18/2023	ND	0.4000	0.8000	***
Copper, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Copper, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Copper, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Copper, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Copper, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Copper, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Copper, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Copper, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Copper, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Copper, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Copper, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Copper, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2021	ND	4.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Copper, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Copper, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Copper, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Lead, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Lead, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Lead, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Lead, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Lead, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Lead, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Lead, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Lead, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Lead, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Lead, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Lead, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Lead, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Lead, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Lead, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Lead, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Lead, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Nickel, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Nickel, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Nickel, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Nickel, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Nickel, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Nickel, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Nickel, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Nickel, total	ug/L	MW-12	04/10/2018		13.4000		
Nickel, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Nickel, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Nickel, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Nickel, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Nickel, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Nickel, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Nickel, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Nickel, total	ug/L	MW-12	04/04/2022		10.4000		
Nickel, total	ug/L	MW-12	10/05/2022		6.2000		
Nickel, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Nickel, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Selenium, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Selenium, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Selenium, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Selenium, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Selenium, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Selenium, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-12	10/12/2018	ND	4.0000		
Selenium, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Selenium, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Selenium, total	ug/L	MW-12	10/07/2020	ND	4.0000		
Selenium, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Selenium, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Selenium, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Selenium, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Selenium, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Silver, total	ug/L	MW-12	04/20/2015	ND	4.0000		
Silver, total	ug/L	MW-12	07/09/2015	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2015	ND	4.0000		
Silver, total	ug/L	MW-12	04/05/2016	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2016	ND	4.0000		
Silver, total	ug/L	MW-12	04/04/2017	ND	4.0000		
Silver, total	ug/L	MW-12	10/03/2017	ND	4.0000		
Silver, total	ug/L	MW-12	04/10/2018	ND	4.0000		
Silver, total	ug/L	MW-12	10/12/2018	ND	8.0000	4.0000	**
Silver, total	ug/L	MW-12	04/16/2019	ND	4.0000		
Silver, total	ug/L	MW-12	09/30/2019	ND	4.0000		
Silver, total	ug/L	MW-12	04/07/2020	ND	4.0000		
Silver, total	ug/L	MW-12	10/07/2020	ND	4.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver, total	ug/L	MW-12	04/22/2021	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2021	ND	4.0000		
Silver, total	ug/L	MW-12	04/04/2022	ND	4.0000		
Silver, total	ug/L	MW-12	10/05/2022	ND	4.0000		
Silver, total	ug/L	MW-12	04/14/2023	ND	4.0000		
Silver, total	ug/L	MW-12	10/18/2023	ND	4.0000		
Thallium, total	ug/L	MW-12	04/20/2015	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	07/09/2015	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/05/2015	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/05/2016	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/05/2016	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/04/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/03/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/10/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	10/12/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-12	04/16/2019	ND	2.0000		
Thallium, total	ug/L	MW-12	09/30/2019	ND	2.0000		
Thallium, total	ug/L	MW-12	04/07/2020	ND	2.0000		
Thallium, total	ug/L	MW-12	10/07/2020	ND	2.0000		
Thallium, total	ug/L	MW-12	04/22/2021	ND	2.0000		
Thallium, total	ug/L	MW-12	10/05/2021	ND	2.0000		
Thallium, total	ug/L	MW-12	04/04/2022	ND	2.0000		
Thallium, total	ug/L	MW-12	10/05/2022	ND	2.0000		
Thallium, total	ug/L	MW-12	04/14/2023	ND	2.0000		
Thallium, total	ug/L	MW-12	10/18/2023	ND	2.0000		
Vanadium, total	ug/L	MW-12	04/20/2015	ND	20.0000		
Vanadium, total	ug/L	MW-12	07/09/2015	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2015	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/05/2016	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2016	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/04/2017	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/03/2017	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-12	09/30/2019	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/07/2020	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/07/2020	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/22/2021	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2021	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/04/2022	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/05/2022	ND	20.0000		
Vanadium, total	ug/L	MW-12	04/14/2023	ND	20.0000		
Vanadium, total	ug/L	MW-12	10/18/2023	ND	20.0000		
Zinc, total	ug/L	MW-12	04/20/2015	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	07/09/2015		18.1000		
Zinc, total	ug/L	MW-12	10/05/2015		10.1000		
Zinc, total	ug/L	MW-12	04/05/2016	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	10/05/2016	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	04/04/2017	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	10/03/2017	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	04/10/2018		27.2000		
Zinc, total	ug/L	MW-12	10/12/2018	ND	20.0000		
Zinc, total	ug/L	MW-12	04/16/2019	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-12	09/30/2019		10.9000		
Zinc, total	ug/L	MW-12	04/07/2020	ND	20.0000		
Zinc, total	ug/L	MW-12	10/07/2020	ND	20.0000		
Zinc, total	ug/L	MW-12	04/22/2021	ND	20.0000		
Zinc, total	ug/L	MW-12	10/05/2021	ND	20.0000		
Zinc, total	ug/L	MW-12	04/04/2022		24.2000		
Zinc, total	ug/L	MW-12	10/05/2022	ND	20.0000		
Zinc, total	ug/L	MW-12	04/14/2023	ND	20.0000		
Zinc, total	ug/L	MW-12	10/18/2023		21.8000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony, total	ug/L	MW-11	10/18/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-11	10/18/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-11	10/18/2023		269.0000		319.4242
Beryllium, total	ug/L	MW-11	10/18/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-11	10/18/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-11	10/18/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-11	10/18/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-11	10/18/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-11	10/18/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-11	10/18/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-11	10/18/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-11	10/18/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-11	10/18/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-11	10/18/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-11	10/18/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-15	10/18/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-15	10/18/2023		166.0000	***	4.0000
Barium, total	ug/L	MW-15	10/18/2023		1350.0000	***	319.4242
Beryllium, total	ug/L	MW-15	10/18/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-15	10/18/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-15	10/18/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-15	10/18/2023		15.9000	***	2.6000
Copper, total	ug/L	MW-15	10/18/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-15	10/18/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-15	10/18/2023		72.1000	***	13.4000
Selenium, total	ug/L	MW-15	10/18/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-15	10/18/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-15	10/18/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-15	10/18/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-15	10/18/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-16	10/18/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-16	10/18/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-16	10/18/2023		84.0000		319.4242
Beryllium, total	ug/L	MW-16	10/18/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-16	10/18/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-16	10/18/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-16	10/18/2023		0.4000		2.6000
Copper, total	ug/L	MW-16	10/18/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-16	10/18/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-16	10/18/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-16	10/18/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-16	10/18/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-16	10/18/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-16	10/18/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-16	10/18/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-20	10/18/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-20	10/18/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-20	10/18/2023		133.0000		319.4242
Beryllium, total	ug/L	MW-20	10/18/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-20	10/18/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-20	10/18/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-20	10/18/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-20	10/18/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-20	10/18/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-20	10/18/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-20	10/18/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-20	10/18/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-20	10/18/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-20	10/18/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-20	10/18/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-22	10/18/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-22	10/18/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-22	10/18/2023		195.0000		319.4242
Beryllium, total	ug/L	MW-22	10/18/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-22	10/18/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-22	10/18/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-22	10/18/2023	ND	0.4000		2.6000
Copper, total	ug/L	MW-22	10/18/2023	ND	4.0000		4.0000
Lead, total	ug/L	MW-22	10/18/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-22	10/18/2023	ND	4.0000		13.4000
Selenium, total	ug/L	MW-22	10/18/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-22	10/18/2023	ND	4.0000		4.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Thallium, total	ug/L	MW-22	10/18/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-22	10/18/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-22	10/18/2023	ND	20.0000		27.2000
Antimony, total	ug/L	MW-6	10/18/2023	ND	2.0000		3.5000
Arsenic, total	ug/L	MW-6	10/18/2023	ND	4.0000		4.0000
Barium, total	ug/L	MW-6	10/18/2023		431.0000	*	319.4242
Beryllium, total	ug/L	MW-6	10/18/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-6	10/18/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-6	10/18/2023	ND	8.0000		8.0000
Cobalt, total	ug/L	MW-6	10/18/2023		2.3000		2.6000
Copper, total	ug/L	MW-6	10/18/2023		4.1000	*	4.0000
Lead, total	ug/L	MW-6	10/18/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-6	10/18/2023		10.0000		13.4000
Selenium, total	ug/L	MW-6	10/18/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-6	10/18/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-6	10/18/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-6	10/18/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-6	10/18/2023	ND	20.0000		27.2000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient Detect	Upgradient N	Upgradient Proportion	Downgradient Detect	Downgradient N	Downgradient Proportion
Antimony, total	1	19	0.053	0	136	0.000
Arsenic, total	0	19	0.000	44	161	0.273
Barium, total	19	19	1.000	178	178	1.000
Beryllium, total	0	19	0.000	0	136	0.000
Cadmium, total	0	19	0.000	23	166	0.139
Chromium, total	0	19	0.000	22	157	0.140
Cobalt, total	1	19	0.053	81	194	0.418
Copper, total	0	19	0.000	63	176	0.358
Lead, total	0	19	0.000	35	167	0.210
Nickel, total	3	19	0.158	104	177	0.588
Selenium, total	0	19	0.000	14	156	0.090
Silver, total	0	19	0.000	0	136	0.000
Thallium, total	0	19	0.000	0	136	0.000
Vanadium, total	0	19	0.000	23	165	0.139
Zinc, total	6	19	0.316	80	178	0.449

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony, total	1	19	0.053									nonpar
Arsenic, total	0	19	0.000									nonpar
Barium, total	19	19	1.000	0.667	0.124					2.326	normal	normal
Beryllium, total	0	19	0.000									nonpar
Cadmium, total	0	19	0.000									nonpar
Chromium, total	0	19	0.000									nonpar
Cobalt, total	1	19	0.053									nonpar
Copper, total	0	19	0.000									nonpar
Lead, total	0	19	0.000									nonpar
Nickel, total	3	19	0.158	0.903	0.321					2.326	normal	nonpar
Selenium, total	0	19	0.000									nonpar
Silver, total	0	19	0.000									nonpar
Thallium, total	0	19	0.000									nonpar
Vanadium, total	0	19	0.000									nonpar
Zinc, total	6	19	0.316	0.057	0.645					2.326	normal	nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Antimony, total	ug/L	1	19					3.5000	nonpar		0.97
Arsenic, total	ug/L	0	19					4.0000	nonpar	***	0.97
Barium, total	ug/L	19	19	260.1579	22.6428	0.0100	2.6174	319.4242	normal		
Beryllium, total	ug/L	0	19					4.0000	nonpar	***	0.97
Cadmium, total	ug/L	0	19					0.8000	nonpar	***	0.97
Chromium, total	ug/L	0	19					8.0000	nonpar	***	0.97
Cobalt, total	ug/L	1	19					2.6000	nonpar		0.97
Copper, total	ug/L	0	19					4.0000	nonpar	***	0.97
Lead, total	ug/L	0	19					4.0000	nonpar	***	0.97
Nickel, total	ug/L	3	19					13.4000	nonpar		0.97
Selenium, total	ug/L	0	19					4.0000	nonpar	***	0.97
Silver, total	ug/L	0	19					4.0000	nonpar	***	0.97
Thallium, total	ug/L	0	19					2.0000	nonpar	***	0.97
Vanadium, total	ug/L	0	19					20.0000	nonpar	***	0.97
Zinc, total	ug/L	6	19					27.2000	nonpar		0.97

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic, total	ug/L	MW-15	03/06/2009		87.6000	*	4.0000
Arsenic, total	ug/L	MW-15	06/16/2009	ND	4.0000		4.0000
Arsenic, total	ug/L	MW-15	07/13/2009		151.0000	*	4.0000
Arsenic, total	ug/L	MW-15	08/31/2009		54.6000	*	4.0000
Arsenic, total	ug/L	MW-15	10/20/2009		184.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/15/2010		78.4000	*	4.0000
Arsenic, total	ug/L	MW-15	06/10/2010		204.0000	*	4.0000
Arsenic, total	ug/L	MW-15	09/14/2010		209.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/11/2011		87.3000	*	4.0000
Arsenic, total	ug/L	MW-15	09/07/2011		267.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/14/2012		117.0000	*	4.0000
Arsenic, total	ug/L	MW-15	09/01/2012		282.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/01/2013		43.3000	*	4.0000
Arsenic, total	ug/L	MW-15	09/09/2013		187.0000	*	4.0000
Arsenic, total	ug/L	MW-15	03/30/2014		99.5000	*	4.0000
Arsenic, total	ug/L	MW-15	09/19/2014		21.9000	*	4.0000
Arsenic, total	ug/L	MW-15	04/20/2015		178.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2015		208.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/05/2016		183.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2016		153.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/04/2017		177.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/03/2017		233.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/10/2018		142.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/12/2018		128.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/16/2019		125.0000	*	4.0000
Arsenic, total	ug/L	MW-15	09/30/2019		212.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/07/2020		149.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/07/2020		168.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/22/2021		177.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2021		200.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/04/2022		143.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/05/2022		250.0000	*	4.0000
Arsenic, total	ug/L	MW-15	04/14/2023		168.0000	*	4.0000
Arsenic, total	ug/L	MW-15	10/18/2023		166.0000	*	4.0000
Barium, total	ug/L	MW-15	03/06/2009		1390.0000	*	319.4242
Barium, total	ug/L	MW-15	06/16/2009		97.7000		319.4242
Barium, total	ug/L	MW-15	07/13/2009		1260.0000	*	319.4242
Barium, total	ug/L	MW-15	08/31/2009		1060.0000	*	319.4242
Barium, total	ug/L	MW-15	10/20/2009		1440.0000	*	319.4242
Barium, total	ug/L	MW-15	03/15/2010		752.0000	*	319.4242
Barium, total	ug/L	MW-15	06/10/2010		1880.0000	*	319.4242
Barium, total	ug/L	MW-15	09/14/2010		3550.0000	*	319.4242
Barium, total	ug/L	MW-15	03/11/2011		1010.0000	*	319.4242
Barium, total	ug/L	MW-15	09/07/2011		2300.0000	*	319.4242
Barium, total	ug/L	MW-15	03/14/2012		869.0000	*	319.4242
Barium, total	ug/L	MW-15	09/01/2012		2010.0000	*	319.4242
Barium, total	ug/L	MW-15	04/01/2013		596.0000	*	319.4242
Barium, total	ug/L	MW-15	09/09/2013		988.0000	*	319.4242
Barium, total	ug/L	MW-15	03/30/2014		1120.0000	*	319.4242
Barium, total	ug/L	MW-15	09/19/2014		694.0000	*	319.4242
Barium, total	ug/L	MW-15	04/20/2015		1160.0000	*	319.4242
Barium, total	ug/L	MW-15	10/05/2015		1030.0000	*	319.4242
Barium, total	ug/L	MW-15	04/05/2016		1080.0000	*	319.4242
Barium, total	ug/L	MW-15	10/05/2016		1160.0000	*	319.4242
Barium, total	ug/L	MW-15	04/04/2017		1130.0000	*	319.4242
Barium, total	ug/L	MW-15	10/03/2017		1160.0000	*	319.4242
Barium, total	ug/L	MW-15	04/10/2018		598.0000	*	319.4242
Barium, total	ug/L	MW-15	10/12/2018		1050.0000	*	319.4242
Barium, total	ug/L	MW-15	04/16/2019		1390.0000	*	319.4242
Barium, total	ug/L	MW-15	09/30/2019		1170.0000	*	319.4242
Barium, total	ug/L	MW-15	04/07/2020		1300.0000	*	319.4242
Barium, total	ug/L	MW-15	10/07/2020		881.0000	*	319.4242
Barium, total	ug/L	MW-15	04/22/2021		868.0000	*	319.4242
Barium, total	ug/L	MW-15	10/05/2021		1180.0000	*	319.4242
Barium, total	ug/L	MW-15	04/04/2022		1000.0000	*	319.4242
Barium, total	ug/L	MW-15	10/05/2022		1170.0000	*	319.4242
Barium, total	ug/L	MW-15	04/14/2023		783.0000	*	319.4242
Barium, total	ug/L	MW-15	10/18/2023		1350.0000	*	319.4242
Cobalt, total	ug/L	MW-15	04/06/2006		27.0000	*	2.6000
Cobalt, total	ug/L	MW-15	09/07/2006		23.0000	*	2.6000
Cobalt, total	ug/L	MW-15	03/14/2007		23.0000	*	2.6000

*   - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt, total	ug/L	MW-15	09/19/2007		22.0000	*	2.6000
Cobalt, total	ug/L	MW-15	03/25/2008		21.0000	*	2.6000
Cobalt, total	ug/L	MW-15	09/05/2008		24.0000	*	2.6000
Cobalt, total	ug/L	MW-15	03/06/2009		24.7000	*	2.6000
Cobalt, total	ug/L	MW-15	06/16/2009	ND	4.0000		2.6000
Cobalt, total	ug/L	MW-15	07/13/2009		54.0000	*	2.6000
Cobalt, total	ug/L	MW-15	08/31/2009		23.6000	*	2.6000
Cobalt, total	ug/L	MW-15	10/20/2009		23.9000	*	2.6000
Cobalt, total	ug/L	MW-15	03/15/2010		23.0000	*	2.6000
Cobalt, total	ug/L	MW-15	06/10/2010		78.4000	*	2.6000
Cobalt, total	ug/L	MW-15	09/14/2010		145.3667	*	2.6000
Cobalt, total	ug/L	MW-15	03/11/2011		22.2333	*	2.6000
Cobalt, total	ug/L	MW-15	09/07/2011		65.1000	*	2.6000
Cobalt, total	ug/L	MW-15	03/14/2012		21.2000	*	2.6000
Cobalt, total	ug/L	MW-15	09/01/2012		43.8000	*	2.6000
Cobalt, total	ug/L	MW-15	04/01/2013		14.9000	*	2.6000
Cobalt, total	ug/L	MW-15	09/09/2013		22.5000	*	2.6000
Cobalt, total	ug/L	MW-15	03/30/2014		30.0000	*	2.6000
Cobalt, total	ug/L	MW-15	09/19/2014		19.4000	*	2.6000
Cobalt, total	ug/L	MW-15	04/20/2015		22.3000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2015		24.3000	*	2.6000
Cobalt, total	ug/L	MW-15	04/05/2016		21.3000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2016		20.1000	*	2.6000
Cobalt, total	ug/L	MW-15	04/04/2017		19.8000	*	2.6000
Cobalt, total	ug/L	MW-15	10/03/2017		22.5000	*	2.6000
Cobalt, total	ug/L	MW-15	04/10/2018		12.3000	*	2.6000
Cobalt, total	ug/L	MW-15	10/12/2018		22.0000	*	2.6000
Cobalt, total	ug/L	MW-15	04/16/2019		23.7000	*	2.6000
Cobalt, total	ug/L	MW-15	09/30/2019		24.2000	*	2.6000
Cobalt, total	ug/L	MW-15	04/07/2020		19.6000	*	2.6000
Cobalt, total	ug/L	MW-15	10/07/2020		15.0000	*	2.6000
Cobalt, total	ug/L	MW-15	04/22/2021		15.1000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2021		20.0000	*	2.6000
Cobalt, total	ug/L	MW-15	04/04/2022		18.4000	*	2.6000
Cobalt, total	ug/L	MW-15	10/05/2022		21.2000	*	2.6000
Cobalt, total	ug/L	MW-15	04/14/2023		13.1000	*	2.6000
Cobalt, total	ug/L	MW-15	10/18/2023		15.9000	*	2.6000
Nickel, total	ug/L	MW-15	03/06/2009		88.9000	*	13.4000
Nickel, total	ug/L	MW-15	06/16/2009		9.7000		13.4000
Nickel, total	ug/L	MW-15	07/13/2009		161.0000	*	13.4000
Nickel, total	ug/L	MW-15	08/31/2009		64.8000	*	13.4000
Nickel, total	ug/L	MW-15	10/20/2009		71.9000	*	13.4000
Nickel, total	ug/L	MW-15	03/15/2010		70.5000	*	13.4000
Nickel, total	ug/L	MW-15	06/10/2010		211.0000	*	13.4000
Nickel, total	ug/L	MW-15	09/14/2010		536.0000	*	13.4000
Nickel, total	ug/L	MW-15	03/11/2011		86.4000	*	13.4000
Nickel, total	ug/L	MW-15	09/07/2011		261.0000	*	13.4000
Nickel, total	ug/L	MW-15	03/14/2012		78.1000	*	13.4000
Nickel, total	ug/L	MW-15	09/01/2012		137.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/01/2013		45.2000	*	13.4000
Nickel, total	ug/L	MW-15	09/09/2013		88.9000	*	13.4000
Nickel, total	ug/L	MW-15	03/30/2014		97.0000	*	13.4000
Nickel, total	ug/L	MW-15	09/19/2014		67.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/20/2015		73.3000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2015		102.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/05/2016		70.3000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2016		59.8000	*	13.4000
Nickel, total	ug/L	MW-15	04/04/2017		71.0000	*	13.4000
Nickel, total	ug/L	MW-15	10/03/2017		101.0000	*	13.4000
Nickel, total	ug/L	MW-15	04/10/2018		57.8000	*	13.4000
Nickel, total	ug/L	MW-15	10/12/2018		52.9000	*	13.4000
Nickel, total	ug/L	MW-15	04/16/2019		70.3000	*	13.4000
Nickel, total	ug/L	MW-15	09/30/2019		92.8000	*	13.4000
Nickel, total	ug/L	MW-15	04/07/2020		60.1000	*	13.4000
Nickel, total	ug/L	MW-15	10/07/2020		65.1000	*	13.4000
Nickel, total	ug/L	MW-15	04/22/2021		61.8000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2021		86.1000	*	13.4000
Nickel, total	ug/L	MW-15	04/04/2022		63.4000	*	13.4000
Nickel, total	ug/L	MW-15	10/05/2022		93.6000	*	13.4000
Nickel, total	ug/L	MW-15	04/14/2023		67.5000	*	13.4000
Nickel, total	ug/L	MW-15	10/18/2023		72.1000	*	13.4000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

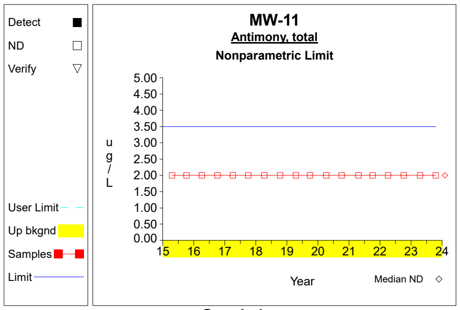
Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

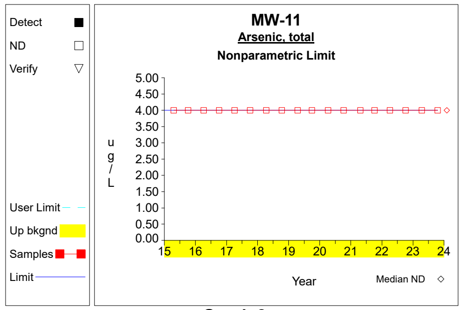
Constituent	Units	Well	Date		Result		Pred. Limit
Barium, total	ug/L	MW-6	03/06/2009		626.0000	*	319.4242
Barium, total	ug/L	MW-6	06/16/2009		625.0000	*	319.4242
Barium, total	ug/L	MW-6	07/13/2009		636.0000	*	319.4242
Barium, total	ug/L	MW-6	08/31/2009		505.0000	*	319.4242
Barium, total	ug/L	MW-6	10/20/2009		665.0000	*	319.4242
Barium, total	ug/L	MW-6	03/15/2010		329.0000	*	319.4242
Barium, total	ug/L	MW-6	06/10/2010		644.0000	*	319.4242
Barium, total	ug/L	MW-6	09/14/2010		616.0000	*	319.4242
Barium, total	ug/L	MW-6	03/11/2011		653.0000	*	319.4242
Barium, total	ug/L	MW-6	09/07/2011		606.5000	*	319.4242
Barium, total	ug/L	MW-6	03/14/2012		519.0000	*	319.4242
Barium, total	ug/L	MW-6	09/01/2012		497.0000	*	319.4242
Barium, total	ug/L	MW-6	04/01/2013		665.0000	*	319.4242
Barium, total	ug/L	MW-6	09/09/2013		606.0000	*	319.4242
Barium, total	ug/L	MW-6	03/30/2014		612.0000	*	319.4242
Barium, total	ug/L	MW-6	09/19/2014		591.0000	*	319.4242
Barium, total	ug/L	MW-6	04/20/2015		717.0000	*	319.4242
Barium, total	ug/L	MW-6	10/05/2015		479.0000	*	319.4242
Barium, total	ug/L	MW-6	04/05/2016		408.0000	*	319.4242
Barium, total	ug/L	MW-6	10/05/2016		231.0000		319.4242
Barium, total	ug/L	MW-6	04/04/2017		154.0000		319.4242
Barium, total	ug/L	MW-6	10/03/2017		573.0000	*	319.4242
Barium, total	ug/L	MW-6	01/03/2018		613.0000	*	319.4242
Barium, total	ug/L	MW-6	04/10/2018		435.0000	*	319.4242
Barium, total	ug/L	MW-6	10/12/2018		289.0000		319.4242
Barium, total	ug/L	MW-6	04/16/2019		274.0000		319.4242
Barium, total	ug/L	MW-6	09/30/2019		409.0000	*	319.4242
Barium, total	ug/L	MW-6	04/07/2020		209.0000		319.4242
Barium, total	ug/L	MW-6	10/07/2020		226.0000		319.4242
Barium, total	ug/L	MW-6	04/22/2021		180.0000		319.4242
Barium, total	ug/L	MW-6	10/05/2021		497.0000	*	319.4242
Barium, total	ug/L	MW-6	04/04/2022		521.0000	*	319.4242
Barium, total	ug/L	MW-6	10/05/2022		551.0000	*	319.4242
Barium, total	ug/L	MW-6	04/14/2023		133.0000		319.4242
Barium, total	ug/L	MW-6	10/18/2023		431.0000	*	319.4242
Copper, total	ug/L	MW-6	03/06/2009		5.0000	*	4.0000
Copper, total	ug/L	MW-6	06/16/2009		4.9000	*	4.0000
Copper, total	ug/L	MW-6	07/13/2009		12.0000	*	4.0000
Copper, total	ug/L	MW-6	08/31/2009		5.2000	*	4.0000
Copper, total	ug/L	MW-6	10/20/2009	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	03/15/2010	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	06/10/2010	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	09/14/2010		5.0000	*	4.0000
Copper, total	ug/L	MW-6	03/11/2011		4.2000	*	4.0000
Copper, total	ug/L	MW-6	09/07/2011		7.5000	*	4.0000
Copper, total	ug/L	MW-6	03/14/2012		5.4000	*	4.0000
Copper, total	ug/L	MW-6	09/01/2012		6.3000	*	4.0000
Copper, total	ug/L	MW-6	04/01/2013		14.3000	*	4.0000
Copper, total	ug/L	MW-6	09/09/2013		6.0000	*	4.0000
Copper, total	ug/L	MW-6	03/30/2014		6.0000	*	4.0000
Copper, total	ug/L	MW-6	09/19/2014		4.5000	*	4.0000
Copper, total	ug/L	MW-6	04/20/2015		4.2000	*	4.0000
Copper, total	ug/L	MW-6	10/05/2015	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/05/2016	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/05/2016	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/04/2017	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/03/2017	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/10/2018	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/12/2018	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/16/2019	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	09/30/2019	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/07/2020	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/07/2020	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/22/2021	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/05/2021	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	04/04/2022	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/05/2022		6.9000	*	4.0000
Copper, total	ug/L	MW-6	04/14/2023	ND	4.0000		4.0000
Copper, total	ug/L	MW-6	10/18/2023		4.1000	*	4.0000

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

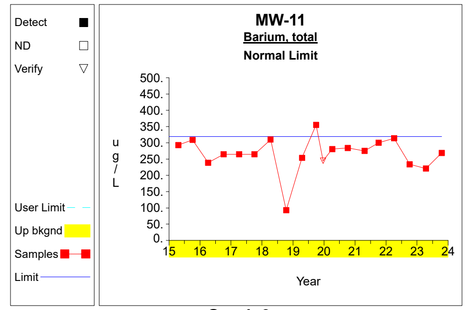
Up vs. Down Prediction Limits



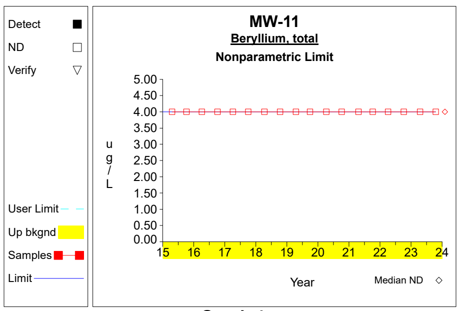
Graph 1



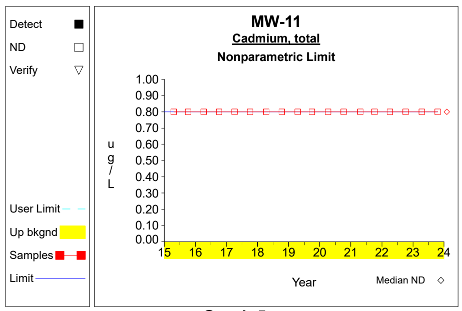
Graph 2



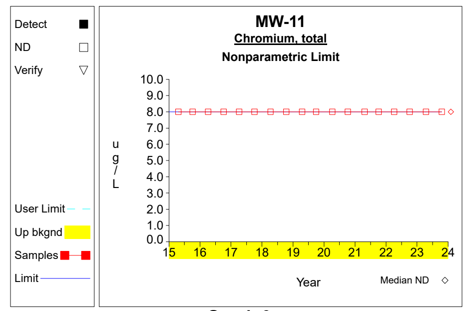
Graph 3



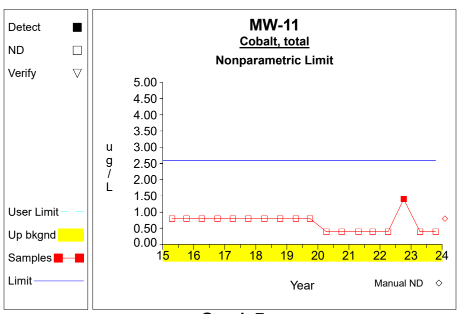
Graph 4



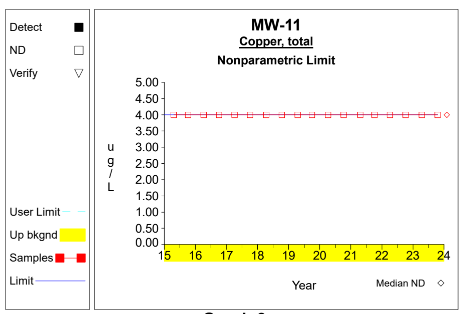
Graph 5



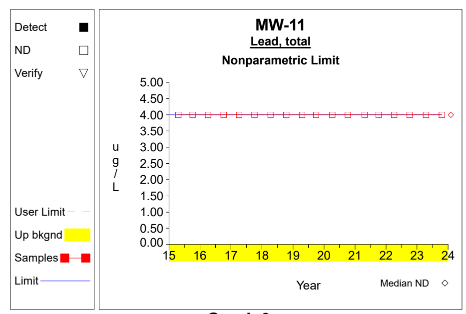
Graph 6



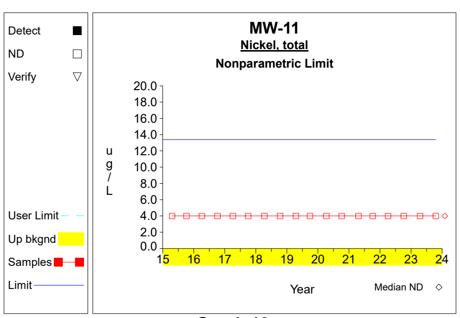
Graph 7



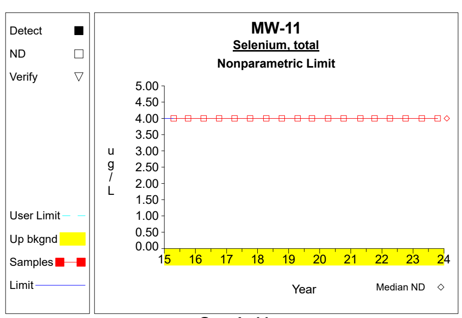
Graph 8



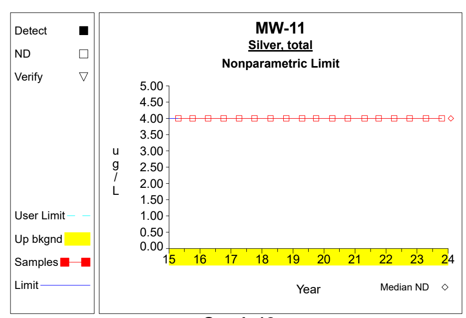
Graph 9



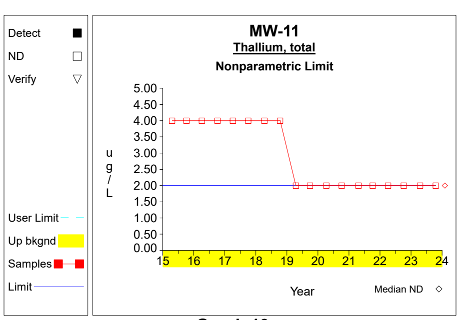
Graph 10



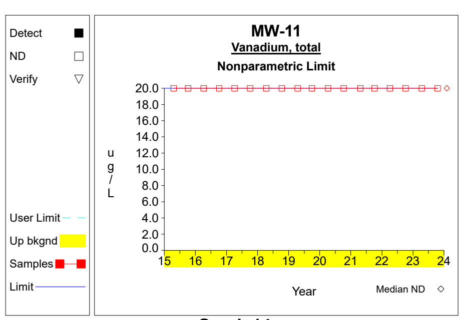
Graph 11



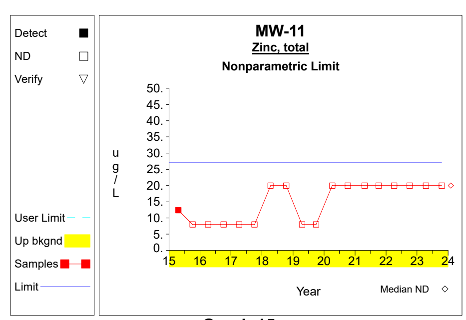
Graph 12



Graph 13



Graph 14



Graph 15

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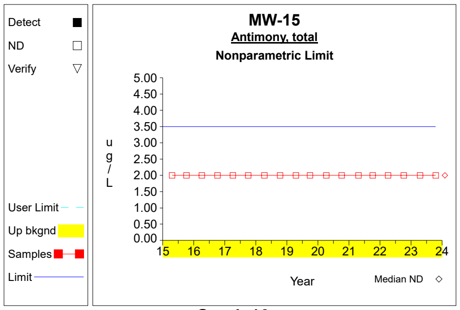
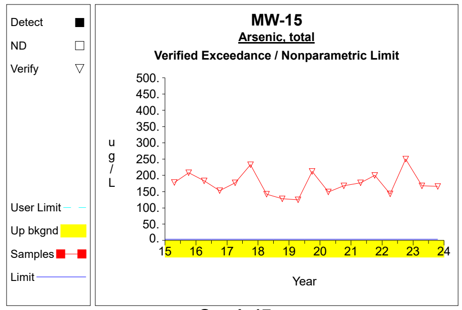
Jones County [GW] November 2023

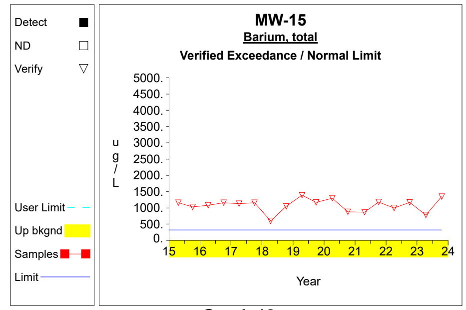
Up vs. Down Prediction Limits



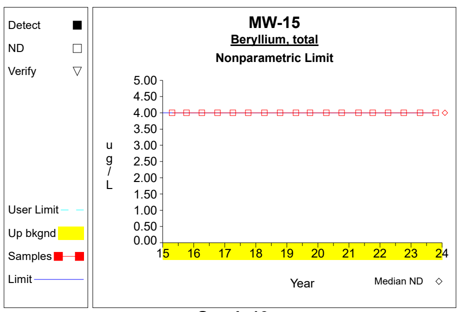
Graph 16



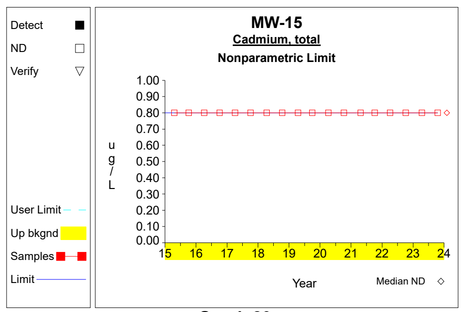
Graph 17



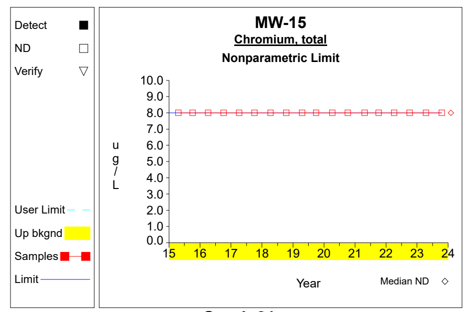
Graph 18



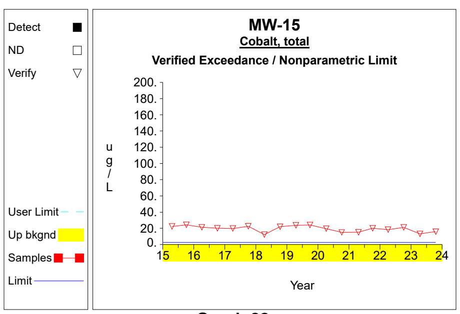
Graph 19



Graph 20



Graph 21



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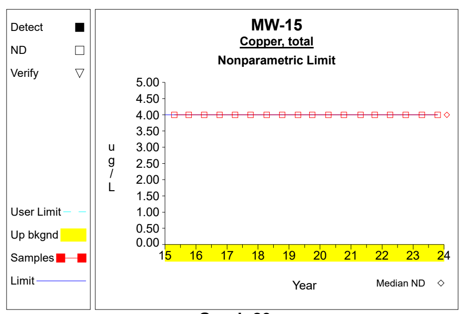
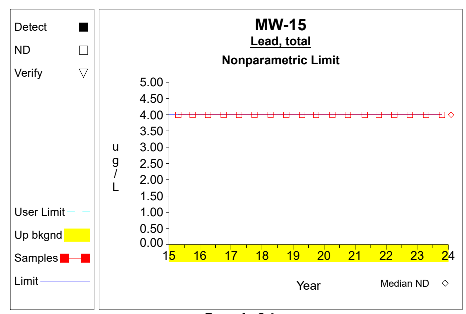
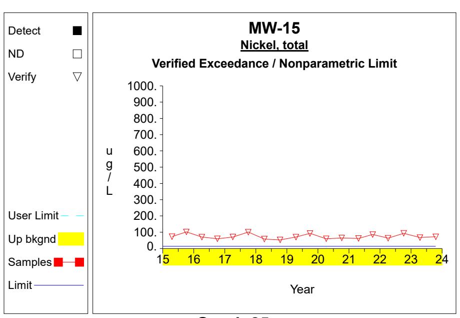


Graph 23



Graph 24



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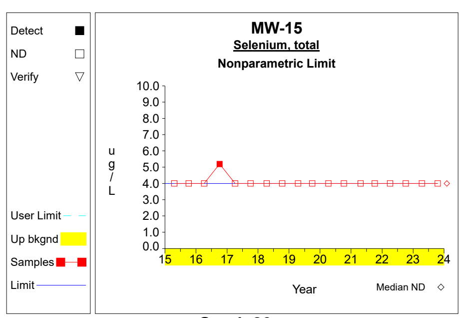

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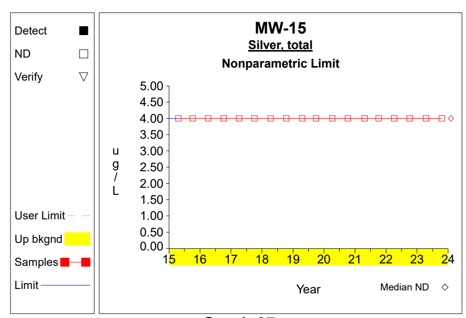

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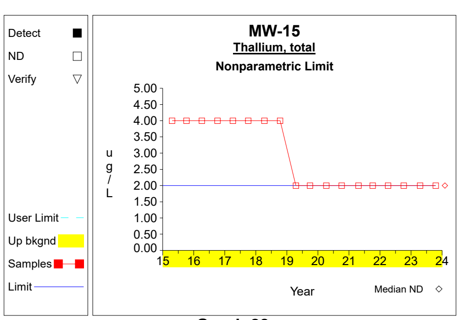
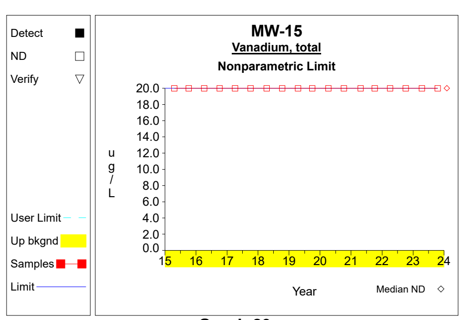


Graph 28



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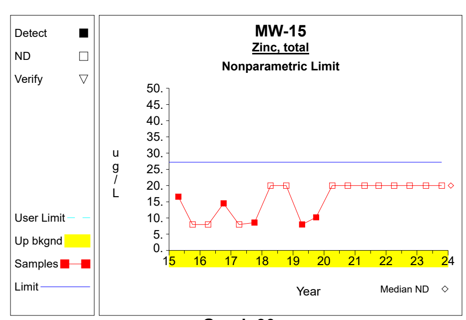

Graph 30

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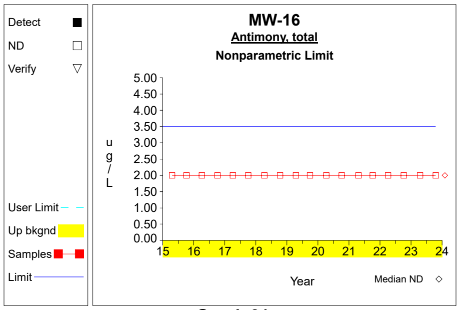
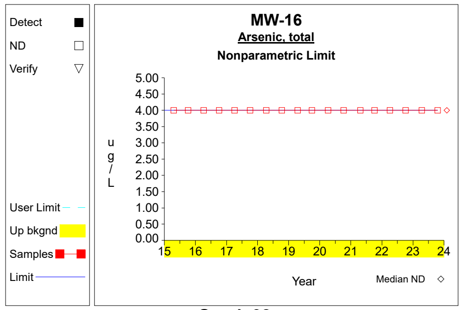
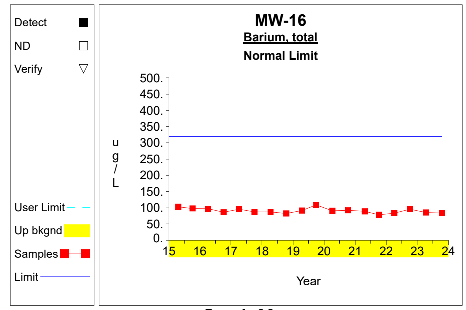
Up vs. Down Prediction Limits



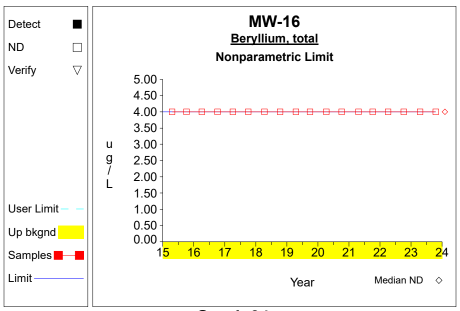
Graph 31



Graph 32



Graph 33



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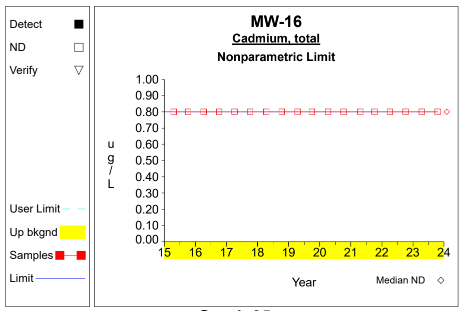
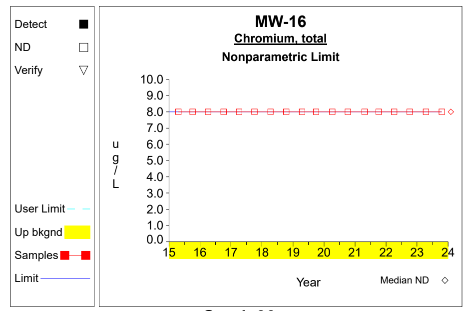


Graph 35



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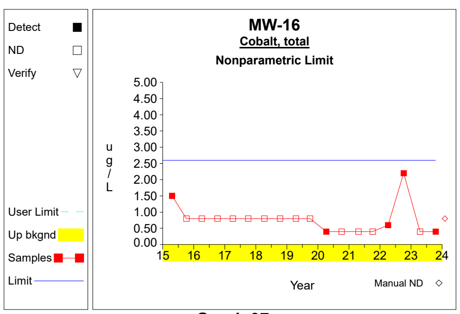

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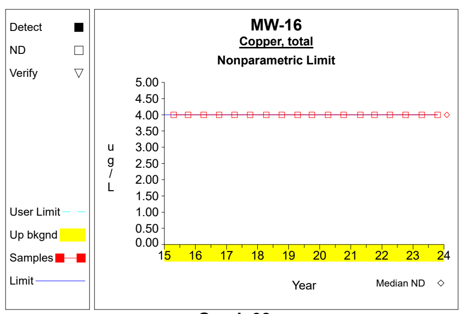

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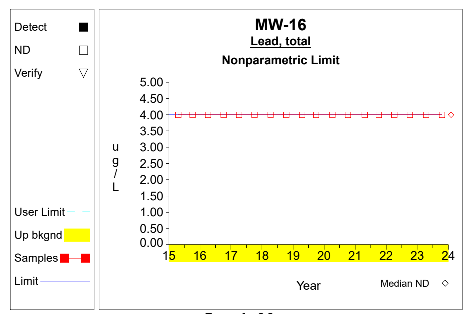

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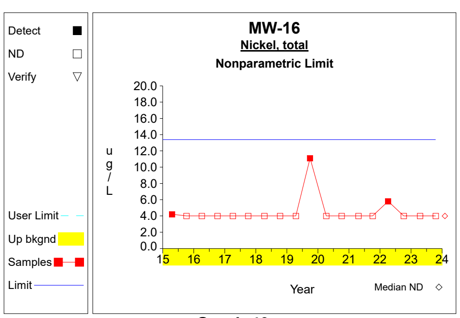

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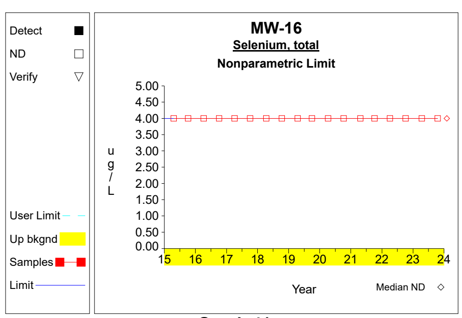

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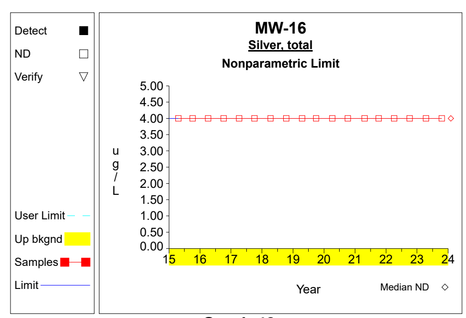

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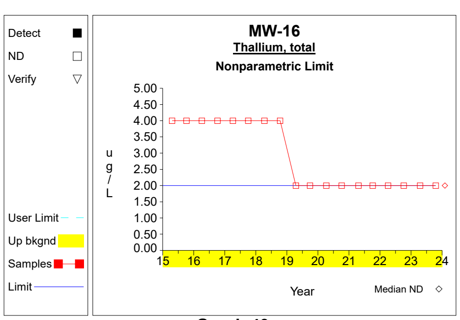

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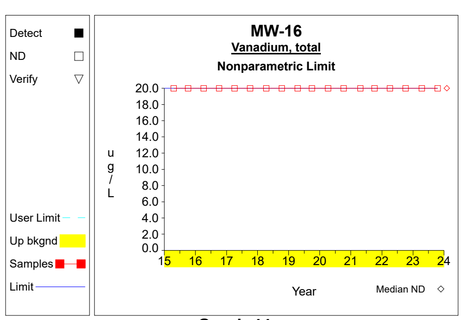
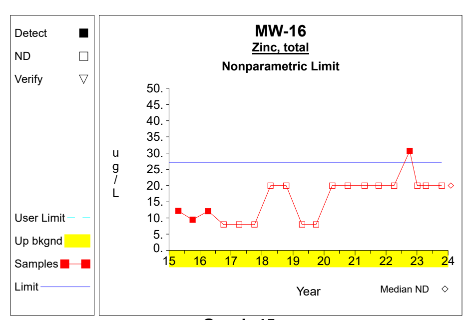
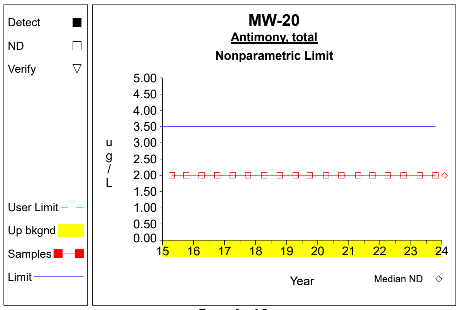


Graph 44



Graph 45

Up vs. Down Prediction Limits



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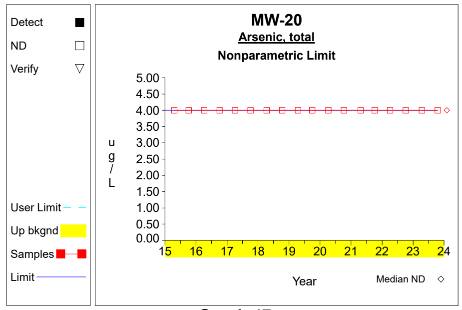
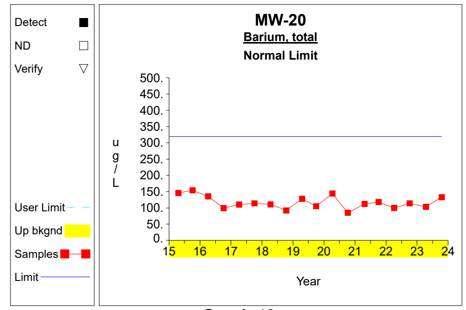
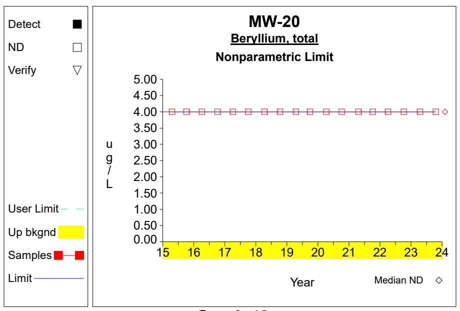


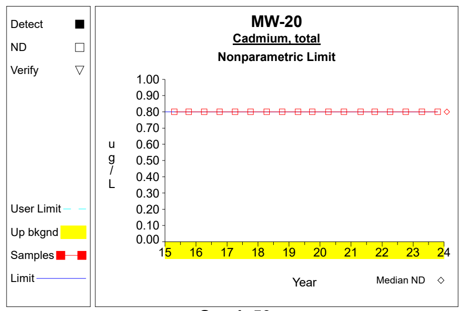
Graph 47



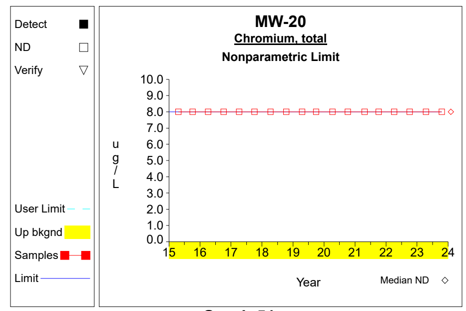
Graph 48



Graph 49



Graph 50



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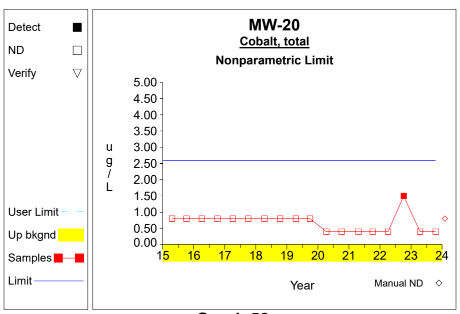
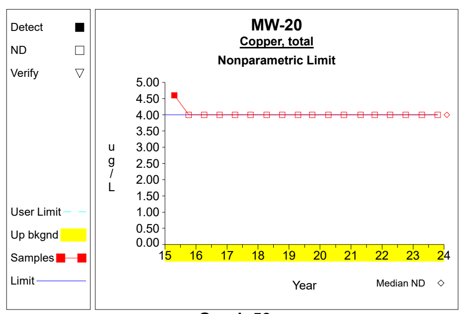


Graph 52



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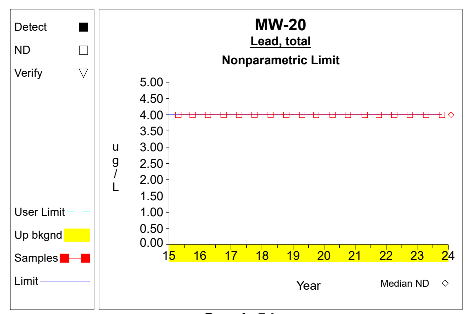
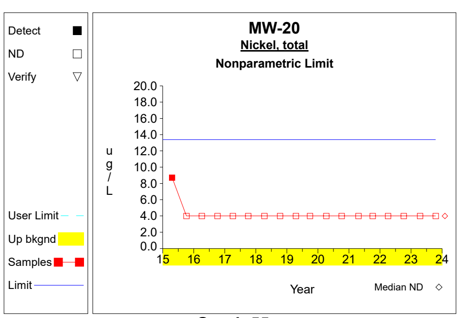


Graph 54



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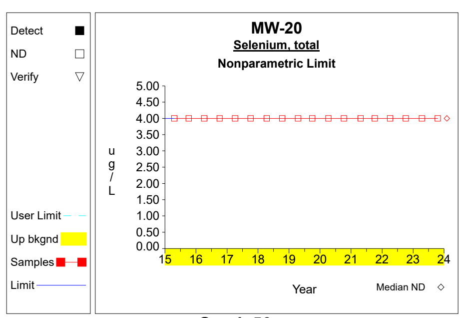
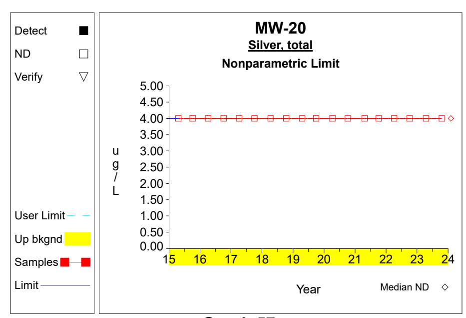


Graph 56



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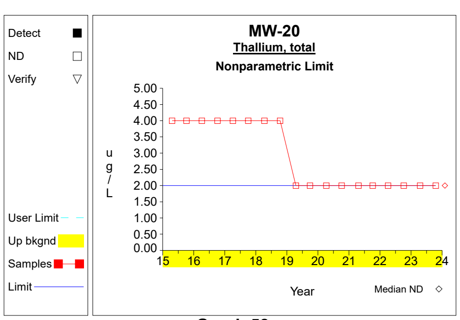

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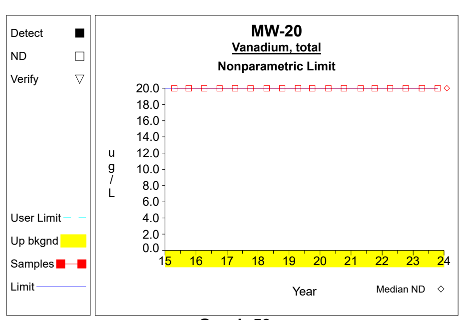
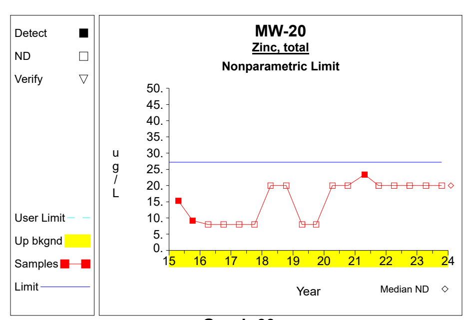


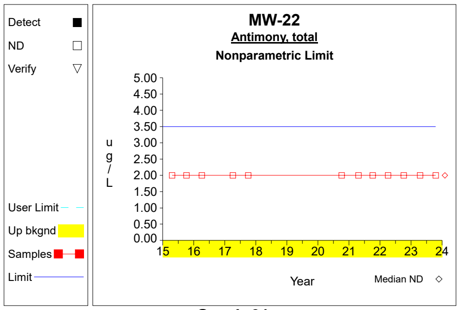
Graph 59



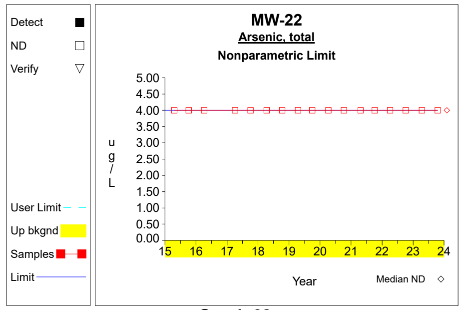
Graph 60

Jones County [GW] November 2023

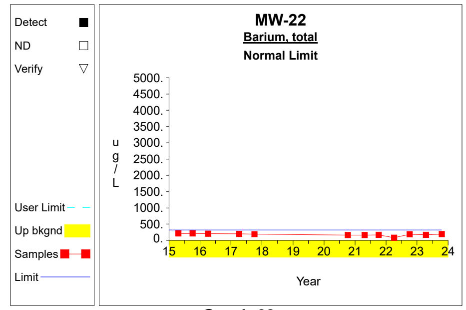
Up vs. Down Prediction Limits



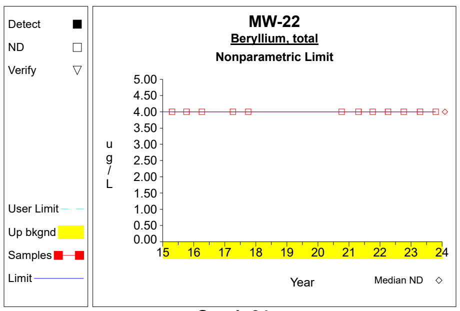
Graph 61



Graph 62



Graph 63



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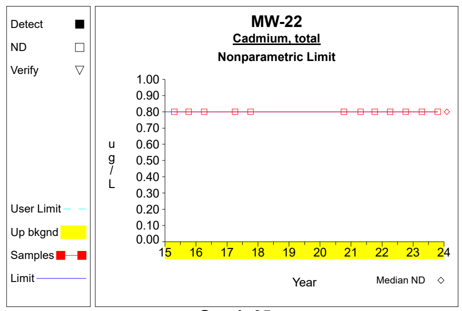
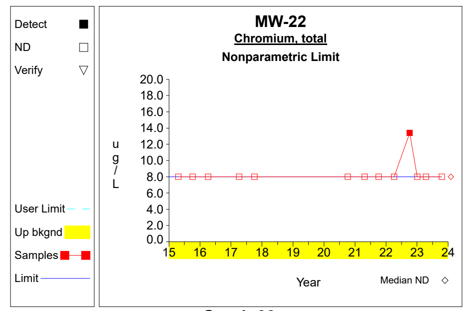


Graph 65



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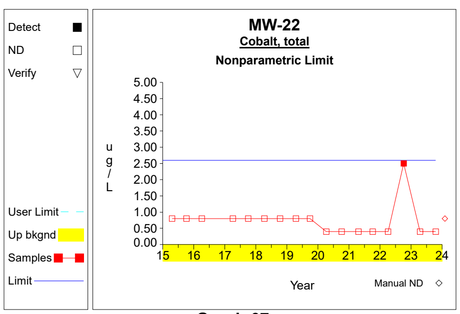
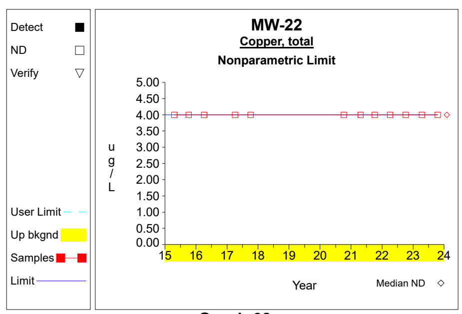
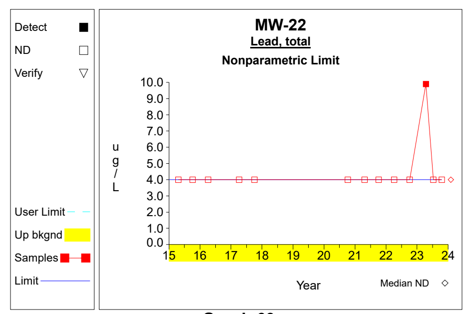


Graph 67



Graph 68



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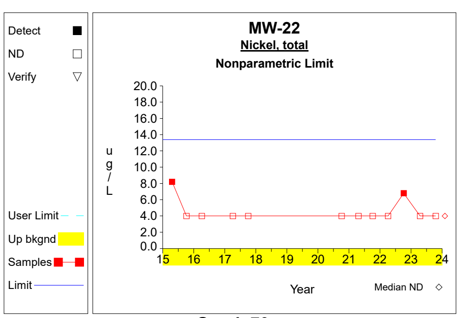

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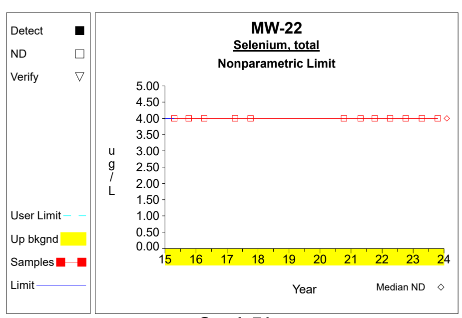
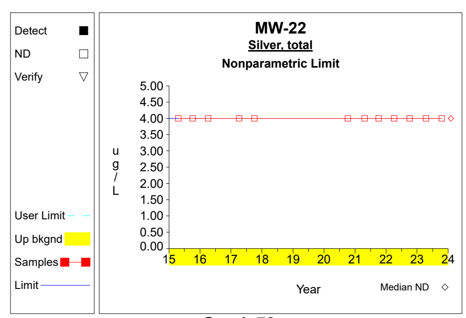


Graph 71



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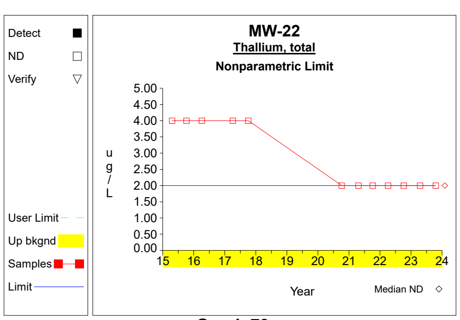
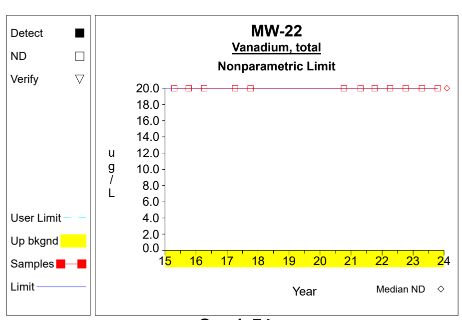
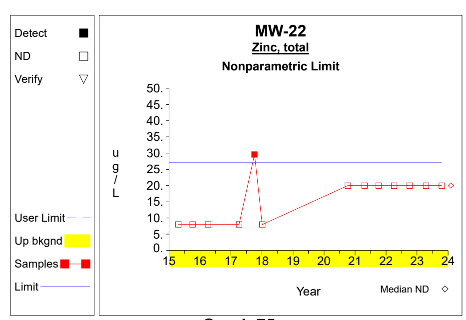


Graph 73



Graph 74



Graph 75

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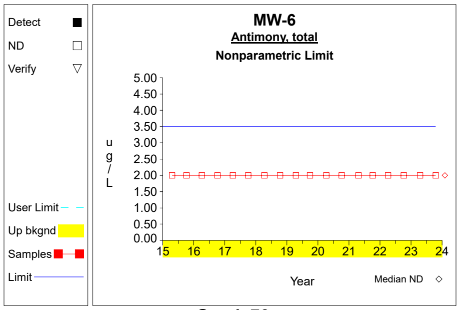
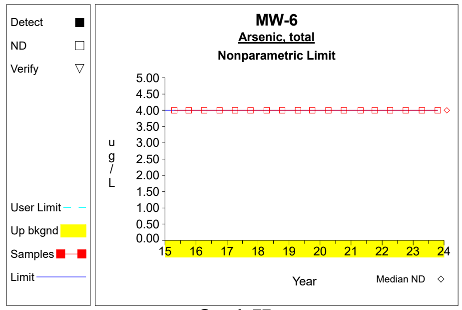
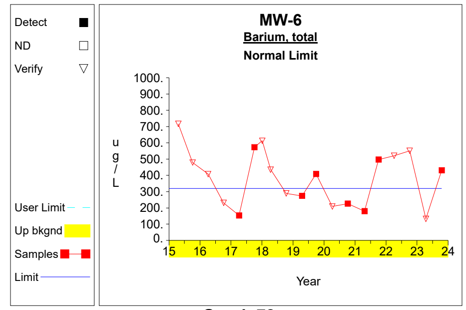
Up vs. Down Prediction Limits



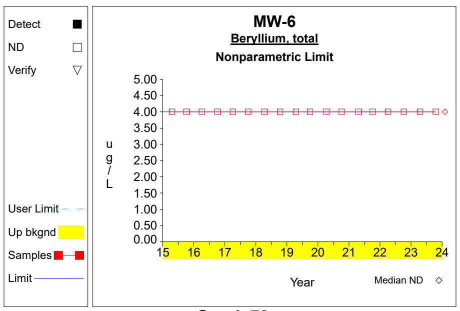
Graph 76



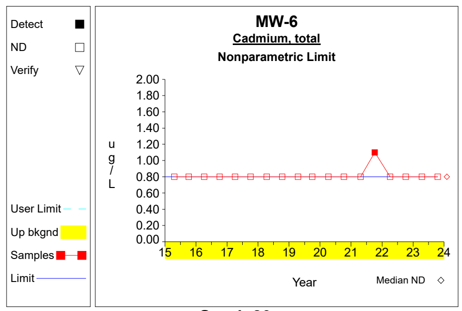
Graph 77



Graph 78



Graph 79



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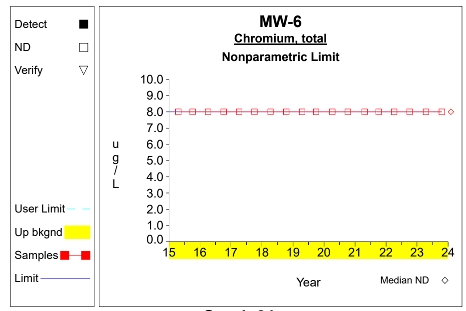
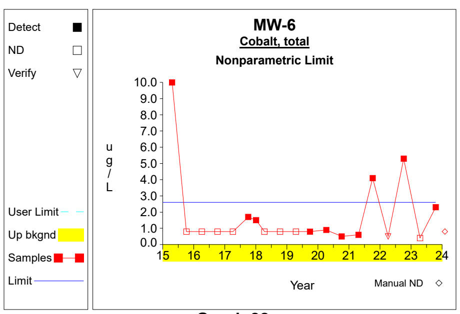
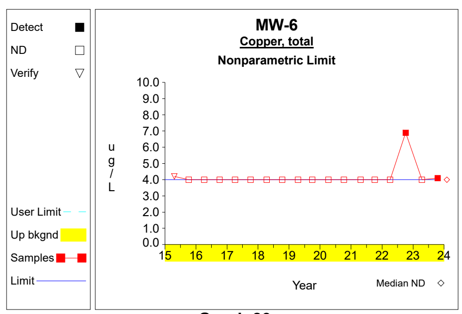


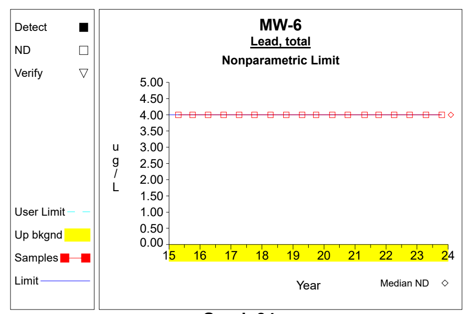
Graph 81



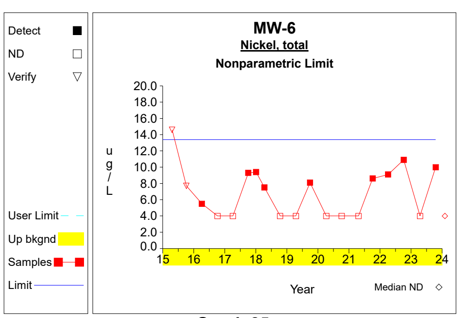
Graph 82



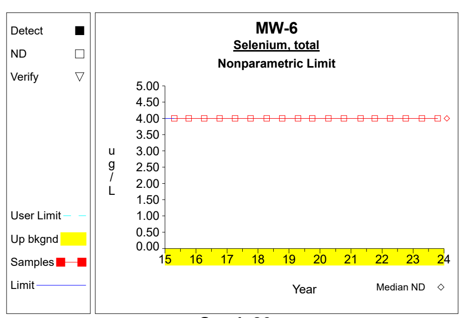
Graph 83



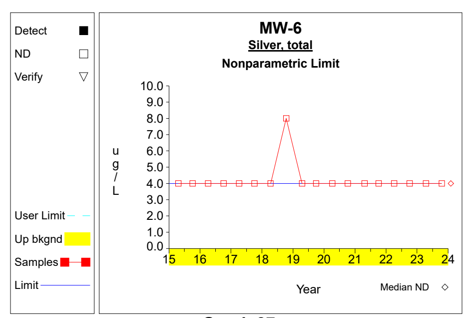
Graph 84



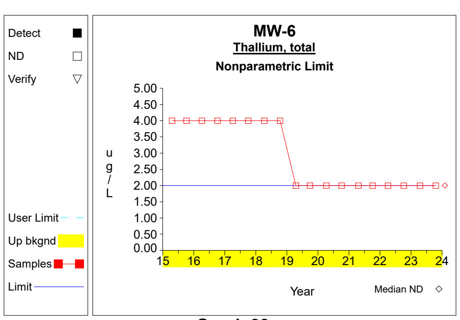
Graph 85



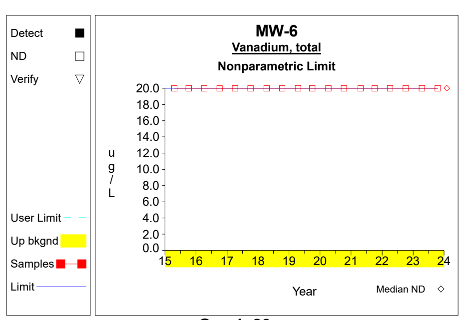
Graph 86



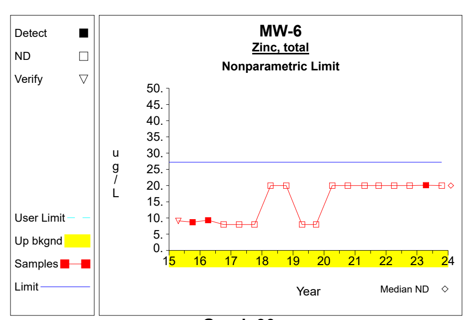
Graph 87



Graph 88



Graph 89



Graph 90

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program

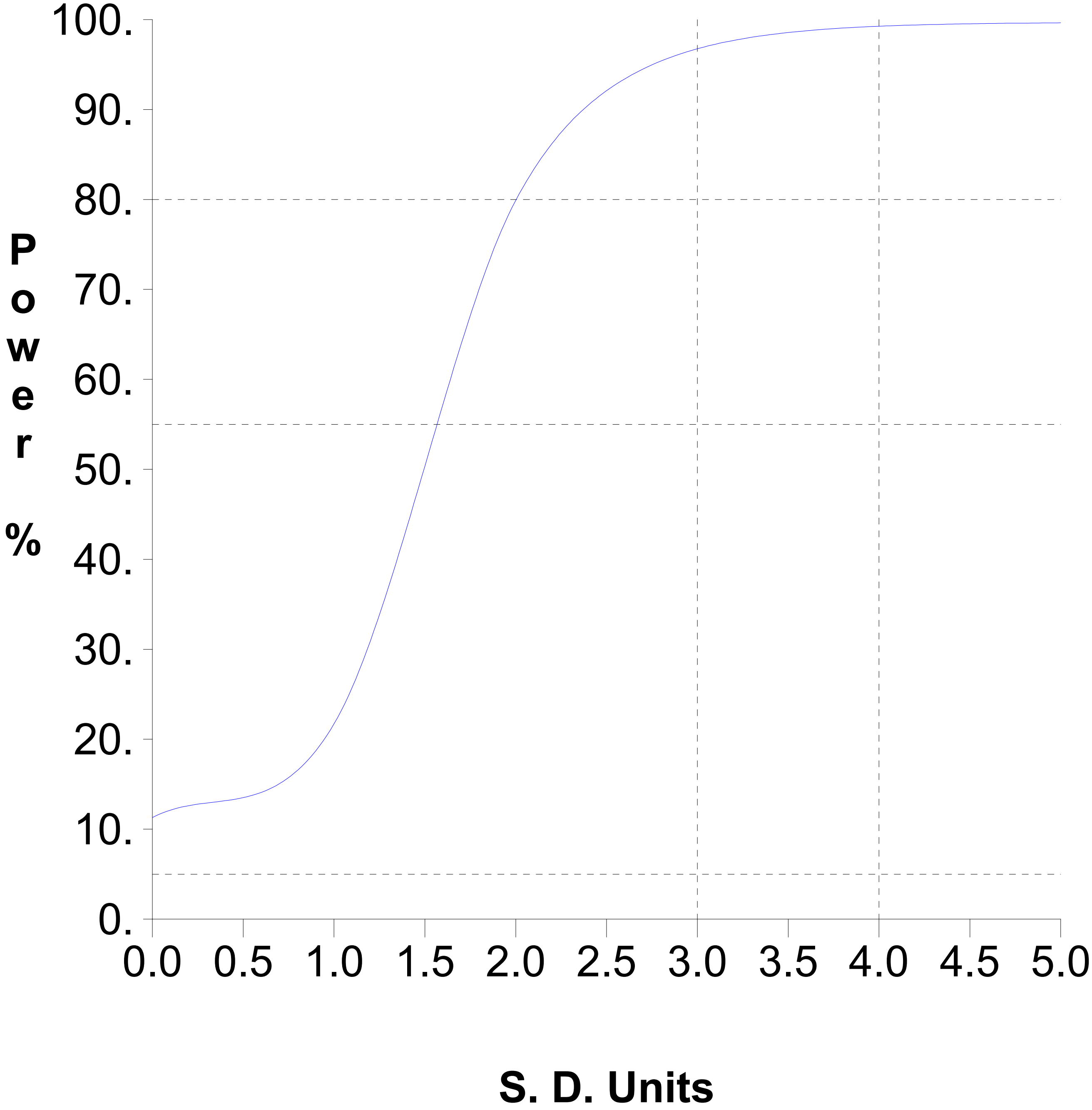


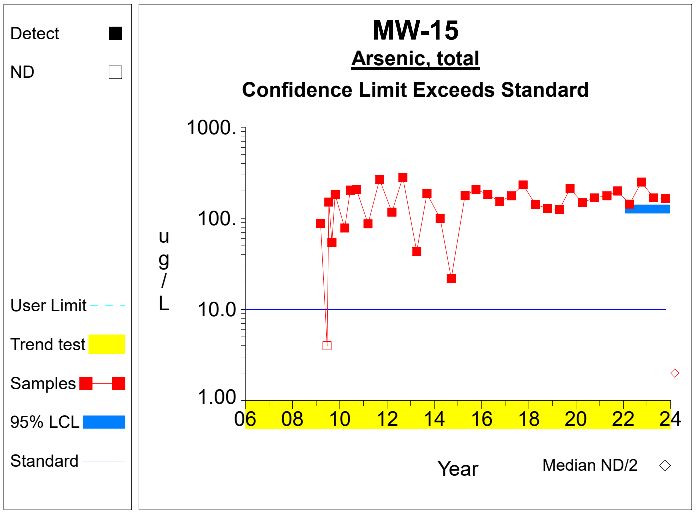
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

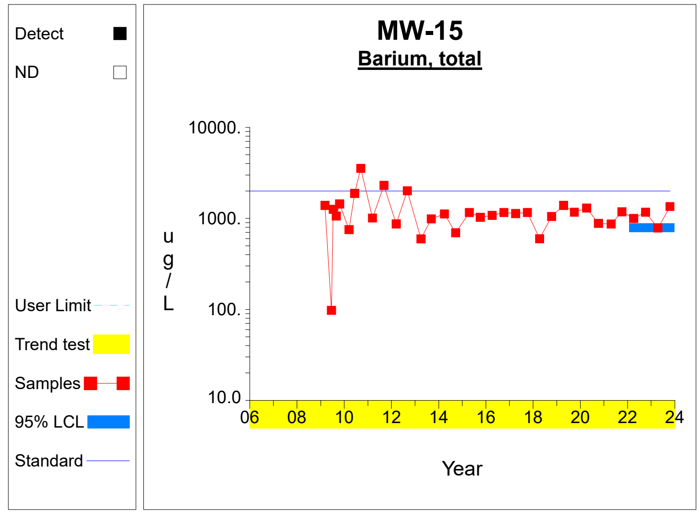
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Arsenic, total	ug/L	MW-15	4	181.750	46.893	1.176	126.591	236.909	10.000		**
Barium, total	ug/L	MW-15	4	1075.750	241.893	1.176	791.214	1360.286	2000.000		
Cobalt, total	ug/L	MW-15	4	17.150	3.461	1.176	13.079	21.221	2.100	dec	**
Copper, total	ug/L	MW-15	4	2.000	0.000	1.176	2.000	2.000	1300.000		
Lead, total	ug/L	MW-15	4	2.000	0.000	1.176	2.000	2.000	15.000		
Nickel, total	ug/L	MW-15	4	74.150	13.445	1.176	58.335	89.965	100.000		
Arsenic, total	ug/L	MW-16	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-16	4	87.125	5.837	1.176	80.258	93.992	2000.000	dec	
Cobalt, total	ug/L	MW-16	4	0.900	0.872	1.176	0.000	1.925	2.100		
Copper, total	ug/L	MW-16	4	2.000	0.000	1.176	2.000	2.000	1300.000		
Lead, total	ug/L	MW-16	4	2.000	0.000	1.176	2.000	2.000	15.000		
Nickel, total	ug/L	MW-16	4	2.950	1.900	1.176	0.715	5.185	100.000		
Arsenic, total	ug/L	MW-22	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-22	4	160.600	53.502	1.176	97.666	223.534	2000.000	dec	
Cobalt, total	ug/L	MW-22	4	0.925	1.050	1.176	0.000	2.160	2.100		
Copper, total	ug/L	MW-22	4	2.000	0.000	1.176	2.000	2.000	1300.000	dec	
Lead, total	ug/L	MW-22	4	3.975	3.950	1.176	0.000	8.621	15.000		
Nickel, total	ug/L	MW-22	4	3.200	2.400	1.176	0.377	6.023	100.000	dec	
Arsenic, total	ug/L	MW-6	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-6	4	409.000	190.935	1.176	184.406	633.594	2000.000	dec	
Cobalt, total	ug/L	MW-6	4	2.125	2.290	1.176	0.000	4.818	2.100		
Copper, total	ug/L	MW-6	4	3.750	2.322	1.176	1.019	6.481	1300.000		
Lead, total	ug/L	MW-6	4	2.000	0.000	1.176	2.000	2.000	15.000		
Nickel, total	ug/L	MW-6	4	8.000	4.067	1.176	3.216	12.784	100.000	dec	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

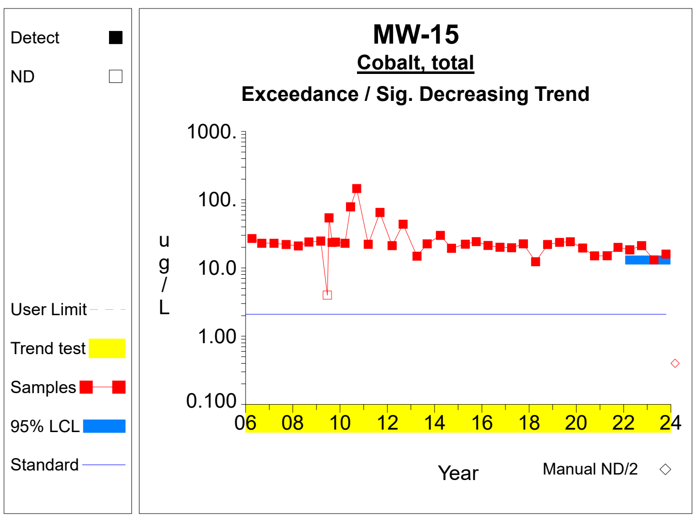
Confidence Limits (Assessment)



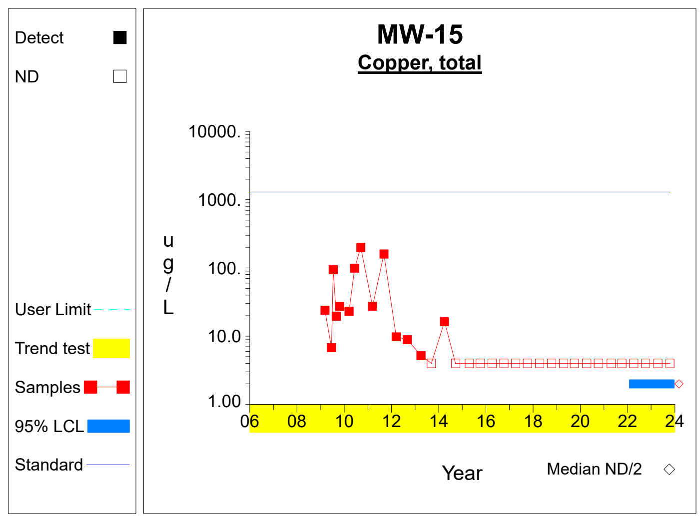
Graph 1



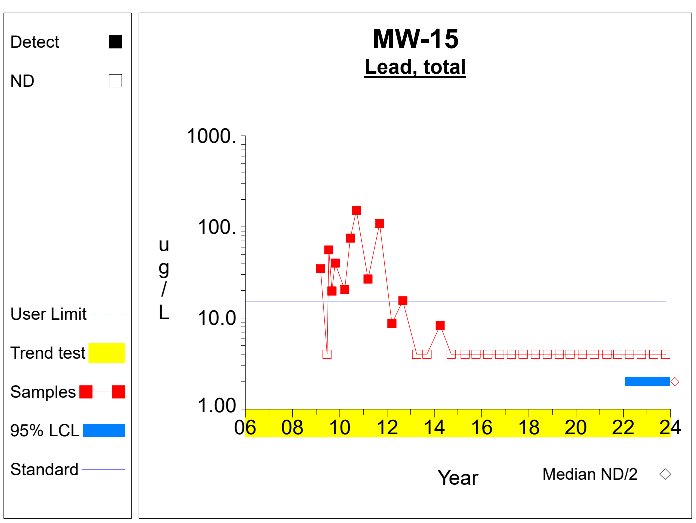
Graph 2



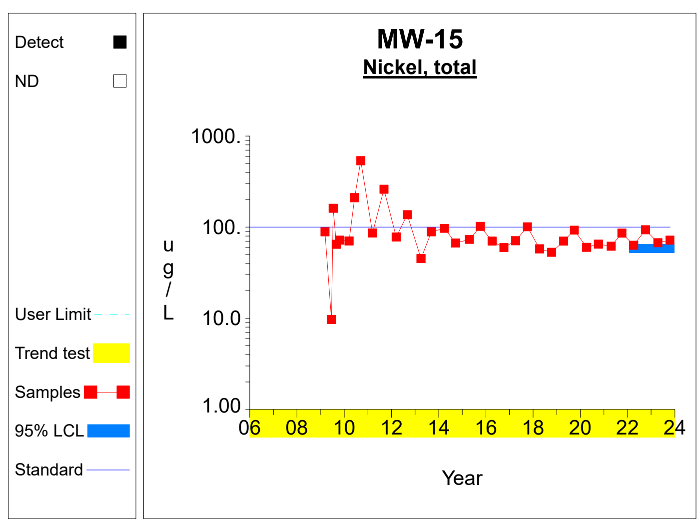
Graph 3



Graph 4



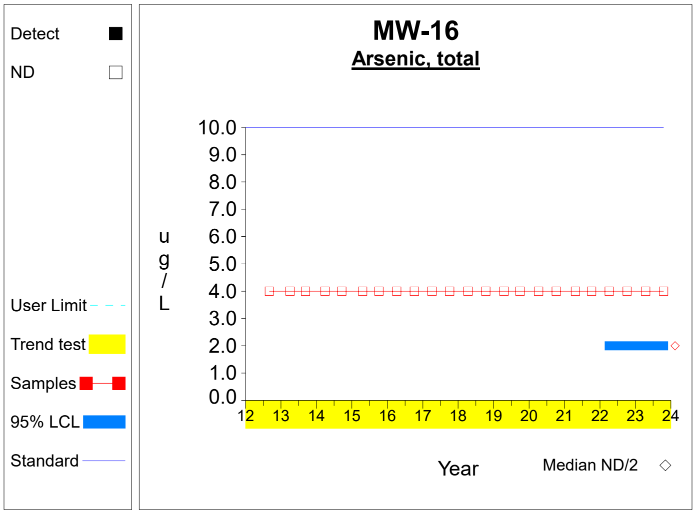
Graph 5



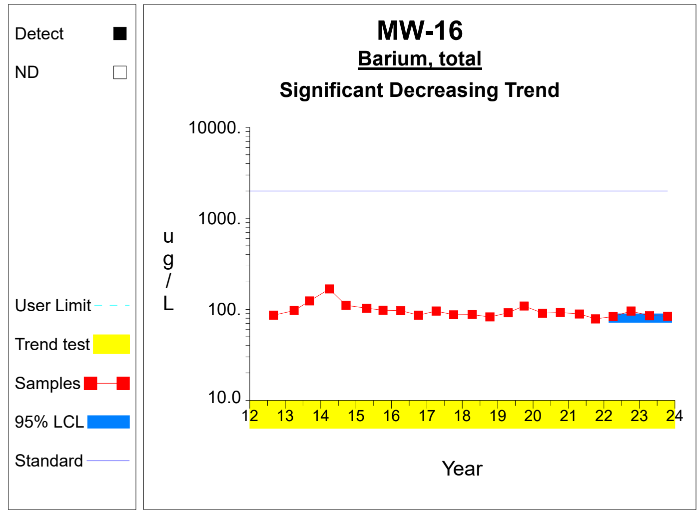
Graph 6

Prepared by: Otter Creek Environmental

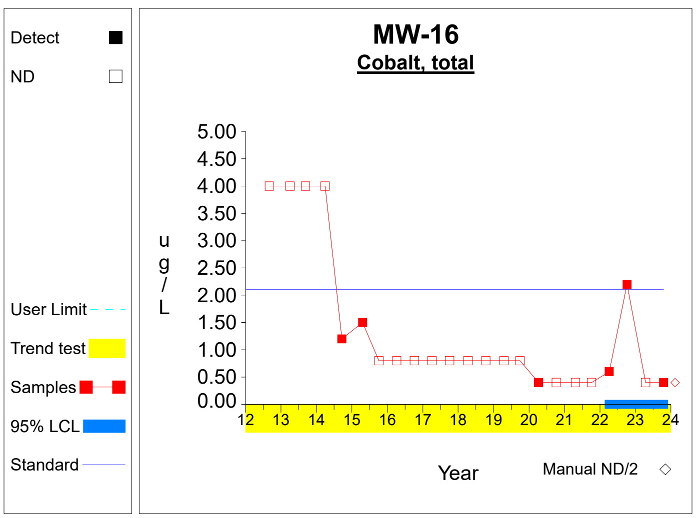
Confidence Limits (Assessment)



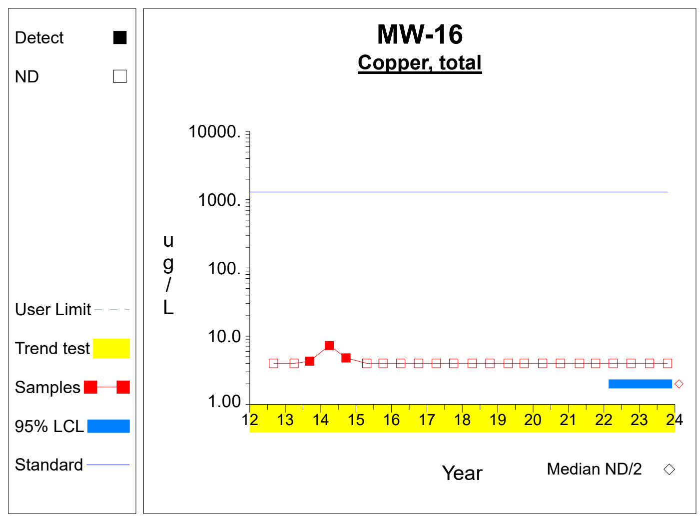
Graph 7



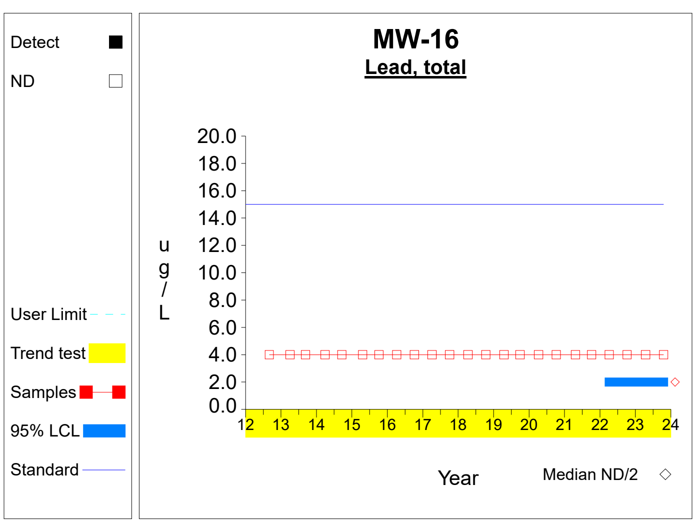
Graph 8



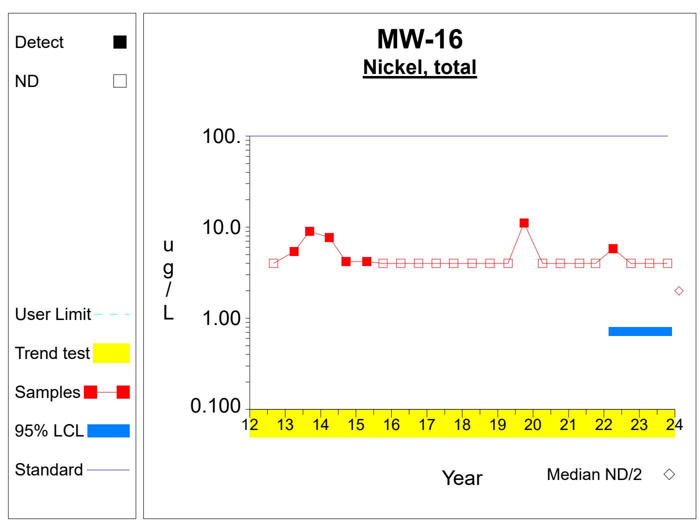
Graph 9



Graph 10



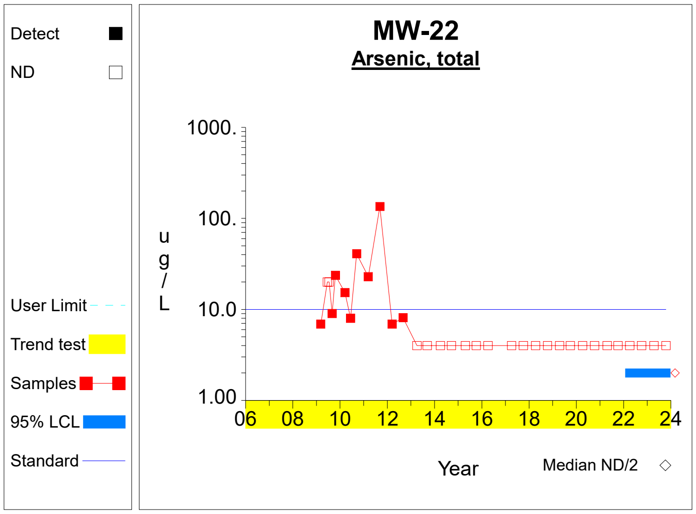
Graph 11



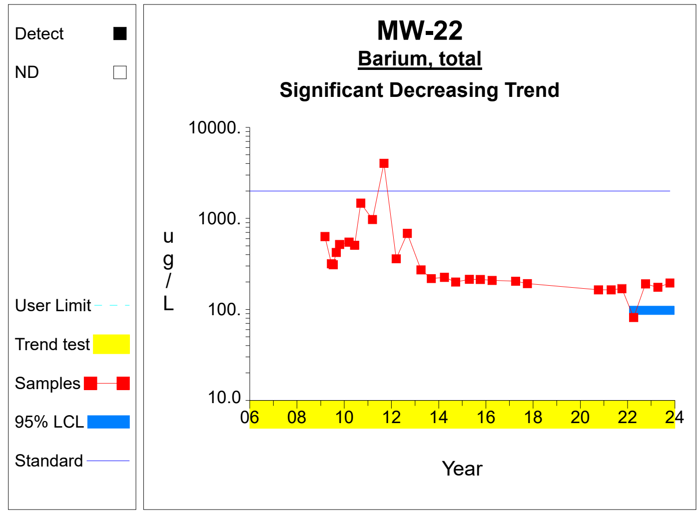
Graph 12

Prepared by: Otter Creek Environmental

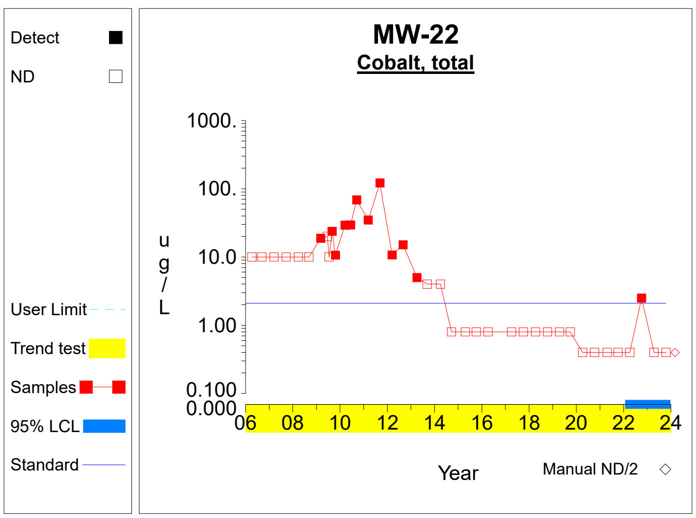
Confidence Limits (Assessment)



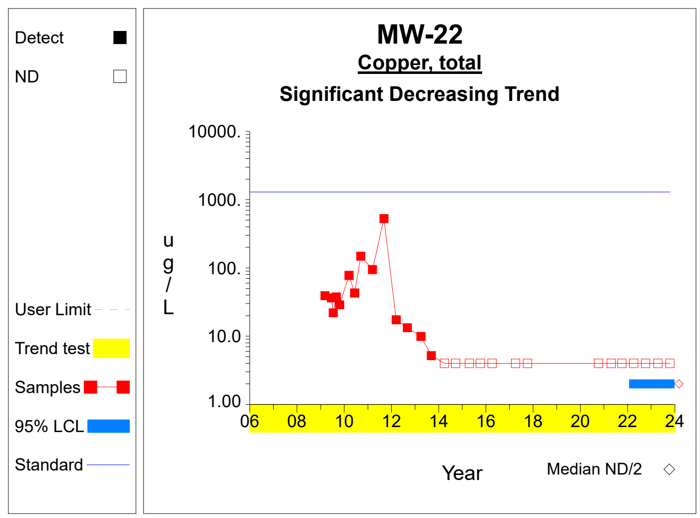
Graph 13



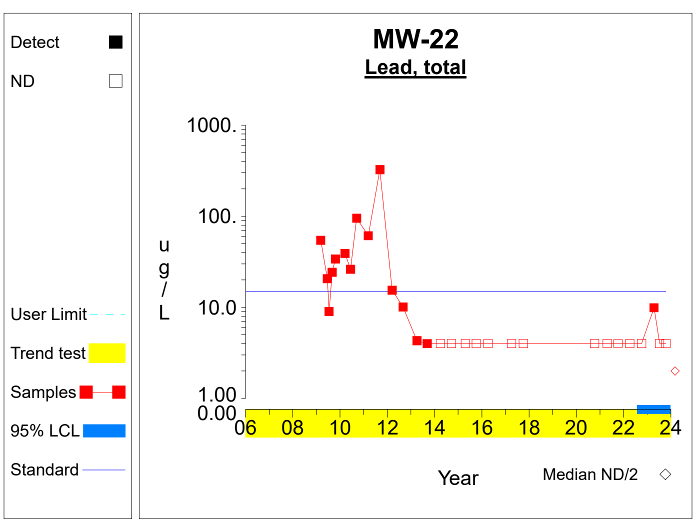
Graph 14



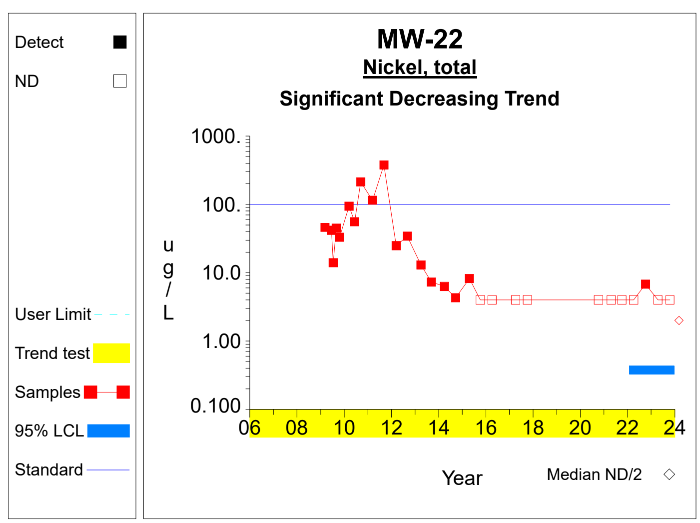
Graph 15



Graph 16

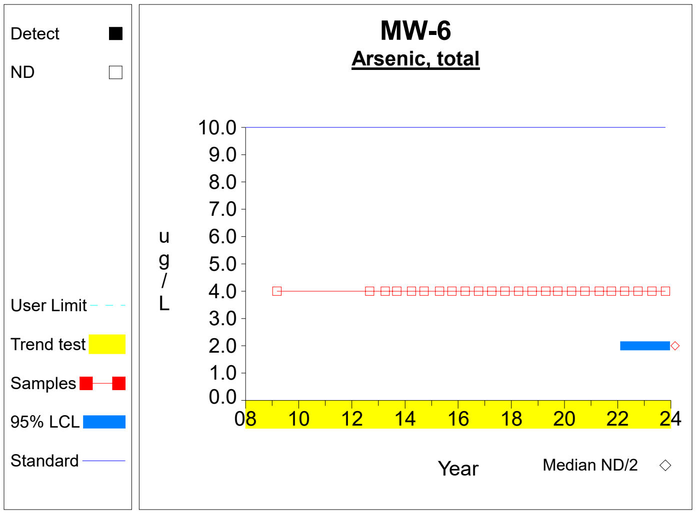


Graph 17

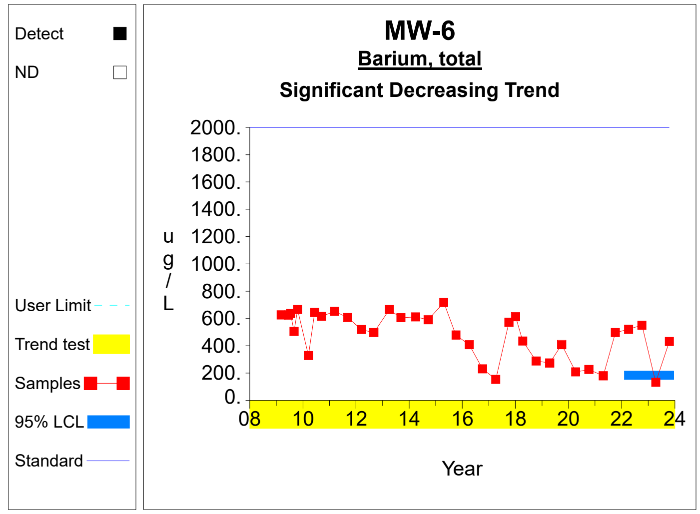


Graph 18

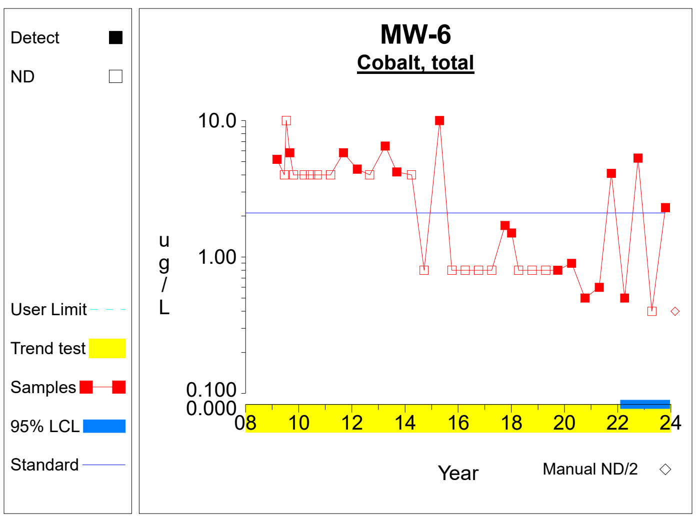
Confidence Limits (Assessment)



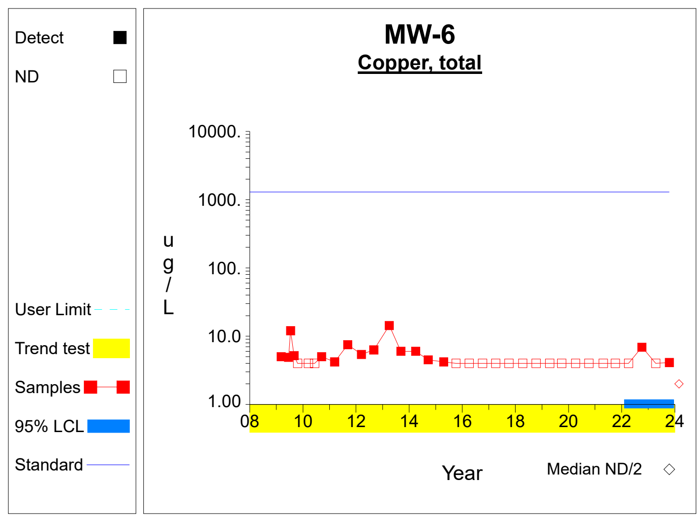
Graph 19



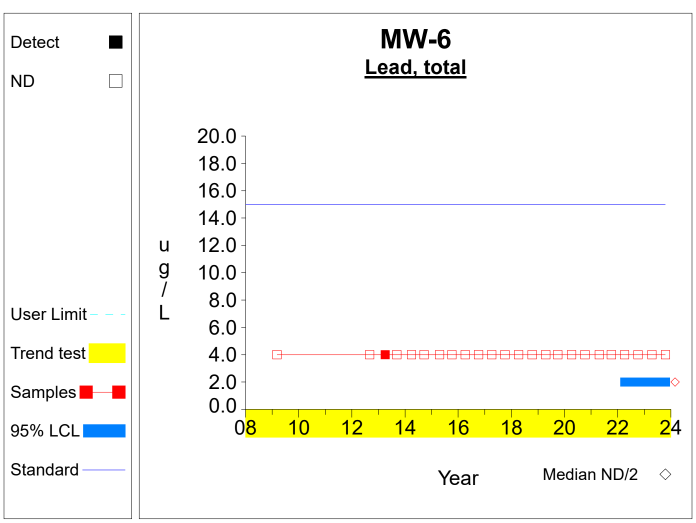
Graph 20



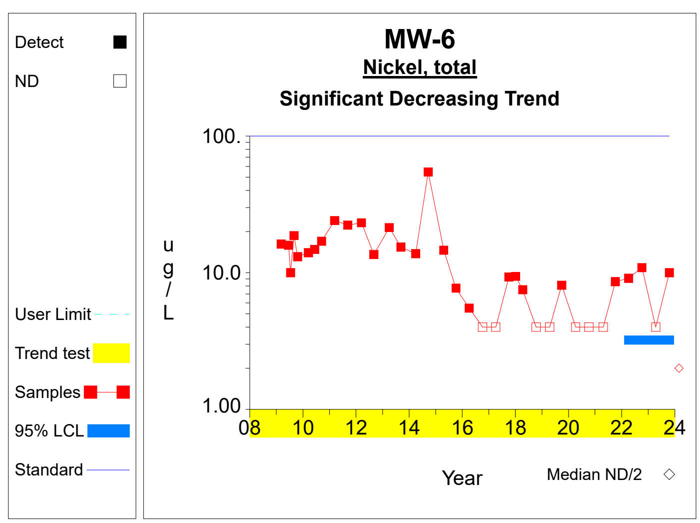
Graph 21



Graph 22



Graph 23



Graph 24

Attachment C

Summary Table of Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,4-dichlorobenzene	LPZ-6	10/07/2020		6.5	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	4/22/2021		6.4	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	10/05/2021		6.0	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	4/04/2022		2.2	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	10/05/2022		6.0	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	4/14/2023		5.3	1.0	ug/L
1,4-dichlorobenzene	LPZ-6	10/18/2023		2.4	1.0	ug/L
Benzene	LPZ-6	4/16/2019		10.5	1.0	ug/L
Benzene	LPZ-6	10/07/2020		10.6	1.0	ug/L
Benzene	LPZ-6	4/22/2021		9.4	1.0	ug/L
Benzene	LPZ-6	10/05/2021		8.8	1.0	ug/L
Benzene	LPZ-6	4/04/2022		1.2	1.0	ug/L
Benzene	LPZ-6	10/05/2022		9.3	1.0	ug/L
Benzene	LPZ-6	4/14/2023		13.6	1.0	ug/L
Carbon disulfide	LPZ-6	10/05/2022		2	1	ug/L
Chlorobenzene	LPZ-6	4/16/2019		2.7	1.0	ug/L
Chlorobenzene	LPZ-6	10/07/2020		2.4	1.0	ug/L
Chlorobenzene	LPZ-6	4/22/2021		2.0	1.0	ug/L
Chlorobenzene	LPZ-6	10/05/2021		2.0	1.0	ug/L
Chlorobenzene	LPZ-6	10/05/2022		1.3	1.0	ug/L
Chlorobenzene	LPZ-6	4/14/2023		1.3	1.0	ug/L
Chloroethane	LPZ-6	4/22/2021		1.6	1.0	ug/L
Chloroethane	LPZ-6	10/18/2023		1.2	1.0	ug/L
Ethylbenzene	LPZ-6	4/16/2019		43.6	1.0	ug/L
Ethylbenzene	LPZ-6	10/07/2020		52.0	1.0	ug/L
Ethylbenzene	LPZ-6	4/22/2021		27.4	1.0	ug/L
Ethylbenzene	LPZ-6	10/05/2021		1.6	1.0	ug/L
Ethylbenzene	LPZ-6	4/04/2022		2.6	1.0	ug/L
Ethylbenzene	LPZ-6	10/05/2022		2.1	1.0	ug/L
Ethylbenzene	LPZ-6	4/14/2023		7.4	1.0	ug/L
Toluene	LPZ-6	10/07/2020		1.4	1.0	ug/L
Toluene	LPZ-6	10/05/2022		1.0	1.0	ug/L
Xylenes, total	LPZ-6	4/16/2019		9.5	2.0	ug/L
Xylenes, total	LPZ-6	10/07/2020		99.1	2.0	ug/L
Xylenes, total	LPZ-6	4/22/2021		27.5	2.0	ug/L
Xylenes, total	LPZ-6	10/05/2021		4.9	2.0	ug/L
Xylenes, total	LPZ-6	4/04/2022		2.4	2.0	ug/L
Xylenes, total	LPZ-6	10/05/2022		22.3	2.0	ug/L
Xylenes, total	LPZ-6	4/14/2023		22.6	2.0	ug/L
Xylenes, total	LPZ-6	10/18/2023		3.8	2.0	ug/L
Acetone	MW-11	10/03/2017		20.6	10.0	ug/L
Acetone	MW-12	10/03/2017		19.6	10.0	ug/L
1,4-dichlorobenzene	MW-15	4/06/2006		2.3	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/07/2006		2.4	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/14/2007		2.1	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/19/2007		2.3	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/25/2008		3.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/05/2008		3.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/06/2009		2.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/06/2009		2.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/20/2009		2.7	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/15/2010		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/15/2010		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	6/10/2010		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/14/2010		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/14/2010		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/11/2011		3.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/11/2011		3.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/07/2011		3.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/01/2012		3.6	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/01/2013		1.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/09/2013		3.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	3/30/2014		3.1	1.0	ug/L
1,4-dichlorobenzene	MW-15	9/19/2014		2.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/20/2015		2.4	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2015		2.7	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/05/2016		2.2	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2016		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/04/2017		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/03/2017		2.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/10/2018		2.6	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/07/2020		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/07/2020		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/22/2021		1.8	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/05/2021		2.1	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/04/2022		1.8	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,4-dichlorobenzene	MW-15	10/05/2022		2.2	1.0	ug/L
1,4-dichlorobenzene	MW-15	4/14/2023		1.9	1.0	ug/L
1,4-dichlorobenzene	MW-15	10/18/2023		1.7	1.0	ug/L
Acetone	MW-15	9/19/2014		13.1	10.0	ug/L
Acetone	MW-15	4/20/2015		51.3	10.0	ug/L
Acetone	MW-15	10/05/2016		26.3	10.0	ug/L
Benzene	MW-15	4/06/2006		10.0	1.0	ug/L
Benzene	MW-15	9/07/2006		7.8	1.0	ug/L
Benzene	MW-15	3/14/2007		10.3	1.0	ug/L
Benzene	MW-15	9/19/2007		7.6	1.0	ug/L
Benzene	MW-15	3/25/2008		8.9	1.0	ug/L
Benzene	MW-15	9/05/2008		9.4	1.0	ug/L
Benzene	MW-15	3/06/2009		11.5	1.0	ug/L
Benzene	MW-15	10/20/2009		12.3	1.0	ug/L
Benzene	MW-15	3/15/2010		10.9	1.0	ug/L
Benzene	MW-15	3/15/2010		10.9	1.0	ug/L
Benzene	MW-15	6/10/2010		11.7	1.0	ug/L
Benzene	MW-15	9/14/2010		8.2	1.0	ug/L
Benzene	MW-15	9/14/2010		8.2	1.0	ug/L
Benzene	MW-15	3/11/2011		13.9	1.0	ug/L
Benzene	MW-15	3/11/2011		13.9	1.0	ug/L
Benzene	MW-15	9/07/2011		11.8	1.0	ug/L
Benzene	MW-15	9/01/2012		9.5	1.0	ug/L
Benzene	MW-15	4/01/2013		7.1	1.0	ug/L
Benzene	MW-15	9/09/2013		6.3	1.0	ug/L
Benzene	MW-15	3/30/2014		10.0	1.0	ug/L
Benzene	MW-15	9/19/2014		7.4	1.0	ug/L
Benzene	MW-15	4/20/2015		7.8	1.0	ug/L
Benzene	MW-15	10/05/2015		5.8	1.0	ug/L
Benzene	MW-15	4/05/2016		7.7	1.0	ug/L
Benzene	MW-15	10/05/2016		5.0	1.0	ug/L
Benzene	MW-15	4/04/2017		6.6	1.0	ug/L
Benzene	MW-15	10/03/2017		6.2	1.0	ug/L
Benzene	MW-15	4/10/2018		8.9	1.0	ug/L
Benzene	MW-15	10/12/2018		5.6	1.0	ug/L
Benzene	MW-15	4/16/2019		6.9	1.0	ug/L
Benzene	MW-15	9/30/2019		3.6	1.0	ug/L
Benzene	MW-15	4/07/2020		5.1	1.0	ug/L
Benzene	MW-15	10/07/2020		3.5	1.0	ug/L
Benzene	MW-15	4/22/2021		6.1	1.0	ug/L
Benzene	MW-15	10/05/2021		3.0	1.0	ug/L
Benzene	MW-15	4/04/2022		4.8	1.0	ug/L
Benzene	MW-15	10/05/2022		4.1	1.0	ug/L
Benzene	MW-15	4/14/2023		4.2	1.0	ug/L
Benzene	MW-15	10/18/2023		1.4	1.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	4/01/2013		10	8	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	3/30/2014		85	8	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	10/05/2015		10	10	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	4/16/2019		10	6	ug/L
Chlorobenzene	MW-15	4/06/2006		7.70	1.00	ug/L
Chlorobenzene	MW-15	9/07/2006		9.10	1.00	ug/L
Chlorobenzene	MW-15	3/14/2007		7.80	1.00	ug/L
Chlorobenzene	MW-15	9/19/2007		7.00	1.00	ug/L
Chlorobenzene	MW-15	3/25/2008		6.90	1.00	ug/L
Chlorobenzene	MW-15	9/05/2008		9.00	1.00	ug/L
Chlorobenzene	MW-15	3/06/2009		9.69	1.00	ug/L
Chlorobenzene	MW-15	3/06/2009		9.60	1.00	ug/L
Chlorobenzene	MW-15	10/20/2009		10.80	1.00	ug/L
Chlorobenzene	MW-15	3/15/2010		9.50	1.00	ug/L
Chlorobenzene	MW-15	3/15/2010		9.50	1.00	ug/L
Chlorobenzene	MW-15	6/10/2010		9.40	1.00	ug/L
Chlorobenzene	MW-15	9/14/2010		8.60	1.00	ug/L
Chlorobenzene	MW-15	9/14/2010		8.60	1.00	ug/L
Chlorobenzene	MW-15	3/11/2011		17.40	1.00	ug/L
Chlorobenzene	MW-15	3/11/2011		17.40	1.00	ug/L
Chlorobenzene	MW-15	9/07/2011		14.30	1.00	ug/L
Chlorobenzene	MW-15	9/01/2012		17.00	1.00	ug/L
Chlorobenzene	MW-15	4/01/2013		8.50	1.00	ug/L
Chlorobenzene	MW-15	9/09/2013		17.50	1.00	ug/L
Chlorobenzene	MW-15	3/30/2014		15.40	1.00	ug/L
Chlorobenzene	MW-15	9/19/2014		14.20	1.00	ug/L
Chlorobenzene	MW-15	4/20/2015		13.50	1.00	ug/L
Chlorobenzene	MW-15	10/05/2015		12.80	1.00	ug/L
Chlorobenzene	MW-15	4/05/2016		11.20	1.00	ug/L
Chlorobenzene	MW-15	10/05/2016		14.40	1.00	ug/L
Chlorobenzene	MW-15	4/04/2017		10.40	1.00	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-15	10/03/2017		12.60	1.00	ug/L
Chlorobenzene	MW-15	4/10/2018		11.10	1.00	ug/L
Chlorobenzene	MW-15	10/12/2018		8.70	1.00	ug/L
Chlorobenzene	MW-15	4/16/2019		9.60	1.00	ug/L
Chlorobenzene	MW-15	9/30/2019		9.40	1.00	ug/L
Chlorobenzene	MW-15	4/07/2020		9.00	1.00	ug/L
Chlorobenzene	MW-15	10/07/2020		8.30	1.00	ug/L
Chlorobenzene	MW-15	4/22/2021		7.40	1.00	ug/L
Chlorobenzene	MW-15	10/05/2021		8.10	1.00	ug/L
Chlorobenzene	MW-15	4/04/2022		7.80	1.00	ug/L
Chlorobenzene	MW-15	10/05/2022		6.90	1.00	ug/L
Chlorobenzene	MW-15	4/14/2023		6.50	1.00	ug/L
Chlorobenzene	MW-15	10/18/2023		4.20	1.00	ug/L
Chloroethane	MW-15	4/06/2006		21.5	1.0	ug/L
Chloroethane	MW-15	9/07/2006		23.1	1.0	ug/L
Chloroethane	MW-15	3/14/2007		20.2	1.0	ug/L
Chloroethane	MW-15	9/19/2007		15.6	1.0	ug/L
Chloroethane	MW-15	3/25/2008		12.7	1.0	ug/L
Chloroethane	MW-15	9/05/2008		19.1	1.0	ug/L
Chloroethane	MW-15	3/06/2009		16.6	1.0	ug/L
Chloroethane	MW-15	3/06/2009		16.6	1.0	ug/L
Chloroethane	MW-15	10/20/2009		18.9	1.0	ug/L
Chloroethane	MW-15	3/15/2010		17.9	1.0	ug/L
Chloroethane	MW-15	3/15/2010		17.9	1.0	ug/L
Chloroethane	MW-15	6/10/2010		21.2	1.0	ug/L
Chloroethane	MW-15	9/14/2010		14.0	1.0	ug/L
Chloroethane	MW-15	9/14/2010		14.0	1.0	ug/L
Chloroethane	MW-15	3/11/2011		20.7	1.0	ug/L
Chloroethane	MW-15	3/11/2011		20.7	1.0	ug/L
Chloroethane	MW-15	9/07/2011		19.3	1.0	ug/L
Chloroethane	MW-15	9/01/2012		16.4	1.0	ug/L
Chloroethane	MW-15	4/01/2013		11.2	1.0	ug/L
Chloroethane	MW-15	9/09/2013		20.3	1.0	ug/L
Chloroethane	MW-15	3/30/2014		15.4	1.0	ug/L
Chloroethane	MW-15	9/19/2014		16.3	1.0	ug/L
Chloroethane	MW-15	4/20/2015		14.1	1.0	ug/L
Chloroethane	MW-15	10/05/2015		10.2	1.0	ug/L
Chloroethane	MW-15	4/05/2016		12.9	1.0	ug/L
Chloroethane	MW-15	10/05/2016		10.6	1.0	ug/L
Chloroethane	MW-15	4/04/2017		12.0	1.0	ug/L
Chloroethane	MW-15	10/03/2017		8.4	1.0	ug/L
Chloroethane	MW-15	4/10/2018		12.3	1.0	ug/L
Chloroethane	MW-15	10/12/2018		8.6	1.0	ug/L
Chloroethane	MW-15	4/16/2019		8.5	1.0	ug/L
Chloroethane	MW-15	9/30/2019		8.8	1.0	ug/L
Chloroethane	MW-15	4/07/2020		9.0	1.0	ug/L
Chloroethane	MW-15	10/07/2020		9.4	1.0	ug/L
Chloroethane	MW-15	4/22/2021		9.8	1.0	ug/L
Chloroethane	MW-15	10/05/2021		6.3	1.0	ug/L
Chloroethane	MW-15	4/04/2022		8.3	1.0	ug/L
Chloroethane	MW-15	10/05/2022		7.5	1.0	ug/L
Chloroethane	MW-15	4/14/2023		4.6	1.0	ug/L
Chloroethane	MW-15	10/18/2023		3.8	1.0	ug/L
Dichlorodifluoromethane	MW-15	3/30/2014		2.5	1.0	ug/L
Dichlorodifluoromethane	MW-15	4/04/2017		1.0	1.0	ug/L
Ethylbenzene	MW-15	4/06/2006		37.2	1.0	ug/L
Ethylbenzene	MW-15	9/07/2006		16.7	1.0	ug/L
Ethylbenzene	MW-15	3/14/2007		31.2	1.0	ug/L
Ethylbenzene	MW-15	9/19/2007		9.7	1.0	ug/L
Ethylbenzene	MW-15	3/25/2008		31.2	1.0	ug/L
Ethylbenzene	MW-15	9/05/2008		22.3	1.0	ug/L
Ethylbenzene	MW-15	3/06/2009		67.6	1.0	ug/L
Ethylbenzene	MW-15	3/06/2009		67.6	1.0	ug/L
Ethylbenzene	MW-15	10/20/2009		83.0	1.0	ug/L
Ethylbenzene	MW-15	3/15/2010		60.6	1.0	ug/L
Ethylbenzene	MW-15	3/15/2010		60.6	1.0	ug/L
Ethylbenzene	MW-15	6/10/2010		16.2	1.0	ug/L
Ethylbenzene	MW-15	9/14/2010		22.4	1.0	ug/L
Ethylbenzene	MW-15	9/14/2010		22.4	1.0	ug/L
Ethylbenzene	MW-15	3/11/2011		90.8	1.0	ug/L
Ethylbenzene	MW-15	3/11/2011		90.8	1.0	ug/L
Ethylbenzene	MW-15	9/07/2011		21.8	1.0	ug/L
Ethylbenzene	MW-15	9/01/2012		19.3	1.0	ug/L
Ethylbenzene	MW-15	4/01/2013		31.6	1.0	ug/L
Ethylbenzene	MW-15	9/09/2013		9.0	1.0	ug/L
Ethylbenzene	MW-15	3/30/2014		39.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Ethylbenzene	MW-15	9/19/2014		15.3	1.0	ug/L
Ethylbenzene	MW-15	4/20/2015		6.5	1.0	ug/L
Ethylbenzene	MW-15	4/05/2016		10.5	1.0	ug/L
Ethylbenzene	MW-15	4/04/2017		4.9	1.0	ug/L
Ethylbenzene	MW-15	4/10/2018		5.1	1.0	ug/L
Toluene	MW-15	4/06/2006		1.1	1.0	ug/L
Toluene	MW-15	9/05/2008		1.0	1.0	ug/L
Toluene	MW-15	3/06/2009		2.6	1.0	ug/L
Toluene	MW-15	10/20/2009		3.3	1.0	ug/L
Toluene	MW-15	3/15/2010		1.1	1.0	ug/L
Toluene	MW-15	3/15/2010		1.1	1.0	ug/L
Toluene	MW-15	6/10/2010		1.2	1.0	ug/L
Toluene	MW-15	3/11/2011		1.8	1.0	ug/L
Toluene	MW-15	3/11/2011		1.8	1.0	ug/L
Xylenes, total	MW-15	4/06/2006		188.0	1.0	ug/L
Xylenes, total	MW-15	9/07/2006		84.6	1.0	ug/L
Xylenes, total	MW-15	3/14/2007		126.0	1.0	ug/L
Xylenes, total	MW-15	9/19/2007		50.8	1.0	ug/L
Xylenes, total	MW-15	3/25/2008		150.0	1.0	ug/L
Xylenes, total	MW-15	9/05/2008		91.4	1.0	ug/L
Xylenes, total	MW-15	3/06/2009		342.0	1.0	ug/L
Xylenes, total	MW-15	3/06/2009		342.0	2.0	ug/L
Xylenes, total	MW-15	10/20/2009		430.0	1.0	ug/L
Xylenes, total	MW-15	3/15/2010		302.0	1.0	ug/L
Xylenes, total	MW-15	3/15/2010		302.0	2.0	ug/L
Xylenes, total	MW-15	6/10/2010		117.0	2.0	ug/L
Xylenes, total	MW-15	9/14/2010		116.0	1.0	ug/L
Xylenes, total	MW-15	9/14/2010		116.0	2.0	ug/L
Xylenes, total	MW-15	3/11/2011		444.0	2.0	ug/L
Xylenes, total	MW-15	3/11/2011		444.0	1.0	ug/L
Xylenes, total	MW-15	9/07/2011		84.4	1.0	ug/L
Xylenes, total	MW-15	9/01/2012		93.1	2.0	ug/L
Xylenes, total	MW-15	4/01/2013		105.0	2.0	ug/L
Xylenes, total	MW-15	9/09/2013		70.0	2.0	ug/L
Xylenes, total	MW-15	3/30/2014		132.0	2.0	ug/L
Xylenes, total	MW-15	9/19/2014		89.8	2.0	ug/L
Xylenes, total	MW-15	4/20/2015		58.0	2.0	ug/L
Xylenes, total	MW-15	10/05/2015		11.8	2.0	ug/L
Xylenes, total	MW-15	4/05/2016		59.2	2.0	ug/L
Xylenes, total	MW-15	10/05/2016		19.2	2.0	ug/L
Xylenes, total	MW-15	4/04/2017		26.1	2.0	ug/L
Xylenes, total	MW-15	10/03/2017		6.3	2.0	ug/L
Xylenes, total	MW-15	4/10/2018		56.2	2.0	ug/L
Xylenes, total	MW-15	10/12/2018		3.5	2.0	ug/L
Xylenes, total	MW-15	4/16/2019		4.3	2.0	ug/L
Xylenes, total	MW-15	9/30/2019		3.1	2.0	ug/L
Xylenes, total	MW-15	4/07/2020		4.0	2.0	ug/L
Xylenes, total	MW-15	10/07/2020		10.3	2.0	ug/L
Xylenes, total	MW-15	4/22/2021		2.3	2.0	ug/L
Acetone	MW-16	10/03/2017		27.9	10.0	ug/L
Acetone	MW-20	10/03/2017		22.4	10.0	ug/L
Acetone	MW-22	10/03/2017		28.8	10.0	ug/L
1,1-dichloroethane	MW-6	9/09/2013		2.5	1.0	ug/L
Acetone	MW-6	10/03/2017		16.2	10.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-6	3/30/2014		36	8	ug/L
Bis(2-ethylhexyl) phthalate	MW-6	10/03/2017		10	6	ug/L
Dichlorodifluoromethane	MW-6	3/30/2014		3.5	1.0	ug/L
Dichlorodifluoromethane	MW-6	9/19/2014		1.3	1.0	ug/L
Dichlorodifluoromethane	MW-6	4/20/2015		1.0	1.0	ug/L
Dichlorodifluoromethane	MW-6	10/05/2016		1.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
The Limit column refers to the laboratory reporting limit

Attachment D

Assessment Statistics for Detected VOCs

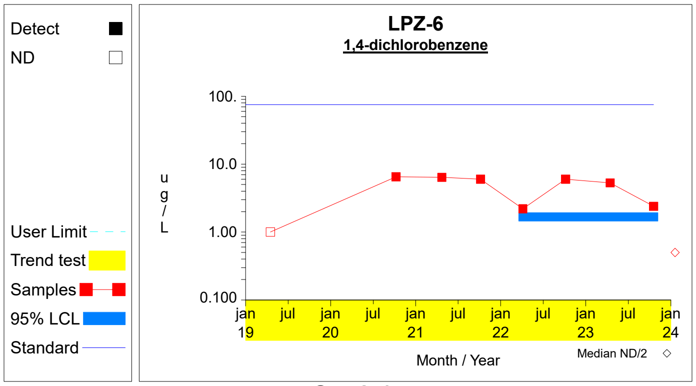
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

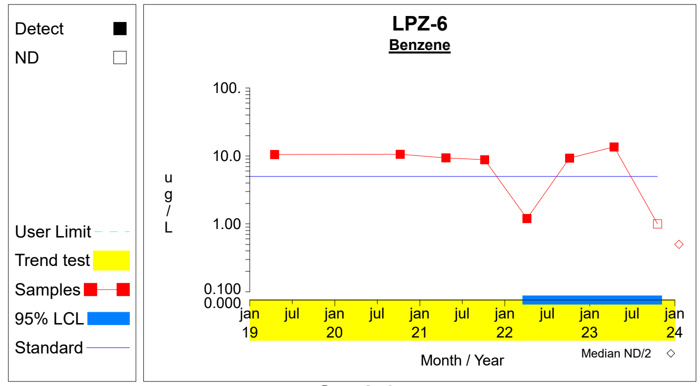
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
1,4-dichlorobenzene	ug/L	LPZ-6	4	3.975	1.957	1.176	1.673	6.277	75.000	
Benzene	ug/L	LPZ-6	4	6.150	6.373	1.176	0.000	13.647	5.000	
Carbon disulfide	ug/L	LPZ-6	4	0.875	0.750	1.176	0.000	1.757	700.000	
Chlorobenzene	ug/L	LPZ-6	4	0.900	0.462	1.176	0.357	1.443	100.000	
Chloroethane	ug/L	LPZ-6	4	0.675	0.350	1.176	0.263	1.087	2800.000	
Ethylbenzene	ug/L	LPZ-6	4	3.150	2.972	1.176	0.000	6.645	700.000	
Toluene	ug/L	LPZ-6	4	0.625	0.250	1.176	0.331	0.919	1000.000	
Xylenes, total	ug/L	LPZ-6	4	12.775	11.187	1.176	0.000	25.934	10000.000	
1,4-dichlorobenzene	ug/L	MW-15	4	1.900	0.216	1.176	1.646	2.154	75.000	dec
Benzene	ug/L	MW-15	4	3.625	1.515	1.176	1.843	5.407	5.000	dec
Carbon disulfide	ug/L	MW-15	4	0.500	0.000	1.176	0.500	0.500	700.000	
Chlorobenzene	ug/L	MW-15	4	6.350	1.533	1.176	4.547	8.153	100.000	
Chloroethane	ug/L	MW-15	4	6.050	2.186	1.176	3.479	8.621	2800.000	dec
Ethylbenzene	ug/L	MW-15	4	0.500	0.000	1.176	0.500	0.500	700.000	dec
Toluene	ug/L	MW-15	4	0.500	0.000	1.176	0.500	0.500	1000.000	
Xylenes, total	ug/L	MW-15	4	1.000	0.000	1.176	1.000	1.000	10000.000	dec

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

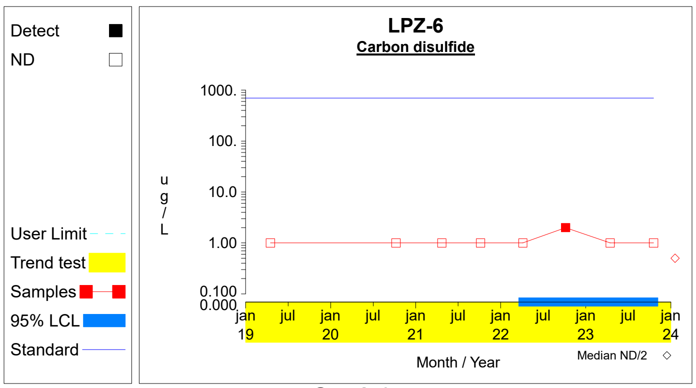
Confidence Limits (Assessment)



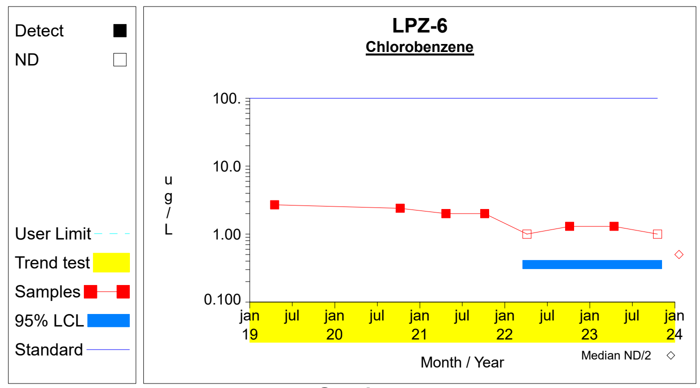
Graph 1



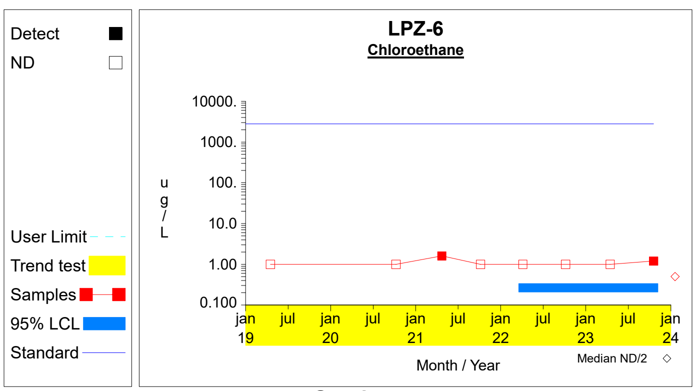
Graph 2



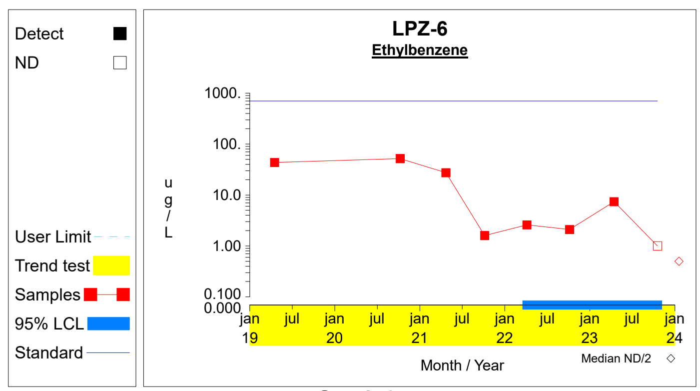
Graph 3



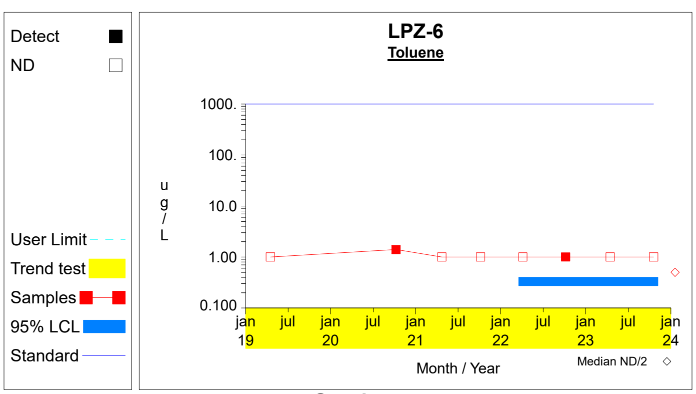
Graph 4



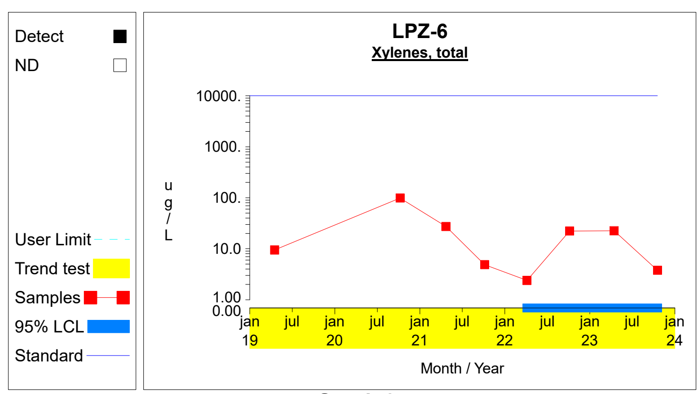
Graph 5



Graph 6

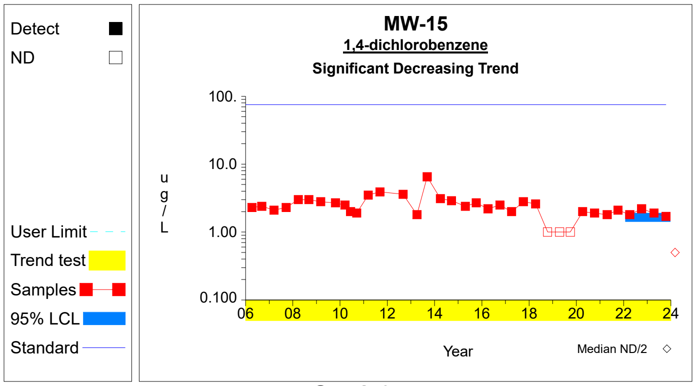


Graph 7

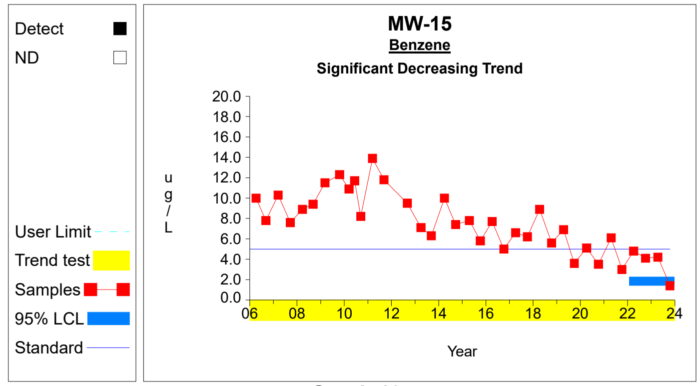


Graph 8

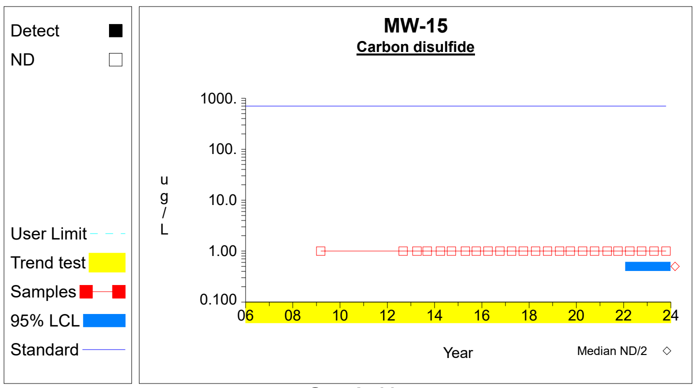
Confidence Limits (Assessment)



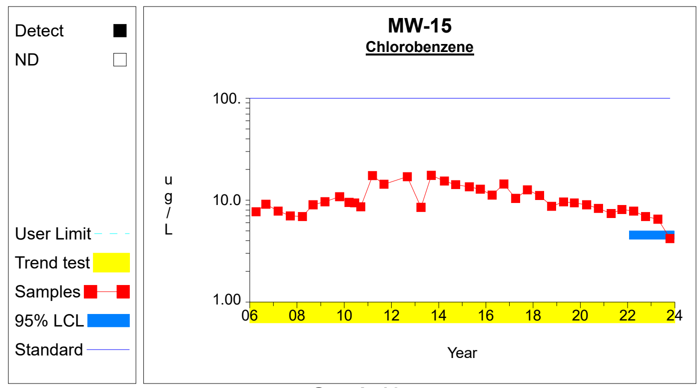
Graph 9



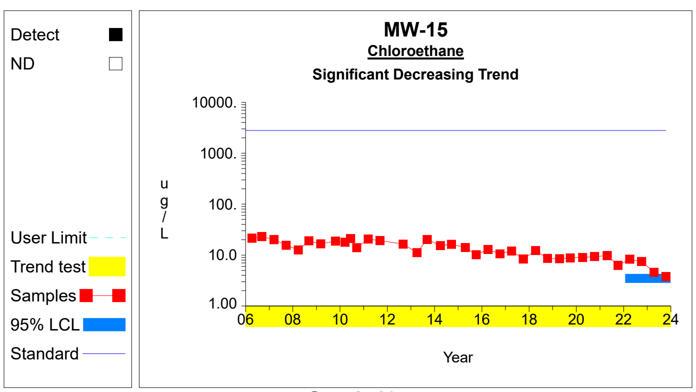
Graph 10



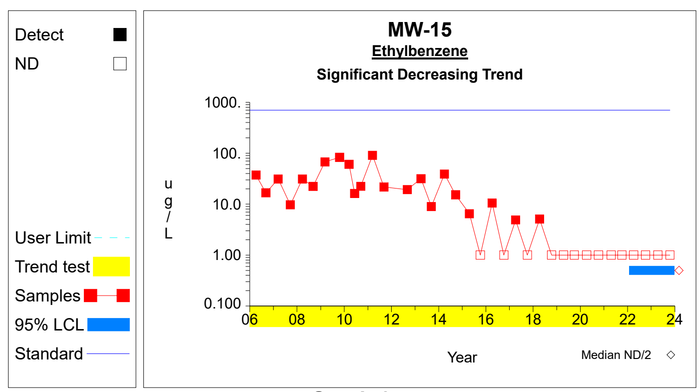
Graph 11



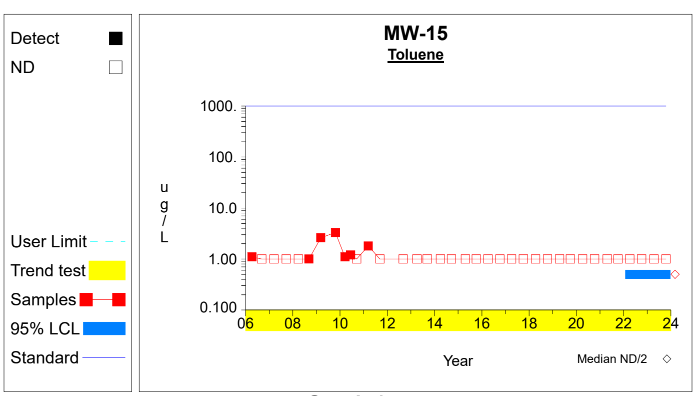
Graph 12



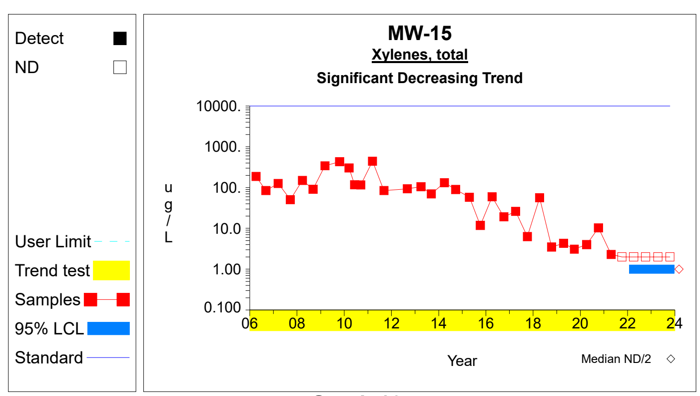
Graph 13



Graph 14



Graph 15



Graph 16

Appendix C

Laboratory Reports for Reporting Period

With Chain of Custody

ANALYTICAL REPORT

Work Order: 1GD1662

Report To	Work Order Information
Todd Whipple HLW Engineering PO Box 314 Story City, IA 50248	Date Received: 4/17/2023 9:51:00AM Collector: Whipple, Todd Phone: (515) 733-4144 PO Number: Jones Co Landfill - New Regs

Project: Jones Co. Landfill - New Regs

Project Number: [none]

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-01 MW-12 (up)				Matrix: Water		Collected: 04/14/23 07:39	
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Surrogate: Dibromofluoromethane	*114 %*			*80-126*	LNH	04/18/23 13:57	
Surrogate: 1,2-Dichloroethane-d4	*97.1 %*			*63-138*	LNH	04/18/23 13:57	
Surrogate: Toluene-d8	*96.8 %*			*87-116*	LNH	04/18/23 13:57	
Surrogate: 4-Bromofluorobenzene	*96.6 %*			*85-111*	LNH	04/18/23 13:57	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Benzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	

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Keystone LABORATORIES
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HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-01 MW-12 (up)				Matrix: Water		Collected: 04/14/23 07:39	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Chlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 13:57	
Surrogate: Dibromofluoromethane	*114 %*			*75-136*	LNH	04/18/23 13:57	
Surrogate: 1,2-Dichloroethane-d4	*97.1 %*			*61-142*	LNH	04/18/23 13:57	
Surrogate: Toluene-d8	*96.8 %*			*82-121*	LNH	04/18/23 13:57	
Surrogate: 4-Bromofluorobenzene	*96.6 %*			*80-116*	LNH	04/18/23 13:57	
Silver, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Arsenic, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Barium, total	**0.232 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Beryllium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Cadmium, total	<0.0008 mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Cobalt, total	<0.0004 mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Chromium, total	<0.0080 mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Copper, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Nickel, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Lead, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Antimony, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 0:24	

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-01 MW-12 (up)				Matrix: Water		Collected: 04/14/23 07:39	
Selenium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Thallium, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Vanadium, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
Zinc, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 0:24	
1GD1662-02 MW-6				Matrix: Water		Collected: 04/14/23 08:04	
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Surrogate: Dibromofluoromethane	*110 %*			*80-126*	LNH	04/18/23 14:23	
Surrogate: 1,2-Dichloroethane-d4	*97.9 %*			*63-138*	LNH	04/18/23 14:23	
Surrogate: Toluene-d8	*98.1 %*			*87-116*	LNH	04/18/23 14:23	
Surrogate: 4-Bromofluorobenzene	*97.5 %*			*85-111*	LNH	04/18/23 14:23	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Benzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	

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HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-02 MW-6				Matrix: Water		Collected: 04/14/23 08:04	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Chlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:23	
Surrogate: Dibromofluoromethane	*110 %*			*75-136*	LNH	04/18/23 14:23	
Surrogate: 1,2-Dichloroethane-d4	*97.9 %*			*61-142*	LNH	04/18/23 14:23	
Surrogate: Toluene-d8	*98.1 %*			*82-121*	LNH	04/18/23 14:23	
Surrogate: 4-Bromofluorobenzene	*97.5 %*			*80-116*	LNH	04/18/23 14:23	
Silver, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Arsenic, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Barium, total	**0.133 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Beryllium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Cadmium, total	<0.0008 mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Cobalt, total	<0.0004 mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Chromium, total	<0.0080 mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Copper, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Nickel, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Lead, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Antimony, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Selenium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Thallium, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Vanadium, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 0:48	
Zinc, total	**0.0201 mg/L**	**0.0200**	1GD1215	EPA 6020A	RVV	04/26/23 0:48	

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HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-03 MW-11				Matrix: Water	Collected:	04/14/23 07:30	
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Surrogate: Dibromofluoromethane	*112 %*			*80-126*	LNH	04/18/23 14:50	
Surrogate: 1,2-Dichloroethane-d4	*98.4 %*			*63-138*	LNH	04/18/23 14:50	
Surrogate: Toluene-d8	*98.0 %*			*87-116*	LNH	04/18/23 14:50	
Surrogate: 4-Bromofluorobenzene	*97.8 %*			*85-111*	LNH	04/18/23 14:50	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Benzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	

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Keystone LABORATORIES A Microbac Company

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-03 MW-11				Matrix: Water	Collected: 04/14/23 07:30		
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Chlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 14:50	
Surrogate: Dibromofluoromethane	*112 %*			*75-136*	LNH	04/18/23 14:50	
Surrogate: 1,2-Dichloroethane-d4	*98.4 %*			*61-142*	LNH	04/18/23 14:50	
Surrogate: Toluene-d8	*98.0 %*			*82-121*	LNH	04/18/23 14:50	
Surrogate: 4-Bromofluorobenzene	*97.8 %*			*80-116*	LNH	04/18/23 14:50	
Silver, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Arsenic, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Barium, total	**0.221 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Beryllium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Cadmium, total	<0.0008 mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Cobalt, total	<0.0004 mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Chromium, total	<0.0080 mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Copper, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Nickel, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Lead, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Antimony, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Selenium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Thallium, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Vanadium, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
Zinc, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 0:54	
1GD1662-04 MW-15				Matrix: Water	Collected: 04/14/23 09:28		
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Surrogate: Dibromofluoromethane	*111 %*			*80-126*	LNH	04/18/23 15:17	
Surrogate: 1,2-Dichloroethane-d4	*98.7 %*			*63-138*	LNH	04/18/23 15:17	
Surrogate: Toluene-d8	*97.8 %*			*87-116*	LNH	04/18/23 15:17	
Surrogate: 4-Bromofluorobenzene	*97.9 %*			*85-111*	LNH	04/18/23 15:17	

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HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-04 MW-15				Matrix: Water		Collected: 04/14/23 09:28	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Chloroethane	**4.6 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Benzene	**4.2 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Chlorobenzene	**6.5 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	

Keystone LABORATORIES
A Microbac Company

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result		MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-04 MW-15					Matrix: Water		Collected: 04/14/23 09:28	
Styrene	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Bromoform	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,2,3-Trichloropropane	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
trans-1,4-Dichloro-2-butene	<5.0	ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,1,2,2-Tetrachloroethane	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,4-Dichlorobenzene	**1.9**	**ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,2-Dichlorobenzene	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
1,2-Dibromo-3-chloropropane	<5.0	ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:17	
Surrogate: Dibromofluoromethane	*111 %*				*75-136*	LNH	04/18/23 15:17	
Surrogate: 1,2-Dichloroethane-d4	*98.7 %*				*61-142*	LNH	04/18/23 15:17	
Surrogate: Toluene-d8	*97.8 %*				*82-121*	LNH	04/18/23 15:17	
Surrogate: 4-Bromofluorobenzene	*97.9 %*				*80-116*	LNH	04/18/23 15:17	
Alkalinity, as CaCO3	**422**	**mg/L**	**10**	1GD0986	2320B	BSS	04/21/23 11:10	
pH	**6.4**	**pH**	**0.5**	1GD0992	SM 4500 H+ B	BSS	04/20/23 8:43	I-03
Silver, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Arsenic, total	**0.168**	**mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Barium, total	**0.783**	**mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Beryllium, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Cadmium, total	<0.0008	mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Cobalt, total	**0.0131**	**mg/L**	**0.0004**	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Chromium, total	<0.0080	mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Copper, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Nickel, total	**0.0675**	**mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Lead, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Antimony, total	<0.0020	mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Selenium, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Thallium, total	<0.0020	mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Vanadium, total	<0.0200	mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
Zinc, total	<0.0200	mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:00	
1GD1662-05 MW-16					Matrix: Water		Collected: 04/14/23 09:18	
Acrylonitrile	<5.0	ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Surrogate: Dibromofluoromethane	*111 %*				*80-126*	LNH	04/18/23 15:43	
Surrogate: 1,2-Dichloroethane-d4	*98.7 %*				*63-138*	LNH	04/18/23 15:43	
Surrogate: Toluene-d8	*97.8 %*				*87-116*	LNH	04/18/23 15:43	
Surrogate: 4-Bromofluorobenzene	*98.7 %*				*85-111*	LNH	04/18/23 15:43	
Chloromethane	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Vinyl Chloride	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Bromomethane	<1.0	ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	

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HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-05 MW-16				Matrix: Water	Collected: 04/14/23 09:18		
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Benzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Chlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-05 MW-16				Matrix: Water		Collected: 04/14/23 09:18	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 15:43	
Surrogate: Dibromofluoromethane	*111 %*			*75-136*	LNH	04/18/23 15:43	
Surrogate: 1,2-Dichloroethane-d4	*98.7 %*			*61-142*	LNH	04/18/23 15:43	
Surrogate: Toluene-d8	*97.8 %*			*82-121*	LNH	04/18/23 15:43	
Surrogate: 4-Bromofluorobenzene	*98.7 %*			*80-116*	LNH	04/18/23 15:43	
Silver, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Arsenic, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Barium, total	**0.0853 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Beryllium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Cadmium, total	<0.0008 mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Cobalt, total	<0.0004 mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Chromium, total	<0.0080 mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Copper, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Nickel, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Lead, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Antimony, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Selenium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Thallium, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Vanadium, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
Zinc, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:18	
1GD1662-06 MW-20				Matrix: Water		Collected: 04/14/23 08:38	
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Surrogate: Dibromofluoromethane	*112 %*			*80-126*	LNH	04/18/23 16:10	
Surrogate: 1,2-Dichloroethane-d4	*98.6 %*			*63-138*	LNH	04/18/23 16:10	
Surrogate: Toluene-d8	*97.6 %*			*87-116*	LNH	04/18/23 16:10	
Surrogate: 4-Bromofluorobenzene	*97.8 %*			*85-111*	LNH	04/18/23 16:10	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	

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Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-06 MW-20				Matrix: Water		Collected: 04/14/23 08:38	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Benzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Chlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	

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Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-06 MW-20				Matrix: Water	Collected: 04/14/23 08:38		
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:10	
Surrogate: Dibromofluoromethane	*112 %*			*75-136*	LNH	04/18/23 16:10	
Surrogate: 1,2-Dichloroethane-d4	*98.6 %*			*61-142*	LNH	04/18/23 16:10	
Surrogate: Toluene-d8	*97.6 %*			*82-121*	LNH	04/18/23 16:10	
Surrogate: 4-Bromofluorobenzene	*97.8 %*			*80-116*	LNH	04/18/23 16:10	
Silver, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Arsenic, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Barium, total	**0.103 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Beryllium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Cadmium, total	<0.0008 mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Cobalt, total	<0.0004 mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Chromium, total	<0.0080 mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Copper, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Nickel, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Lead, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Antimony, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Selenium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Thallium, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Vanadium, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
Zinc, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:25	
1GD1662-07 MW-22				Matrix: Water	Collected: 04/14/23 09:00		
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Surrogate: Dibromofluoromethane	*111 %*			*80-126*	LNH	04/18/23 16:37	
Surrogate: 1,2-Dichloroethane-d4	*98.3 %*			*63-138*	LNH	04/18/23 16:37	
Surrogate: Toluene-d8	*98.1 %*			*87-116*	LNH	04/18/23 16:37	
Surrogate: 4-Bromofluorobenzene	*98.0 %*			*85-111*	LNH	04/18/23 16:37	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	

Phone 641-792-8451 600 East 17th Street South Newton, IA 50208 Fax 641-792-7989

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Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-07 MW-22				Matrix: Water		Collected: 04/14/23 09:00	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Benzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Chlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Ethylbenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Xylenes, total	<2.0 ug/L	2.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 16:37	
Surrogate: Dibromofluoromethane	*111 %*			*75-136*	LNH	04/18/23 16:37	
Surrogate: 1,2-Dichloroethane-d4	*98.3 %*			*61-142*	LNH	04/18/23 16:37	

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Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-07 MW-22				Matrix: Water		Collected: 04/14/23 09:00	
Surrogate: Toluene-d8	*98.1 %*			*82-121*	LNH	04/18/23 16:37	
Surrogate: 4-Bromofluorobenzene	*98.0 %*			*80-116*	LNH	04/18/23 16:37	
Silver, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Arsenic, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Barium, total	**0.175 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Beryllium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Cadmium, total	<0.0008 mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Cobalt, total	<0.0004 mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Chromium, total	<0.0080 mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Copper, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Nickel, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Lead, total	**0.0099 mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Antimony, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Selenium, total	<0.0040 mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Thallium, total	<0.0020 mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Vanadium, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
Zinc, total	<0.0200 mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:31	
1GD1662-08 LPZ-6				Matrix: Water		Collected: 04/14/23 10:02	
Acrylonitrile	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Surrogate: Dibromofluoromethane	*112 %*			*80-126*	LNH	04/18/23 17:03	
Surrogate: 1,2-Dichloroethane-d4	*98.2 %*			*63-138*	LNH	04/18/23 17:03	
Surrogate: Toluene-d8	*97.8 %*			*87-116*	LNH	04/18/23 17:03	
Surrogate: 4-Bromofluorobenzene	*98.2 %*			*85-111*	LNH	04/18/23 17:03	
Chloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Bromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Chloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Acetone	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Methyl Iodide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Carbon Disulfide	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Methylene Chloride	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Vinyl Acetate	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	

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Phone 641-792-8451 600 East 17th Street South Newton, IA 50208 Fax 641-792-7989

Keystone LABORATORIES
A Microbac Company

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-08 LPZ-6				Matrix: Water		Collected: 04/14/23 10:02	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Bromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Chloroform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Benzene	**13.6 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Trichloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Dibromomethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Toluene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Chlorobenzene	**1.3 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Ethylbenzene	**7.4 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Xylenes, total	**22.6 ug/L**	**2.0**	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Styrene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Bromoform	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,4-Dichlorobenzene	**5.3 ug/L**	**1.0**	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GD0924	EPA 8260B	LNH	04/18/23 17:03	
Surrogate: Dibromofluoromethane	*112 %*			*75-136*	LNH	04/18/23 17:03	
Surrogate: 1,2-Dichloroethane-d4	*98.2 %*			*61-142*	LNH	04/18/23 17:03	
Surrogate: Toluene-d8	*97.8 %*			*82-121*	LNH	04/18/23 17:03	
Surrogate: 4-Bromofluorobenzene	*98.2 %*			*80-116*	LNH	04/18/23 17:03	
Alkalinity, as CaCO3	**571 mg/L**	**10**	1GD0986	2320B	BSS	04/21/23 11:10	
Nitrogen, Ammonia	**4.38 mg/L**	**1.00**	1GD1467	TIMBERLINE	TJB	04/28/23 10:38	
pH	**6.4 pH**	**0.5**	1GD0992	SM 4500 H+ B	BSS	04/20/23 8:43	I-03

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Keystone LABORATORIES A Microbac Company

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Analyte	Result		MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1662-08	LPZ-6				Matrix: Water		Collected: 04/14/23 10:02	
Solids, total dissolved	**886**	**mg/L**	**5**	1GD1016	USGS I-1750-85	MEAH	04/20/23 12:35	
Chloride	**114**	**mg/L**	**10.0**	1GD1504	EPA 9056	MID	04/27/23 12:23	
Sulfate	**16.1**	**mg/L**	**10.0**	1GD1504	EPA 9056	MID	04/27/23 12:23	
Arsenic, total	**0.0077**	**mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:37	
Cobalt, total	**0.0026**	**mg/L**	**0.0004**	1GD1215	EPA 6020A	RVV	04/26/23 1:37	
BOD (5 day)	**9**	**mg/l**	**2**	2GD0116	SM 5210 B	DES	04/14/23 12:50	
1GD1662-09	Duplicate				Matrix: Water		Collected: 04/14/23 00:00	
Silver, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Arsenic, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Barium, total	**0.230**	**mg/L**	**0.0040**	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Beryllium, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Cadmium, total	<0.0008	mg/L	0.0008	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Cobalt, total	<0.0004	mg/L	0.0004	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Chromium, total	<0.0080	mg/L	0.0080	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Copper, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Nickel, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Lead, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Antimony, total	<0.0020	mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Selenium, total	<0.0040	mg/L	0.0040	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Thallium, total	<0.0020	mg/L	0.0020	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Vanadium, total	<0.0200	mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:43	
Zinc, total	<0.0200	mg/L	0.0200	1GD1215	EPA 6020A	RVV	04/26/23 1:43	

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0924 - EPA 5030B										
Blank (1GD0924-BLK1)				Prepared & Analyzed: 04/18/23						
Surrogate: Dibromofluoromethane	*54.5*		*ug/L*	*50.3520*		*108*	*75-136*			
Surrogate: Dibromofluoromethane	*54.5*		"	*50.3520*		*108*	*80-126*			
Surrogate: 1,2-Dichloroethane-d4	*49.2*		"	*50.4080*		*97.7*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*49.2*		"	*50.4080*		*97.7*	*61-142*			
Surrogate: Toluene-d8	*49.3*		"	*50.2360*		*98.1*	*82-121*			
Surrogate: Toluene-d8	*49.3*		"	*50.2360*		*98.1*	*87-116*			
Surrogate: 4-Bromofluorobenzene	*49.7*		"	*50.4200*		*98.6*	*80-116*			
Surrogate: 4-Bromofluorobenzene	*49.7*		"	*50.4200*		*98.6*	*85-111*			
Chloromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Acetone	ND	10.0	"							
Methyl Iodide	ND	1.0	"							
Carbon Disulfide	ND	1.0	"							
Methylene Chloride	ND	5.0	"							
Acrylonitrile	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
Vinyl Acetate	ND	5.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
2-Butanone (MEK)	ND	10.0	"							
Bromochloromethane	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	5.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0924 - EPA 5030B										
Blank (1GD0924-BLK1)				Prepared & Analyzed: 04/18/23						
1,1,2-Trichloroethane	ND	1.0	ug/L							
Tetrachloroethylene	ND	1.0	"							
2-Hexanone (MBK)	ND	5.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	2.0	"							
Styrene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,2,3-Trichloropropane	ND	1.0	"							
trans-1,4-Dichloro-2-butene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							
LCS (1GD0924-BS1)				Prepared & Analyzed: 04/18/23						
Surrogate: Dibromofluoromethane	*52.0*		*ug/L*	*50.3520*		*103*	*75-136*			
Surrogate: Dibromofluoromethane	*52.0*		*"*	*50.3520*		*103*	*80-126*			
Surrogate: 1,2-Dichloroethane-d4	*48.7*		*"*	*50.4080*		*96.6*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*48.7*		*"*	*50.4080*		*96.6*	*61-142*			
Surrogate: Toluene-d8	*49.8*		*"*	*50.2360*		*99.1*	*87-116*			
Surrogate: Toluene-d8	*49.8*		*"*	*50.2360*		*99.1*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*48.7*		*"*	*50.4200*		*96.6*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*48.7*		*"*	*50.4200*		*96.6*	*80-116*			
Chloromethane	26.13	1.0	"	30.0000		87.1	63-155			
Vinyl Chloride	26.16	1.0	"	30.0000		87.2	70-154			
Bromomethane	30.89	1.0	"	30.0000		103	52-176			
Chloroethane	31.07	1.0	"	30.0000		104	72-148			
Trichlorofluoromethane	29.30	1.0	"	30.0000		97.7	70-152			
1,1-Dichloroethylene	52.54	1.0	"	50.0000		105	70-148			
Acetone	92.00	10.0	"	104.100		88.4	43-172			
Methyl Iodide	119.2	1.0	"	112.563		106	69-170			
Carbon Disulfide	117.8	1.0	"	106.400		111	72-162			
Methylene Chloride	47.13	5.0	"	50.0000		94.3	68-142			
Acrylonitrile	90.82	5.0	"	100.500		90.4	67-144			
trans-1,2-Dichloroethylene	50.31	1.0	"	50.0000		101	66-148			

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Work Order: 1GD1662

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0924 - EPA 5030B										
LCS (1GD0924-BS1)				Prepared & Analyzed: 04/18/23						
1,1-Dichloroethane	50.24	1.0	ug/L	50.0000		100	66-143			
Vinyl Acetate	81.44	5.0	"	103.300		78.8	43-153			
cis-1,2-Dichloroethylene	48.43	1.0	"	50.0000		96.9	71-149			
2-Butanone (MEK)	97.31	10.0	"	106.200		91.6	52-159			
Bromochloromethane	50.75	1.0	"	50.0000		102	69-143			
Chloroform	48.78	1.0	"	50.0000		97.6	69-144			
1,1,1-Trichloroethane	44.70	1.0	"	49.9750		89.4	62-129			
Carbon Tetrachloride	55.17	1.0	"	50.0000		110	63-141			
Benzene	49.55	1.0	"	50.0000		99.1	71-134			
1,2-Dichloroethane	47.64	1.0	"	50.0000		95.3	72-132			
Trichloroethylene	41.46	1.0	"	50.0000		82.9	71-135			
1,2-Dichloropropane	49.21	1.0	"	50.0000		98.4	69-136			
Dibromomethane	50.74	1.0	"	50.0000		101	73-147			
Bromodichloromethane	47.77	1.0	"	50.0000		95.5	68-129			
cis-1,3-Dichloropropene	48.55	1.0	"	50.3250		96.5	65-134			
4-Methyl-2-pentanone (MIBK)	74.20	5.0	"	103.100		72.0	58-147			
Toluene	48.60	1.0	"	50.0000		97.2	72-133			
trans-1,3-Dichloropropene	47.47	1.0	"	50.4250		94.1	67-130			
1,1,2-Trichloroethane	47.40	1.0	"	50.0000		94.8	69-135			
Tetrachloroethylene	47.36	1.0	"	50.0000		94.7	69-130			
2-Hexanone (MBK)	75.27	5.0	"	110.300		68.2	55-144			
Dibromochloromethane	52.18	1.0	"	49.5000		105	73-127			
1,2-Dibromoethane	47.93	1.0	"	50.0000		95.9	67-132			
Chlorobenzene	47.62	1.0	"	50.0000		95.2	72-123			
1,1,1,2-Tetrachloroethane	52.09	1.0	"	50.0000		104	73-127			
Ethylbenzene	46.39	1.0	"	50.0000		92.8	71-127			
Xylenes, total	136.6	2.0	"	150.000		91.1	74-127			
Styrene	46.71	1.0	"	50.0000		93.4	66-126			
Bromoform	55.42	1.0	"	50.0000		111	68-130			
1,2,3-Trichloropropane	46.99	1.0	"	50.0000		94.0	63-136			
trans-1,4-Dichloro-2-butene	79.14	5.0	"	102.400		77.3	54-134			
1,1,2,2-Tetrachloroethane	46.24	1.0	"	49.8500		92.8	61-131			
1,4-Dichlorobenzene	48.22	1.0	"	50.0000		96.4	70-129			
1,2-Dichlorobenzene	47.51	1.0	"	50.0000		95.0	69-126			
1,2-Dibromo-3-chloropropane	42.27	5.0	"	50.0000		84.5	50-143			

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Work Order: 1GD1662

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0924 - EPA 5030B										
LCS Dup (1GD0924-BSD1)				Prepared & Analyzed: 04/18/23						
Surrogate: Dibromofluoromethane	*52.6*		*ug/L*	*50.3520*		*105*	*75-136*			
Surrogate: Dibromofluoromethane	*52.6*		*"*	*50.3520*		*105*	*80-126*			
Surrogate: 1,2-Dichloroethane-d4	*48.9*		*"*	*50.4080*		*97.0*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*48.9*		*"*	*50.4080*		*97.0*	*61-142*			
Surrogate: Toluene-d8	*49.6*		*"*	*50.2360*		*98.8*	*82-121*			
Surrogate: Toluene-d8	*49.6*		*"*	*50.2360*		*98.8*	*87-116*			
Surrogate: 4-Bromofluorobenzene	*48.8*		*"*	*50.4200*		*96.9*	*80-116*			
Surrogate: 4-Bromofluorobenzene	*48.8*		*"*	*50.4200*		*96.9*	*85-111*			
Chloromethane	25.17	1.0	"	30.0000		83.9	63-155	3.74	24	
Vinyl Chloride	24.79	1.0	"	30.0000		82.6	70-154	5.38	25	
Bromomethane	30.46	1.0	"	30.0000		102	52-176	1.40	27	
Chloroethane	30.00	1.0	"	30.0000		100	72-148	3.50	25	
Trichlorofluoromethane	27.82	1.0	"	30.0000		92.7	70-152	5.18	26	
1,1-Dichloroethylene	49.77	1.0	"	50.0000		99.5	70-148	5.41	24	
Acetone	93.68	10.0	"	104.100		90.0	43-172	1.81	30	
Methyl Iodide	121.1	1.0	"	112.563		108	69-170	1.63	30	
Carbon Disulfide	112.4	1.0	"	106.400		106	72-162	4.69	24	
Methylene Chloride	47.29	5.0	"	50.0000		94.6	68-142	0.339	21	
Acrylonitrile	90.23	5.0	"	100.500		89.8	67-144	0.652	24	
trans-1,2-Dichloroethylene	48.78	1.0	"	50.0000		97.6	66-148	3.09	27	
1,1-Dichloroethane	49.47	1.0	"	50.0000		98.9	66-143	1.54	24	
Vinyl Acetate	84.10	5.0	"	103.300		81.4	43-153	3.21	30	
cis-1,2-Dichloroethylene	47.89	1.0	"	50.0000		95.8	71-149	1.12	26	
2-Butanone (MEK)	99.74	10.0	"	106.200		93.9	52-159	2.47	27	
Bromochloromethane	50.82	1.0	"	50.0000		102	69-143	0.138	23	
Chloroform	48.04	1.0	"	50.0000		96.1	69-144	1.53	23	
1,1,1-Trichloroethane	43.56	1.0	"	49.9750		87.2	62-129	2.58	24	
Carbon Tetrachloride	53.15	1.0	"	50.0000		106	63-141	3.73	25	
Benzene	48.29	1.0	"	50.0000		96.6	71-134	2.58	24	
1,2-Dichloroethane	48.18	1.0	"	50.0000		96.4	72-132	1.13	24	
Trichloroethylene	40.25	1.0	"	50.0000		80.5	71-135	2.96	24	
1,2-Dichloropropane	48.31	1.0	"	50.0000		96.6	69-136	1.85	24	
Dibromomethane	50.77	1.0	"	50.0000		102	73-147	0.0591	25	
Bromodichloromethane	48.16	1.0	"	50.0000		96.3	68-129	0.813	22	
cis-1,3-Dichloropropene	48.70	1.0	"	50.3250		96.8	65-134	0.308	23	
4-Methyl-2-pentanone (MIBK)	74.26	5.0	"	103.100		72.0	58-147	0.0808	27	
Toluene	47.40	1.0	"	50.0000		94.8	72-133	2.50	24	
trans-1,3-Dichloropropene	47.29	1.0	"	50.4250		93.8	67-130	0.380	24	

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Work Order: 1GD1662

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0924 - EPA 5030B										
LCS Dup (1GD0924-BSD1)				Prepared & Analyzed: 04/18/23						
1,1,2-Trichloroethane	47.48	1.0	ug/L	50.0000		95.0	69-135	0.169	23	
Tetrachloroethylene	45.89	1.0	"	50.0000		91.8	69-130	3.15	25	
2-Hexanone (MBK)	74.79	5.0	"	110.300		67.8	55-144	0.640	25	
Dibromochloromethane	53.19	1.0	"	49.5000		107	73-127	1.92	22	
1,2-Dibromoethane	48.20	1.0	"	50.0000		96.4	67-132	0.562	24	
Chlorobenzene	46.62	1.0	"	50.0000		93.2	72-123	2.12	23	
1,1,1,2-Tetrachloroethane	51.45	1.0	"	50.0000		103	73-127	1.24	24	
Ethylbenzene	44.70	1.0	"	50.0000		89.4	71-127	3.71	26	
Xylenes, total	133.9	2.0	"	150.000		89.3	74-127	2.00	25	
Styrene	46.13	1.0	"	50.0000		92.3	66-126	1.25	23	
Bromoform	56.33	1.0	"	50.0000		113	68-130	1.63	23	
1,2,3-Trichloropropane	47.37	1.0	"	50.0000		94.7	63-136	0.805	24	
trans-1,4-Dichloro-2-butene	79.65	5.0	"	102.400		77.8	54-134	0.642	27	
1,1,2,2-Tetrachloroethane	46.78	1.0	"	49.8500		93.8	61-131	1.16	29	
1,4-Dichlorobenzene	48.10	1.0	"	50.0000		96.2	70-129	0.249	24	
1,2-Dichlorobenzene	47.47	1.0	"	50.0000		94.9	69-126	0.0842	26	
1,2-Dibromo-3-chloropropane	41.36	5.0	"	50.0000		82.7	50-143	2.18	30	
Matrix Spike (1GD0924-MS1)		**Source: 1GD1662-01**		Prepared & Analyzed: 04/18/23						
Surrogate: Dibromofluoromethane	*277*		*ug/L*	*251.760*		*110*	*75-136*			
Surrogate: Dibromofluoromethane	*277*		*"*	*251.760*		*110*	*80-126*			
Surrogate: 1,2-Dichloroethane-d4	*246*		*"*	*252.040*		*97.5*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*246*		*"*	*252.040*		*97.5*	*61-142*			
Surrogate: Toluene-d8	*251*		*"*	*251.180*		*99.8*	*87-116*			
Surrogate: Toluene-d8	*251*		*"*	*251.180*		*99.8*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*248*		*"*	*252.100*		*98.3*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*248*		*"*	*252.100*		*98.3*	*80-116*			
Chloromethane	134.2	5.0	"	150.000	ND	89.5	61-152			
Vinyl Chloride	140.1	5.0	"	150.000	ND	93.4	66-149			
Bromomethane	132.6	5.0	"	150.000	ND	88.4	43-171			
Chloroethane	164.2	5.0	"	150.000	ND	109	69-148			
Trichlorofluoromethane	150.9	5.0	"	150.000	ND	101	62-163			
1,1-Dichloroethylene	275.4	5.0	"	250.000	ND	110	70-148			
Acetone	426.2	50.0	"	520.500	ND	81.9	45-173			
Methyl Iodide	502.4	5.0	"	562.815	ND	89.3	62-167			
Carbon Disulfide	600.5	5.0	"	532.000	ND	113	71-163			
Methylene Chloride	245.8	25.0	"	250.000	ND	98.3	69-140			
Acrylonitrile	486.9	25.0	"	502.500	ND	96.9	58-151			
trans-1,2-Dichloroethylene	259.6	5.0	"	250.000	ND	104	69-144			

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Work Order: 1GD1662

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Batch 1GD0924 - EPA 5030B

Matrix Spike (1GD0924-MS1) **Source: 1GD1662-01** Prepared & Analyzed: 04/18/23

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethane	262.2	5.0	ug/L	250.000	ND	105	70-138			
Vinyl Acetate	505.0	25.0	"	516.500	ND	97.8	58-142			
cis-1,2-Dichloroethylene	254.4	5.0	"	250.000	ND	102	68-151			
2-Butanone (MEK)	401.7	50.0	"	531.000	ND	75.6	50-160			
Bromochloromethane	270.6	5.0	"	250.000	ND	108	65-143			
Chloroform	252.0	5.0	"	250.000	ND	101	71-143			
1,1,1-Trichloroethane	230.5	5.0	"	249.875	ND	92.2	63-133			
Carbon Tetrachloride	278.2	5.0	"	250.000	ND	111	63-142			
Benzene	254.2	5.0	"	250.000	ND	102	69-133			
1,2-Dichloroethane	247.8	5.0	"	250.000	ND	99.1	63-138			
Trichloroethylene	207.5	5.0	"	250.000	ND	83.0	71-133			
1,2-Dichloropropane	253.6	5.0	"	250.000	ND	101	69-132			
Dibromomethane	261.0	5.0	"	250.000	ND	104	70-147			
Bromodichloromethane	245.9	5.0	"	250.000	ND	98.4	67-130			
cis-1,3-Dichloropropene	242.0	5.0	"	251.625	ND	96.2	61-126			
4-Methyl-2-pentanone (MIBK)	415.2	25.0	"	515.500	ND	80.5	55-147			
Toluene	250.9	5.0	"	250.000	ND	100	71-133			
trans-1,3-Dichloropropene	238.0	5.0	"	252.125	ND	94.4	63-124			
1,1,2-Trichloroethane	247.6	5.0	"	250.000	ND	99.0	69-133			
Tetrachloroethylene	244.0	5.0	"	250.000	ND	97.6	70-124			
2-Hexanone (MBK)	396.0	25.0	"	551.500	ND	71.8	53-141			
Dibromochloromethane	263.3	5.0	"	247.500	ND	106	74-122			
1,2-Dibromoethane	249.9	5.0	"	250.000	ND	100	66-127			
Chlorobenzene	246.6	5.0	"	250.000	ND	98.6	76-116			
1,1,1,2-Tetrachloroethane	263.8	5.0	"	250.000	ND	106	77-121			
Ethylbenzene	238.8	5.0	"	250.000	ND	95.5	73-124			
Xylenes, total	714.4	10.0	"	750.000	ND	95.3	75-123			
Styrene	243.3	5.0	"	250.000	ND	97.3	70-120			
Bromoform	278.6	5.0	"	250.000	ND	111	70-124			
1,2,3-Trichloropropane	248.3	5.0	"	250.000	ND	99.3	62-135			
trans-1,4-Dichloro-2-butene	406.8	25.0	"	512.000	ND	79.5	50-120			
1,1,2,2-Tetrachloroethane	255.8	5.0	"	249.250	ND	103	63-126			
1,4-Dichlorobenzene	245.8	5.0	"	250.000	ND	98.3	72-119			
1,2-Dichlorobenzene	239.6	5.0	"	250.000	ND	95.8	71-117			
1,2-Dibromo-3-chloropropane	216.0	25.0	"	250.000	ND	86.4	49-134			

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Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0924 - EPA 5030B										
Matrix Spike Dup (1GD0924-MSD1)		**Source: 1GD1662-01**		Prepared & Analyzed: 04/18/23						
Surrogate: Dibromofluoromethane	*273*		*ug/L*	*251.760*		*108*	*80-126*			
Surrogate: Dibromofluoromethane	*273*		*"*	*251.760*		*108*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*243*		*"*	*252.040*		*96.2*	*61-142*			
Surrogate: 1,2-Dichloroethane-d4	*243*		*"*	*252.040*		*96.2*	*63-138*			
Surrogate: Toluene-d8	*249*		*"*	*251.180*		*99.0*	*87-116*			
Surrogate: Toluene-d8	*249*		*"*	*251.180*		*99.0*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*248*		*"*	*252.100*		*98.4*	*80-116*			
Surrogate: 4-Bromofluorobenzene	*248*		*"*	*252.100*		*98.4*	*85-111*			
Chloromethane	136.0	5.0	"	150.000	ND	90.7	61-152	1.33	26	
Vinyl Chloride	138.8	5.0	"	150.000	ND	92.6	66-149	0.896	23	
Bromomethane	148.2	5.0	"	150.000	ND	98.8	43-171	11.1	29	
Chloroethane	161.2	5.0	"	150.000	ND	107	69-148	1.87	25	
Trichlorofluoromethane	151.2	5.0	"	150.000	ND	101	62-163	0.199	25	
1,1-Dichloroethylene	274.4	5.0	"	250.000	ND	110	70-148	0.364	22	
Acetone	428.4	50.0	"	520.500	ND	82.3	45-173	0.503	30	
Methyl Iodide	606.8	5.0	"	562.815	ND	108	62-167	18.8	24	
Carbon Disulfide	598.8	5.0	"	532.000	ND	113	71-163	0.292	22	
Methylene Chloride	242.8	25.0	"	250.000	ND	97.1	69-140	1.23	19	
Acrylonitrile	471.2	25.0	"	502.500	ND	93.8	58-151	3.27	15	
trans-1,2-Dichloroethylene	262.3	5.0	"	250.000	ND	105	69-144	1.02	22	
1,1-Dichloroethane	262.4	5.0	"	250.000	ND	105	70-138	0.114	20	
Vinyl Acetate	476.9	25.0	"	516.500	ND	92.3	58-142	5.73	24	
cis-1,2-Dichloroethylene	253.0	5.0	"	250.000	ND	101	68-151	0.532	22	
2-Butanone (MEK)	430.9	50.0	"	531.000	ND	81.1	50-160	7.01	23	
Bromochloromethane	264.7	5.0	"	250.000	ND	106	65-143	2.19	22	
Chloroform	250.6	5.0	"	250.000	ND	100	71-143	0.577	21	
1,1,1-Trichloroethane	232.0	5.0	"	249.875	ND	92.9	63-133	0.670	23	
Carbon Tetrachloride	286.6	5.0	"	250.000	ND	115	63-142	2.97	22	
Benzene	254.6	5.0	"	250.000	ND	102	69-133	0.138	18	
1,2-Dichloroethane	243.8	5.0	"	250.000	ND	97.5	63-138	1.63	20	
Trichloroethylene	210.3	5.0	"	250.000	ND	84.1	71-133	1.34	23	
1,2-Dichloropropane	252.2	5.0	"	250.000	ND	101	69-132	0.553	20	
Dibromomethane	262.8	5.0	"	250.000	ND	105	70-147	0.706	22	
Bromodichloromethane	244.7	5.0	"	250.000	ND	97.9	67-130	0.489	21	
cis-1,3-Dichloropropene	243.0	5.0	"	251.625	ND	96.6	61-126	0.454	21	
4-Methyl-2-pentanone (MIBK)	410.2	25.0	"	515.500	ND	79.6	55-147	1.21	23	
Toluene	254.0	5.0	"	250.000	ND	102	71-133	1.23	19	
trans-1,3-Dichloropropene	239.2	5.0	"	252.125	ND	94.9	63-124	0.503	21	

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Batch 1GD0924 - EPA 5030B

Matrix Spike Dup (1GD0924-MSD1) **Source: 1GD1662-01** Prepared & Analyzed: 04/18/23

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	245.4	5.0	ug/L	250.000	ND	98.2	69-133	0.852	19	
Tetrachloroethylene	250.0	5.0	"	250.000	ND	100	70-124	2.39	24	
2-Hexanone (MBK)	394.5	25.0	"	551.500	ND	71.5	53-141	0.367	24	
Dibromochloromethane	269.2	5.0	"	247.500	ND	109	74-122	2.23	21	
1,2-Dibromoethane	249.8	5.0	"	250.000	ND	99.9	66-127	0.0400	23	
Chlorobenzene	246.0	5.0	"	250.000	ND	98.4	76-116	0.264	21	
1,1,1,2-Tetrachloroethane	271.2	5.0	"	250.000	ND	108	77-121	2.77	25	
Ethylbenzene	241.2	5.0	"	250.000	ND	96.5	73-124	1.00	20	
Xylenes, total	718.2	10.0	"	750.000	ND	95.8	75-123	0.530	20	
Styrene	243.9	5.0	"	250.000	ND	97.6	70-120	0.246	23	
Bromoform	284.0	5.0	"	250.000	ND	114	70-124	1.92	22	
1,2,3-Trichloropropane	247.6	5.0	"	250.000	ND	99.1	62-135	0.262	28	
trans-1,4-Dichloro-2-butene	409.4	25.0	"	512.000	ND	80.0	50-120	0.637	26	
1,1,2,2-Tetrachloroethane	257.4	5.0	"	249.250	ND	103	63-126	0.585	24	
1,4-Dichlorobenzene	245.6	5.0	"	250.000	ND	98.2	72-119	0.102	24	
1,2-Dichlorobenzene	240.0	5.0	"	250.000	ND	96.0	71-117	0.167	24	
1,2-Dibromo-3-chloropropane	215.3	25.0	"	250.000	ND	86.1	49-134	0.348	28	

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Work Order: 1GD1662

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0986 - Wet Chem Preparation										
Blank (1GD0986-BLK1)				Prepared: 04/20/23 Analyzed: 04/21/23						
Alkalinity, as CaCO3	ND	10	mg/L							
LCS (1GD0986-BS1)				Prepared: 04/20/23 Analyzed: 04/21/23						
Alkalinity, as CaCO3	50.4	10	mg/L	50.0000		101	88-114			
Matrix Spike (1GD0986-MS1)	**Source: 1GD1918-02**			Prepared: 04/20/23 Analyzed: 04/21/23						
Alkalinity, as CaCO3	206	10	mg/L	50.0000	170	72.0	74-122			QM-07
Matrix Spike Dup (1GD0986-MSD1)	**Source: 1GD1918-02**			Prepared: 04/20/23 Analyzed: 04/21/23						
Alkalinity, as CaCO3	205	10	mg/L	50.0000	170	71.0	74-122	0.243	10	QM-07
Batch 1GD0992 - Wet Chem Preparation										
Duplicate (1GD0992-DUP1)	**Source: 1GD1639-01**			Prepared & Analyzed: 04/20/23						
pH	10.7	0.5	pH		10.7			0.0468	10	
Reference (1GD0992-SRM1)				Prepared & Analyzed: 04/20/23						
pH	7.0	0.5	pH	7.00000		99.4	90-110			
Reference (1GD0992-SRM2)				Prepared & Analyzed: 04/20/23						
pH	7.0	0.5	pH	7.00000		101	90-110			
Reference (1GD0992-SRM3)				Prepared & Analyzed: 04/20/23						
pH	12.4	0.5	pH	12.4500		100	90-110			
Batch 1GD1016 - Wet Chem Preparation										
Blank (1GD1016-BLK1)				Prepared & Analyzed: 04/20/23						
Solids, total dissolved	ND	5	mg/L							

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Work Order: 1GD1662

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD1016 - Wet Chem Preparation										
LCS (1GD1016-BS1)				Prepared & Analyzed: 04/20/23						
Solids, total dissolved	99	5	mg/L	100.000		99.1	71-114			
Duplicate (1GD1016-DUP1)		**Source: 1GD1537-01**		Prepared & Analyzed: 04/20/23						
Solids, total dissolved	199000	5	mg/L		196000			1.59	30	
Batch 1GD1467 - General Prep HPLC/IC										
Blank (1GD1467-BLK1)				Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	ND	0.10	mg/L							
Blank (1GD1467-BLK2)				Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	ND	0.10	mg/L							
LCS (1GD1467-BS1)				Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	5.30	0.10	mg/L	5.00000		106	90-114			
LCS (1GD1467-BS2)				Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	5.39	0.10	mg/L	5.00000		108	90-114			
Matrix Spike (1GD1467-MS1)		**Source: 1GD1650-02**		Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	5.03	0.10	mg/L	5.00000	ND	101	84-115			
Matrix Spike (1GD1467-MS2)		**Source: 1GD1657-02**		Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	5.18	0.10	mg/L	5.00000	0.829	87.0	84-115			
Matrix Spike Dup (1GD1467-MSD1)		**Source: 1GD1650-02**		Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	5.19	0.10	mg/L	5.00000	ND	104	84-115	3.11	20	

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Work Order: 1GD1662

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD1467 - General Prep HPLC/IC										
Matrix Spike Dup (1GD1467-MSD2)		**Source: 1GD1657-02**		Prepared & Analyzed: 04/28/23						
Nitrogen, Ammonia	5.79	0.10	mg/L	5.00000	0.829	99.1	84-115	11.1	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

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Work Order: 1GD1662

Determination of Inorganic Anions - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD1504 - General Prep HPLC/IC										
Blank (1GD1504-BLK1)				Prepared & Analyzed: 04/27/23						
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
Blank (1GD1504-BLK2)				Prepared & Analyzed: 04/27/23						
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
LCS (1GD1504-BS1)				Prepared & Analyzed: 04/27/23						
Chloride	14.76	1.0	mg/L	15.2642		96.7	80-120			
Sulfate	33.54	1.0	"	34.1908		98.1	80-120			
LCS Dup (1GD1504-BSD1)				Prepared & Analyzed: 04/27/23						
Chloride	14.91	1.0	mg/L	15.2642		97.7	80-120	1.01	10	
Sulfate	33.40	1.0	"	34.1908		97.7	80-120	0.439	10	
MRL Check (1GD1504-MRL1)				Prepared & Analyzed: 04/27/23						
Chloride	0.68	1.0	mg/L	0.616331		110	50-150			
Sulfate	1.14	1.0	"	1.10693		103	0-200			
Matrix Spike (1GD1504-MS1)	**Source: 1GD2416-01**			Prepared & Analyzed: 04/27/23						
Chloride	231.6	10.0	mg/L	152.642	75.25	102	81-116			
Sulfate	385.7	10.0	"	341.908	56.22	96.4	87-113			
Matrix Spike Dup (1GD1504-MSD1)	**Source: 1GD2416-01**			Prepared & Analyzed: 04/27/23						
Chloride	232.3	10.0	mg/L	152.642	75.25	103	81-116	0.310	10	
Sulfate	387.6	10.0	"	341.908	56.22	96.9	87-113	0.473	10	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD1215 - EPA 3005A Total Recoverable Metals										
Blank (1GD1215-BLK1)				Prepared: 04/25/23 Analyzed: 04/26/23						
Antimony, total	ND	0.0020	mg/L							
Arsenic, total	ND	0.0040	"							
Barium, total	ND	0.0040	"							
Beryllium, total	ND	0.0040	"							
Cadmium, total	ND	0.0008	"							
Chromium, total	ND	0.0080	"							
Cobalt, total	ND	0.0004	"							
Copper, total	ND	0.0040	"							
Lead, total	ND	0.0040	"							
Nickel, total	ND	0.0040	"							
Selenium, total	ND	0.0040	"							
Silver, total	ND	0.0040	"							
Thallium, total	ND	0.0020	"							
Vanadium, total	ND	0.0200	"							QB-12
Zinc, total	ND	0.0200	"							
LCS (1GD1215-BS1)				Prepared: 04/25/23 Analyzed: 04/26/23						
Antimony, total	0.0956	0.0020	mg/L	0.100000		95.6	80-120			
Arsenic, total	0.0967	0.0040	"	0.100000		96.7	80-120			
Barium, total	0.103	0.0040	"	0.100000		103	80-120			
Beryllium, total	0.0963	0.0040	"	0.100000		96.3	80-120			
Cadmium, total	0.0970	0.0008	"	0.100000		97.0	80-120			
Chromium, total	0.0954	0.0080	"	0.100000		95.4	80-120			
Cobalt, total	0.0982	0.0004	"	0.100000		98.2	80-120			
Copper, total	0.0986	0.0040	"	0.100000		98.6	80-120			
Lead, total	0.0942	0.0040	"	0.100000		94.2	80-120			
Nickel, total	0.0968	0.0040	"	0.100000		96.8	80-120			
Selenium, total	0.1017	0.0040	"	0.100000		102	80-120			
Silver, total	0.0978	0.0040	"	0.100000		97.8	80-120			
Thallium, total	0.0844	0.0020	"	0.100000		84.4	80-120			
Vanadium, total	0.0995	0.0200	"	0.100000		99.5	80-120			
Zinc, total	0.0976	0.0200	"	0.100000		97.6	80-120			

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD1215 - EPA 3005A Total Recoverable Metals										
Matrix Spike (1GD1215-MS1)		**Source: 1GD1662-01**		Prepared: 04/25/23 Analyzed: 04/26/23						
Antimony, total	0.0946	0.0020	mg/L	0.100000	ND	94.6	75-125			
Arsenic, total	0.0965	0.0040	"	0.100000	0.0019	94.6	75-125			
Barium, total	0.330	0.0040	"	0.100000	0.232	97.7	75-125			
Beryllium, total	0.0967	0.0040	"	0.100000	ND	96.7	75-125			
Cadmium, total	0.0915	0.0008	"	0.100000	ND	91.5	75-125			
Chromium, total	0.0923	0.0080	"	0.100000	0.0006	92.3	75-125			
Cobalt, total	0.0943	0.0004	"	0.100000	ND	94.3	75-125			
Copper, total	0.0895	0.0040	"	0.100000	ND	89.5	75-125			
Lead, total	0.0897	0.0040	"	0.100000	ND	89.7	75-125			
Nickel, total	0.0919	0.0040	"	0.100000	ND	91.9	75-125			
Selenium, total	0.0989	0.0040	"	0.100000	ND	98.9	75-125			
Silver, total	0.0958	0.0040	"	0.100000	ND	95.8	75-125			
Thallium, total	0.0862	0.0020	"	0.100000	0.0013	84.9	75-125			
Vanadium, total	0.0978	0.0200	"	0.100000	ND	97.8	75-125			
Zinc, total	0.103	0.0200	"	0.100000	ND	103	75-125			
Matrix Spike Dup (1GD1215-MSD1)		**Source: 1GD1662-01**		Prepared: 04/25/23 Analyzed: 04/26/23						
Antimony, total	0.0942	0.0020	mg/L	0.100000	ND	94.2	75-125	0.443	20	
Arsenic, total	0.0967	0.0040	"	0.100000	0.0019	94.8	75-125	0.158	20	
Barium, total	0.341	0.0040	"	0.100000	0.232	109	75-125	3.29	20	
Beryllium, total	0.0963	0.0040	"	0.100000	ND	96.3	75-125	0.393	20	
Cadmium, total	0.0924	0.0008	"	0.100000	ND	92.4	75-125	0.952	20	
Chromium, total	0.0928	0.0080	"	0.100000	0.0006	92.8	75-125	0.471	20	
Cobalt, total	0.0962	0.0004	"	0.100000	ND	96.2	75-125	1.99	20	
Copper, total	0.0893	0.0040	"	0.100000	ND	89.3	75-125	0.165	20	
Lead, total	0.0896	0.0040	"	0.100000	ND	89.6	75-125	0.0710	20	
Nickel, total	0.0928	0.0040	"	0.100000	ND	92.8	75-125	0.951	20	
Selenium, total	0.0990	0.0040	"	0.100000	ND	99.0	75-125	0.114	20	
Silver, total	0.0940	0.0040	"	0.100000	ND	94.0	75-125	1.95	20	
Thallium, total	0.0877	0.0020	"	0.100000	0.0013	86.5	75-125	1.76	20	
Vanadium, total	0.0988	0.0200	"	0.100000	ND	98.8	75-125	1.01	20	
Zinc, total	0.104	0.0200	"	0.100000	ND	104	75-125	0.163	20	

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD1215 - EPA 3005A Total Recoverable Metals										
Post Spike (1GD1215-PS1)	**Source: 1GD1662-01**		Prepared: 04/25/23 Analyzed: 04/26/23							
Antimony, total	0.0802		mg/L	0.0800000	0.00004	100	80-120			
Arsenic, total	0.0824		"	0.0800000	0.0018	101	80-120			
Barium, total	0.311		"	0.0800000	0.228	104	80-120			
Beryllium, total	0.0803		"	0.0800000	-0.000002	100	80-120			
Cadmium, total	0.0764		"	0.0800000	0.00005	95.4	80-120			
Chromium, total	0.0781		"	0.0800000	0.0006	96.9	80-120			
Cobalt, total	0.0793		"	0.0800000	0.00005	99.1	80-120			
Copper, total	0.0747		"	0.0800000	0.0006	92.6	80-120			
Lead, total	0.0757		"	0.0800000	0.00002	94.6	80-120			
Nickel, total	0.0795		"	0.0800000	0.0012	97.9	80-120			
Selenium, total	0.0785		"	0.0800000	-0.0001	98.1	80-120			
Silver, total	0.0802		"	0.0800000	0.0012	98.8	80-120			
Thallium, total	0.0744		"	0.0800000	0.0012	91.5	80-120			
Vanadium, total	0.0853		"	0.0800000	0.0060	99.2	80-120			
Zinc, total	0.406		"	0.0800000	0.0137	491	80-120			PS-04

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Waterloo

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2GD0116 - Wet Chem Preparation										
Blank (2GD0116-BLK1)				Prepared & Analyzed: 04/14/23						
BOD (5 day)	ND	2	mg/l							
Duplicate (2GD0116-DUP1)		**Source: 2GD0433-01**		Prepared & Analyzed: 04/14/23						
BOD (5 day)	1600	2	mg/l		1570			2.27	30	
Reference (2GD0116-SRM1)				Prepared & Analyzed: 04/14/23						
BOD (5 day)	227	2	mg/l	198		115	84.5-115.5			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
2320B in Water		
	Alkalinity, as CaCO3	KS-NT,SIA1X
EPA 6020A in Water		
	Antimony, total	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Beryllium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Cobalt, total	SIA1X,KS-NT
	Copper, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Nickel, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
	Thallium, total	SIA1X,KS-NT
	Vanadium, total	SIA1X,KS-NT
	Zinc, total	SIA1X,KS-NT
EPA 8260B in Water		
	Chloromethane	KS-NT,SIA1X
	Vinyl Chloride	KS-NT,SIA1X
	Bromomethane	KS-NT,SIA1X
	Chloroethane	KS-NT,SIA1X
	Trichlorofluoromethane	KS-NT,SIA1X
	1,1-Dichloroethylene	KS-NT,SIA1X
	Acetone	KS-NT,SIA1X
	Methyl Iodide	SIA1X
	Carbon Disulfide	KS-NT,SIA1X
	Methylene Chloride	KS-NT,SIA1X
	Acrylonitrile	KS-NT,SIA1X
	trans-1,2-Dichloroethylene	KS-NT,SIA1X
	1,1-Dichloroethane	KS-NT,SIA1X
	Vinyl Acetate	KS-NT,SIA1X
	cis-1,2-Dichloroethylene	KS-NT,SIA1X
	2-Butanone (MEK)	KS-NT,SIA1X
	Bromochloromethane	KS-NT,SIA1X
	Chloroform	KS-NT,SIA1X
	1,1,1-Trichloroethane	KS-NT,SIA1X
	Carbon Tetrachloride	KS-NT,SIA1X
	Benzene	KS-NT,SIA1X
	1,2-Dichloroethane	KS-NT,SIA1X
	Trichloroethylene	KS-NT,SIA1X
	1,2-Dichloropropane	KS-NT,SIA1X
	Dibromomethane	SIA1X
	Bromodichloromethane	KS-NT,SIA1X
	cis-1,3-Dichloropropene	KS-NT,SIA1X
	4-Methyl-2-pentanone (MIBK)	KS-NT,SIA1X

Method/Matrix	Analyte	Certifications
	Toluene	KS-NT,SIA1X
	trans-1,3-Dichloropropene	KS-NT,SIA1X
	1,1,2-Trichloroethane	KS-NT,SIA1X
	Tetrachloroethylene	KS-NT,SIA1X
	2-Hexanone (MBK)	KS-NT,SIA1X
	Dibromochloromethane	KS-NT,SIA1X
	1,2-Dibromoethane	KS-NT,SIA1X
	Chlorobenzene	KS-NT,SIA1X
	1,1,1,2-Tetrachloroethane	KS-NT,SIA1X
	Ethylbenzene	KS-NT,SIA1X
	Xylenes, total	KS-NT,SIA1X
	Styrene	KS-NT,SIA1X
	Bromoform	KS-NT,SIA1X
	1,2,3-Trichloropropane	KS-NT,SIA1X
	trans-1,4-Dichloro-2-butene	SIA1X
	1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
	1,4-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dibromo-3-chloropropane	KS-NT,SIA1X
EPA 9056 in Water		
	Chloride	KS-NT,SIA1X
	Sulfate	KS-NT,SIA1X
SM 4500 H+ B in Water		
	pH	KS-NT,SIA1X
SM 5210 B in Water		
	BOD (5 day)	SIA1X,KS-NT
TIMBERLINE in Water		
	Nitrogen, Ammonia	SIA1X,KS-NT
USGS I-1750-85 in Water		
	Solids, total dissolved	KS-NT,SIA1X

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
SM 5210 B in Water		
	BOD (5 day)	SIA1X

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2024
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Department of Natural Resources	051	09/01/2024
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GD1662

Notes and Definitions

I-03	Analyte required to be analyzed within 15 minutes of sampling. Analysis performed upon receipt of sample at laboratory.
PS-04	The post spike recovery exceeded acceptance limits. However, all other QC was acceptable.
QB-12	The analyte was found in the blank at a concentration greater than one-half the reporting limit. However, the concentration of the analyte in the blank was less than the reporting limit so the data was accepted.
QM-07	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

End of Report

Sue Thompson

Keystone Laboratories

Sue Thompson

Client Services Manager

CHAIN OF C[…]

Keystone LABORATORIES, INC.

600 East 17th Street S[…]
Newton, IA 50208
641-792-8451

1GD1662
HLW Engineering
PM: Sue Thompson

Printed: 3/29/2023 4:46:31AM

www.keystonelabs.co

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jones Co. Landfill - New Regs

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Karl Taylor
Jones County Solid Waste Management Cor
PO Box 235
Anamosa, IA 52205

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order: 1GD1662
Temperature: 4.6
Turn-Cooler: No

☐ Custody Seal
☒ Containers Intact
☒ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	MW-12 (up)	Water	GRAB	4/14/23	7:39	7	lndfill-app1-voc-group lndfil-app1-metals-6020	01
02-001	MW-6	Water	GRAB	4/14/23	8:04	7	lndfill-app1-voc-group lndfil-app1-metals-6020	02
03-001	MW-11	Water	GRAB	4/14/23	7:30	7	lndfill-app1-voc-group lndfil-app1-metals-6020	03
04-001	MW-15	Water	GRAB	4/14/23	9:28	11	alk-caco3-2320 lndfill-app1-voc-group lndfill-app1-metals-6020 methane-astm-d1946 ph-4500	04
05-001	MW-16	Water	GRAB	4/14/23	9:18	7	lndfill-app1-voc-group lndfil-app1-metals-6020	05
06-001	MW-20	Water	GRAB	4/14/23	8:38	7	lndfill-app1-voc-group lndfil-app1-metals-6020	06
07-001	MW-22	Water	GRAB	4/14/23	9:00	7	lndfill-app1-voc-group lndfil-app1-metals-6020	07

Relinquished By: Todd Whipple Date/Time: 4/17/23

Received By Date/Time

Relinquished By Date/Time

Received for Lab By: [signature] Date/Time: 4/17/23 9:57

Remarks:

Original - Lab Copy Yellow - Sampler Copy

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

600 East 17th Stre
Newton, IA 50208
641-792-8451

1GD1662
HLW Engineering
PM: Sue Thompson

Printed: 3/29/2023 4:46:31AM

www.keystonelabs.co

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jones Co. Landfill - New Regs

REPO... ..

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

..E TO

Karl Taylor
Jones County Solid Waste Management Cor
PO Box 235
Anamosa, IA 52205

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order: 1GD1662
Temperature: 4.6
Turn-Cooler: No

☐ Custody Seal
☒ Containers Intact
☒ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	**LPZ-6**	Water	GRAB	4/14/23	10:02	12	alk-caco3-2320, as-t-6020, ~~bod-5210~~, cl-9056-w, co-t-6020, lndfill-app1-voc-group, methane-astm-d1946, nh3-timberline, ph-4500, so4-9056-w, tds-i-1750-85	08
09-001	**Duplicate**	Water	GRAB	4/14/23	✓	1	~~lndfill-app1-voc-group~~, lndfll-app1-metals-6020	09

Todd Whipple 4/17/23
Relinquished By Date/Time

Received By Date/Time

Relinquished By Date/Time

[signature] 4/17/23 9:51
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

600 East 17th Street South
Newton, IA 50208
641-792-8451

COPY

Printed: 3/29/2023 4:46:31AM

www.keystonelabs.com

SITE INFORMATION

Sampler:

Project: Jones Co. Landfill - New Regs

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Karl Taylor
Jones County Solid Waste Management Cor
PO Box 235
Anamosa, IA 52205

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order ______

Temperature ______

Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	LPZ-6	Water	GRAB	4/14/23	10:02	1 250ml	~~alk-caco3-2520~~ ~~as-t-6020~~ bod-5210 ~~cl-9056-w~~ co-t-6020 ~~lndfill-app1-voc-group~~ ~~methane-astm-d1946~~ ~~nh3-timberline~~ ~~ph-4500~~ ~~so4-9056-w~~ ~~tds-i-1750-85~~	
09-001	Duplicate	Water	GRAB	/ /			~~lndfill-app1-voc-group~~ ~~lndfill-app1-metals-6020~~	

1GD1662
HLW Engineering
PM: Sue Thompson

Relinquished By: Todd Whipple Date/Time: 4/14/23 12:40

Received By: Date/Time:

Relinquished By: Date/Time:

Received for Lab By: T Thone Date/Time: 4/14/23 1240

Remarks:

http://www.teklabinc.com/

Client Project: 1GD1662 **Work Order:** 23041311

Report to:	Keystone Laboratories Attn: Dara Hanson 600 East 17 th Street South Newton IA 50208	**Invoice to:**	Keystone Laboratories Attn: Accounts Payable 600 East 17th Street Newton IA 50208

DateReceived: 4/19/2023 9:15:00 AM Date Due: Standard TAT QClevel: LVL1

Project Manager: Marvin L. Darling Tel: (618)344-1004 ex 41 Email: mdarling@teklabinc.com

NOTICE: Teklab will proceed with analysis as reported below unless otherwise notified. Call your Project Manager with questions.

Shipping container in good condition?	Yes
Ice present?	Ice
Chain of custody present?	Yes
Chain of custody signed when relinquished?	Yes
Chain of custody agrees with sample labels?	Yes
Samples in proper container/bottle?	Yes
Sample container intact?	Yes
Sufficient sample volume for indicated tests?	Yes
All samples received within holding time?	Yes
Container/Temp Blank temperature compliant?	Yes 5.0 Celsius

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Field parameters measured in Lab?	N/A
Water - TOX containers have zero headspace?	No TOX containers
Water - VOA vials have zero headspace?	yes
Water - pH acceptable upon receipt?	Yes
NPDES/CWA TCN interference checked/treated in field?	N/A

Comments

23041311-001	**1GD1662-04**	**Collected:** 4/14/2023 9:28:00 AM			**Aqueous**
Test		**Hold**	**MS/MSD**	**Rush**	**Sub**
Permanent Gases		☐	☐	☐	☐
23041311-002	**1GD1662-08**	**Collected:** 4/14/2023 10:02:00 AM			**Aqueous**
Test		**Hold**	**MS/MSD**	**Rush**	**Sub**
Permanent Gases		☐	☐	☐	☐

Keystone Laboratories - Newton

MICROBAC®

23041311

SUBCONTRACTED CHAIN OF CUSTODY

1GD1662

SENDING LABORATORY:

Keystone Laboratories - Newton
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
Lab Manager: Sue Thompson
Email: sthompson@keystonelabs.com

RECEIVING LABORATORY:

Teklab, Inc.
5445 Horseshoe Lake Road
Collinsville, IL 62234
Phone: (618) 344-1004

Project Info:

Project Type: Landfills
Project Location: IA
Report TAT: **10**
Due: **05/01/23 17:00**

Sample ID: 1GD1662-04 | **Sampled: 04/14/23 09:28** | Sampler: Whipple, Todd

Matrix: Water | Description: MW-15

Analysis	Method	Analysis Due	Expires
methane-astm-d1946	**ASTM D1946**	**04/28/23 17:00**	**04/28/23 09:28**

Containers Supplied:
F: VH-40 ml Vial Hydrochloric
G: VH-40 ml Vial Hydrochloric
H: VH-40 ml Vial Hydrochloric

23041311 - 001

Sample ID: 1GD1662-08 | **Sampled: 04/14/23 10:02** | Sampler: Whipple, Todd

Matrix: Water | Description: LPZ-6

Analysis	Method	Analysis Due	Expires
methane-astm-d1946	**ASTM D1946**	**04/28/23 17:00**	**04/28/23 10:02**

Containers Supplied:
G: VH-40 ml Vial Hydrochloric
H: VH-40 ml Vial Hydrochloric
I: VH-40 ml Vial Hydrochloric

-002

All samples for methane, ethane and ethene.

5.0° #5
ice
ØHS
LM 4/19

23041311

Released By	Date	Received By	Date
Linda Malsom	4/17/23	Allison Cole (Speedee)	4/19/23 9:15

Keystone LABORATORIES, INC.

MEMBER ACIL

ANALYTICAL REPORT

June 05, 2023

Work Order: 2GD0435

Report To

Sue Thompson
Keystone - Newton
600 East 17th Street South
Newton, IA 50208

Work Order Information

Date Received: 04/14/2023 12:40PM
Collector: Whipple, Todd
Phone: 641-791-8451
PO Number: 1GD1662

Project : Lagoon Sampling
Project Number: 1GD1662

Analyte		Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
2GD0435-01	1GD1662-08				Matrix:Water	Collected:	04/14/23 10:02	
BOD (5 day)		**9mg/l**	**2**	2GD0116	SM 5210 B	DES	04/14/23 12:50	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone - Newton
600 East 17th Street South
Newton, IA 50208

Work Order: 2GD0435

Certified Analyses included in this Report

Method/Matrix	Analyte	Certifications
SM 5210 B in Water		
	BOD (5 day)	SIA1X

Code	Description	Number	Expires
SIA1X	Iowa Department of Natural Resources	051	09/01/2024

End of Report

Tammy Thome

Keystone Laboratories, Inc.

Tammy Thome
Lab Supervisor

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone LABORATORIES, INC.

CHAIN OF CUSTODY RECOR

600 East 17th Street South
Newton, IA 50208
641-792-8451

2GD0435
Keystone - Newton
PM: Tammy Thome

SITE INFORMATION

Sampler:

Project: Jones Co. Landfill - New Regs

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Karl Taylor
Jones County Solid Waste Management Cor
PO Box 235
Anamosa, IA 52205

SPECIAL INSTRUCTIONS

None

Turn Around Time
☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order 2GD0435
Temperature 13.8
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	LPZ-6	Water	GRAB	4/14/23	10:02	1	~~alk-caco3-2320~~, bod-5210, co-t-6020, methane-astm-d1946, ph-4500, tds-i-1750-85, lndfill-app1-voc-group, ~~as-t-6020~~, ~~cl-9056-w~~, ~~lndfill-app1-voc-group~~, ~~nh3-timberline~~, so4-9056-w, lndfl-app1-metals-6020	01
09-001	Duplicate	Water	GRAB	/ /				

Relinquished By: Todd Whipple Date/Time: 4/14/23 12:40

Relinquished By Date/Time

Received By Date/Time

Received for Lab By: T Thome Date/Time: 4/14/23 1240

Remarks:

Original - Lab Copy Yellow - Sampler Copy

April 26, 2023

Dara Hanson
Keystone Laboratories
600 East 17 th Street South
Newton, IA 50208
TEL: (641) 792-8451
FAX: (641) 792-7989

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: 1GD1662 **WorkOrder:** 23041311

Dear Dara Hanson:

TEKLAB, INC received 2 samples on 4/19/2023 9:15:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Report Contents

Client: Keystone Laboratories **Work Order:** 23041311

Client Project: 1GD1662 **Report Date:** 26-Apr-23

This reporting package includes the following:

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

- # - Unknown hydrocarbon
- C - RL shown is a Client Requested Quantitation Limit
- H - Holding times exceeded
- J - Analyte detected below quantitation limits
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside recovery limits
- X - Value exceeds Maximum Contaminant Level
- B - Analyte detected in associated Method Blank
- E - Value above quantitation range
- I - Associated internal standard was outside method criteria
- M - Manual Integration used to determine area response
- R - RPD outside accepted recovery limits
- T - TIC(Tentatively identified compound)

Client: Keystone Laboratories

Work Order: 23041311

Client Project: 1GD1662

Report Date: 26-Apr-23

Cooler Receipt Temp: 5.0 °C

Locations

Collinsville

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	jhriley@teklabinc.com

Springfield

Address	3920 Pintail Dr Springfield, IL 62711-9415
Phone	(217) 698-1004
Fax	(217) 698-1005
Email	KKlostermann@teklabinc.com

Kansas City

Address	8421 Nieman Road Lenexa, KS 66214
Phone	(913) 541-1998
Fax	(913) 541-1998
Email	jhriley@teklabinc.com

Collinsville Air

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	EHurley@teklabinc.com

Chicago

Address	1319 Butterfield Rd. Downers Grove, IL 60515
Phone	(630) 324-6855
Fax	
Email	arenner@teklabinc.com

Client: Keystone Laboratories **Work Order:** 23041311

Client Project: 1GD1662 **Report Date:** 26-Apr-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Laboratory Results

http://www.teklabinc.com/

Client: Keystone Laboratories
Work Order: 23041311
Client Project: 1GD1662
Report Date: 26-Apr-23
Lab ID: 23041311-001
Client Sample ID: 1GD1662-04
Matrix: AQUEOUS
Collection Date: 04/14/2023 9:28

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Ethane	*	7.0		**ND**	µg/L	1	04/24/2023 9:34	R327714
Ethene	*	10.0		**ND**	µg/L	1	04/24/2023 9:34	R327714
Methane	*	400		**1670**	µg/L	100	04/24/2023 10:52	R327714

Teklab, Inc. Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Keystone Laboratories
Work Order: 23041311
Client Project: 1GD1662
Report Date: 26-Apr-23
Lab ID: 23041311-002
Client Sample ID: 1GD1662-08
Matrix: AQUEOUS
Collection Date: 04/14/2023 10:02

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Ethane	*	7.0		**ND**	µg/L	1	04/24/2023 9:58	R327714
Ethene	*	10.0		**ND**	µg/L	1	04/24/2023 9:58	R327714
Methane	*	400		**1340**	µg/L	100	04/24/2023 11:02	R327714

Teklab Inc. Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Keystone Laboratories

Client Project: 1GD1662

Work Order: 23041311

Report Date: 26-Apr-23

Carrier: Spee Dee

Received By: ANC

Completed by: Lindsey Maddox
On: 19-Apr-23

Reviewed by: Elizabeth A. Hurley
On: 19-Apr-23

Pages to follow: Chain of custody 1 | Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	5.0
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Keystone Laboratories - Newton

MICROBAC®

23041311

SUBCONTRACTED CHAIN OF CUSTODY

1GD1662

SENDING LABORATORY:	RECEIVING LABORATORY:
Keystone Laboratories - Newton	Teklab, Inc.
600 East 17th Street South	5445 Horseshoe Lake Road
Newton, IA 50208	Collinsville, IL 62234
Phone: 641-792-8451	Phone: (618) 344-1004
Lab Manager: Sue Thompson	
Email: sthompson@keystonelabs.com	

Project Info:

Project Type: Landfills
Project Location: IA
Report TAT: **10**
Due: **05/01/23 17:00**

Sample ID: 1GD1662-04 **Sampled: 04/14/23 09:28** Sampler: Whipple, Todd

Matrix: Water Description: MW-15

Analysis	Method	Analysis Due	Expires
methane-astm-d1946	**ASTM D1946**	**04/28/23 17:00**	**04/28/23 09:28**

Containers Supplied:
F: VH-40 ml Vial Hydrochloric
G: VH-40 ml Vial Hydrochloric
H: VH-40 ml Vial Hydrochloric

23041311 - 001

Sample ID: 1GD1662-08 **Sampled: 04/14/23 10:02** Sampler: Whipple, Todd

Matrix: Water Description: LPZ-6

Analysis	Method	Analysis Due	Expires
methane-astm-d1946	**ASTM D1946**	**04/28/23 17:00**	**04/28/23 10:02**

Containers Supplied:
G: VH-40 ml Vial Hydrochloric
H: VH-40 ml Vial Hydrochloric
I: VH-40 ml Vial Hydrochloric

-002

All samples for methane, ethane and ethene.

5.0° #5
ice
ØHS
4/19
23041311

Released By	Date	Received By	Date
Linda Malsom	4/17/23	Allison Cole (speedee)	4/19/23 9:15

ANALYTICAL REPORT

Work Order: 1GG0676

Report To	Work Order Information
Todd Whipple HLW Engineering PO Box 314 Story City, IA 50248	Date Received: 7/11/2023 9:16:00AM Collector: Whipple, Todd Phone: (515) 733-4144 PO Number: Jones Co. Landfill - New Regs

Project: Jones Co. Landfill - New Regs

Project Number: Jones Co. Landfill - New Regs

Analyte		Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GG0676-01	MW-22				Matrix: Water	Collected:	07/10/23 08:16	
Lead, total		<0.0040 mg/L	0.0040	1GG0547	EPA 6020A	RVV	07/13/23 23:38	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GG0676

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GG0547 - EPA 3005A Total Recoverable Metals										
Blank (1GG0547-BLK1)				Prepared: 07/12/23 Analyzed: 07/13/23						
Lead, total	ND	0.0040	mg/L							
LCS (1GG0547-BS1)				Prepared: 07/12/23 Analyzed: 07/13/23						
Lead, total	0.0978	0.0040	mg/L	0.100000		97.8	80-120			
Matrix Spike (1GG0547-MS1)	**Source: 1GG0665-01**			Prepared: 07/12/23 Analyzed: 07/13/23						
Lead, total	0.0900	0.0040	mg/L	0.100000	ND	90.0	75-125			
Matrix Spike Dup (1GG0547-MSD1)	**Source: 1GG0665-01**			Prepared: 07/12/23 Analyzed: 07/13/23						
Lead, total	0.0902	0.0040	mg/L	0.100000	ND	90.2	75-125	0.144	20	
Post Spike (1GG0547-PS1)	**Source: 1GG0665-01**			Prepared: 07/12/23 Analyzed: 07/13/23						
Lead, total	0.0707		mg/L	0.0800000	0.00009	88.3	80-120			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
EPA 6020A in Water		
	Lead, total	SIA1X,KS-NT

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2024
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

Work Order: 1GG0676

End of Report

Sue Thompson

Keystone Laboratories

Sue Thompson

Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

CHAIN OF CUSTO

Keystone LABORATORIES, INC.

☐ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborou
Waterloo, IA 5(
Phone: 319-23
Fax: 319-23

VanBuren St
ville, IA 52544
: 641-437-7023
641-437-7040

1GG0676
HLW Engineering
PM: Sue Thompson

. AGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW	REPORT TO:	BILL TO:
SAMPLER: Todd Whipple	NAME: Todd Whipple	NAME: Mr. Karl Taylor, Director
SITE NAME: Jones Co SLF	COMPANY NAME: HLW Group LLC	COMPANY NAME: Jones County Sanitary Landfill
ADDRESS:	ADDRESS: PO Box 314	ADDRESS: P.O Box 235
CITY/ST/ZIP:	CITY/ST/ZIP: Story City IA 50248	CITY/ST/ZIP: Anamosa, IA 52205
PHONE:	PHONE: 515 733-4144	PHONE:
	FAX: 4146	Keystone Quote No: (If Applicable)

LAB USE ONLY

LABORATORY WORK ORDER NO.: 166 0676

SAMPLE TEMPERATURE UPON RECEIPT: 1.2 ice ✓ °C

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: Pb, total								SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
MW-22	7/10/23	8:16	MW-22	1	W	X	X									01

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around:
[signature]	Date 7/11/23 Time		Date Time	☐ Standard ☐ Rush ____ Contact Lab Prior to Submission
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature) [signature]	Date 7-11-23 Time 9:16	Remarks:

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Project Description

Jones Co. Landfill - New Regs

For:

Todd Whipple

HLW Engineering

PO Box 314

Story City, IA 50248

Sue Thompson

Client Services Manager

Monday, November 6, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Keystone Laboratories - Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

HLW Engineering

Todd Whipple
PO Box 314
Story City, IA 50248

Project Name: Jones Co. Landfill - New Regs

Project / PO Number: / Jones Co. Landfill - New Regs
Received: 10/19/2023
Reported: 11/06/2023

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
MW-12 (up)	1GJ1897-01	Water	GRAB		10/18/23 09:19	10/19/23 13:26
MW-6	1GJ1897-02	Water	GRAB		10/18/23 09:57	10/19/23 13:26
MW-11	1GJ1897-03	Water	GRAB		10/18/23 09:09	10/19/23 13:26
MW-15	1GJ1897-04	Water	GRAB		10/18/23 11:13	10/19/23 13:26
MW-16	1GJ1897-05	Water	GRAB		10/18/23 11:03	10/19/23 13:26
MW-20	1GJ1897-06	Water	GRAB		10/18/23 10:20	10/19/23 13:26
MW-22	1GJ1897-07	Water	GRAB		10/18/23 10:50	10/19/23 13:26
LPZ-6	1GJ1897-08	Water	GRAB		10/18/23 11:34	10/19/23 13:26
Duplicate	1GJ1897-09	Water	GRAB		10/18/23 00:00	10/19/23 13:26

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Analytical Testing Parameters

Client Sample ID:	MW-12 (up)			
Sample Matrix:	Water		**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-01		**Collection Date:**	10/18/2023 9:19

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Chloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-12 (up)		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-01	**Collection Date:**	10/18/2023 9:19

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: Dibromofluoromethane	96.7	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: Dibromofluoromethane	96.7	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: 1,2-Dichloroethane-d4	93.6	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: 1,2-Dichloroethane-d4	93.6	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: 4-Bromofluorobenzene	97.2	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 1557	LJS
Surrogate: 4-Bromofluorobenzene	97.2	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 1557	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Barium, total	**0.255**	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1804	RVV
Zinc, total	**0.0218**	0.0200	mg/L	4		10/23/23 1619	11/03/23 0635	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-6		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-02	**Collection Date:**	10/18/2023 9:57

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Chloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-6		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-02	**Collection Date:**	10/18/2023 9:57

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: Dibromofluoromethane	99.1	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: Dibromofluoromethane	99.1	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: 1,2-Dichloroethane-d4	97.5	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: 1,2-Dichloroethane-d4	97.5	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: Toluene-d8	101	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: Toluene-d8	101	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: 4-Bromofluorobenzene	96.8	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 1637	LJS
Surrogate: 4-Bromofluorobenzene	96.8	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 1637	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Barium, total	**0.431**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Cobalt, total	**0.0023**	0.0004	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Copper, total	**0.0041**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Nickel, total	**0.0100**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/25/23 1107	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/25/23 1107	RVV

Client Sample ID:	MW-11		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-03	**Collection Date:**	10/18/2023 9:09

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Chloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-11		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-03	**Collection Date:**	10/18/2023 9:09

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: Dibromofluoromethane	98.1	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: Dibromofluoromethane	98.1	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: 1,2-Dichloroethane-d4	95.8	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: 1,2-Dichloroethane-d4	95.8	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: Toluene-d8	102	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: Toluene-d8	102	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: 4-Bromofluorobenzene	97.0	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 1716	LJS
Surrogate: 4-Bromofluorobenzene	97.0	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 1716	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Barium, total	**0.269**	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1846	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1846	RVV

Client Sample ID:	MW-15		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-04	**Collection Date:**	10/18/2023 11:13

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Chloroethane	**3.8**	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Benzene	**1.4**	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Chlorobenzene	**4.2**	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-15		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-04	**Collection Date:**	10/18/2023 11:13

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,4-Dichlorobenzene	**1.7**	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: Dibromofluoromethane	98.3	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: Dibromofluoromethane	98.3	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: 1,2-Dichloroethane-d4	96.6	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: 1,2-Dichloroethane-d4	96.6	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: 4-Bromofluorobenzene	99.1	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 2112	LJS
Surrogate: 4-Bromofluorobenzene	99.1	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 2112	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Arsenic, total	**0.166**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Barium, total	**1.35**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Cobalt, total	**0.0159**	0.0004	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Nickel, total	**0.0721**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/25/23 1113	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/25/23 1113	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-16		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-05	**Collection Date:**	10/18/2023 11:03

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Chloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-16		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-05	**Collection Date:**	10/18/2023 11:03

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: Dibromofluoromethane	96.4	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: Dibromofluoromethane	96.4	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: 1,2-Dichloroethane-d4	90.5	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: 1,2-Dichloroethane-d4	90.5	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: Toluene-d8	104	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: Toluene-d8	104	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: 4-Bromofluorobenzene	99.0	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 2151	LJS
Surrogate: 4-Bromofluorobenzene	99.0	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 2151	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Barium, total	**0.0840**	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Cobalt, total	**0.0004**	0.0004	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/25/23 1119	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/25/23 1119	RVV

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CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-20		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-06	**Collection Date:**	10/18/2023 10:20

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Chloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-20		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-06	**Collection Date:**	10/18/2023 10:20

Determination of Volatile Organic Compounds	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: Dibromofluoromethane	94.3	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: Dibromofluoromethane	94.3	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: 1,2-Dichloroethane-d4	91.8	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: 1,2-Dichloroethane-d4	91.8	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: Toluene-d8	104	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: Toluene-d8	104	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: 4-Bromofluorobenzene	97.7	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 2230	LJS
Surrogate: 4-Bromofluorobenzene	97.7	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 2230	LJS

Determination of Total Metals	**Result**	**RL**	**Units**	**DF**	**Note**	**Prepared**	**Analyzed**	**Analyst**
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Barium, total	**0.133**	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1904	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1904	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-22		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-07	**Collection Date:**	10/18/2023 10:50

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Chloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Xylenes, total	<2.0	2.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	MW-22		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-07	**Collection Date:**	10/18/2023 10:50

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: Dibromofluoromethane	95.6	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: Dibromofluoromethane	95.6	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: 1,2-Dichloroethane-d4	89.4	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: 1,2-Dichloroethane-d4	89.4	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: Toluene-d8	105	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: Toluene-d8	105	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: 4-Bromofluorobenzene	98.2	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 2309	LJS
Surrogate: 4-Bromofluorobenzene	98.2	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 2309	LJS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Barium, total	**0.195**	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1910	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1910	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	LPZ-6		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-08	**Collection Date:**	10/18/2023 11:34

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Vinyl Chloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Bromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Chloroethane	**1.2**	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Trichlorofluoromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Acetone	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Methyl Iodide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Carbon Disulfide	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Methylene Chloride	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Acrylonitrile	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,1-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Vinyl Acetate	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
2-Butanone (MEK)	<10.0	10.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Bromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Chloroform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Carbon Tetrachloride	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Benzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,2-Dichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Trichloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,2-Dichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Dibromomethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Bromodichloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Toluene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Tetrachloroethylene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Dibromochloromethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,2-Dibromoethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Chlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Ethylbenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Xylenes, total	**3.8**	2.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Styrene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Bromoform	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Client Sample ID:	LPZ-6		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-08	**Collection Date:**	10/18/2023 11:34

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,4-Dichlorobenzene	**2.4**	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: Dibromofluoromethane	95.3	Limit: 80-126	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: Dibromofluoromethane	95.3	Limit: 75-136	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: 1,2-Dichloroethane-d4	92.1	Limit: 63-138	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: 1,2-Dichloroethane-d4	92.1	Limit: 61-142	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: Toluene-d8	105	Limit: 82-121	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: Toluene-d8	105	Limit: 87-116	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: 4-Bromofluorobenzene	99.6	Limit: 85-111	% Rec	1		10/24/23 0000	10/24/23 2348	LJS
Surrogate: 4-Bromofluorobenzene	99.6	Limit: 80-116	% Rec	1		10/24/23 0000	10/24/23 2348	LJS

Client Sample ID:	Duplicate		
Sample Matrix:	Water	**Collected By:**	Whipple, Todd
Lab Sample ID:	1GJ1897-09	**Collection Date:**	10/18/2023

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Barium, total	**0.280**	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Copper, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Lead, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Silver, total	<0.0040	0.0040	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1916	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		10/23/23 1619	10/24/23 1916	RVV

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1GJ1366	1GJ1366-BLK1	
		1GJ1366-BS1	
		1GJ1897-01	MW-12 (up)
		1GJ1366-MS1	1GJ1897-01
		1GJ1366-MSD1	1GJ1897-01
		1GJ1366-PS1	1GJ1897-01
		1GJ1897-03	MW-11
		1GJ1897-06	MW-20
		1GJ1897-07	MW-22
		1GJ1897-09	Duplicate
		1GJ1897-02	MW-6
		1GJ1897-04	MW-15
		1GJ1897-05	MW-16
		1GJ1897-01RE1	MW-12 (up)

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	1GJ1482	1GJ1482-BS1	
		1GJ1482-BSD1	
		1GJ1482-BLK1	
		1GJ1897-01	MW-12 (up)
		1GJ1897-02	MW-6
		1GJ1897-03	MW-11
		1GJ1482-MS1	1GJ1896-01
		1GJ1482-MSD1	1GJ1896-01
		1GJ1482-BLK2	
		1GJ1897-04	MW-15
		1GJ1897-05	MW-16
		1GJ1897-06	MW-20
		1GJ1897-07	MW-22
		1GJ1897-08	LPZ-6

Batch Quality Control Summary: Keystone Laboratories - Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
Blank (1GJ1482-BLK1)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 10:41							
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 1GJ1482 - EPA 5030B - EPA 8260B

Blank (1GJ1482-BLK1) Prepared: 10/24/23 00:00 Analyzed: 10/24/23 10:41

Chloroethane	<1.0	1.0	ug/L
Trichlorofluoromethane	<1.0	1.0	ug/L
1,1-Dichloroethylene	<1.0	1.0	ug/L
Acetone	<10.0	10.0	ug/L
Methyl Iodide	<1.0	1.0	ug/L
Carbon Disulfide	<1.0	1.0	ug/L
Methylene Chloride	<5.0	5.0	ug/L
Acrylonitrile	<5.0	5.0	ug/L
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L
1,1-Dichloroethane	<1.0	1.0	ug/L
Vinyl Acetate	<5.0	5.0	ug/L
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L
2-Butanone (MEK)	<10.0	10.0	ug/L
Bromochloromethane	<1.0	1.0	ug/L
Chloroform	<1.0	1.0	ug/L
1,1,1-Trichloroethane	<1.0	1.0	ug/L
Carbon Tetrachloride	<1.0	1.0	ug/L
Benzene	<1.0	1.0	ug/L
1,2-Dichloroethane	<1.0	1.0	ug/L
Trichloroethylene	<1.0	1.0	ug/L
1,2-Dichloropropane	<1.0	1.0	ug/L
Dibromomethane	<1.0	1.0	ug/L
Bromodichloromethane	<1.0	1.0	ug/L
cis-1,3-Dichloropropene	<1.0	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L
Toluene	<1.0	1.0	ug/L
trans-1,3-Dichloropropene	<1.0	1.0	ug/L
1,1,2-Trichloroethane	<1.0	1.0	ug/L
Tetrachloroethylene	<1.0	1.0	ug/L
2-Hexanone (MBK)	<5.0	5.0	ug/L
Dibromochloromethane	<1.0	1.0	ug/L
1,2-Dibromoethane	<1.0	1.0	ug/L
Chlorobenzene	<1.0	1.0	ug/L
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L
Ethylbenzene	<1.0	1.0	ug/L
Xylenes, total	<2.0	2.0	ug/L
Styrene	<1.0	1.0	ug/L
Bromoform	<1.0	1.0	ug/L
1,2,3-Trichloropropane	<1.0	1.0	ug/L
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L
1,4-Dichlorobenzene	<1.0	1.0	ug/L
1,2-Dichlorobenzene	<1.0	1.0	ug/L

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
Blank (1GJ1482-BLK1)				Prepared: 10/24/23 00:00 Analyzed: 10/24/23 10:41						
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
Surrogate: Dibromofluoromethane	*46.2*		ug/L	*50.4*		*91.8*	*80-126*			
Surrogate: Dibromofluoromethane	*46.2*		ug/L	*50.4*		*91.8*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*44.2*		ug/L	*50.4*		*87.6*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*44.2*		ug/L	*50.4*		*87.6*	*61-142*			
Surrogate: Toluene-d8	*51.5*		ug/L	*50.2*		*102*	*87-116*			
Surrogate: Toluene-d8	*51.5*		ug/L	*50.2*		*102*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.5*		ug/L	*50.4*		*100*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*50.5*		ug/L	*50.4*		*100*	*80-116*			
Blank (1GJ1482-BLK2)				Prepared: 10/24/23 00:00 Analyzed: 10/24/23 20:33						
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							
Chloroethane	<1.0	1.0	ug/L							
Trichlorofluoromethane	<1.0	1.0	ug/L							
1,1-Dichloroethylene	<1.0	1.0	ug/L							
Acetone	<10.0	10.0	ug/L							
Methyl Iodide	<1.0	1.0	ug/L							
Carbon Disulfide	<1.0	1.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
Acrylonitrile	<5.0	5.0	ug/L							
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L							
1,1-Dichloroethane	<1.0	1.0	ug/L							
Vinyl Acetate	<5.0	5.0	ug/L							
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Bromochloromethane	<1.0	1.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
1,1,1-Trichloroethane	<1.0	1.0	ug/L							
Carbon Tetrachloride	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
Blank (1GJ1482-BLK2)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 20:33							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
Surrogate: Dibromofluoromethane	*48.2*		ug/L	*50.4*		*95.7*	*80-126*			
Surrogate: Dibromofluoromethane	*48.2*		ug/L	*50.4*		*95.7*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*46.2*		ug/L	*50.4*		*91.7*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*46.2*		ug/L	*50.4*		*91.7*	*61-142*			
Surrogate: Toluene-d8	*52.2*		ug/L	*50.2*		*104*	*87-116*			
Surrogate: Toluene-d8	*52.2*		ug/L	*50.2*		*104*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.4*		ug/L	*50.4*		*100*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*50.4*		ug/L	*50.4*		*100*	*80-116*			
LCS (1GJ1482-BS1)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 08:43							
Chloromethane	26.06	1.0	ug/L	30.0		86.9	63-155			
Vinyl Chloride	29.76	1.0	ug/L	30.0		99.2	70-154			
Bromomethane	29.16	1.0	ug/L	30.0		97.2	52-176			
Chloroethane	30.29	1.0	ug/L	30.0		101	72-148			
Trichlorofluoromethane	27.98	1.0	ug/L	30.0		93.3	70-152			
1,1-Dichloroethylene	46.37	1.0	ug/L	50.0		92.7	70-148			
Acetone	112.8	10.0	ug/L	102		111	43-172			
Methyl Iodide	106.0	1.0	ug/L	99.7		106	69-170			
Carbon Disulfide	98.40	1.0	ug/L	101		97.4	72-162			
Methylene Chloride	46.47	5.0	ug/L	50.0		92.9	68-142			
Acrylonitrile	90.71	5.0	ug/L	100		90.3	67-144			
trans-1,2-Dichloroethylene	46.75	1.0	ug/L	50.0		93.5	66-148			
1,1-Dichloroethane	48.59	1.0	ug/L	50.0		97.2	66-143			
Vinyl Acetate	64.62	5.0	ug/L	102		63.4	43-153			
cis-1,2-Dichloroethylene	49.70	1.0	ug/L	49.5		100	71-149			
2-Butanone (MEK)	107.0	10.0	ug/L	103		104	52-159			
Bromochloromethane	49.03	1.0	ug/L	50.0		98.1	69-143			
Chloroform	49.64	1.0	ug/L	50.0		99.3	69-144			
1,1,1-Trichloroethane	46.34	1.0	ug/L	50.0		92.7	62-129			
Carbon Tetrachloride	45.52	1.0	ug/L	50.0		91.0	63-141			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
LCS (1GJ1482-BS1)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 08:43							
Benzene	51.79	1.0	ug/L	50.0		104	71-134			
1,2-Dichloroethane	54.60	1.0	ug/L	50.0		109	72-132			
Trichloroethylene	54.22	1.0	ug/L	50.0		108	71-135			
1,2-Dichloropropane	54.92	1.0	ug/L	50.0		110	69-136			
Dibromomethane	60.84	1.0	ug/L	50.0		122	73-147			
Bromodichloromethane	48.47	1.0	ug/L	50.0		96.9	68-129			
cis-1,3-Dichloropropene	55.27	1.0	ug/L	50.3		110	65-134			
4-Methyl-2-pentanone (MIBK)	110.7	5.0	ug/L	101		109	58-147			
Toluene	50.42	1.0	ug/L	50.0		101	72-133			
trans-1,3-Dichloropropene	56.72	1.0	ug/L	50.4		112	67-130			
1,1,2-Trichloroethane	59.09	1.0	ug/L	50.0		118	69-135			
Tetrachloroethylene	49.54	1.0	ug/L	50.0		99.1	69-130			
2-Hexanone (MBK)	114.0	5.0	ug/L	103		110	55-144			
Dibromochloromethane	58.02	1.0	ug/L	49.5		117	73-127			
1,2-Dibromoethane	58.60	1.0	ug/L	50.0		117	67-132			
Chlorobenzene	49.34	1.0	ug/L	50.0		98.7	72-123			
1,1,1,2-Tetrachloroethane	56.29	1.0	ug/L	50.0		113	73-127			
Ethylbenzene	49.94	1.0	ug/L	50.0		99.9	71-127			
Xylenes, total	152.4	2.0	ug/L	150		102	74-127			
Styrene	50.33	1.0	ug/L	50.0		101	66-126			
Bromoform	58.36	1.0	ug/L	50.0		117	68-130			
1,2,3-Trichloropropane	55.24	1.0	ug/L	50.0		110	63-136			
trans-1,4-Dichloro-2-butene	113.1	5.0	ug/L	104		109	54-134			
1,1,2,2-Tetrachloroethane	56.14	1.0	ug/L	49.8		113	61-131			
1,4-Dichlorobenzene	48.84	1.0	ug/L	50.0		97.7	70-129			
1,2-Dichlorobenzene	48.77	1.0	ug/L	50.0		97.5	69-126			
1,2-Dibromo-3-chloropropane	49.78	5.0	ug/L	50.0		99.6	50-143			
Surrogate: Dibromofluoromethane	*47.4*		ug/L	*50.4*		*94.2*	*80-126*			
Surrogate: Dibromofluoromethane	*47.4*		ug/L	*50.4*		*94.2*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*50.0*		ug/L	*50.4*		*99.2*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*50.0*		ug/L	*50.4*		*99.2*	*61-142*			
Surrogate: Toluene-d8	*49.7*		ug/L	*50.2*		*99.0*	*87-116*			
Surrogate: Toluene-d8	*49.7*		ug/L	*50.2*		*99.0*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*51.2*		ug/L	*50.4*		*102*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*51.2*		ug/L	*50.4*		*102*	*80-116*			
LCS Dup (1GJ1482-BSD1)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 09:22							
Chloromethane	26.31	1.0	ug/L	30.0		87.7	63-155	0.955	24	
Vinyl Chloride	29.86	1.0	ug/L	30.0		99.5	70-154	0.335	25	
Bromomethane	30.06	1.0	ug/L	30.0		100	52-176	3.04	27	
Chloroethane	30.95	1.0	ug/L	30.0		103	72-148	2.16	25	
Trichlorofluoromethane	29.04	1.0	ug/L	30.0		96.8	70-152	3.72	26	
1,1-Dichloroethylene	47.48	1.0	ug/L	50.0		95.0	70-148	2.37	24	
Acetone	109.7	10.0	ug/L	102		108	43-172	2.78	30	

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1897

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
LCS Dup (1GJ1482-BSD1)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 09:22							
Methyl Iodide	107.2	1.0	ug/L	99.7		108	69-170	1.14	30	
Carbon Disulfide	100.0	1.0	ug/L	101		99.1	72-162	1.66	24	
Methylene Chloride	46.84	5.0	ug/L	50.0		93.7	68-142	0.793	21	
Acrylonitrile	91.75	5.0	ug/L	100		91.3	67-144	1.14	24	
trans-1,2-Dichloroethylene	47.56	1.0	ug/L	50.0		95.1	66-148	1.72	27	
1,1-Dichloroethane	48.95	1.0	ug/L	50.0		97.9	66-143	0.738	24	
Vinyl Acetate	64.26	5.0	ug/L	102		63.1	43-153	0.559	30	
cis-1,2-Dichloroethylene	49.70	1.0	ug/L	49.5		100	71-149	0.00	26	
2-Butanone (MEK)	105.8	10.0	ug/L	103		102	52-159	1.19	27	
Bromochloromethane	49.49	1.0	ug/L	50.0		99.0	69-143	0.934	23	
Chloroform	50.35	1.0	ug/L	50.0		101	69-144	1.42	23	
1,1,1-Trichloroethane	47.21	1.0	ug/L	50.0		94.5	62-129	1.86	24	
Carbon Tetrachloride	47.30	1.0	ug/L	50.0		94.6	63-141	3.84	25	
Benzene	52.87	1.0	ug/L	50.0		106	71-134	2.06	24	
1,2-Dichloroethane	55.47	1.0	ug/L	50.0		111	72-132	1.58	24	
Trichloroethylene	55.66	1.0	ug/L	50.0		111	71-135	2.62	24	
1,2-Dichloropropane	54.99	1.0	ug/L	50.0		110	69-136	0.127	24	
Dibromomethane	62.62	1.0	ug/L	50.0		125	73-147	2.88	25	
Bromodichloromethane	48.96	1.0	ug/L	50.0		97.9	68-129	1.01	22	
cis-1,3-Dichloropropene	56.36	1.0	ug/L	50.3		112	65-134	1.95	23	
4-Methyl-2-pentanone (MIBK)	111.3	5.0	ug/L	101		110	58-147	0.513	27	
Toluene	51.51	1.0	ug/L	50.0		103	72-133	2.14	24	
trans-1,3-Dichloropropene	57.55	1.0	ug/L	50.4		114	67-130	1.45	24	
1,1,2-Trichloroethane	59.43	1.0	ug/L	50.0		119	69-135	0.574	23	
Tetrachloroethylene	50.79	1.0	ug/L	50.0		102	69-130	2.49	25	
2-Hexanone (MBK)	113.5	5.0	ug/L	103		110	55-144	0.396	25	
Dibromochloromethane	57.85	1.0	ug/L	49.5		117	73-127	0.293	22	
1,2-Dibromoethane	59.17	1.0	ug/L	50.0		118	67-132	0.968	24	
Chlorobenzene	50.20	1.0	ug/L	50.0		100	72-123	1.73	23	
1,1,1,2-Tetrachloroethane	56.37	1.0	ug/L	50.0		113	73-127	0.142	24	
Ethylbenzene	50.81	1.0	ug/L	50.0		102	71-127	1.73	26	
Xylenes, total	154.7	2.0	ug/L	150		103	74-127	1.50	25	
Styrene	50.55	1.0	ug/L	50.0		101	66-126	0.436	23	
Bromoform	58.98	1.0	ug/L	50.0		118	68-130	1.06	23	
1,2,3-Trichloropropane	55.15	1.0	ug/L	50.0		110	63-136	0.163	24	
trans-1,4-Dichloro-2-butene	113.6	5.0	ug/L	104		109	54-134	0.424	27	
1,1,2,2-Tetrachloroethane	56.80	1.0	ug/L	49.8		114	61-131	1.17	29	
1,4-Dichlorobenzene	50.03	1.0	ug/L	50.0		100	70-129	2.41	24	
1,2-Dichlorobenzene	49.39	1.0	ug/L	50.0		98.8	69-126	1.26	26	
1,2-Dibromo-3-chloropropane	50.18	5.0	ug/L	50.0		100	50-143	0.800	30	
Surrogate: Dibromofluoromethane	*47.0*		ug/L	*50.4*		*93.3*	*80-126*			
Surrogate: Dibromofluoromethane	*47.0*		ug/L	*50.4*		*93.3*	*75-136*			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
LCS Dup (1GJ1482-BSD1)			Prepared: 10/24/23 00:00 Analyzed: 10/24/23 09:22							
Surrogate: 1,2-Dichloroethane-d4	*49.4*		ug/L	*50.4*		*98.0*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*49.4*		ug/L	*50.4*		*98.0*	*61-142*			
Surrogate: Toluene-d8	*49.6*		ug/L	*50.2*		*98.8*	*87-116*			
Surrogate: Toluene-d8	*49.6*		ug/L	*50.2*		*98.8*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.5*		ug/L	*50.4*		*100*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*50.5*		ug/L	*50.4*		*100*	*80-116*			
Matrix Spike (1GJ1482-MS1)	**Source: 1GJ1896-01**		Prepared: 10/24/23 00:00 Analyzed: 10/24/23 18:35							
Chloromethane	262.0	10.0	ug/L	300	ND	87.3	61-152			
Vinyl Chloride	308.1	10.0	ug/L	300	ND	103	66-149			
Bromomethane	288.7	10.0	ug/L	300	ND	96.2	43-171			
Chloroethane	304.3	10.0	ug/L	300	ND	101	69-148			
Trichlorofluoromethane	310.8	10.0	ug/L	300	9.38	100	62-163			
1,1-Dichloroethylene	484.5	10.0	ug/L	500	ND	96.9	70-148			
Acetone	1136	100	ug/L	1020	ND	111	45-173			
Methyl Iodide	1057	10.0	ug/L	997	ND	106	62-167			
Carbon Disulfide	998.2	10.0	ug/L	1010	ND	98.8	71-163			
Methylene Chloride	459.9	50.0	ug/L	500	ND	92.0	69-140			
Acrylonitrile	924.8	50.0	ug/L	1000	ND	92.1	58-151			
trans-1,2-Dichloroethylene	480.9	10.0	ug/L	500	ND	96.2	69-144			
1,1-Dichloroethane	505.7	10.0	ug/L	500	8.02	99.5	70-138			
Vinyl Acetate	621.7	50.0	ug/L	1020	ND	61.0	58-142			
cis-1,2-Dichloroethylene	504.0	10.0	ug/L	495	ND	102	68-151			
2-Butanone (MEK)	1091	100	ug/L	1030	ND	106	50-160			
Bromochloromethane	486.3	10.0	ug/L	500	ND	97.3	65-143			
Chloroform	511.1	10.0	ug/L	500	ND	102	71-143			
1,1,1-Trichloroethane	488.9	10.0	ug/L	500	ND	97.8	63-133			
Carbon Tetrachloride	480.5	10.0	ug/L	500	ND	96.1	63-142			
Benzene	532.0	10.0	ug/L	500	ND	106	69-133			
1,2-Dichloroethane	556.7	10.0	ug/L	500	ND	111	63-138			
Trichloroethylene	559.7	10.0	ug/L	500	ND	112	71-133			
1,2-Dichloropropane	555.1	10.0	ug/L	500	ND	111	69-132			
Dibromomethane	616.7	10.0	ug/L	500	ND	123	70-147			
Bromodichloromethane	485.7	10.0	ug/L	500	ND	97.1	67-130			
cis-1,3-Dichloropropene	545.3	10.0	ug/L	503	ND	108	61-126			
4-Methyl-2-pentanone (MIBK)	1142	50.0	ug/L	1010	ND	113	55-147			
Toluene	512.0	10.0	ug/L	500	ND	102	71-133			
trans-1,3-Dichloropropene	551.5	10.0	ug/L	504	ND	109	63-124			
1,1,2-Trichloroethane	583.5	10.0	ug/L	500	ND	117	69-133			
Tetrachloroethylene	511.7	10.0	ug/L	500	ND	102	70-124			
2-Hexanone (MBK)	1169	50.0	ug/L	1030	ND	113	53-141			
Dibromochloromethane	571.3	10.0	ug/L	495	ND	115	74-122			
1,2-Dibromoethane	577.6	10.0	ug/L	500	ND	116	66-127			
Chlorobenzene	500.0	10.0	ug/L	500	ND	100	76-116			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
Matrix Spike (1GJ1482-MS1)	**Source: 1GJ1896-01**	Prepared: 10/24/23 00:00 Analyzed: 10/24/23 18:35								
1,1,1,2-Tetrachloroethane	558.5	10.0	ug/L	500	ND	112	77-121			
Ethylbenzene	508.0	10.0	ug/L	500	ND	102	73-124			
Xylenes, total	1541	20.0	ug/L	1500	ND	103	75-123			
Styrene	505.4	10.0	ug/L	500	ND	101	70-120			
Bromoform	571.4	10.0	ug/L	500	ND	114	70-124			
1,2,3-Trichloropropane	557.1	10.0	ug/L	500	ND	111	62-135			
trans-1,4-Dichloro-2-butene	1070	50.0	ug/L	1040	ND	103	50-120			
1,1,2,2-Tetrachloroethane	565.5	10.0	ug/L	498	ND	113	63-126			
1,4-Dichlorobenzene	494.5	10.0	ug/L	500	ND	98.9	72-119			
1,2-Dichlorobenzene	490.1	10.0	ug/L	500	ND	98.0	71-117			
1,2-Dibromo-3-chloropropane	504.8	50.0	ug/L	500	ND	101	49-134			
Surrogate: Dibromofluoromethane	*482*		ug/L	*504*		*95.6*	*80-126*			
Surrogate: Dibromofluoromethane	*482*		ug/L	*504*		*95.6*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*505*		ug/L	*504*		*100*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*505*		ug/L	*504*		*100*	*61-142*			
Surrogate: Toluene-d8	*498*		ug/L	*502*		*99.1*	*87-116*			
Surrogate: Toluene-d8	*498*		ug/L	*502*		*99.1*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*513*		ug/L	*504*		*102*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*513*		ug/L	*504*		*102*	*80-116*			
Matrix Spike Dup (1GJ1482-MSD1)	**Source: 1GJ1896-01**	Prepared: 10/24/23 00:00 Analyzed: 10/24/23 19:14								
Chloromethane	262.0	10.0	ug/L	300	ND	87.3	61-152	0.00	26	
Vinyl Chloride	305.1	10.0	ug/L	300	ND	102	66-149	0.978	23	
Bromomethane	290.7	10.0	ug/L	300	ND	96.9	43-171	0.690	29	
Chloroethane	312.3	10.0	ug/L	300	ND	104	69-148	2.59	25	
Trichlorofluoromethane	304.4	10.0	ug/L	300	9.38	98.3	62-163	2.08	25	
1,1-Dichloroethylene	480.3	10.0	ug/L	500	ND	96.1	70-148	0.871	22	
Acetone	1183	100	ug/L	1020	ND	116	45-173	4.03	30	
Methyl Iodide	1052	10.0	ug/L	997	ND	106	62-167	0.446	24	
Carbon Disulfide	989.5	10.0	ug/L	1010	ND	98.0	71-163	0.875	22	
Methylene Chloride	469.5	50.0	ug/L	500	ND	93.9	69-140	2.07	19	
Acrylonitrile	951.3	50.0	ug/L	1000	ND	94.7	58-151	2.83	15	
trans-1,2-Dichloroethylene	481.6	10.0	ug/L	500	ND	96.3	69-144	0.145	22	
1,1-Dichloroethane	503.3	10.0	ug/L	500	8.02	99.1	70-138	0.476	20	
Vinyl Acetate	639.5	50.0	ug/L	1020	ND	62.8	58-142	2.82	24	
cis-1,2-Dichloroethylene	505.7	10.0	ug/L	495	ND	102	68-151	0.337	22	
2-Butanone (MEK)	1124	100	ug/L	1030	ND	109	50-160	2.96	23	
Bromochloromethane	499.3	10.0	ug/L	500	ND	99.9	65-143	2.64	22	
Chloroform	513.8	10.0	ug/L	500	ND	103	71-143	0.527	21	
1,1,1-Trichloroethane	491.2	10.0	ug/L	500	ND	98.3	63-133	0.469	23	
Carbon Tetrachloride	480.6	10.0	ug/L	500	ND	96.1	63-142	0.0208	22	
Benzene	529.4	10.0	ug/L	500	ND	106	69-133	0.490	18	
1,2-Dichloroethane	557.9	10.0	ug/L	500	ND	112	63-138	0.215	20	
Trichloroethylene	551.1	10.0	ug/L	500	ND	110	71-133	1.55	23	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1482 - EPA 5030B - EPA 8260B										
Matrix Spike Dup (1GJ1482-MSD1)	**Source: 1GJ1896-01**		Prepared: 10/24/23 00:00 Analyzed: 10/24/23 19:14							
1,2-Dichloropropane	549.0	10.0	ug/L	500	ND	110	69-132	1.10	20	
Dibromomethane	621.7	10.0	ug/L	500	ND	124	70-147	0.807	22	
Bromodichloromethane	488.9	10.0	ug/L	500	ND	97.8	67-130	0.657	21	
cis-1,3-Dichloropropene	543.4	10.0	ug/L	503	ND	108	61-126	0.349	21	
4-Methyl-2-pentanone (MIBK)	1169	50.0	ug/L	1010	ND	115	55-147	2.40	23	
Toluene	508.5	10.0	ug/L	500	ND	102	71-133	0.686	19	
trans-1,3-Dichloropropene	562.4	10.0	ug/L	504	ND	112	63-124	1.96	21	
1,1,2-Trichloroethane	594.3	10.0	ug/L	500	ND	119	69-133	1.83	19	
Tetrachloroethylene	503.2	10.0	ug/L	500	ND	101	70-124	1.68	24	
2-Hexanone (MBK)	1195	50.0	ug/L	1030	ND	116	53-141	2.16	24	
Dibromochloromethane	579.5	10.0	ug/L	495	ND	117	74-122	1.43	21	
1,2-Dibromoethane	578.9	10.0	ug/L	500	ND	116	66-127	0.225	23	
Chlorobenzene	495.3	10.0	ug/L	500	ND	99.1	76-116	0.944	21	
1,1,1,2-Tetrachloroethane	558.1	10.0	ug/L	500	ND	112	77-121	0.0717	25	
Ethylbenzene	499.5	10.0	ug/L	500	ND	99.9	73-124	1.69	20	
Xylenes, total	1529	20.0	ug/L	1500	ND	102	75-123	0.795	20	
Styrene	502.8	10.0	ug/L	500	ND	101	70-120	0.516	23	
Bromoform	582.3	10.0	ug/L	500	ND	116	70-124	1.89	22	
1,2,3-Trichloropropane	559.4	10.0	ug/L	500	ND	112	62-135	0.412	28	
trans-1,4-Dichloro-2-butene	1090	50.0	ug/L	1040	ND	105	50-120	1.89	26	
1,1,2,2-Tetrachloroethane	567.3	10.0	ug/L	498	ND	114	63-126	0.318	24	
1,4-Dichlorobenzene	483.5	10.0	ug/L	500	ND	96.7	72-119	2.25	24	
1,2-Dichlorobenzene	483.5	10.0	ug/L	500	ND	96.7	71-117	1.36	24	
1,2-Dibromo-3-chloropropane	510.8	50.0	ug/L	500	ND	102	49-134	1.18	28	
Surrogate: Dibromofluoromethane	*490*		ug/L	*504*		*97.3*	*80-126*			
Surrogate: Dibromofluoromethane	*490*		ug/L	*504*		*97.3*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*515*		ug/L	*504*		*102*	*63-138*			
Surrogate: 1,2-Dichloroethane-d4	*515*		ug/L	*504*		*102*	*61-142*			
Surrogate: Toluene-d8	*502*		ug/L	*502*		*99.9*	*87-116*			
Surrogate: Toluene-d8	*502*		ug/L	*502*		*99.9*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*512*		ug/L	*504*		*101*	*85-111*			
Surrogate: 4-Bromofluorobenzene	*512*		ug/L	*504*		*101*	*80-116*			

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1366 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1GJ1366-BLK1)			Prepared: 10/23/23 16:19 Analyzed: 10/24/23 17:52							
Antimony, total	<0.0020	0.0020	mg/L							
Arsenic, total	<0.0040	0.0040	mg/L							
Barium, total	<0.0040	0.0040	mg/L							
Beryllium, total	<0.0040	0.0040	mg/L							
Cadmium, total	<0.0008	0.0008	mg/L							
Chromium, total	<0.0080	0.0080	mg/L							

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1366 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1GJ1366-BLK1)				Prepared: 10/23/23 16:19 Analyzed: 10/24/23 17:52						
Cobalt, total	<0.0004	0.0004	mg/L							
Copper, total	<0.0040	0.0040	mg/L							
Lead, total	<0.0040	0.0040	mg/L							
Nickel, total	<0.0040	0.0040	mg/L							
Selenium, total	<0.0040	0.0040	mg/L							
Silver, total	<0.0040	0.0040	mg/L							
Thallium, total	<0.0020	0.0020	mg/L							
Vanadium, total	<0.0200	0.0200	mg/L							
Zinc, total	<0.0200	0.0200	mg/L							
LCS (1GJ1366-BS1)				Prepared: 10/23/23 16:19 Analyzed: 10/24/23 17:58						
Antimony, total	0.0995	0.0020	mg/L	0.100		99.5	80-120			
Arsenic, total	0.0995	0.0040	mg/L	0.100		99.5	80-120			
Barium, total	0.106	0.0040	mg/L	0.100		106	80-120			
Beryllium, total	0.103	0.0040	mg/L	0.100		103	80-120			
Cadmium, total	0.100	0.0008	mg/L	0.100		100	80-120			
Chromium, total	0.0983	0.0080	mg/L	0.100		98.3	80-120			
Cobalt, total	0.101	0.0004	mg/L	0.100		101	80-120			
Copper, total	0.0991	0.0040	mg/L	0.100		99.1	80-120			
Lead, total	0.0987	0.0040	mg/L	0.100		98.7	80-120			
Nickel, total	0.0990	0.0040	mg/L	0.100		99.0	80-120			
Selenium, total	0.0992	0.0040	mg/L	0.100		99.2	80-120			
Silver, total	0.109	0.0040	mg/L	0.100		109	80-120			
Thallium, total	0.0971	0.0020	mg/L	0.100		97.1	80-120			
Vanadium, total	0.0983	0.0200	mg/L	0.100		98.3	80-120			
Zinc, total	0.101	0.0200	mg/L	0.100		101	80-120			
Matrix Spike (1GJ1366-MS1)	**Source: 1GJ1897-01**			Prepared: 10/23/23 16:19 Analyzed: 10/24/23 18:10						
Antimony, total	0.0987	0.0020	mg/L	0.100	ND	98.7	75-125			
Arsenic, total	0.101	0.0040	mg/L	0.100	ND	101	75-125			
Barium, total	0.347	0.0040	mg/L	0.100	0.255	91.3	75-125			
Beryllium, total	0.102	0.0040	mg/L	0.100	ND	102	75-125			
Cadmium, total	0.0997	0.0008	mg/L	0.100	ND	99.7	75-125			
Chromium, total	0.0971	0.0080	mg/L	0.100	0.0012	95.9	75-125			
Cobalt, total	0.101	0.0004	mg/L	0.100	ND	101	75-125			
Copper, total	0.0936	0.0040	mg/L	0.100	0.0010	92.5	75-125			
Lead, total	0.0945	0.0040	mg/L	0.100	ND	94.5	75-125			
Nickel, total	0.0974	0.0040	mg/L	0.100	0.0023	95.1	75-125			
Selenium, total	0.1001	0.0040	mg/L	0.100	ND	100	75-125			
Silver, total	0.109	0.0040	mg/L	0.100	ND	109	75-125			
Thallium, total	0.0955	0.0020	mg/L	0.100	0.0003	95.2	75-125			
Vanadium, total	0.102	0.0200	mg/L	0.100	ND	102	75-125			
Zinc, total	0.0996	0.0200	mg/L	0.100	0.0863	13.3	75-125			QM-07
Matrix Spike Dup (1GJ1366-MSD1)	**Source: 1GJ1897-01**			Prepared: 10/23/23 16:19 Analyzed: 10/24/23 18:16						
Antimony, total	0.0999	0.0020	mg/L	0.100	ND	99.9	75-125	1.13	20	

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1366 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Matrix Spike Dup (1GJ1366-MSD1)	**Source: 1GJ1897-01**	Prepared: 10/23/23 16:19 Analyzed: 10/24/23 18:16								
Arsenic, total	0.102	0.0040	mg/L	0.100	ND	102	75-125	0.202	20	
Barium, total	0.344	0.0040	mg/L	0.100	0.255	88.2	75-125	0.903	20	
Beryllium, total	0.104	0.0040	mg/L	0.100	ND	104	75-125	1.78	20	
Cadmium, total	0.0980	0.0008	mg/L	0.100	ND	98.0	75-125	1.71	20	
Chromium, total	0.0959	0.0080	mg/L	0.100	0.0012	94.8	75-125	1.19	20	
Cobalt, total	0.100	0.0004	mg/L	0.100	ND	100	75-125	0.920	20	
Copper, total	0.0927	0.0040	mg/L	0.100	0.0010	91.6	75-125	0.962	20	
Lead, total	0.0948	0.0040	mg/L	0.100	ND	94.8	75-125	0.301	20	
Nickel, total	0.0989	0.0040	mg/L	0.100	0.0023	96.7	75-125	1.56	20	
Selenium, total	0.1002	0.0040	mg/L	0.100	ND	100	75-125	0.0535	20	
Silver, total	0.107	0.0040	mg/L	0.100	ND	107	75-125	1.52	20	
Thallium, total	0.0950	0.0020	mg/L	0.100	0.0003	94.7	75-125	0.494	20	
Vanadium, total	0.103	0.0200	mg/L	0.100	ND	103	75-125	0.210	20	
Zinc, total	0.0989	0.0200	mg/L	0.100	0.0863	12.6	75-125	0.701	20	QM-07
Post Spike (1GJ1366-PS1)	**Source: 1GJ1897-01**	Prepared: 10/23/23 16:19 Analyzed: 10/24/23 18:22								
Antimony, total	0.0826		mg/L	0.0800	0.0004	103	80-120			
Arsenic, total	0.0834		mg/L	0.0800	0.0008	103	80-120			
Barium, total	0.329		mg/L	0.0800	0.250	98.1	80-120			
Beryllium, total	0.0858		mg/L	0.0800	-0.00008	107	80-120			
Cadmium, total	0.0795		mg/L	0.0800	0.00009	99.3	80-120			
Chromium, total	0.0795		mg/L	0.0800	0.0011	98.0	80-120			
Cobalt, total	0.0826		mg/L	0.0800	0.0001	103	80-120			
Copper, total	0.0766		mg/L	0.0800	0.0010	94.5	80-120			
Lead, total	0.0773		mg/L	0.0800	0.0002	96.3	80-120			
Nickel, total	0.0822		mg/L	0.0800	0.0022	99.9	80-120			
Selenium, total	0.0767		mg/L	0.0800	-0.0002	95.9	80-120			
Silver, total	0.0871		mg/L	0.0800	0.0014	107	80-120			
Thallium, total	0.0783		mg/L	0.0800	0.0003	97.5	80-120			
Vanadium, total	0.0864		mg/L	0.0800	0.0034	104	80-120			
Zinc, total	0.0891		mg/L	0.0800	0.0846	5.70	80-120			PS-03

Definitions

PS-03: The post spike recovery was below acceptance limits.

QM-07: The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

RL: Reporting Limit

RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 4.9°C

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

Reviewed and Approved By:

Sue Thompson
Client Services Manager
11/06/23 17:09

Keystone LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1 G J 1 8 9 7
HLW Engineering
PM: Heather Murphy

9/11/2023 8:21:39AM

www.keystonelabs.cor

SITE INFORMATION
Sampler: TODD WHIPPLE
Project: Jones Co. Landfill - New Regs

REPORT TO
Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO
Karl Taylor
Jones County Solid Waste Management Cor
PO Box 235
Anamosa, IA 52205

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY
Work Order 1GJ1897
Temperature 4.9
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
01-001	MW-12 (up)	Water	GRAB	10/18/23	9:19	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	01
02-001	MW-6	Water	GRAB	10/18/23	9:57	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	02
03-001	MW-11	Water	GRAB	10/18/23	9:09	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	03
04-001	MW-15	Water	GRAB	10/18/23	11:13	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	04
05-001	MW-16	Water	GRAB	10/18/23	11:03	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	05
06-001	MW-20	Water	GRAB	10/18/23	10:20	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	06
07-001	MW-22	Water	GRAB	10/18/23	10:50	7	lndfill-app1-voc-group	lndfil-app1-metals-6020	07

Todd Whipple 10/19/23
Relinquished By Date/Time

Received By Date/Time

Relinquished By Date/Time

Amber Pohl 10/19/23 13:26
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

CHAIN OF CUSTODY

Keystone
LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1 G J 1 8 9 7
HLW Engineering
PM: Heather Murphy

1/2023 8:21:39AM

v.keystonelabs.con

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: Jones Co. Landfill - New Regs

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Karl Taylor
Jones County Solid Waste Management Co
PO Box 235
Anamosa, IA 52205

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by __/__/__

LAB USE ONLY

Work Order
Temperature 4.9
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	LPZ-6	Water	GRAB	10/18/23	11:34	6	lndfill-app1-voc-group	08
09-001	Duplicate	Water	GRAB	10/18/23	✓	1	~~lndfill-app1-voc-group~~ lndfill-app1-metals-6020	09

Relinquished By: Todd Whipple Date/Time: 10/19/23

Received By: Date/Time:

Relinquished By: Date/Time:

Received for Lab By: [signature] Date/Time: 10/19/23 13:26

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Appendix D

Field Turbidity Summary

Jones County Sanitary Landfill

Field Turbidity Over Time

No-Purge Sampling

	4/20/15	7/9/15	10/5/15	4/5/16	10/5/16	4/4/17	10/3/17	4/10/18	10/12/18	4/16/19	9/30/19	12/20/19	4/7/20	10/7/20	4/22/21	10/5/21	4/4/22	10/5/22	1/3/23	4/14/23	7/10/23	10/18/23	Max	Min	Ave	Std Dev
Well	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**	**NTU**				
6	36.3		18.47	2.31	3.93	2.14	4.39	1.01	3.00	1.14	1.41		1.67	2.62	1.72	2.36	0.79	3.94		1.17		6.24	**36.30**	**0.79**	**5.26**	**8.48**
11	5.05		0.06	0.21	0.12	0.57	0.08	1.8	0.69	0.83	0.94	0.88	0.81	1.1	0.88	1.21	1.2	1.05		0.84		2.9	**5.05**	**0.06**	**1.12**	**1.12**
12	3.19	1.08	0.33	1.04	0.4	2.88	0.18	0.37	0.79	0.62	1.51		1.01	1.3	1.47	0.93	4.46	1.09		2.53		1.82	**4.46**	**0.18**	**1.42**	**1.09**
15	53.1		0.61	3.45	72.1	27.63	2.58	16.92	2.6	13.41	6.76		8.8	2.08	4.29	11.18	9.64	2.07		11.33		1.91	**72.10**	**0.61**	**13.91**	**18.69**
16	9.1		4.22	5.94	4.76	5.03	1.02	1.16	4.1	1.44	2.26		1.18	1.58	4.27	1.45	0.69	1.2	4.97	2.35		2.1	**9.10**	**0.69**	**3.10**	**2.16**
20	3.91		0.78	0.23	0.17	0.39	0.16	0.41	0.65	0.48	0.86		0.77	1.53	0.85	1.28	24.09	1.28		1.27		58.82	**58.82**	**0.16**	**5.44**	**14.01**
22	6.41		0.13	0.87	---	119.1	0.16	0.63	0.71	1.38	1.68		31.48	1.31	0.98	1.74	1.4	5.94	13.9	1.23	1.46	1.51	**119.10**	**0.13**	**10.11**	**26.68**
Max	**53.10**	**1.08**	**18.47**	**5.94**	**72.10**	**119.10**	**4.39**	**16.92**	**4.10**	**13.41**	**6.76**	**0.88**	**31.48**	**2.62**	**4.29**	**11.18**	**24.09**	**5.94**	**13.90**	**11.33**	**1.46**	**58.82**				
Min	**3.19**	**1.08**	**0.06**	**0.21**	**0.12**	**0.39**	**0.08**	**0.37**	**0.65**	**0.48**	**0.86**	**0.88**	**0.77**	**1.10**	**0.85**	**0.93**	**0.69**	**1.05**	**4.97**	**0.84**	**1.46**	**1.51**				
Median	**6.41**	**1.08**	**0.61**	**1.04**	**2.17**	**2.88**	**0.18**	**1.01**	**0.79**	**1.14**	**1.51**	**0.88**	**1.18**	**1.53**	**1.47**	**1.45**	**1.40**	**1.28**	**9.44**	**1.27**	**1.46**	**2.10**				
Average	**16.72**	**1.08**	**3.51**	**2.01**	**13.58**	**22.53**	**1.22**	**3.19**	**1.79**	**2.76**	**2.20**	**0.88**	**6.53**	**1.65**	**2.07**	**2.88**	**6.04**	**2.37**	**9.44**	**2.96**	**1.46**	**10.76**				

Appendix E

Running Summary of Prediction Limit Exceedances

Spring 2014		**Fall 2014**	
MW-6**	Barium	MW-6**	Barium
	Bis (2-ethylhexyl)phthalate		Nickel
	Dichlorodifluoromethane		Zinc
			Dichlorodifluoromethane
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Chromium		Cobalt
	Cobalt		Nickel
	Copper		1,4-dichlorobenzene
	Lead		Acetone
	Nickel		Benzene
	Zinc		Chlorobenzene
	1,4-dichlorobenzene		Chloroethane
	Benzene		Ethylbenzene
	Bis (2-ethylhexyl)phthalate		Xylenes
	Chlorobenzene		
	Chloroethane		
	Dichlorodifluoromethane		
	Ethylbenzene		
	Xylenes		

Spring 2015		**Fall 2015**	
MW-6**	Barium	MW-6**	Barium
	Cobalt		
	Dichlorodifluoromethane		
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	Acetone		1,4-dichlorobenzene
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	Chloroethane		Chloroethane
	Ethylbenzene		Xylenes
	Xylenes		Bis (2-ethylhexyl)phthalate

Spring 2016		**Fall 2016**	
MW-6**	Barium	MW-6**	Dichlorodifluoromethane
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		Selenium
	Benzene		1,4-dichlorobenzene
	Chlorobenzene		Acetone
	Chloroethane		Benzene
	Ethyl Benzene		Chlorobenzene
	Xylenes		Chloroethane
			Xylenes

Spring 2017		Fall 2017	
MW-6**	None	MW-6**	Barium
			Cobalt
			Nickel
			Bis(2-ethylhexyl)phthalate
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		Selenium
	Benzene		1,4-dichlorobenzene
	Chlorobenzene		Benzene
	Chloroethane		Chlorobenzene
	Dichlorodifluoromethane		Chloroethane
	Ethyl Benzene		Xylenes
	Xylenes		

Spring 2018		Fall 2018	
MW-6**	Barium	MW-6**	None
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		Benzene
	Benzene		Chlorobenzene
	Chlorobenzene		Chloroethane
	Chloroethane		Xylenes
	Ethyl Benzene		
	Xylenes		

Spring 2019		Fall 2019	
MW-6**	None	MW-6**	Barium
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	Chloroethane		Chloroethane
	Xylenes		Xylenes

Spring 2020		**Fall 2020**	
MW-6**	Cobalt	MW-6**	None
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		1,4-dichlorobenzene
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	Chloroethane		Chloroethane
	Xylenes		Xylenes

Spring 2021		**Fall 2021**	
MW-6**	None	MW-6**	Barium
			Cadmium
			Cobalt
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		1,4-dichlorobenzene
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	Chloroethane		Chloroethane
	Xylenes		

Spring 2022		**Fall 2022**	
MW-6**	Barium	MW-6**	Barium
			Cobalt
			Copper
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		1,4-dichlorobenzene
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	Chloroethane		Chloroethane

*** Monitoring well is an Assessment or Supplemental monitoring point and water quality is compared to GWPS, rather than site prediction limits.*

Spring 2023		Fall 2023	
MW-6**	None	MW-6**	Barium
			Copper
MW-15**	Arsenic	MW-15**	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,4-dichlorobenzene		1,4-dichlorobenzene
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	Chloroethane		Chloroethane

*** Monitoring well is an Assessment or Supplemental monitoring point and water quality is compared to GWPS, rather than site prediction limits.*

Appendix F

Summary of On-Going Assessment Monitoring

Bis(2-ethylhexyl)phthalate (ug/L) ***GWPS = 6.0 ug/L***

Date	MW-6	MW-15	MW-22
3/6/2009	<8	<8	<8
4/1/2013	NT	**10.0**	NT
9/9/2013	NT	<10	NT
3/30/2014	**36.0**	**85.0**	NT
9/19/2014	NT	<10	NT
4/20/2015	<10	<10	NT
7/9/2015	<10	NT	NT
10/5/2015	<10	**10.0**	NT
4/5/2016	<10	<10	<10
10/5/2016	<10	<10	No Sample
4/4/2017	<10	<10	<10
10/3/2017	**10.0**	<6	<6
4/10/2018	<6	<6	NT
10/12/2018	<6	<6	NT
4/16/2019	<6	**10.0**	NT
9/30/2019	<6	<6	NT
4/7/2020	<6	<6	NT
10/7/2020	<6	<6	NT
4/22/2021	NT	NT	NT
10/5/2021	NT	NT	NT
4/4/2022	NT	NT	NT
10/5/2022	NT	NT	NT
4/14/2023	NT	NT	NT
10/18/2023	NT	NT	NT

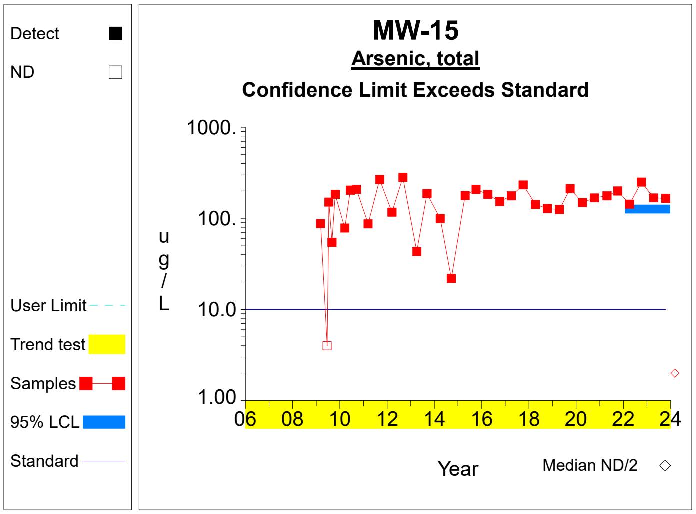
Dichlorodifluoromethane (ug/L) ***GWPS = 1,000.0 ug/L***

Date	MW-6	MW-15	MW-22
3/6/2009	<1	<1	<1
4/1/2013	NT	<1	NT
9/9/2013	NT	NT	NT
3/30/2014	**3.5**	**2.5**	NT
9/19/2014	**1.3**	<1	NT
4/20/2015	**1.0**	<1	NT
7/9/2015	NT	NT	NT
10/5/2015	<1	<1	NT
4/5/2016	<1	<1	<1
10/5/2016	**1.0**	<1	No Sample
4/4/2017	<1	**1.0**	<1
10/3/2017	<1	<1	<1
4/10/2018	<1	<1	NT
10/12/2018	<1	<1	NT
4/16/2019	<1	<1	NT
9/30/2019	<1	<1	NT
4/7/2020	<1	<1	NT
10/7/2020	<1	<1	NT
4/22/2021	NT	NT	NT
10/5/2021	NT	NT	NT
4/4/2022	NT	NT	NT
10/5/2022	NT	NT	NT
4/14/2023	NT	NT	NT
10/18/2023	NT	NT	NT

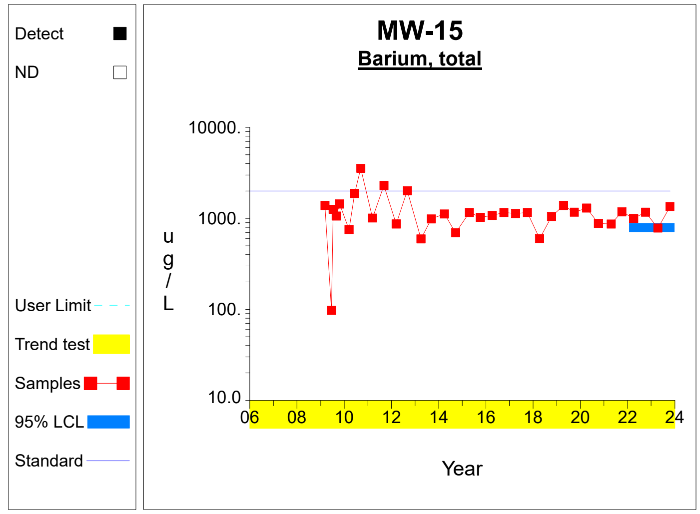
Appendix G

Time Series Plots – MW-15

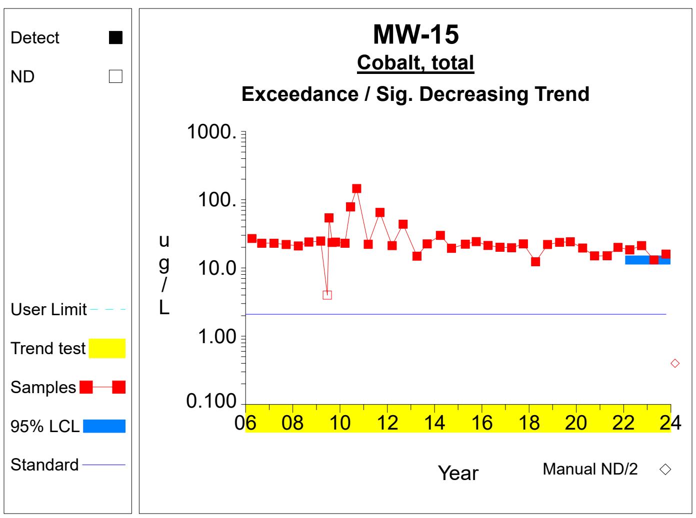
Confidence Limits (Assessment)



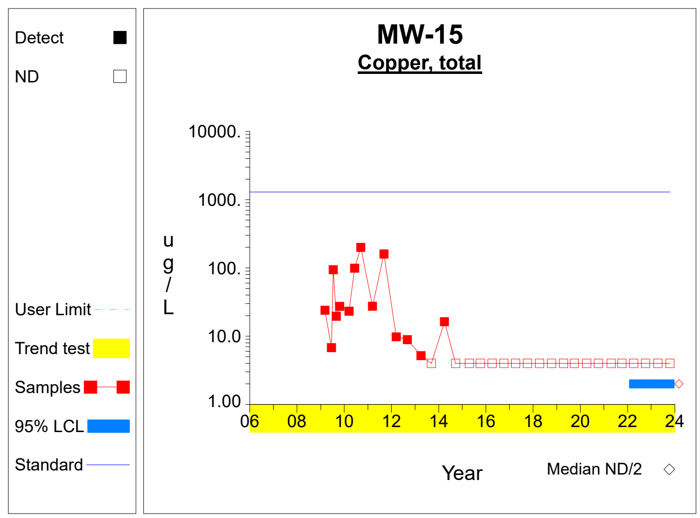
Graph 1



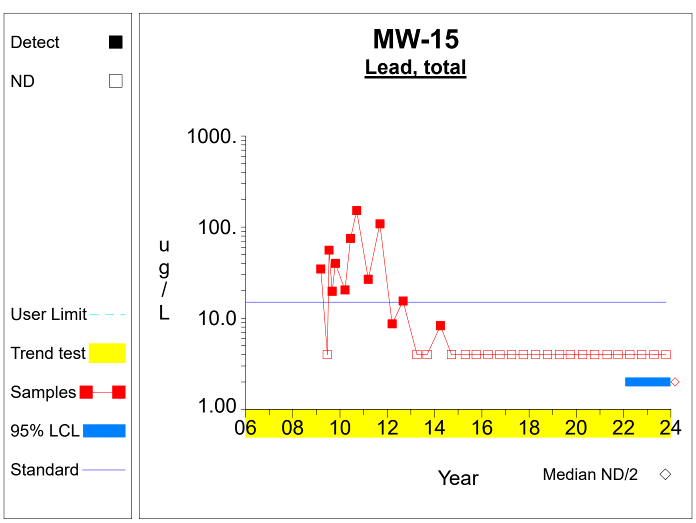
Graph 2



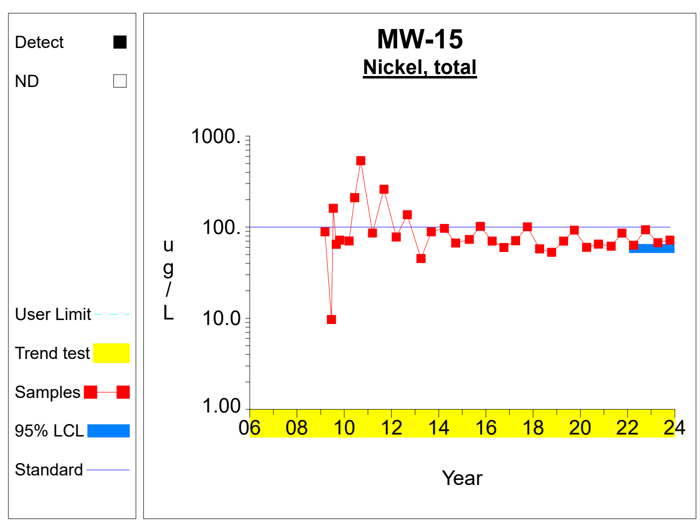
Graph 3



Graph 4

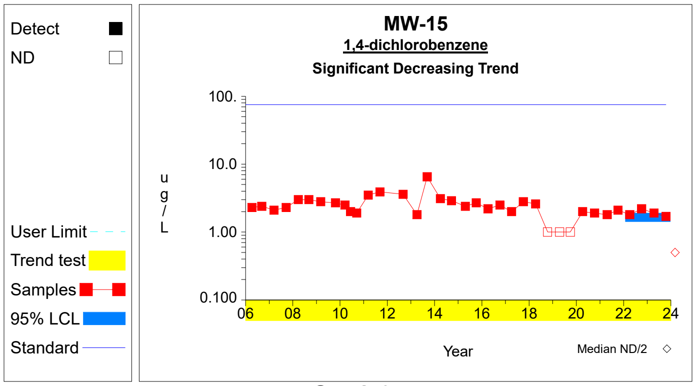


Graph 5

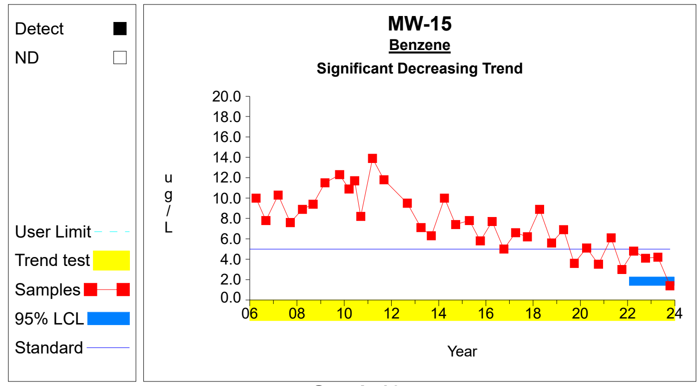


Graph 6

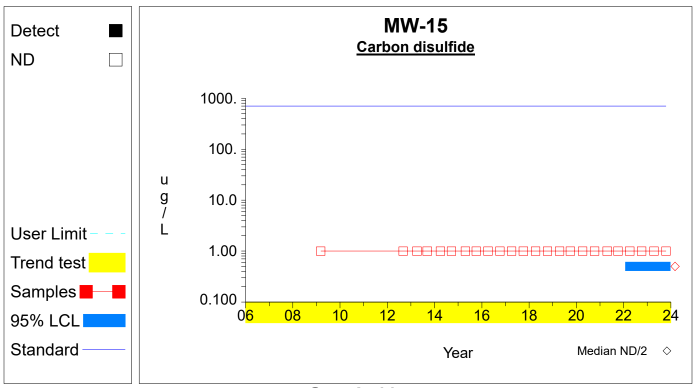
Confidence Limits (Assessment)



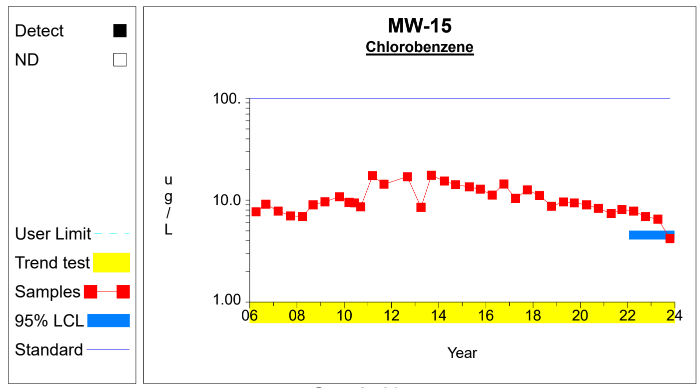
Graph 9



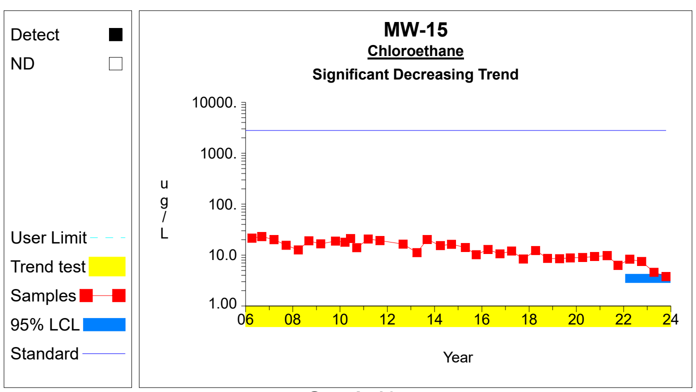
Graph 10



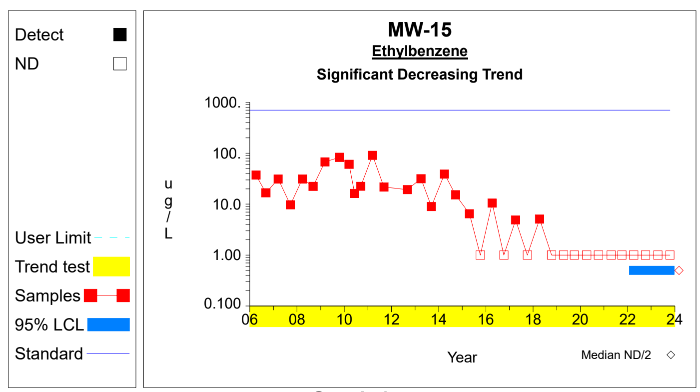
Graph 11



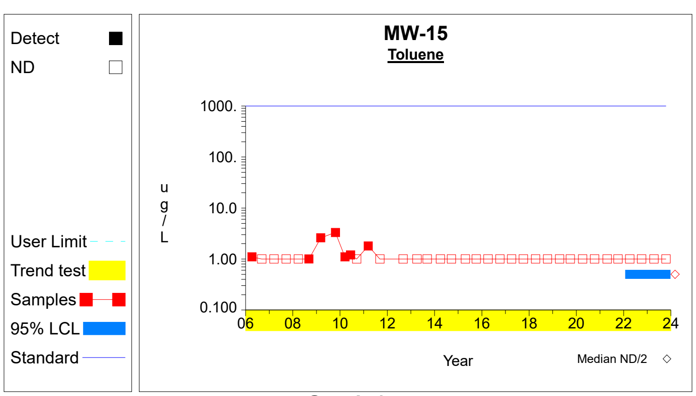
Graph 12



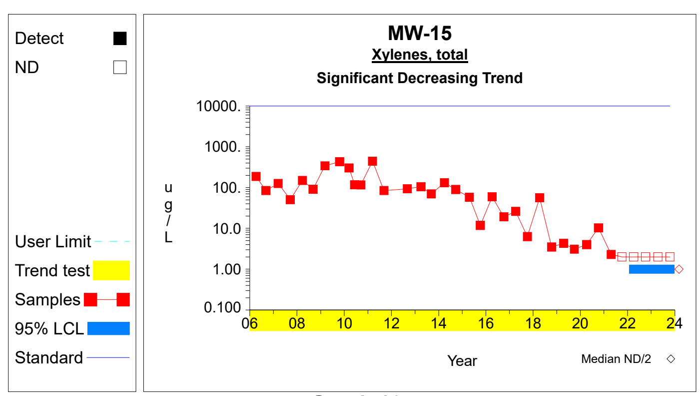
Graph 13



Graph 14



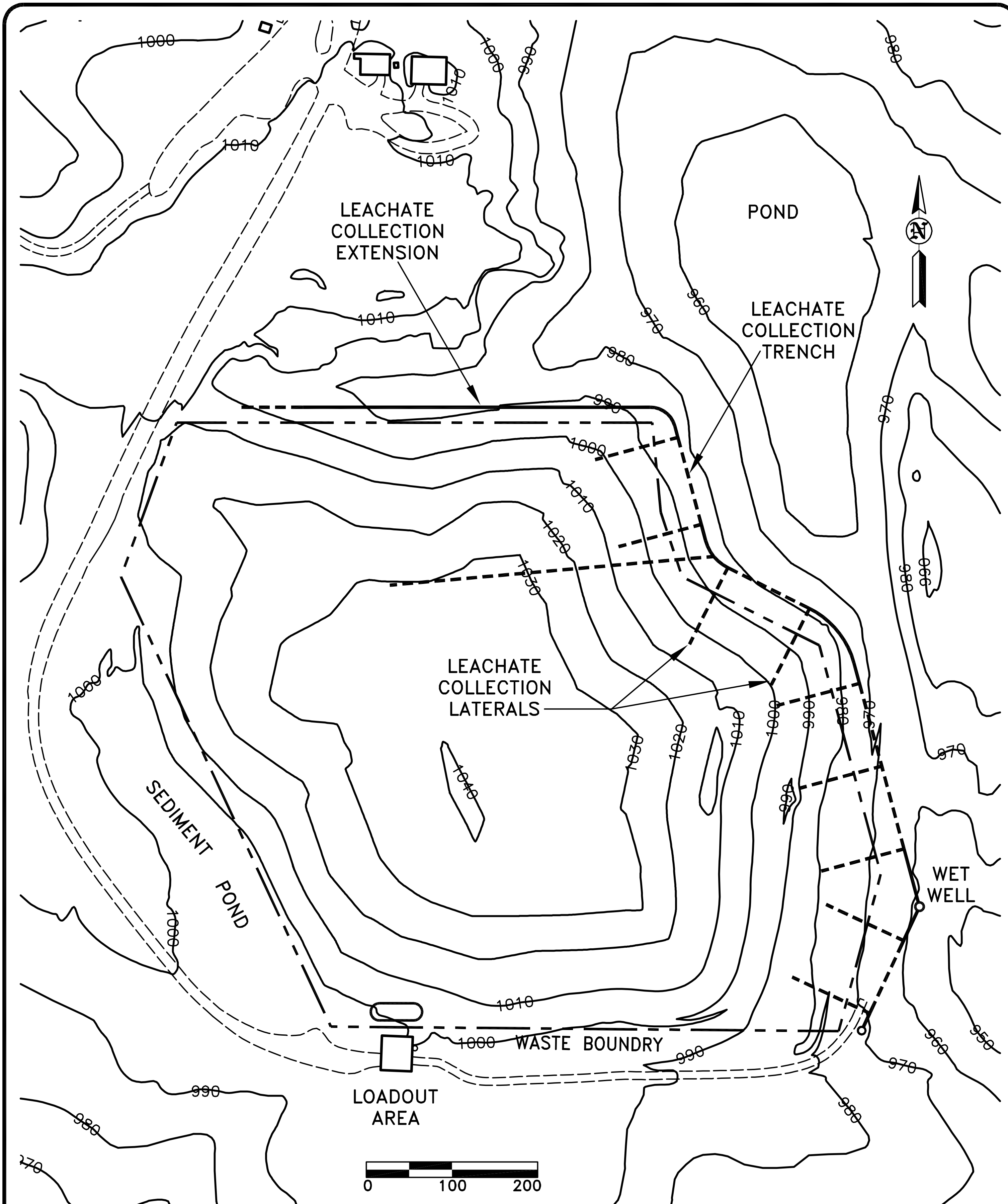
Graph 15



Graph 16

Appendix H

Leachate Collection System Map



HLW
HLW Engineering Group

LEACHATE COLLECTION EXTENSION

JONES COUNTY SANITARY LANDFILL
ANAMOSA, IOWA

FIGURE:	1	
REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6038	DATE 1-17-16