2024 Annual Water Quality Report

Winneshiek County Sanitary Landfill
Winneshiek County, Iowa
Permit #96-SDP-1-74P

Winneshiek County Area Solid Waste Agency
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March 2025

2024 ANNUAL WATER QUALITY REPORT

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March 2025



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the state of Iowa.

March 31, 2025
CHRISTOPHER G. OELKERS, PE Date

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My license renewal date is December 31, 2025.

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Date Issued:

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March 31, 2025
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Executive Summary

ES.1 Period of Report Coverage

This Annual Water Quality Report (AWQR) for the Winneshiek County Sanitary Landfill (Landfill) includes a summary of all groundwater, leachate, and landfill gas sampling completed in calendar year 2024.

ES.2 Report Priority

A revised HMSP was submitted in October 2024 (Document No. 110947).
An Assessment of Corrective Measures (ACM) study began in August 2022. The ACM was started due to cobalt in groundwater at MW-29A exceeded the GWPS of 2.1 µg/L. An ACM report was submitted in March 2024 (Document No. 108806). An updated ACM report will be submitted in March 2025.

ES.3 Site Status and Applicable Rules

Original Areas 1, 2 and 3 are closed either by soil final cover (slopes greater than 5%), composite final cover or by the abutment liner. Original Cell 4 is also closed by the abutment liner, except for the south and east side slopes which have 2 feet of temporary cover and dense vegetation. The active Municipal Solid Waste (MSW) incorporates the abutment liner, the original Cell 5 Expansion Area and original Cell 5 Phases I, II and III. The active MSW cell is referred to as C5 EXP in all documents and drawings, beginning with the Solid Waste Disposal Permit Renewal in 2017.

The monitoring of the site and analysis of sample data was conducted in accordance with Chapter 113 of the Iowa Administrative Code (IAC).

Winneshiek County Service Area

The Winneshiek County Service Area is made up of: all cities in Clayton County, excluding Guttenberg, North Buena Vista and Strawberry Point, and the unincorporated portion of the county; all cities in Howard County, excluding Chester, Elma and Riceville, and the unincorporated portion of the county; all cities and the unincorporated area of Winneshiek County; and the city of Postville (including those commercial accounts located in rural areas within Allamakee County and within two miles of the city limits of Postville, Iowa, that have contracted with the City of Postville) in Allamakee County.

1. Background Information

The 2024 groundwater sampling was completed at the Winneshiek County Sanitary Landfill (Landfill) in accordance with the site Hydrologic Monitoring System Plan (HMSP) and Iowa Department of Natural Resources (IDNR) permit requirements. This report summarizes the effect the Landfill is having on groundwater quality, surface water quality, and groundwater flow direction. The Landfill is located in rural Winneshiek County approximately 5 miles southeast of the City of Decorah, Iowa, in Section 9, T 97N, R 7W. The street address is 2000 - 140th Avenue, Decorah, Iowa, 52101.

Information regarding the monitoring points is included in Table 1. Recent sampling events and constituents are presented in Table 2. Analysis of sample data was conducted in accordance with Chapter 113 of the Iowa Administrative Code (IAC). Input and output files used in the statistical analyses are included in Appendix A.

Monitoring well maintenance and performance evaluation schedule is provided in Table 3. Monitoring well performance tasks are scheduled to be completed in 2025. The original report was published as part of the 2017 AWQR and will continue to be updated on a biennial basis. The report will next be updated as part of the 2025 AWQR.

Groundwater elevation contour maps, based on data obtained in March 2024, are presented as Figures 2 and 3. Groundwater elevation data for 2024 are given in Table 4. Groundwater gradients and flow velocity calculations are provided in Appendix C.

Field sampling data forms and laboratory analytical results from the 2024 sampling events are presented in Appendices B and C. Appendix B includes Tables B-1 and B-2 summarizing historical Appendix I and Appendix II analytical results from each monitoring zone and each monitoring point. The 2024 Leachate Control System Performance Evaluation and 2024 Methane Monitoring Report are included as Appendices D and E of this report. Semi-annual inspections were conducted on March 20, 2024, and August 27, 2024.

1.1 Winneshiek County Sanitary Landfill History and Construction

Nishna Sanitary Services initially developed the Landfill in 1974. The Landfill was privately owned and operated until 1991 when the Winneshiek County Solid Waste Agency (Agency) purchased the facility. Since that time, the Landfill has served as the primary disposal site for the waste generated in the Winneshiek Service Area. In 2024, the Winneshiek County Sanitary Landfill accepted approximately 22,551 tons.

Waste disposal at the Landfill began in 1974 with the development of original Area 1. Original Area 1 was constructed without a liner or leachate collection system, but a leachate toe drain was installed around the perimeter in 1993.

Original Area 2 was developed from about 1982 and was used until 1994, except for some construction and demolition (C&D) disposal that continued in a small portion of original Area 2 until 2000-02. Original Area 2 has no liner or leachate collection system but has a leachate toe drain along the western perimeter. A landfill gas collection trench extends south of original Area 2 and original Area 3.

Development of original Area 3 began in about 1988 and continued until 1994. Original Area 3 was constructed without a liner or leachate collection system, but it has a leachate toe drain along the eastern side and a landfill gas collection trench along the south side.

Development of original Cell 4 began in 1994. It is constructed with a clay liner and leachate collection system.

Development of original Cell 5 began in 1996. It is constructed with a composite liner and leachate collection system.

In 2016, the Agency completed the 2016 Closure and Capital Improvements Project (2016 Project). The 2016 Project included a 20-acre abutment liner over the east side of original Areas 1 and 3, and original Cell 4, and a new cell in the gap between original Area 1 and original Cell 5, Phase II, called the original Cell 5 Expansion Area. Also, the 2016 Project included the final closure on the remaining footprint of original Areas 1, 2 and 3. Slopes greater than 5% have a 4-foot soil final cover, and the remaining portions are closed with either a composite final cover system or are covered with the abutment liner. Original Cell 4 is effectively closed as it is mostly covered by the abutment liner, except for the south and east side slopes. Those slopes have 2 feet of temporary cover and are densely vegetated. The active cell, including the abutment liner, the original Cell 5 Expansion Area and original Cell 5, is now known as C5 EXP. Final closures of the C5 EXP, including the south and east side slopes of original Cell 4, will be a composite final cover system with passive gas vents.

The final part of the 2016 Project was a 4.5-million-gallon leachate lagoon. From this lagoon, the Landfill staff can recirculate, evaporate and loadout the leachate. The lagoon collects leachate from the west and central toe drains, original Cell 4, original Cell 5, and the C5 EXP. The Agency installed diversion manholes with valving to either discharge underdrain groundwater to the creek or discharge to the lagoon for the groundwater underdrains at original Cell 5, the C5 EXP and the lagoon itself. The C5 EXP groundwater discharge and the combined original Cell 5 and lagoon groundwater discharge are sampled as part of the current detection monitoring program.

Winneshiek County currently recirculates the leachate from the lagoon. The leachate is pumped from the lagoon to a sprinkler system on C5 EXP. The leachate is recirculated in the warm months if there is less than 1 foot of leachate measured at the leachate piezometers. Also, Winneshiek County operates an evaporator in the south bay of the lagoon to evaporate the leachate. The evaporator can be moved around the north half of Lagoon Bay No. 2 to ensure that mist drift is not leaving the lagoon boundary. The evaporator is not operated when the wind speed exceeds 15-MPH.

1.2 Winneshiek County Sanitary Landfill Geology and Hydrogeology

The subsurface geologic formations encountered during installation of site wells at the Landfill are included on the boring logs and monitoring well/piezometer documentation forms (Iowa DNR Form 542-1277) presented in Appendix A of the 2024 HMSP. Boring and well locations are shown on HMSP Figure 4. The site geology and hydrogeology of the Landfill has been comprehensively investigated in several studies, including the report for Phase II: Hydrogeologic Investigation at the Winneshiek County Sanitary Landfill (Brown, et al., 1990), Winneshiek County Sanitary Landfill HMSP Update (Rust E&I, 1997), and Winneshiek County Sanitary Landfill HMSP Update (AECOM 2023; IDNR Document No. 106349), and will be summarized here.

The Landfill is located on a generally eastward sloping upland that is part of an interfluve bordered on the east by an unnamed, northward flowing tributary to the Trout River and on the northwest by a different unnamed, northward flowing drainageway that drains to the Trout River (HMSP Figure 1; AWQR Figure 2). In this part of Winneshiek County, thin Quaternary-age deposits overlie Ordovician-age bedrock.

In uplands, the thin Quaternary deposits include loess overlying either remnants of Pre-Illinoian-age glacial diamicton (“till”) that locally contains isolated lenses of fluvioglacial material or Quaternary-age colluvium. On side slopes, the loess overlies either Quaternary-age colluvium or, where the colluvium is absent, bedrock. In lowlands, the thin Quaternary-age deposits consist of fine-grained alluvium. In portions of the site area, such as east of original Cell 4, landfill construction activities have removed the Quaternary deposits, and fine-grained, construction-derived soil fill overlies Ordovician-age Maquoketa Formation bedrock. Fine-grained, construction-derived soil fill overlies loess east of original Cell 5.

The Quaternary-age deposits overlie a gently dipping Ordovician-age bedrock sequence that consists of the upper and lower Elgin Member of the Maquoketa Formation and the underlying Galena Formation. In parts of the eastern and northeastern portion of the site, the Maquoketa Formation is eroded away and absent. In that area, the Galena Formation is the uppermost bedrock unit.

Groundwater is monitored in one water-bearing zone: (1) the shallow groundwater measured by the water table, and (2) the deep groundwater measured in the Ordovician-age upper and lower Elgin Member of the Maquoketa Formation and, where the Maquoketa is absent, the Ordovician-age Galena Group Dubuque Formation. Shallow wells are screened in different geologic units because the water table occurs in successively different stratigraphic horizons downslope. The water table and bedrock groundwater are interconnected and act as one water-bearing zone transitioning to only water table on the eastside of the landfill with groundwater discharging to tributary of Trout River.

1.2.1 Water Table

The water table occurs in successively different stratigraphic units, downslope toward the Trout River at the Landfill, including Quaternary-age loess, undifferentiated Pre-Illinoian glacial diamicton (“till”), colluvium, alluvium, and Ordovician-age Maquoketa Formation.

Water table elevations are measured in 30 water table wells at the Landfill. Figure 2 shows the water table elevations for March 2024 which is representative for site conditions. In the immediate Landfill area, water table groundwater generally flows from a groundwater divide in two directions: east to northeast and northwest from a groundwater high located near the southwest corner of the Landfill area toward the tributaries to the Trout River. Water table head is considered to mimic (reflect) the surface topography and surface water hydrology. On the east to northeast side of the landfill, the water table is in uppermost bedrock unit as it flows and discharges to the tributaries of the Trout River.

1.2.2 Piezometric Surface in the Uppermost Bedrock

The uppermost bedrock beneath the site is a gently dipping Ordovician-age bedrock sequence that consists of the upper and lower Elgin Member of the Maquoketa Formation and the underlying Galena Formation. The contact between the Maquoketa Formation and the underlying Galena Formation is an unconformity (an uneven erosional surface). The Maquoketa Formation is composed of significant thicknesses of shale and claystone and is a regional aquitard. The Galena Group, composed of limestone and dolomite, is part of a regional aquifer system. In parts of the northeastern portion of the site, the Maquoketa Formation is largely eroded away and absent. In that area, the Galena Formation is the uppermost bedrock unit.

Groundwater flow in the Maquoketa Formation aquitard is primarily downward, and groundwater flow in the Galena Group aquifer is primarily horizontal. Site groundwater flow in the Galena Group is expected to be primarily east toward Trout River, the regional groundwater discharge point.

Bedrock groundwater elevations are measured in 7 piezometer wells at the Landfill. Figure 3 shows the bedrock elevations for March 2024 which is representative for site conditions. In the immediate Landfill area, groundwater in bedrock generally flows from southwest to northeast of the Landfill area toward the tributaries to the Trout River.

1.3 Summary of Hydrologic Monitoring System Plan (HMSP)

Groundwater is monitored in an interconnected water-bearing zone at the Winneshiek County Landfill: (1) the shallow groundwater measured by the water table, and (2) the deep groundwater measured by the potentiometric surface in the Ordovician-age upper and lower Elgin Member of the Maquoketa Formation and, where the Maquoketa Formation is absent, the Ordovician-age Galena Group Dubuque Formation. Shallow wells are screened in different geologic units because the water table occurs in successively different stratigraphic horizons downslope.

1.3.1 Water Table and Underdrain Monitoring Points

The wells comprising the water table and underdrain sampling program for the Landfill are listed on Table 1. The monitoring wells and underdrain sampling points are shown on Figure 1. The upgradient and downgradient positions of the wells within the shallow (water table) groundwater flow system for each

monitored solid waste unit is based on groundwater flow depicted on Figure 2. The following narrative describes monitoring wells related to each solid waste unit.

Water table wells include:

1. Upgradient water table wells near the southwest corner of the Landfill:
    - MW-1 completed in Quaternary-age loess and the underlying pre-Illinoian-age glacial diamicton.
    - MW-32A completed in Quaternary loess and the underlying Elgin Member of the Ordovician-age Maquoketa Formation. This well has been dry or groundwater levels less than 0.1 ft.
    - MW-37A completed in Quaternary loess and the underlying pre-Illinoian-age glacial diamicton. This well is a new well installed in September 2021 to replace MW-1R.

2. Three water table wells sidegradient/downgradient of original Area 1:
    - MW-3 completed in pre-Illinoian-age glacial diamicton.
    - MW-34A completed in pre-Illinoian-age glacial diamicton.
    - MW-41A completed in pre-Illinoian-age glacial diamicton.

3. Three water table wells downgradient/sidegradient of original Area 2 along the western boundary of the Landfill:
    - MW-2R completed the upper Elgin Member of the Ordovician-age Maquoketa Formation bedrock.
    - MW-33A completed in pre-Illinoian-age glacial diamicton.
    - MW-2 completed in pre-Illinoian-age glacial diamicton and the underlying upper Elgin Member of the Ordovician-age Maquoketa Formation. This well has been dry or groundwater levels less than 0.1 ft.

4. One water table well downgradient of original Area 1 and Area 3 in the north-central portion of the Landfill:
    - MWII-2 completed in Quaternary loess and pre-Illinoian-age glacial diamicton.

5. Water table wells located downgradient/sidegradient of Cell 4 and 5 EXP:

6. MW-4 and MW-4B completed in pre-Illinoian-age glacial diamicton and interbedded fluvioglacial material.
    - MW-45A completed in the upper and lower Elgin Member of the Ordovician-age Maquoketa Formation. MW-7A completed in pre-Illinoian-age glacial diamicton.
    - MW-24A, MW-25A and MW-31A completed in fine-grained construction fill overlying thin loess and the underlying Elgin Member of the Ordovician-age Maquoketa Formation.
    - MW-46A completed in Quaternary loess and pre-Illinoian-age glacial diamicton. •MW-38A completed in colluvium and the underlying Elgin Member of the Ordovician-age Maquoketa Formation and Galena Group. This well is a new well installed in September 2021 to replace MW-27A.
    - MW-39A completed in colluvium and the underlying Elgin Member of the Ordovician-age Maquoketa Formation and Galena Group. This well is a new well installed in September 2021 to replace MW-12A.
    - MW-40A completed in colluvium and the underlying Elgin Member of the Ordovician-age Maquoketa Formation and Galena. This well is a new well installed in September 2021 to replace MW-26A.

- MW-42A completed in colluvium and the underlying Elgin Member of the Ordovician-age Maquoketa Formation and Galena. This well is a new well installed in August 2022 as part of the ACM.

7. Water table wells completed downgradient of leachate lagoon include:

- MW-101 completed in pre-Illinoian-age glacial diamicton and the underlying lower Elgin Member of the Ordovician-age Maquoketa Formation.
- MW-29A completed in pre-Illinoian-age glacial diamicton and the underlying Galena Formation dolomite.
- MW-43A completed in colluvium and the underlying Elgin Member of the Ordovician-age Maquoketa Formation and Galena. This well is a new well installed in August 2022 as part of the ACM.
- MW-44A completed in colluvium and the underlying Elgin Member of the Ordovician-age Maquoketa Formation and Galena. This well is a new well installed in August 2022 as part of the ACM.

8. Groundwater underdrain monitoring points include:

- GU-1
- GU-2

1.3.2 Bedrock Monitoring Points

The wells comprising the uppermost bedrock monitoring program for all the waste disposal areas at the Landfill are listed on Table 1 and include the following monitoring wells shown on Figure 1. The upgradient and downgradient positions of the wells within the deep (bedrock) groundwater flow system for each monitored solid waste unit is based on groundwater flow depicted on Figure 3.

Piezometric elevations are measured in the uppermost Ordovician-age bedrock at the Landfill, which includes the upper and lower Elgin Member of the Maquoketa Formation and, where the Maquoketa Formation is absent because of geologic erosion, the geologically older Galena Formation.

Eight wells are completed in the uppermost Ordovician-age bedrock at the Landfill as follows.

1. One upgradient bedrock well near the southwest corner of the Landfill:

- MW-19R completed in the lower Elgin Member of the Maquoketa Formation. This well was installed in September 2021 to replace MW-19.

2. One bedrock well upgradient of original Area 1, original Cell 5, and Cell 5 EXP:

- MW-18 completed in upper Elgin Member of the Maquoketa Formation.

3. One bedrock well downgradient of original Areas 2 and 3 and original Cell 5:

- MW-11 completed in the upper and lower Elgin Member of the Ordovician-age Maquoketa Formation. This well has been dry or groundwater levels less than 0.1 ft.

4. Three bedrock wells downgradient of original Areas 2 and 3 and original Cell 4:

- MW-35 completed in the lower Elgin Member of the Ordovician-age Maquoketa Formation.
- MW-36 completed in the Galena Formation. This well has had groundwater levels less than 0.3 ft.

5. Two bedrock wells downgradient of original Area 1 and original Cell 5:

- MW-22 completed in the Galena Formation.

6. One bedrock well downgradient of Cell 5 EXP and leachate lagoon:
    - MW-30 completed in the Galena Formation. This well has had groundwater levels less than 0.3 ft.

1.3.3 Surface Water Monitoring Points

1. Five surface water monitoring points, three in the tributary of the Trout River, include:

   One upstream location:
    - SW-1

   One downstream location:
    - SW-2

2. One surface water monitoring point, downstream of dam on eastside of landfill:
    - SW-3

3. One surface water monitoring point, downstream of pond on west-side of landfill:
    - SW-4

4. One surface water monitoring point, downstream of pond on eastside of landfill and adjacent to the leachate lagoon:
    - SW-5

1.3.4 Changes or Deviations to HMSP

A revised HMSP was submitted in October 2024 (Document No. 110947).

1.3.5 Current Site Map

The Landfill location in Winneshiek County and site map showing the current monitoring system is shown on Figure 1.

1.3.6 Current Groundwater Contour Maps

Groundwater is monitored in an interconnected water-bearing zone at the Winneshiek County Landfill: (1) the shallow groundwater measured by the water table, and (2) the deep groundwater measured by the potentiometric surface in the Ordovician-age upper and lower Elgin Member of the Maquoketa Formation and, where the Maquoketa Formation is absent, the Ordovician-age Galena Group Dubuque Formation. Shallow wells are screened in different geologic units because the water table occurs in successively different stratigraphic horizons downslope.

Groundwater, leachate, underdrain, and surface water elevations for 2024 are summarized in Table 4.

1.3.6.1 Water Table Groundwater Flow

The water table at the site occurs within the Quaternary Deposits and weathered bedrock, depending on location. The Quaternary Deposits are composed of a sequence of Wisconsinan-aged glacial till and glaciofluvial outwash mantled by wind-blown loess. The water table mimics the surface topography.

The water table has been altered in areas nearby the downgradient portion of the facility due to landfill base grade design being keyed into the underlying aquitard and use of groundwater drainage layers for sections of C5 EXP. Groundwater moves on-site as throughflow from the elevated areas to the northwest, northeast, and east of the site.

Groundwater elevations are presented in Table 4. A water table elevation contour map was prepared based on elevations measured during March 2024 (Figure 2). The map shows groundwater flow direction consistent with site history. Groundwater elevations vary seasonally from March to August. For example, monitoring well MW-37A groundwater elevation increased by 11.11 ft from March 2024 to August 2024. Overall, water table groundwater levels increased by an average of 1.48 ft from March 2024 to August 2024 with a range of 2.40 ft decrease to 10.68 ft increase.

Horizontal groundwater gradients for the site are relatively uniform and flat, varying from 0.031 to 0.060 ft/ft, with a mean of 0.040 ft/ft. The average linear velocity for the water table varies from 118 ft/year to 232 ft/year with a mean of 154 ft/yr. based on gradient, geometric mean hydraulic conductivity of 2.629 ft/day (0.8 m/day) and assumed porosity of 0.25. Gradient calculations are provided in Appendix C.

Monitoring well nests with water table and bedrock wells were used to estimate vertical groundwater gradients. Paired monitoring well nests are MW-1/MW-19R; MW-3/MW-18; MW-12A/MW-35; MW-26A/MW-36; MW-31A/MW-11; MW-29A/MW-30; and MW-7A/MW-22. Vertical hydraulic gradients vary from -0.07 ft/ft upward to 1.44 ft/ft downward from the water table to bedrock. Vertical gradient plots and calculations are provided in Appendix C.

Based on groundwater levels and flowlines from Figure 2, the designated upgradient wells are adequately monitoring upgradient groundwater, and designated downgradient wells are monitoring downgradient groundwater.

1.3.6.2 Deep Groundwater Flow

Figure 3 presents the March 2024 potentiometric surface within the weathered and variably fractured carbonate Elgin Member of the Ordovician Maquoketa Formation and Galena Formation. The potentiometric surface is also consistent with previous years, showing the direction of groundwater movement in the northeast and east directions. Hydraulic gradients of the potentiometric surface vary from 0.027 to 0.028 ft/ft, with a mean of 0.0275 ft/ft. The average linear velocity for the bedrock is estimated to be 2.61 ft/yr. based on gradient, bedrock hydraulic conductivity of 0.026 ft/day (0.008 m/d) and assumed porosity of 0.10.

The potentiometric surface is generally flat and uniform across the site. The measured water levels depicted on Figure 3 indicate there is no apparent mounding of the potentiometric surface to suggest variable flow directions. Groundwater elevations in bedrock vary seasonally from March to August. Bedrock groundwater levels increased by an average of 0.21 ft from March 2024 to August 2024 with a range of 1.27 ft decrease to 1.72 ft increase.

Based on groundwater levels and flowlines from Figure 3, the designated upgradient wells are adequately monitoring upgradient groundwater, and designated downgradient wells are monitoring downgradient groundwater in bedrock.

1.4 Monitoring Well Maintenance and Performance Re-Evaluation Plan

The evaluation of water levels and their relationship to the well screen interval was completed throughout the year to comply with IAC 567-113.10(2)f. As part of this evaluation, screen depths were verified and reviewed to determine whether they are properly placed with respect to groundwater levels. To comply with IAC 567-113.10(2)f(3), changes to depth-to-bottom readings were also evaluated to determine if sedimentation over time has occurred. Table 3 presents the monitoring well maintenance and performance evaluation schedule. Table 4 presents a summary of monitoring well groundwater levels, depth to bottom and recharge rates. Beginning in 2014, in compliance with IAC 567-113.10(2)f(4), low-flow sampling with flow rates and water quality constituents have been recorded for each sampling event. Flow rates are recorded on field forms (Appendix C). Water quality constituents pH, specific conductance, temperature, and turbidity have been recorded using a multiparameter In-Situ AquaTroll 500.

Low-flow sampling was utilized during all 2024 sampling events to record stabilization data, including flow rate, redox potential (+/-10mv), pH (+/-10%), conductivity (+/-10%), turbidity (less than 5 NTU) and dissolved oxygen (+/-10%) constituents that may indicate changes in well chemistry. These constituents are measured using an In-Situ AquaTroll 500 equipped with a rugged turbidity sensor. Low-flow data for the shallow and deep wells and groundwater layer discharge points are included in Appendix C. Calibration information is also included in Appendix C. The 2024 high and low water level measurements and well depth-to-bottom readings are included in Table 4.

Annually, each well is inspected during site-wide groundwater level measurements for the following information:

- Condition of Guard Posts
- Condition of Surface Seal
- Condition of Protective Casing
- Well Security
- Well Cap Condition
- Presence of Water in Protective Casing
- Biological Hazards (i.e., Wasp Nest)
- Condition of Well Casing
- Obstructions or Bends in Well Casing
- Sediment in Well Bottom

Inspection notes are made on field forms. In addition, wells are photographed to document condition of monitoring well. Based on inspection results, maintenance is scheduled for each well which requires repairs. The biennial monitoring well maintenance and performance re-evaluation is next scheduled to be completed in 2026.

2. Reporting Period Monitoring Activities

2.1 Current Detection Monitoring Activities

The detection monitoring program for the Landfill has been established in accordance with the IDNR regulations in 567-113.10(5). The existing detection monitoring system consists of 28 monitoring wells, including 23 shallow (water table) wells:

MW-1		MW-2R	MW-3	MW-4	MW-4B
MW-37A	MW-7A	MW-24A	MW-25A	MW-29A	MW-31A
MW-33A	MW-34A	MW-38A	MW-39A	MW-40A	MW-41A
MW-42A	MW-43A	MW-44A	MW-45A	MW-46A	MW-101

and 5 deeper wells in the uppermost bedrock:

MW-11	MW-18	MW-19/MW-19R	MW-22	MW-35

A summary of the hydrologic monitoring system is provided in Table 1. Locations of detection monitoring points are shown on Figure 1.

In addition to the monitoring wells, three surface water locations (SW-1, SW-2 and SW-5), two underdrain outlets (GU-1 and GU-2), and two leachate manholes (MH-1AA and MH-4-2) are also currently being monitored.

2.2 Current Assessment Monitoring Activities

Currently, there are eight shallow and two bedrock monitoring wells with ongoing and newly identified SSIs. There are five wells with SSLs. Table 7 presents a summary of ongoing and newly identified SSIs and SSLs. The groundwater protection standards used in the comparisons were obtained from the IDNR website at:

https://programs.iowadnr.gov/riskcalc/Home/statewidestandards

A site-specific GWPS of 3.4 µg/L for cobalt has been established and is detailed in the current HMSP (Document No. 110947).

Table 8 presents a summary of notable SSLs for groundwater.

In addition, three wells have been installed as part of an ACM. Wells MW-42A, MW-43A and MW-44A were installed to monitor groundwater downgradient of well nest MW-31A and MW-11, and groundwater downgradient of leachate lagoon well MW-29A.

2.3 Historical and Current Corrective Action Activities

The following historical information is provided as part of the Landfill corrective action. Analyses of groundwater samples taken at the Landfill in 1990 indicated a possible shallow (water table) groundwater contamination issue downgradient from the unlined landfill cell designated Area 1. Groundwater sampling results from MW-4 showed elevated constituent concentrations attributable to leachate interaction with shallow groundwater.

Steps were taken to assess the location and quantity of leachate at the Landfill. To determine the extent to which the original fill area was saturated with leachate, six (6) leachate head piezometers (LHPZ-1 through LHPZ-6) were installed. In September 1991, a groundwater assessment plan (BP-D, 1991), approved by the IDNR, was implemented. To track the contaminant plume, MW-4B and four temporary wells (B-1

through B-4) were installed downgradient from MW-4 and sampled. An electromagnetic survey was also conducted (BP-D, 1992) to determine the extent of contamination. Data from these investigations confirmed on-site groundwater impact and began to define the extent of the plume.

A leachate collection plan was developed (BP-D, 1992) and a gravity interceptor leachate system was installed around Areas 1, 2 and 3 to intercept contaminants released from the Landfill (refer to Figure 1, West Toe Drain). When Phase I of the Landfill's development plan was initiated with the excavation of Cell 4 and the placement of a 4-foot clay liner, a leachate collection system was included. A leachate collection system sump, storage tank and load-out were also included in the Cell 5 development in 1997.

To further assess the impact of leachate on groundwater downgradient from the Landfill and to monitor the effectiveness of the leachate interceptor and collection system, monitoring wells MWII-1 through MWII-6 were installed around MW-4 and MW-4B in May 1993. Leachate head within the Landfill is evaluated annually to determine if the leachate control system is effectively reducing leachate within Areas 1 through 3. Organic compounds, 1,1-Dichloroethane, 1,4-Dichlorobenzene, Benzene, Chlorobenzene were detected in groundwater samples from MW-4B from October 2008 through May 2015. Recent groundwater sampled semi-annually between September 2015 and November 2024 have had no Appendix I organic detections. Analysis of Appendix II constituents in groundwater samples from MW-4B were obtained in February 2010, October 2014, September 2015, November 2016, and November 2017. There have been no Appendix II detections in November 2016 and November 2017. This confirms the leachate interceptor and collection system is effective. The water table map (Figure 2) also verifies groundwater flow towards the leachate interceptor.

Inorganic constituents, Barium and Cobalt have been detected in groundwater samples from MW-4 and MW-4B. Cobalt in groundwater samples from monitoring well MW-4B have been nondetect or estimated since November 2016. The prediction limit and trend plots show Cobalt below the prediction limit since low-flow sampling techniques were implemented in November 2014. In addition, Cobalt in MW-4 and MW-4B groundwater samples has been below the GWPS of 2.1 µg/L in 19 of 21 sampling events since November 2014 (refer to Appendix B-2 Analytical Data Summary Tables).

Since the concentrations of all Appendix II constituents and Cobalt were shown to be at or below the cobalt GWPS of 2.1 µg/L, the Landfill returned to routine detection monitoring of Appendix I constituents for MW-4 and MW-4B in 2018. The time series data for all the detection monitoring wells is included in Appendix B.

In addition to the leachate toe drain, a landfill gas trench was installed at the southern edge of Area 2 and 3 (refer to Appendix E – Methane Monitoring Program Report).

Current activities include the development of a series of ponds on the eastside of landfill. These ponds were built because of a storm event which discharged silt to the tributary of Trout River. The ponds slow discharge and silt related to storm events which produce large overland flows to the creek.

In May 2022, IDNR comment letter noted the Spring 2022 Water Quality Sampling Report Table 7 indicated that levels of cobalt exceeded the groundwater protection standard at monitoring wells MW-29A, MW-31A and MW-35. In accordance with 567 Iowa Administrative Code (IAC) 113.10(6)”g”, the permit holder has certain schedule obligations that result in the preparation of an Assessment of Corrective Measures (ACM) report within 180 days of the initial finding (567 IAC 113.10(7)”a”). An ACM report was submitted in March 2024 (Document No. 108806). An updated ACM report will be submitted in March 2025.

2.4 Current Leachate Lagoon Activities

Refer to Appendix D.

3. Data Evaluation and Summary

Water Quality

Water quality at the Landfill is monitored by a system of active groundwater detection monitoring wells, a groundwater sump (GU-01) that receives water from original Cell 5, a groundwater sump (GU-02) that receives water from the original Cell 5 Expansion Area (C5 EXP), two leachate manholes, and three surface water staff gauges. Locations of hydrologic monitoring points are shown on Figure 1.

Hydrologic Monitoring System Plan History

A revised HMSP was submitted in October 2024 (Document No. 110947).

Current Monitoring System

Table 1 provides a summary of current sampling locations as defined in the 2024 HMSP. Samples from the monitoring points were analyzed for IDNR Appendix I constituents. Beginning with the fall 2014 sampling event, all samples that included total metals analyses were also tested for total suspended solids (TSS) in the laboratory, and for turbidity as measured by both field and laboratory methods. With the use of new AquaTroll 500 turbidity sensor in 2020, lab turbidity is no longer required. As a result of statistical analyses identifying SSIs, water table wells MW-4, MW-29A, MW-31A, MW-33A, MW-42A, MW-43A, MW-44A, and MW-46A, and bedrock monitoring wells MW-11 and MW-35 are in assessment monitoring. Except for wells MW-7A, MW-42A, MW-43A, and MW-44A, these wells have been sampled for Appendix II constituents. Wells MW-42A and MW-43A were sampled for Appendix II in July 2024. Wells and constituents with SSIs are listed in Table 1.

Historical summary Tables B-1 and B-2 included in Appendix B present analytical results for each monitoring well from time periods October 2007 through February 2025. The minimum detection levels for many constituents have varied over time between sampling events. This is generally a result of a change in the laboratory testing procedures for these constituents. An additional factor in the change in detection limits is that, beginning in October 2011, all results have been reported to the method detection limit per IDNR direction. Finally, low-flow sampling techniques were implemented in Fall 2014. As such, tables used in analysis reflect samples collected over time periods between 2014 – 2024.

Statistical Analysis

It has been assumed that outliers attributable to sample turbidity have been present in the past background datasets. Beginning in Fall 2011, analytical results are reported to the method detection limit. Beginning with the Fall 2014 sampling event, precise low-flow sampling techniques were instituted and, qualitatively, encouraging preliminary results regarding lower total suspended solids and turbidity were observed. In Fall 2016, the background datasets for the shallow and bedrock hydrostratigraphic units were re-evaluated to retain data that better represent samples obtained using current low-flow sampling methods and results reported to the method detection limit. In 2018, it was determined that by excluding upgradient background data obtained prior to Fall 2014, the goal of representative adequate background datasets could be achieved; and therefore, the datasets used for interwell comparisons span the period from Fall 2014 through the end of 2017. Per IDNR comment, in 2019, analysis was performed in order to determine if an update of background time period was appropriate and shift the background time period to begin in November 2014 and end November 2018. This provided a minimum of eight sample events per well for most background wells. Background was updated again at end of 2019, adding 2018 and 2019 to background for use in 2020 and 2021, and at end of 2021 adding 2020 and 2021 to background for use in 2022 and 2023 statistical analysis. Background has been updated in 2024 adding in sample results for 2022 and 2023 for use in 2024 and 2025 statistical analysis. Background datasets used for 2026 interwell comparisons will be updated to span the period from 2014 through the end of 2025. The current background time period for the 2024 AWQR spans from years 2014 – 2023. Table 5 presents a summary of background and GWPS values for the shallow (water table) and deep (bedrock aquifer) groundwater monitoring zones.

Prior to statistical analysis, the background data for constituents with less than 50 percent non-detections (censored) were examined to determine whether they were normally distributed. Tables of DUMPStat statistical analyses are included in Appendix A. Tables include summary of detection frequencies in

upgradient and downgradient wells, test of normality, statistical distribution, summary statistics, prediction limits and Dixon's test for outliers. DUMPStat analyses were completed for both shallow (water table) and deep (bedrock) monitoring zones.

Statistical tests were conducted to detect results that are artificially high or low (outliers). Outliers may be due to field, transportation, laboratory, or transcription errors. Past testing has indicated that although some background data points meet the statistical criteria to be outliers, no justification could be found to remove them from the background data and, as such, the data remain as part of the background data. Trend testing is conducted as part of the prediction limit analysis. Tables of DUMPStat statistical outliers identified and trend analyses are included in Appendix A.

Background levels for comparing constituents detected in 2024 were established by pooling all available historical data from shallow background wells MW-1, MW-1R and MW-37A for the water table, bedrock well MW-19R for bedrock, and surface water monitoring point SW-1 for upstream surface water from 2014 through 2023.

For the detection monitoring program, compliance well data were statistically tested against the background data using interwell prediction limit methods. Such tests were conducted only for compliance results noted at or above the reporting limit. The procedure used to determine the appropriate prediction limit method was as follows:

1. If background for a given constituent contained more than 50 percent non-detects (censored), a nonparametric prediction limit was used to test the compliance data against upgradient background, and the method detection limits (MDL) were used for non-detect values to account for non-detects.

    1.a. Note: The MDL does not affect the estimation of the nonparametric prediction limit (NPL). An NPL is defined as maximum detected value, or MDL if 100 percent ND.

2. If background for a given constituent contained between 20 percent and 50 percent non-detects (censored), Cohen's adjustment was used to account for non-detect values. If background for a given constituent contained less than 20 percent non-detects (censored), the MDL was used to account for non-detect values.

3. If background for a given constituent contained less than 50 percent non-detects (censored), the background data were tested for lognormality and normality using the Shapiro-Wilk procedure and probability plots. If background data for a given constituent did not follow a lognormal or normal statistical distribution (defined as a significant result for the Shapiro-Wilk procedure at a 95 percent confidence level), a distribution-free nonparametric prediction limit (NPL) (with 99 Percent Confidence Level) was used to test the compliance well data against background.

4. If background for a given constituent was determined to follow either a lognormal or normal distribution (defined as a non-significant result for the Shapiro-Wilk method at a 95 percent confidence level) and contained less than 50 percent non-detects (censored), a parametric prediction limit (PL) (USEPA Unified Guidance 99% Confidence One-Sided) was used to test the compliance data against background.

5. If background data for a given constituent did not follow either a lognormal or normal statistical distribution (defined as a significant result for the Shapiro-Wilk procedure at a 95 percent confidence level) and contained less than 50 percent non-detects (censored), a distribution-free nonparametric prediction limit (PL) (with 99 percent confidence level) was used to test the compliance well data against background.

Table 5 presents a background and GWPS summary. Interwell statistical comparisons were not conducted for detected downgradient constituents that were estimated (analytical results between the MDL and RL which were designated by lab with a J-flag). The detected downgradient monitoring results are reported in Table 6.

Water table wells MW-29A, MW-31A, MW-40A, MW-42A, MW-43A, and MW-44A, two bedrock wells, MW-11, and MW-35, and two surface water monitoring locations, SW-2 and SW-5 comprise the current assessment of corrective measures (ACM) monitoring program at the Landfill. At these monitoring points, comparisons to the appropriate statewide standards for a protected groundwater source were performed using either a parametric or a nonparametric confidence interval with a 99 percent confidence level (α=0.01), and 2024 results were compared to interwell background values (Table 7). The Statewide Standards for a Protected Groundwater Source (GWPS) used in the comparisons were obtained from the following IDNR website:

https://programs.iowadnr.gov/riskcalc/Home/statewidestandards

Site-specific Groundwater Protection Standard for Cobalt

Background data for cobalt is based on upgradient interwell shallow groundwater monitoring wells. Wells included are: MW-1, MW-1R, MW-19R, and MW-37A. Except for MW-19R, sample dates span from May 2014, when low-flow sampling began, through June 2024.

Sampling from these non-impacted monitoring points has indicated the measured background concentrations of total cobalt are occasionally above the GWPS in wells screened in the groundwater monitoring zone. Previously described site conceptual groundwater flow is recharge from precipitation moves vertically downward into glacial aged sediments consisting of loess, glacial tills, colluvium, and recharges bedrock composed of Maquoketa shale and claystone and Galena Group limestone. The Maquoketa bedrock has been eroded as part of last glaciation from west to east across the site as part of development of the Trout River to where the top of bedrock on the east side consists of Galena Group limestone. The Galena Group limestone is a uniform microcrystalline limestone with few fractures. Hence groundwater flows along the Maquoketa Group claystone and shale contact with Galena discharging as springs to tributary of Trout River. As such, groundwater chemistry is a mix of upgradient water table and bedrock groundwater flowing and mixing to the east which then discharges to the Trout River.

Given the above, development of a site-specific background GWPS for cobalt is suitable. The site-wide prediction limit for cobalt in groundwater is estimated to be 3.40 µg/L and is being used in lieu of IDNR GWPS of 2.1 µg/L for all groundwater comparisons.

Verification Resampling

A pass 1-of-2 verification resampling scheme was utilized for wells which statistically exceeded background prediction limits. For current year compliance data, an exceedance of the appropriate interwell prediction limit for a given Appendix I inorganic constituent, or the reporting limit for an organic compound, triggered a retest for that constituent within 90 days of the original sampling date. If the retest sample results also exceeded the prediction limit or reporting limit, a statistically significant increase (SSI) over background levels at that well was considered to have occurred. If it could not be demonstrated that a source other than a landfill unit caused the contamination or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality, then the well entered assessment monitoring.

3.1 Detection Monitoring

The Spring 2024 semi-annual event commenced on June 11, 2024, and was completed on July 03, 2024. AECOM received the last of the laboratory data for the Spring 2024 event on July 24, 2024; and statistical analyses were completed on August 12, 2024.

For the Spring 2024 event, 28 of the 28 groundwater detection monitoring points in the current Hydrologic Monitoring System Plan (HMSP) were successfully sampled. Surface water detection monitoring points SW-1, SW-2, and SW-5 were sampled Underdrain groundwater detection monitoring point GU-1 was sampled. Underdrain groundwater detection monitoring point GU-2 was not sampled due to no flow. Leachate manholes MH-1AA and MH-4-2 were sampled. Leachate lagoon Bays 1 and 2 were sampled in May 2024.

All monitoring wells were sampled using small-diameter bladder pumps for low-flow sampling. Surface water was sampled using a disposable container to grab water samples from the stream. Underdrain monitoring points were sampled using an extensible sampling pole with attached container to grab water samples from the manhole. Leachate lagoons were sampled using an extensible sampling pole with attached container to grab water samples from the lagoon.

The Summer 2024 verification resampling event commenced on August 27, 2024, and completed on September 5, 2024. AECOM received the last of the laboratory data for the Summer 2024 resampling event on September 18, 2024.

For the Summer 2024 verification resampling event, 8 groundwater detection monitoring points in the current Hydrologic Monitoring System Plan (HMSP) were successfully re-sampled. Monitoring wells MW-4B, MW-18, MW-33A, MW-35, MW-39A, MW-43A, MW-45A, and MW-46A were re-sampled.

The Fall 2024 semi-annual event commenced on November 19, 2024, and completed on December 18, 2024. AECOM received the last of the laboratory data for the Fall 2024 event on January 7, 2025. And statistical analyses were completed on February 11, 2025. For the Fall 2024 event, 30 of the 35 detection monitoring points in the current Hydrologic Monitoring System Plan (HMSP) were successfully sampled. Five detection monitoring points were dry or had insufficient water to sample.

Surface water detection monitoring points SW-2 and SW-5 were sampled. Surface water detection monitoring point SW-1 was sampled in Spring 2024 but was dry during the Fall 2024 sampling event.. Underdrain groundwater detection monitoring point GU-1 was sampled. Underdrain groundwater detection monitoring point GU-2 was dry. Leachate manholes MH-4-2 and MH-1AA had no flow which could be sampled.

A Winter 2024 verification resampling event commenced on February 14, 2025, and completed on February 25, 2025. AECOM received the last of the laboratory data for the Winter 2024 event on February 24, 2025. and statistical analyses were completed on February 25, 2025. Monitoring wells MW-4, MW-7A, and MW-42A were resampled. MW-29A, MW-33A, and MW-43A were unable to be resampled.

Table 6 provides a summary of detection monitoring wells with the Appendix I constituents detected in groundwater, surface water and underdrain groundwater for the Spring 2024 Semi-annual, August 2024 verification resample, Fall Semi-Annual 2024, and February 2025 verification resampling and fifth detection monitoring sampling for new wells, MW-45A and MW-46A. The results of the interwell compliance to background comparisons are also presented in Table 6. In addition, results from two verification resampling events for SSIs are presented.

Estimated (lab results J-flagged) organic detections in the shallow and deep upgradient wells occurred very rarely in 2024.

Downgradient Monitoring Points

Comparisons between downgradient sampling points and their upgradient counterparts are intended to detect any possible impact from the Landfill on water quality downgradient of the Landfill. Upgradient and downgradient sampling points are sampled concurrently.

Shallow Monitoring Points

Refer to the current Hydrologic Monitoring System Plan (HMSP) for list of shallow (water table) monitoring points (A revised HMSP was submitted in October 2024 (Document No. 110947).

Deep Monitoring Points

Refer to the current Hydrologic Monitoring System Plan (HMSP) for list of deep (bedrock) monitoring points (refer to IDNR Doc No. 110947).

Upgradient well MW-19R is screened in the Maquoketa shale.

Well MW-11 was sampled for Appendix II in July 2024. Well MW-11 had insufficient groundwater for sampling in November 2024.

Non-Assessment Points: Table 6 presents the results of the interwell comparisons for all inorganic constituents detected in the downgradient shallow (water table), bedrock, and surface water detection monitoring points not currently in assessment monitoring.

3.1.1 Monitoring Results Summary

Monitoring results for semi-annual and resampling events are summarized below and in Table 6.

3.1.1.1 Spring 2024 Semi-Annual Sample

Water Table (shallow) Wells

Of all the water table monitoring points not in assessment monitoring, six wells had at least one unverified statistically significant increase (SSI) over background for interwell tests. The semi-annual detected results are presented in 2024 AWQR Table 6.

Monitoring wells MW-2R, MW-3, MW-7A, MW-18, MW-22, MW-24A, MW-25A, MW-34A, MW-38A, MW-40A, MW-41A, MW-42A, MW-45A, and MW-101 had no prediction limit exceedances (confirmed SSIs) or results above groundwater protection standards (GWPS).

Water table well MW-33A has an ongoing verified PL exceedance and GWPS exceedance for Arsenic.

No new positive double quantification analyses for organic compounds were noted at any of the water table monitoring points not in assessment monitoring.

Bedrock (deep) Wells

Of all the bedrock monitoring points not in assessment monitoring, no bedrock wells had any confirmed SSIs over background for interwell tests. The semi-annual detected results are presented in Table 6. Monitoring wells MW-18 and MW-22 had no SSIs or results above a GWPS.

No new positive double quantification analyses for organic compounds were noted at any of the bedrock monitoring points not in assessment monitoring.

3.1.1.2 August 2024 Verification Resample

For the August 2024 verification resampling event, 7 groundwater detection monitoring points in the current Hydrologic Monitoring System Plan (HMSP) were successfully re-sampled. Monitoring wells MW-4B, MW-33A, MW-35A, MW-39A, MW-43A, MW-45A, and MW-46A were resampled.

Water table well MW-33A had unverified PL exceedances for Cobalt and Acetone. The August 2024 resampling results show no verified exceedances for Cobalt or Acetone.

Water table wells MW-4B and MW-43A had an initial PL exceedance for Silver. The August 2024 resampling results showed no verified exceedance for Silver.

Water table well MW-39A has an initial PL exceedance for Zinc. The August 2024 resampling results showed no verified exceedance for Zinc.

Water table well MW-46A had initial PL exceedances for Nickel and Silver. This well was resampled in August 2024. The August 2024 resampling results showed no verified exceedances for Silver.

Monitoring wells MW-45A and MW-46A are new water table wells with less than eight (<8) sampling events. For new wells MW-45A and MW-46A, additional sampling data is needed to determine if groundwater concentrations represent naturally occurring concentrations.
Bedrock well MW-35 has an unverified PL exceedance for Thallium. The August 2024 resampling results showed no verified exceedance for Thallium.

3.1.1.3 Fall 2024 Semi-annual Sample

For the Fall 2024 event, 27 of the 28 groundwater detection monitoring points in the current Hydrologic Monitoring System Plan (HMSP) were successfully sampled.

Surface water detection monitoring points SW-2 and SW-5 were sampled. Surface water monitoring point SW-1 was dry. Underdrain groundwater detection monitoring points GU-1 was sampled. Underdrain groundwater detection monitoring points GU-2 was dry. Manholes MH-1AA and MH-4-2 were dry.

Water Table (shallow) Wells

Of all the water table monitoring points not in assessment monitoring, no wells had at least one statistically significant increase (SSI) over background for interwell tests. The semi-annual detected results are presented in 2024 AWQR Table 6.

No new positive double quantification analyses for organic compounds were noted at any of the water table monitoring points not in assessment monitoring.

Bedrock (deep) Wells

Of all the bedrock monitoring points not in assessment monitoring, no wells had a confirmed statistically significant increase (SSI) over background for interwell tests. The semi-annual detected results are presented in Table 6.

Monitoring well MW-11 was dry and could not be sampled.

Monitoring wells MW-19R and MW-22 had no SSIs or results above a GWPS.

No new positive double quantification analyses for organic compounds were noted at any of the bedrock monitoring points not in assessment monitoring.

3.1.1.4 February 2025 Verification Resample

Three wells, MW-4, MW-7A, and MW-42A, were sampled during the February 2025 event.

Sample results for MW-4 disconfirmed the Fall 2024 Cadmium exceedance.
Sample results for MW-7A disconfirmed the Fall 2024 Barium exceedance.
Sample results for MW-42A confirmed the Fall 2024 Nickel exceedance.

3.1.2 Assessment Monitoring

Water table monitoring wells MW-4, MW-29A, MW-31A, MW-33A, MW-42A, MW-43A, MW-44A, and MW-46A and bedrock monitoring wells MW-11 and MW-35 are in assessment monitoring. Table 7 presents the

water table and the bedrock assessment wells compared to Iowa statewide standards for a protected groundwater source. A summary of ongoing and newly identified statistically significant levels above groundwater protection standards (SSLs) are presented in Table 8.

An Assessment of Corrective Measures (ACM) study was initiated in August 2022 due to cobalt concentrations greater than the IDNR GWPS of 2.1 µg/L (SSL). The 2024 sampling events are a continuation additional data collection. In addition to groundwater, surface water and leachate data collection, selected groundwater monitoring wells were sampled for presence of landfill gas.

Table 8 presents a summary of ongoing and newly identified SSLs in groundwater. Four wells, MW-29A, MW-31A, MW-43A and MW-35 exceed the site-specific GWPS for cobalt which represented by the site groundwater prediction limit (PL) of 3.4 µg/L. One well, MW-33A exceeded the arsenic IDNR GWPS of 10 µg/L. As noted, MW-33A is located adjacent to a perimeter toe drain which was installed in 1993 on the west, north and east sides of Areas 1, 2 and 3 as a remedy. The toe drains capture groundwater from these areas which is discharged to the leachate lagoons.

Monitoring well MW-4 had an SSI for Barium. This well was last sampled for Appendix II as part of the June 2023 sampling event. This well has been sampled for Appendix II three times since 2015 with no detections of Appendix II specific constituents.

Monitoring well MW-29A had SSIs for Cobalt and Nickel which exceeded PLs. Only the Cobalt UCL is above the site groundwater protection standards (GWPS) (Table 7 and 8). No organics have been detected in sampling over time. Well MW-29A was sampled for Appendix II as part of the Fall 2020, Spring 2021, and March 2022 sampling events. The only detected Appendix II parameter was Sulfide in Spring 2021. Sulfide has been sampled eight times since then and all results have been nondetect. Well MW-29A will be sampled for Appendix II again in Spring 2027.

Monitoring well MW-31A had SSIs for Cobalt and Nickel. Well MW-31A is downgradient of Cells 4 and 5EXP. Only the Cobalt LCL is above the site-specific GWPS (Table 7 and 8). Well MW-31A is in assessment monitoring and has been sampled three times for full Appendix II parameters: 2020, 2021 and 2022. The only Appendix II parameters (not in Appendix I) detected was Endosulfan I with 2 detections out of 11 samples (82% ND). Well MW-31A will be sampled for Appendix I in 2025 and Appendix II again in Spring 2027.

Monitoring well MW-33A had an Arsenic SSI for 2024. The Arsenic LCL is above the IDNR Statewide GWPS (Table 7). Well MW-33A is in assessment monitoring and has been sampled twice for full Appendix II parameters: 2021 and 2022. There were no detected Appendix II only parameters (not in Appendix I). Well MW-33A will be sampled for Appendix I in 2025 and Appendix II again in Fall 2027. In addition, wells MW-4, MW-4B, and MW-33A are located adjacent to a perimeter toe drain which was installed in 1993 on the west, north and east sides of Areas 1, 2 and 3 as a remedy. The toe drains capture groundwater from these areas which is discharged to the leachate lagoons.

Monitoring well MW-43A had Arsenic, Cobalt, and Nickel SSIs for 2024. Only the Cobalt LCL is above the site-specific GWPS (Table 7). Monitoring well MW-43A is downgradient of MW-29A and screened at same elevation. Cobalt in MW-43A was estimated at 3.49 µg/L and 3.83 µg/L as compared to Cobalt of 11.2 µg/L and 16.5 µg/L at MW-29A. Cobalt at MW-44A was estimated at 0.423 J°µg/L and 0. 435 J°µg/L compared to MW-29A. SW-5 was estimated at 0.679 µg/L in Spring 2024 and below the detection limit in Fall 2024 as compared to MW-29A and MW-43A. This demonstrates Cobalt is attenuating as groundwater flows downgradient from MW-29A and discharges to the tributary of Trout River.

Monitoring well MW-42A had a confirmed Nickel SSI of 23.5 µg/L which is greater than the 20.9 µg/L PL. This value is less than the 100 µg/L GWPS. This well was sampled for Appendix II in Spring 2024, and results showed no Appendix II detections. The next Appendix II sampling will be in Spring 2025.
Monitoring well MW-44A is downgradient of MW-29A and screened at the same elevation. Nickel at MW-44A was estimated at 21.6 µg/L and 34.2 µg/L as compared to nickel of 63.9 and 69.6 µg/L at MW-29A.

Monitoring well MW-46A had a Nickel SSI with 26.6 µg/L and 28.2 which is greater than the 20.9 µg/L PL. This value is less than the 100 µg/L GWPS. This well was sampled for Appendix II in Fall 2024, and results showed no Appendix II detections. The next Appendix II sampling will be in Spring 2025.

Monitoring well MW-11 had an SSI for Zinc in 2024. Well MW-11 has been difficult to sample due to being dry or having low groundwater levels from 2013 – 2021. Well MW-11 was sampled for Appendix II in Spring 2023 and 2024. Water table well MW-31A which is nested with MW-11 provides shallow groundwater quality downgradient of Cells 4 and 5EXP. Together MW-31A and MW-11 provide information on vertical extent of Cobalt. Well MW-11 was nondetect for Cobalt in Spring 2023 and 2024. There were no detections of Appendix II only parameters not in Appendix I. Well MW-11 will be sampled for Appendix II again in Spring 2029 if there is sufficient groundwater.

Bedrock well MW-35 had a disconfirmed SSI for Cobalt below the site-specific GWPS of 3.4 µg/L (Table 7). This well is scheduled to be sampled for Appendix I parameters again in 2025 as part of semi-annual monitoring. Well MW-35 was sampled for Appendix II as part of the Fall 2020 and Spring 2021 sampling events. There were no detections of Appendix II only parameters not in Appendix I. Well MW-35 will be sampled for Appendix II again in Spring 2026.

3.1.3 Surface Water Monitoring Points

Surface water monitoring points SW-1 (upstream), SW-2 (downstream), and SW-5 (downstream) were sampled. SW-1 was sampled during the Spring 2024 sampling event but was dry during the time of the Fall 2024 sampling event. Downstream samples at SW-2 and SW-5 had no confirmed SSIs when compared to SW-1. As compared to groundwater, there were no surface water results for arsenic, barium, cobalt or nickel greater than the GWPS. In addition, SW-2 and SW-5 had no organic detections above the reporting limits in Spring and Fall 2024.

3.1.4 Groundwater Underdrains

Landfill cell groundwater underdrain GU-1 was sampled. Underdrain GU-2 could not be sampled as it had no flow. Underdrain GU-1 had mainly inorganic metals detected, Barium, Nickel, and Cobalt. None of the detections were above a GWPS. In addition, GU-1 had no organic detections above the reporting limits in 2024. There is no discharge of underdrain groundwater to the surface, Trout River, or the tributary of the Trout River adjacent to the landfill. Since underdrain groundwater is treated as leachate and directed to the leachate lagoon, resampling is not required.

3.1.5 Leachate Lagoon Sampling

Leachate Lagoon Bay 1 and Bay 2 were sampled in May 2024.

Lagoon Bay 1 receives:

- West Toe Drain
- Cell 5 Expansion Area Ground Water

Lagoon Bay 2 receives:

- Cell 4 Leachate
- Central Toe Drain
- Cell 5 Leachate
- Cell 5 Expansion Area Leachate

Leachate Lagoon Bay 1 results were mainly inorganics and metals. Arsenic was detected at 4.73 µg/L which is less than the GWPS of 10 µg/L. Barium was detected at 42.9 µg/L which is less than the GWPS of 2000 µg/L. Chromium was detected at 8.27 µg/L which is less than the GWPS of 100 µg/L. Copper was detected at 6.62 µg/L which is less than the GWPS of 1,300 µg/L. Lead was detected at 0.743 µg/L which is less than the GWPS of 15 µg/L. Nickel was detected at 73.8 µg/L which is less than the GWPS of 100 µg/L. Silver was detected at 1.26 µg/L which is less than the GWPS of 100 µg/L. Zinc was detected at 51.6 µg/L which is less than the GWPS of 2,000 µg/L.

Leachate Lagoon Bay 2 results were mainly inorganics and metals. Arsenic was detected at 4.91 µg/L which is less than the GWPS of 10 µg/L. Barium was detected at 84.7 µg/L which is less than the GWPS of 2000 µg/L. Chromium was detected at 9.77 µg/L which is less than the GWPS of 100 µg/L. Copper was detected at 6.91 µg/L which is less than the GWPS of 1,300 µg/L. Nickel was detected at 70.9 µg/L which is less than the GWPS of 100 µg/L. Zinc was detected at 56.4 µg/L which is less than the GWPS of 2,000 µg/L. There were no VOCs, SVOCs, Pesticides, or PCBs detected in Leachate Lagoon Bay 1 or Bay 2 sample results.

The Leachate Lagoon effluent is evaporated over Bay 2 or recirculated over C5EXP when the weather allows according to the permit. No leachate has been discharged from the site since the lagoons came online in 2016.
Leachate lagoon sample results are included in Appendix D.

3.1.6 Leachate Manholes

Leachate manholes MH-1AA and MH-4-2 for Cell 4 were sampled in July 2024. Leachate results for MH-1AA and MH-4-2 were mainly metals, Antimony, Arsenic, Barium, Chromium, Cobalt, Copper, Lead, Nickel, and Zinc.

Only, Cobalt was detected at 3.39 µg/L (< site groundwater PL (3.40 µg/L NPL)) in MH-1AA and 7.77 µg/L in MH-4-2 which is greater than the Iowa GWPS of 2.1 µg/L (> site groundwater PL (3.40 µg/L NPL).

There were unverified organic detections in MH-1AA which included 2-Butanone, Acetone, Benzene, Ethylbenzene, Toluene and Xylenes. None of the organic detections exceed a GWPS. All leachate is diverted to the leachate lagoons. There were no organic detections for manhole MH-4-2.Leachate manholes MH-1AA and MH-4-2 could not be sampled in Fall 2024. There was no flow at time of Fall 2024 sampling event.

3.2 Quality Assurance/Quality Control Plan

To monitor the quality of sampling in the field and the quality of the laboratory processing and analysis, equipment blanks, trip blanks and field duplicate samples were collected during the June, August, and November 2024 and February 2025 sampling events at the Landfill. The June and November events were semi-annual sampling events, and the August 2024 and February 2025 events were verification resampling to monitor and verify SSIs for select constituents. A description of the quality control samples collected is provided below.

3.2.1 Trip Blanks

The primary purpose of a blank sample (“blank”) is to measure the magnitude of contaminant concentration (for constituent(s) of specific interest) that might have been introduced into the sample as a result of sampling-related and transport activities. A definition of trip blanks is as follows:

- A sample collected at the laboratory using constituent-free water in the appropriate sample container with the proper preservative, taken out to the field, and returned to the laboratory for analysis without being opened. Trip blanks are generally for volatile organic compounds, low-level metals, and gasoline range hydrocarbon samples. The sample is used to assess contamination introduced during sample transport.

In order to assess the degree and type of accidental contamination by volatile organics during the sample collection and shipment procedures, one 40-ml volatile trip blank sample per cooler were filled completely with distilled water prior to mobilization to the site and stored with the sample volatile vials to be used during field sample collection.

3.2.2 Field Duplicates

The primary purpose of replicate samples is to identify and (or) quantify the variability in all or part of the sampling and analysis system. Replicates -- environmental samples collected in duplicate, triplicate, or greater multiples -- are considered identical or nearly identical in composition and are analyzed for the same chemical properties.

A definition of field duplicates is as follows:

- Two or more samples collected at the same sampling location. Field replicates should be samples collected side-by-side or by collecting one sample and immediately collecting the second sample. Field replicates represent the precision of the whole method, site heterogeneity, field sampling and the laboratory analysis.

Sequential replicates or field duplicates are samples of environmental water -- commonly groundwater -- that are collected consecutively (one after the other) from the same sampling site and that are subjected to identical laboratory analysis. The sequential replicate can be collected, for example, as a sample pumped from a well or stream. Sequential replicates are used to assess variability among samples that results from field activities (collection, processing, and shipping procedures). Because sequential replicates are not collected simultaneously, inhomogeneities in the water resource are incorporated into the variability measured. Also included is the variability inherent in laboratory handling and analysis of the samples.

3.2.3 Field Blanks

The primary purpose of field (rinsate or equipment) blank samples is to verify the effectiveness of the decontamination procedures on non-dedicated or reusable sampling equipment.

A definition of field blanks is as follows:

- A field (equipment or rinsate) blank is a volume of solution (in this case, laboratory-grade deionized water) used to rinse a sampling tool before sample collection. The rinse water is collected and tested to verify that the sampling tool is not contaminated.

For groundwater monitoring, one field blank is collected for every 20 samples, or one per sampling round, whichever is more frequent.

3.2.4 Field Duplicate, Field Blank and Trip Blank Sample Results

Sample results for trip blanks, field blanks and field duplicate samples were reviewed, and results of the analysis are summarized in Tables 9 and 10. A descriptive summary is provided below.

Trip Blanks

Trip blanks in 2024 had no detections or estimated detections (J-Flagged).

Field Blanks

Field (equipment) blanks in 2024 had detections of inorganic constituents. Field blanks had detections as follows:

- June 2024 – Barium and Tribromomethane
- August 2024 – Bromodichloromethane, Dibromochloromethane, and Trichloromethane
- November 2024 – Acetone and Barium
- February 2025 -

These constituents are common laboratory contaminants (EPA, 2014; Morrison, 2010) and are likely not related to field handling during sampling. Estimated and blank constituents detected that do not qualify. Potential laboratory contaminants have an unknown source and may be the result of a combination of issues related to field procedures and lab procedures.

Field Duplicates

Field duplicate results were compared to determine the precision between sampling results. The precision was based on a calculation of Relative Percent Difference (RPDs) between detected concentrations. RPDs within 20 percent limit for groundwater or within ±2x the reporting limit (RL) were considered acceptable. Field duplicates for detected results are summarized in Table 10.

Except for a few inorganics, most duplicate results were within 20 percent or ±2x the reporting limit (RL).

Conclusions

A review of detections in trip blanks and field blanks indicates that sampling, decontamination, and sample storage/transport were generally conducted adequately. Results of field blank samples indicate there may have been some issues with inadequate decontamination; however, the field blank detections in 2024 were few, estimated concentrations were generally estimated below the reporting limit, and several detected constituents were common laboratory contaminants. Decontamination procedures will continue to be reviewed to be sure all equipment is being adequately decontaminated between wells.

3.3 Assessment of Corrective Measures

In May 2022, IDNR comment letter noted levels of cobalt exceeded the groundwater protection standard at monitoring wells MW-29A, MW-31A and MW-35. In accordance with 567 Iowa Administrative Code (IAC) 113.10(6)"g", *the permit holder has certain schedule obligations that result in the preparation of an Assessment of Corrective Measures report within 180 days of the initial finding (567 IAC 113.10(7)"a"*).

An ACM report was submitted to IDNR in March 2024 (Document No. 108806). An updated ACM report will be submitted in March 2025.

4. Summary

No confirmed statistically significant increases were noted at detection monitoring points not currently in assessment monitoring at the Landfill in 2024. All monitoring wells currently in the detection monitoring program will remain as detection monitoring points. Detections of Appendix I constituents at wells currently in the assessment monitoring program were above Iowa statewide standards for a protected groundwater source for Cobalt (GWPS 2.1 µg/L). An ACM report was submitted to IDNR in March 2024 (Document No. 108806). An updated ACM report will be submitted in March 2025.

Most surface water detections of both metals and organics in 2024, were at very low levels, mainly nondetect or estimated (J-flagged). Downstream constituents detected at SW-2 and SW-5 are not significantly greater than upstream location SW-1. Surface water monitoring will continue in detection monitoring for 2025.

A revised HMSP was submitted in October 2024 (Document No. 110947).
Background time period for statistics will be revised to span the time period from Fall 2014 through November 2025 for the development of prediction limits for the 2026 AWQR.

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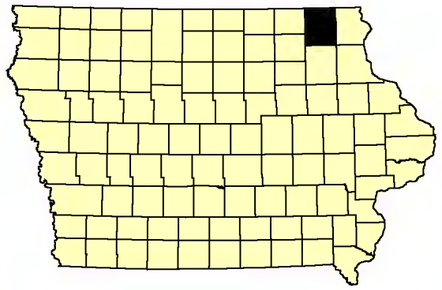
Figures





Leachate Manhole

Shallow Detection Well

Shallow Water Level Only Well

Deep Detection Well

Deep Water Level Only Well

Surface Detection Point

Waterway

0 150 300 450 600

Feet

N

W E

S

Aerial Photography Source: USDA National Agriculture Imagery Program, 2021

140th Ave.

200th Street

Trout River

SW-4

MW-41A

MW-4

MW-4B

MWII-2

MWII-3

MW-46A

GU-1

SW-2

MW-100

MW-45A

MW-5AR

GU-2

MW-7A

MW-22

MH-1AA

MW-21A

Scale House

MW-18

MW-3

Area 1

MW-101

MW-24A

MW-44A

MW-34A

MW-29A

SW-5

MW-30

MW-43A

Cell 5

MW-25A

MW-2R

MH 4-2

MW-11

MW-42A

MW-31A

LHPZ-2

MW-2

Area 2

Area 3

MW-26A

SW-3

MW-40A

MW-36

MW-33A

MW-35

MW-39A

Cell 4

MW-12A

MW-37A

LHPZ-1

MW-27A

MW-38A

LHPZ-6

MW-1

MW-19R

MW-32A

MW-28A

SW-1

AECOM

Figure 1
Site Map
Annual Water Quality Report
Winneshiek County Solid Waste Agency
Decorah, Iowa

Mar. 2025

60711139

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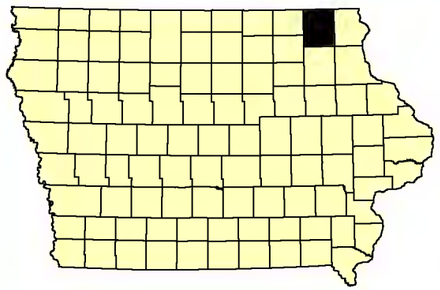

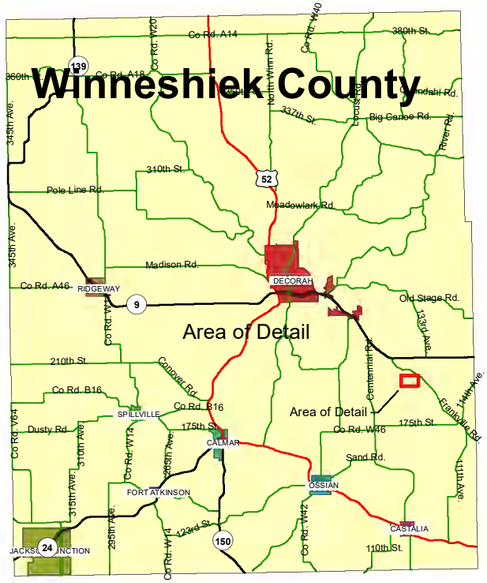

Water Table Contour

Flow Line

Waterway

MW-1 919.08 Monitoring Point with Water Elevation AMSL

0 150 300 450 600

Feet

N W E S

Based on March 2024 water elevations.
NM = Not Measured

Aerial Photography Source: USDA National Agriculture Imagery Program, 2021

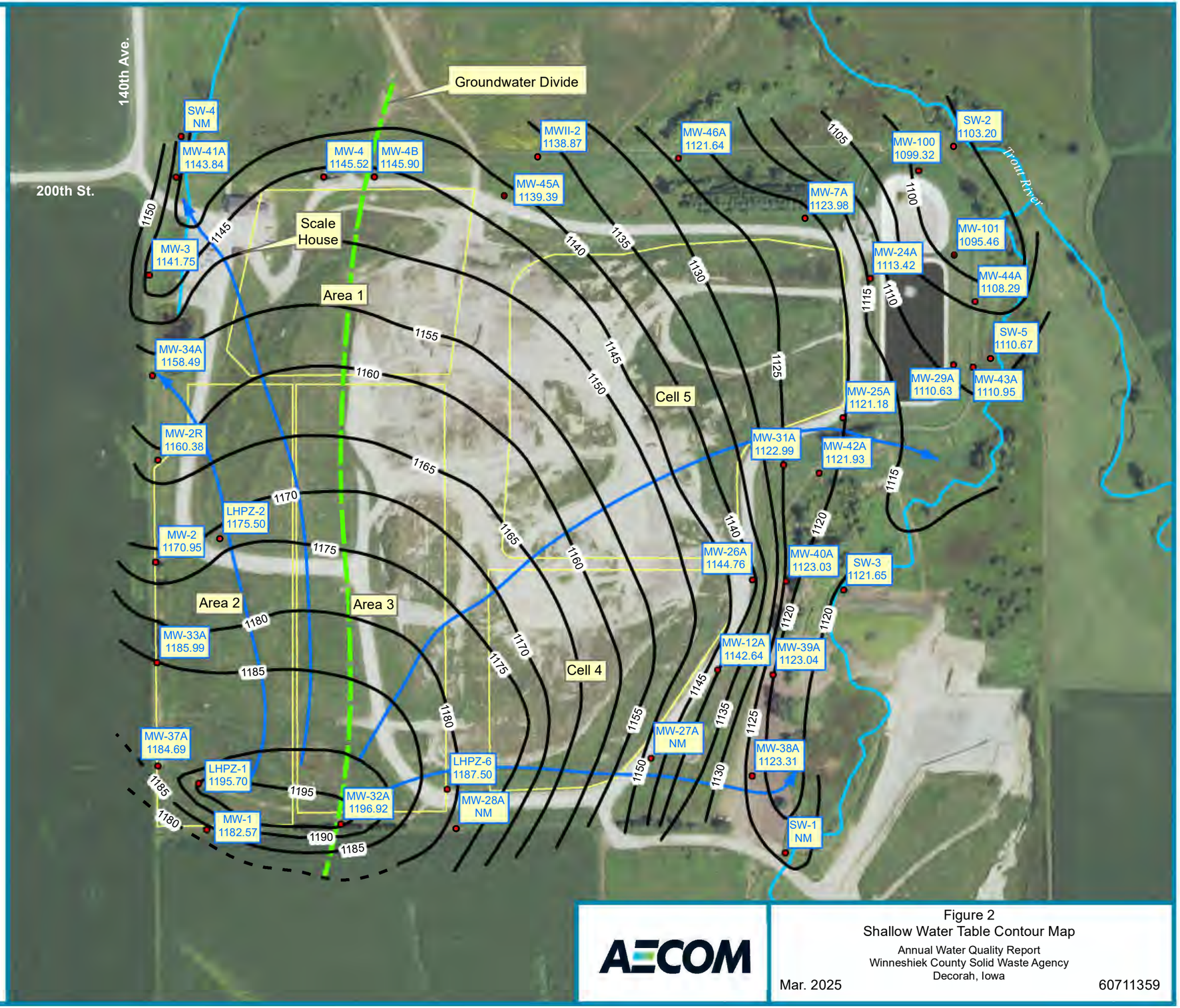

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Figure 2
Shallow Water Table Contour Map
Annual Water Quality Report
Winneshiek County Solid Waste Agency
Decorah, Iowa

Mar. 2025 60711359

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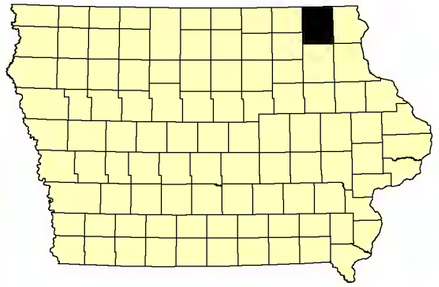



Potentiometric Contour

Flow Line

Waterway

MW-1
919.08
Monitoring Point with
Water Elevation AMSL

0 150 300 450 600
Feet

N
W E
S

NM = Not measured
Based on March 2024 water elevations.

Aerial Photography Source: USDA National Agriculture Imagery Program, 2021

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AECOM

Figure 3
Deep Well Water Elevations
Annual Water Quality Report
Winneshiek County Solid Waste Agency
Decorah, Iowa

Mar. 2025 60711359

Tables

Table 1
Monitoring Program Summary Table
2024 Annual Water Quality Report
Winneshiek County Landfill
Permit No. 96-SDP-1-74P

Monitoring Well	Formation	Groundwater System	Current Monitoring Program (March 2024)	Change for next sampling event	Constituents w/SSI	Constituents w/SSL	Total # of Samples in each monitoring program		
							Detection	Assessment	Corrective Action
MW-1	Qt/fluv	Water table	Background	NC	None	None	22	7	0
MW-2R	Oeu	Water table	Detection	NC	None	None	22	0	0
MW-3	Qt	Water table	Detection	NC	None	None	24	0	0
MW-4	Qt/fluv	Water table	Assessment	NC	Barium	None	21	7	0
MW-4B	Qt/fluv	Water table	Detection	NC	None	None	24	8	0
MW-7A	Qt	Water table	Assessment	NC	Barium	None	24	1	0
MW-24A	Qf,Ql,Oe	Water table	Assessment	Water Level	Nickel	None	16	2	0
MW-25A	Qf,Ql,Oe	Water table	Detection	NC	None	None	22	0	0
MW-29A	Ql/Qc	Water table	Assessment	NC	Arsenic, Cobalt, Nickel	Cobalt	13	10	0
MW-31A	Ql/Qc	Water table	Assessment	NC	Cobalt, Nickel	Cobalt	13	11	0
MW-33A	Ql/Qt	Water table	Assessment	NC	Arsenic	Arsenic	14	2	0
MW-34A	Ql/Qt	Water table	Detection	NC	None	None	13	0	0
MW-37A	Ql/Qt	Water table	Background	NC	None	None	9	0	0
MW-38A	Qf,Ql,Oe	Water table	Detection	NC	None	None	10	0	0
MW-39A	Qf,Ql,Oe	Water table	Detection	NC	None	None	11	0	0
MW-40A	Qf,Ql,Oe	Water table	Detection	NC	None	None	10	2	0
MW-41A	Qf,Ql,Oe	Water table	Detection	NC	None	None	8	0	0
MW-42A	Qf,Ql,Oe	Water table	Assessment	NC	Cobalt, Nickel	None	7	1	0
MW-43A	Qf,Ql,Oe	Water table	Assessment	NC	Arsenic, Cobalt, Nickel	Cobalt	8	1	0
MW-44A	Qf,Ql,Oe	Water table	Assessment	NC	Nickel	None	7	1	0
MW-45A	Qt	Water table	Detection	NC	None	None	5	0	0
MW-46A	Qt	Water table	Assessment	NC	Nickel	None	5	0	0
MW-101	Qt/fluv	Water table	Detection	NC	None	None	13	0	0
MW-11	Oeu/Oel	Uppermost bedrock	Assessment	NC	Cobalt, Zinc	None	7	2	0
MW-18	Oeu	Uppermost bedrock	Detection	NC	NA	NA	3	0	0
MW-19R	Oel	Uppermost bedrock	Background	NC	None	None	10	1	0
MW-22	Og	Uppermost bedrock	Detection	NC	None	None	14	0	0
MW-35	Oel	Uppermost bedrock	Assessment	NC	Cobalt	Cobalt	14	2	0
GU-1	NA	Groundwater Underdrain	Detection	NC	None	None	21	0	0
GU-2	NA	Groundwater Underdrain	Detection	NC	None	None	11	0	0
SW-1	Tributary of Trout River	Surface Water	Detection	NC	None	None	20	0	0
SW-2	Trout River	Surface Water	Detection	NC	None	None	22	0	0
SW-5	Tributary of Trout River	Surface Water	Detection	NC	None	None	6	0	0
MH-1AA	NA	Leachate Manhole	ACM	NC	NA	NA	2	--	--
MH-4-2	NA	Leachate Manhole	ACM	NC	NA	NA	3	--	--
Other monitoring points									
MW-2	Qt/Oeu	Water table	Water Level	NC	NA	NA	--	--	--
MWII-2	Qt	Water table	Water Level	NC	NA	NA	--	--	--
MW-12A	Qf/Oeu	Water table	Water Level	NC	NA	NA	--	--	--
MW-26A	Qf,Qc,Oe	Water table	Water Level	NC	NA	NA	--	--	--
MW-27A	Qf,Oe	Water table	Water Level	NC	NA	NA	--	--	--
MW-32A	Qt/fluv	Water table	Water Level	NC	NA	NA	--	--	--
MW-100	Qt/fluv	Water table	Water Level	NC	NA	NA	--	--	--
MW-30	Oeu	Uppermost bedrock	Water Level	NC	NA	NA	--	--	--
MW-36	Og	Uppermost bedrock	Water Level	NC	NA	NA	--	--	--

Notes:
Number of Samples including resampling based on sampling events since fall 2014

SSI = Statistically Significant Increase above background
SSL = Statistically Significant Level above groundwater protection standard
NC = No Change for next sampling event
NA = new monitoring well; insufficient sample size
ACM = Assessment of Corrective Measures Sampling

Geological Unit Symbols:
fluv = Quaternary Fluvioglacial Material
Qf = Quaternary Fill Placed During Landfill Construction
Ql = Quaternary Loess
Qc = Quaternary, Pre-Wisconsin Episode Colluvium
Qt = Quaternary Till
Oeu = Ordovician Maquoketa Formation, Upper Elgin Member (Interbedded Limestone and Shale)
Oel = Ordovician Maquoketa Formation, Lower Elgin Member (Shale)
Og = Ordovician Galena Formation (Limestone)
Groundwater underdrain = groundwater from Cell 5 underdrain layer

60711359/400/405/2024 AWQR/03-AWQR Tables

Table 2
Monitoring Program Implementation Schedule
2024 Annual Water Quality Report
Winneshiek County Landfill
Permit No. 96-SDP-1-74P

Monitoring Well	Recent Sampling Events and Constituents				Upcoming Sampling Dates and Constituents			Full Appendix II Sample Dates	
	June/July 2024	August 2024	December 2024	February 2025	May 2025	August 2025	November 2025	Previously Collected	Next Event
MW-1	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	7/24/2009, 4/21/2010, 5/5/2014, 6/25/2014, 11/7/2014, 12/22/14, 5/1/2015, 9/22/2015, 12/19/2015, 4/11/2016, 11/11/2016	NA
MW-2R	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-3	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-4	Appendix II, TSS	--	Appendix I, TSS	Cadmium	Appendix I, TSS	--	Appendix I, TSS	4/9/2009, 4/21/2010, 5/2/2014, 6/26/2014, 11/4/2014, 12/19/2014, 5/6/2015, 9/18/2015, 11/28/2016, 11/16/2017, 6/8/2023	2028
MW-4B	Appendix I, TSS	Silver, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	2/25/2010, 10/31/2014, 12/19/2014, 5/6/2015, 7/1/2015, 9/15/2015, 12/9/2015, 11/29/2016, 11/21/2017	NA
MW-7A	Appendix II, TSS	--	Appendix I, TSS	Barium	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-24A	Appendix II, TSS	--	Appendix I, TSS	--	Groundwater Level	--	Groundwater Level	6/29/2020, 6/18/2024	NA
MW-25A	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-29A	Appendix I, Sulfide, TSS	--	Appendix I, Sulfide, TSS	--	Appendix I, Sulfide, TSS	--	Appendix I, Sulfide, TSS	11/20/2020, 5/24/2021, 3/29/2022	2027
MW-31A	Appendix I, EndosulfanI, TSS	--	Appendix I, EndosulfanI, TSS	--	Appendix I, EndosulfanI, TSS	--	Appendix I, EndosulfanI, TSS	11/18/2020; 5/19/2021, 3/15/2022	2027
MW-33A	Appendix I, TSS	Arsenic, Acetone, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	9/29/2021, 9/13/2022	2027
MW-34A	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-37A	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-38A	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-39A	Appendix I, TSS	Zinc, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-40A	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	11/6/2023, 6/13/2024	2029
MW-41A	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-42A	Appendix II, TSS	--	Appendix I, TSS	Nickel	Appendix II, TSS	--	Appendix I, TSS	6/18/2024	2025
MW-43A	Appendix II, TSS	Silver, TSS	Appendix I, TSS	--	Appendix II, TSS	--	Appendix I, TSS	7/3/2024	2025
MW-44A	Appendix II, TSS	--	Appendix I, TSS	--	Appendix II, TSS	--	Appendix I, TSS	6/26/2024	2025
MW-45A	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	--	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	NA	NA
MW-46A	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	--	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	NA	NA
MW-100	Groundwater Level	--	Groundwater Level	--	Groundwater Level	--	Groundwater Level	NA	NA
MW-101	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-11	Appendix II, TSS	--	Dry	--	Appendix I, TSS	--	Appendix I, TSS	6/20/2023, 7/1/2024	2029
MW-18	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS		Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	NA	NA
MW-19R	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-22	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MW-35	Appendix I, TSS	Thallium, TSS	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	11/5/2020, 6/8/2021	2026
Underdrain Groundwater									
GU-1	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
GU-2	Dry	--	Dry	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
Surface Water									
SW-1	Appendix I, TSS	--	Dry	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
SW-2	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
SW-5	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
Leachate Manhole									
MH-1AA	Appendix I, TSS	--	Dry	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA
MH-4-2	Appendix I, TSS	--	Dry	--	Appendix I, TSS	--	Appendix I, TSS	NA	NA

Notes:
NA - not applicable
NS - no sampling due to low groundwater levels
Dry - well dry at sampling time
60711359/400/405/2024 AWQR/03-AWQR Tables

Table 3
Monitoring Well Maintenance and Performance Revaluation Schedule
2024 Annual Water Quality Report
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Compliance with:	Monitoring Calendar Years											
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
567 IAC 113.10(2)"f"(1) high and low water levels (semi-annually)	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 113.10(2)"f"(3) well depths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
Waste separation from ground water 113.6(2)i	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled

Notes:
Groundwater levels were monitored on a monthly basis through 2016. After 2016, groundwater levels were monitored during semi-annual sampling events.
Hydrogeologic setting and groundwater flow paths are evaluated annually.
Monitoring well depths are measured semi-annually during groundwater sampling events.
Monitoring well recharge rates are checked based on semi-annual low-flow sampling. Groundwater chemistry is evaluated semi-annually.
Waste separation from groundwater is evaluated annually.

Table 4
Monitoring Points Information Summary
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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
Water Table											
MW-1	1200.92	1186.30	1176.30	22.02	Groundwater Level (ft)	18.35	11.04	-0.02	1.20E-03	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1182.57	1189.88		5/15/2000		
					Measured Well Depth (ft)	22.02	22.04				
					Submerged screen	N	Y				
MW-2	1188.40	1177.54	1167.54	18.70	Groundwater Level (ft)	17.45	17.20	0.65	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1170.95	1171.20		NM		
					Measured Well Depth (ft)	18.05	18.08				
					Submerged screen	N	N				
MW-2R	1175.56	1157.20	1147.20	28.50	Groundwater Level (ft)	14.98	12.96	-0.04	3.44E-03	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1160.58	1162.60		1/28/2002		
					Measured Well Depth (ft)	28.48	28.54				
					Submerged screen	Y	Y				
MW-3	1162.81	1133.72	1123.72	36.90	Groundwater Level (ft)	21.06	NM	NA	7.60E-03	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1141.75	NM		5/15/2000		
					Measured Well Depth (ft)	37.82	NM				
					Submerged screen	Y	NM				
MW-4	1180.35	1143.04	1133.04	44.80	Groundwater Level (ft)	34.83	32.49	-0.14	1.63E-04	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1145.52	1147.86		8/7/1989		
					Measured Well Depth (ft)	44.88	44.94				
					Submerged screen	Y	Y				
MW-4B	1180.15	1150.59	1140.59	40.20	Groundwater Level (ft)	34.25	31.60	-0.04	3.10E-04	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1145.90	1148.55		5/15/2000		
					Measured Well Depth (ft)	40.17	40.24				
					Submerged screen	N	N				
MW-7A	1136.05	1123.19	1116.19	20.30	Groundwater Level (ft)	12.07	13.10	0.06	2.10E-05	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1123.98	1122.95		5/15/2000		
					Measured Well Depth (ft)	20.24	20.27				
					Submerged screen	Y	N				
MW-12A	1170.99	1156.68	1141.68	29.31	Groundwater Level (ft)	28.35	27.43	-0.33	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1142.64	1143.56		NM		
					Measured Well Depth (ft)	29.59	29.64				
					Submerged screen	N	N				

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Monitoring Points Information Summary
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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
MW-24A	1132.98	1120.69	1110.69	22.29	Groundwater Level (ft)	19.56	21.66	-5.51	9.60E-05	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1113.42	1111.32				
					Measured Well Depth (ft)	22.78	27.80		6/3/2010		
					Submerged screen	N	N				
MW-25A	1137.98	1126.71	1116.71	21.27	Groundwater Level (ft)	16.80	19.20	-0.47	9.60E-06	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1121.18	1118.78				
					Measured Well Depth (ft)	21.74	21.74		6/3/2010		
					Submerged screen	N	N				
MW-26A	1164.65	1155.03	1145.03	19.62	Groundwater Level (ft)	19.89	19.46	-0.58	7.30E-07	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1144.76	1145.19				
					Measured Well Depth (ft)	20.17	20.20		6/3/2010		
					Submerged screen	N	N				
MW-27A	1178.02	1167.88	1159.88	18.14	Groundwater Level (ft)	Dry	Dry	NA	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	Dry	Dry				
					Measured Well Depth (ft)	18.06	NM		NM		
					Submerged screen	NA	NA				
MW-29A	1133.85	1116.55	1106.55	27.27	Groundwater Level (ft)	23.22	23.69	0.07	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1110.63	1110.16				
					Measured Well Depth (ft)	27.20	27.24		NM		
					Submerged screen	N	N				
MW-31A	1138.77	1126.17	1116.17	22.81	Groundwater Level (ft)	15.78	16.51	0.11	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1122.99	1122.26				
					Measured Well Depth (ft)	22.70	22.74		NM		
					Submerged screen	N	N				
MW-32A	1219.37	1206.84	1196.84	22.66	Groundwater Level (ft)	22.45	22.47	0.17	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1196.92	1196.90				
					Measured Well Depth (ft)	22.60	22.49		NM		
					Submerged screen	N	N				
MW-33A	1205.88	1193.83	1183.83	22.45	Groundwater Level (ft)	19.89	13.06	0.15	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1185.99	1192.82				
					Measured Well Depth (ft)	22.30	22.40		NM		
					Submerged screen	N	N				

Table 4
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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
MW-34A	1166.70	1150.20	1140.20	26.81	Groundwater Level (ft)	8.21	6.30	0.29	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1158.49	1160.40				
					Measured Well Depth (ft)	26.52	26.72		NM		
					Submerged screen	Y	Y				
MW-37A	1210.30	1,198.50	1,183.50	26.48	Groundwater Level (ft)	25.61	14.93	0.18	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1184.69	1195.37				
					Measured Well Depth (ft)	26.30	26.32		NM		
					Submerged screen	N	N				
MW-38A	1148.37	1,130.47	1,115.47	32.62	Groundwater Level (ft)	25.06	24.05	0.12	2.69E-02	Completed 2021	NC
					Groundwater Elevation (Ft MSL)	1123.31	1124.32				
					Measured Well Depth (ft)	32.50	32.55		9/13/2021		
					Submerged screen	N	N				
MW-39A	1146.90	1,128.99	1,113.99	32.47	Groundwater Level (ft)	23.86	23.45	0.15	2.10E-02	Completed 2021	NC
					Groundwater Elevation (Ft MSL)	1123.04	1123.45				
					Measured Well Depth (ft)	32.32	32.36		9/13/2021		
					Submerged screen	N	N				
MW-40A	1151.17	1,123.82	1,108.82	41.81	Groundwater Level (ft)	28.14	20.16	0.12	3.16E-05	Completed 2022	NC
					Groundwater Elevation (Ft MSL)	1123.03	1131.01				
					Measured Well Depth (ft)	41.69	41.72		8/31/2022		
					Submerged screen	N	Y				
MW-41A	1149.75	1,136.63	1,126.63	23.78	Groundwater Level (ft)	5.91	2.71	-0.04	6.42E-05	Completed 2022	NC
					Groundwater Elevation (Ft MSL)	1143.84	1147.04				
					Measured Well Depth (ft)	23.75	23.82		8/31/2022		
					Submerged screen	Y	Y				
MW-42A	1135.43	1,121.86	1,111.86	23.22	Groundwater Level (ft)	13.50	14.72	-0.54	1.86E-04	Completed 2022	NC
					Groundwater Elevation (Ft MSL)	1121.93	1120.71				
					Measured Well Depth (ft)	23.74	23.76		8/16/2022		
					Submerged screen	Y	N				
MW-43A	1119.21	1,109.31	1,099.31	20.25	Groundwater Level (ft)	8.26	8.93	0.03	6.25E-04	Completed 2022	NC
					Groundwater Elevation (Ft MSL)	1110.95	1110.28				
					Measured Well Depth (ft)	20.22	20.25		8/17/2022		
					Submerged screen	Y	Y				
MW-44A	1117.88	1,107.67	1,097.67	20.27	Groundwater Level (ft)	9.59	9.40	0.06	2.36E-03	Completed 2022	NC
					Groundwater Elevation (Ft MSL)	1108.29	1108.48				
					Measured Well Depth (ft)	20.25	20.21		8/17/2022		
					Submerged screen	Y	Y				

Table 4
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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
MW-45A	1147.69	1,139.13	1,128.13	19.13	Groundwater Level (ft)	8.30	NM	NA	7.05E-06	Completed 2023	NC
					Groundwater Elevation (Ft MSL)	1139.39	NM				
					Measured Well Depth (ft)	19.13	NM		11/14/2023		
					Submerged screen	Y	NM				
MW-46A	1130.82	1,123.04	1,113.04	18.18	Groundwater Level (ft)	9.18	9.25	0.06	2.13E-03	Completed 2023	NC
					Groundwater Elevation (Ft MSL)	1121.64	1121.57				
					Measured Well Depth (ft)	18.14	18.12		11/14/2023		
					Submerged screen	N	N				
MWII-2	1145.20	1133.76	1123.76	22.00	Groundwater Level (ft)	6.33	7.52	0.05	5.50E-04	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1138.87	1137.68				
					Measured Well Depth (ft)	21.95	21.98		5/15/2000		
					Submerged screen	Y	Y				
MW-100	1134.14	1110.20	1100.20	35.04	Groundwater Level (ft)	34.82	34.82	0.04	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1099.32	1099.32				
					Measured Well Depth (ft)	35.00	35.02		NM		
					Submerged screen	N	N				
MW-101	1134.55	1104.10	1094.10	40.40	Groundwater Level (ft)	39.09	38.82	-0.02	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1095.46	1095.73				
					Measured Well Depth (ft)	40.38	40.42		NM		
					Submerged screen	N	N				

Table 4
Monitoring Points Information Summary
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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
Deep											
MW-11	1138.92	1106.50	1096.50	42.42	Groundwater Level (ft)	40.19	41.46	-0.34	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1098.73	1097.46				
					Measured Well Depth (ft)	42.34	42.76		NM		
					Submerged screen	N	N				
MW-18	1163.02	1122.79	1117.79	47.38	Groundwater Level (ft)	20.94	20.18	-0.62	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1142.08	1142.84				
					Measured Well Depth (ft)	47.93	48.00		NM		
					Submerged screen	Y	Y				
MW-19R	1204.15	1,153.45	1,133.45	71.00	Groundwater Level (ft)	47.83	46.11	0.20	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1156.32	1158.04				
					Measured Well Depth (ft)	70.80	70.91		NM		
					Submerged screen	Y	Y				
MW-22	1135.52	1103.05	1093.05	42.77	Groundwater Level (ft)	38.94	39.09	0.14	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1096.58	1096.43				
					Measured Well Depth (ft)	42.63	42.66		NM		
					Submerged screen	N	N				
MW-30	1133.76	1103.32	1093.32	40.23	Groundwater Level (ft)	39.78	39.70	0.11	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1093.98	1094.06				
					Measured Well Depth (ft)	40.12	40.17		NM		
					Submerged screen	N	N				
MW-35	1170.60	1125.10	1115.10	55.64	Groundwater Level (ft)	47.59	47.15	-1.93	NM	Scheduled	NC
					Groundwater Elevation (Ft MSL)	1123.01	1123.45				
					Measured Well Depth (ft)	57.57	55.64		NM		
					Submerged screen	N	N				
MW-36	1165.22	1089.80	1079.80	85.46	Groundwater Level (ft)	85.12	85.20	0.14	NM	Insufficient Groundwater Level	NC
					Groundwater Elevation (Ft MSL)	1080.10	1080.02				
					Measured Well Depth (ft)	85.32	85.40		NM		
					Submerged screen	N	N				

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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
Leachate Piezometer											
LHPZ-1	1213.80	1193.93	1183.93	25.47	Leachate Level (ft)	11.20	18.40				
					Leachate Elevation (ft MSL)	1195.70	1202.90				
					Liner Elevation (ft MSL)	1184.50	1184.50				
					Submerged screen	Y	Y				
LHPZ-2	1198.19	1182.77	1172.77	19.00	Leachate Level (ft)	2.50	4.30				
					Leachate Elevation (Ft MSL)	1175.50	1177.30				
					Liner Elevation (ft MSL)	1173.00	1173.00				
					Submerged screen	N	N				
LHPZ-3	1182.96	1172.31	1170.31	7.50	Leachate Level (ft)	3.50	2.10				
					Leachate Elevation (Ft MSL)	1173.50	1172.10				
					Liner Elevation (ft MSL)	1170.00	1170.00				
					Submerged screen	Y	N				
LHPZ-4	1188.89	1168.74	1158.74	24.00	Leachate Level (ft)	3.90	3.40				
					Leachate Elevation (Ft MSL)	1162.90	1162.40				
					Liner Elevation (ft MSL)	1159.00	1159.00				
					Submerged screen	N	N				
LHPZ-6	1214.78	1194.82	1184.82	26.80	Leachate Level (ft)	4.50	5.00				
					Leachate Elevation (Ft MSL)	1187.50	1188.00				
					Liner Elevation (ft MSL)	1183.00	1183.00				
					Submerged screen	N	N				
LHPZ-4-1			1161.70		Leachate Level (ft)	0.30	0.70				
					Leachate Elevation (Ft MSL)	1162.00	1162.40				
					Liner Elevation (ft MSL)	1161.70	1161.70				
					Submerged screen	Y	Y				
LHPZ-5-1			1122.70		Leachate Level (ft)	0.75	0.80				
					Leachate Elevation (Ft MSL)	1123.45	1123.50				
					Liner Elevation (ft MSL)	1122.70	1122.70				
					Submerged screen	Y	Y				
LHPZ-5-2			1140.00		Leachate Level (ft)	0.00	0.00				
					Leachate Elevation (Ft MSL)	1140.00	1140.00				
					Liner Elevation (ft MSL)	1140.00	1140.00				
					Submerged screen	N	N				

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Monitoring Points Information Summary
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Well	Top of casing (ft NGVD)	Top of Screen (ft)	Bottom of Screen (ft)	Total Depth (ft)	Parameter	Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Recharge cm/s (Date)	Current Recharge Rate	
						3/20/2024	8/27/2024			12/31/2024	% Change
LHPZ-5E-1			1140.50		Leachate Level (ft)	0.20	0.50				
					Leachate Elevation (Ft MSL)	1140.70	1141.00				
					Liner Elevation (ft MSL)	1140.50	1140.50				
					Submerged screen	Y	Y				
LHPZ-5E-2			1141.50		Leachate Level (ft)	0.75	0.80				
					Leachate Elevation (Ft MSL)	1142.25	1142.30				
					Liner Elevation (ft MSL)	1141.50	1141.50				
					Submerged screen	Y	Y				

Groundwater Underdrain Piezometer (Updated Sept. 2024)

Well	Measurement	Date	
		3/1/2024	8/1/2024
GU - 1	Underdrain Elevation	1107.10	1107.20
	Groundwater Elevation (feet MSL)	1113.42	1111.32
	Separation distance (feet)	6.32	4.12
GU5E-1	Underdrain Elevation	1038.40	1038.80
	Groundwater Elevation (feet MSL)	1139.39	NM
	Separation distance (feet)	100.99	NM
GULG-1	Underdrain Elevation	1121.10	1121.10
	Groundwater Elevation (feet MSL)	1109.84	1111.43
	Separation distance (feet)	-11.26	-9.67

NOTES:
NM = not measured
NC = No change
NA = not applicable

60711359/400/405/2024 AWQR/03-AWQR Tables

Table 5
Background and GWPS Water Quality
Summary Tables
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Sitewide (All Groundwater) Background/GWPS (MW-1, MW-1R, MW-19, and MW-37A)

Constituent	Units	Samples	Detections	Min	Max	Median	Background Standard	Statistical Test	GWPS	Source
Inorganics										
Antimony (Sb)	µg/l	42	0	<0.161	<1.320	<0.690	0.690	PL(NP)	6	MCL
Arsenic (As)	µg/l	42	3	<0.232	4.570	<0.750	4.570	PL(NP)	10	MCL
Barium (Ba)	µg/l	42	42	58.700	282.000	116.500	292.000	PL(LN)	2000	MCL
Beryllium (Be)	µg/l	42	0	<0.0390	<0.530	<0.270	0.270	PL(NP)	4	MCL
Cadmium (Cd)	µg/l	42	2	<0.0351	0.209	<0.055	0.209	PL(NP)	5	MCL
Chromium (Cr)	µg/l	42	8	0.423	2.630	<1.100	2.630	PL(NP)	100	MCL
Cobalt (Co)	µg/l	42	14	0.028	3.400	<0.170	3.400	PL(NP)	2.1	SS
Copper (Cu)	µg/l	42	5	<0.485	7.640	<1.600	7.640	PL(NP)	1300	MCL
Lead (Pb)	µg/l	42	6	<0.0967	3.250	<0.240	3.250	PL(NP)	15	MCL
Mercury (Hg)	µg/l	--	--	--	--	--	--	--	2	MCL
Nickel (Ni)	µg/l	42	8	0.424	20.900	<1.900	20.900	PL(NP)	100	SS
Selenium (Se)	µg/l	42	3	<0.630	<3.340	<0.960	1.410	PL(NP)	50	MCL
Silver (Ag)	µg/l	42	2	<0.033	1.240	0.395	1.240	PL(NP)	100	SS
Thallium (Tl)	µg/l	42	1	<0.0255	<0.57	<0.260	0.260	PL(NP)	2	MCL
Tin (Sn)	µg/l	--	--	--	--	--	--	--	4200	SS
Vanadium (V)	µg/l	42	10	0.394	<2.150	<1.100	1.770	PL(NP)	35	SS
Zinc (Zn)	µg/l	42	1	<2.000	18.600	<10.000	18.600	PL(NP)	2000	SS

Table 5
Background and GWPS Water Quality
Summary Tables
2024 Annual Water Quality Report
Winneshiek County Landfill
Permit No. 96-SDP-1-74P

Surface Water Background/GWPS (SW-1)

Constituent	Units	Samples	Detections	Min	Max	Median	Background Standard	Statistical Test	GWPS	Source
Inorganics										
Antimony (Sb)	µg/l	19	0	<0.119	<1.320	<0.510	0.510	PL(NP)	6	MCL
Arsenic (As)	µg/l	19	1	<0.232	2.54	<0.750	2.540	PL(NP)	10	MCL
Barium (Ba)	µg/l	19	19	110	201	123	201.000	PL(NP)	2000	MCL
Beryllium (Be)	µg/l	19	0	<0.0142	<0.530	<0.270	0.270	PL(NP)	4	MCL
Cadmium (Cd)	µg/l	20	3	<0.0351	0.228	0.058	0.228	PL(NP)	5	MCL
Chromium (Cr)	µg/l	19	0	<0.355	<1.370	<1.100	1.100	PL(NP)	100	MCL
Cobalt (Co)	µg/l	19	8	<0.0453	4.36	0.177	4.360	PL(NP)	2.1	SS
Copper (Cu)	µg/l	19	5	<0.497	11.500	<1.500	11.500	PL(NP)	1300	MCL
Lead (Pb)	µg/l	19	8	<0.0967	7.080	<0.250	7.080	PL(NP)	15	MCL
Mercury (Hg)	µg/l	--	--	--	--		--	--	2	MCL
Nickel (Ni)	µg/l	19	2	<0.581	7.850	<1.700	7.850	PL(NP)	100	SS
Selenium (Se)	µg/l	19	1	<0.630	<3.340	<0.96	0.960	PL(NP)	50	MCL
Silver (Ag)	µg/l	20	2	<0.0396	1.360	0.335	1.360	PL(NP)	100	SS
Thallium (Tl)	µg/l	20	2	<0.0255	4.670	<0.260	4.670	PL(NP)	2	MCL
Tin (Sn)	µg/l	--	--	--	--	--	--	--	4200	SS
Vanadium (V)	µg/l	19	7	0.495	7.590	<0.850	7.590	PL(NP)	35	SS
Zinc (Zn)	µg/l	19	1	<5.21	20.700	<10.000	20.700	PL(NP)	2000	SS

Notes:

Acronyms/Abbreviations:
MDL = Method Detection Limit
RL = Reporting Limit
GWPS = Groundwater Protection Standard
DQR = Double Quantification Rule
PL = Prediction Limit
P = Parametric
NP = Non-Parametric
N = Normal
LN = Lognormal
NS = No standard available
Est. = Estimated
MCL = EPA Maximum Contaminant Level
SS = DNR Statewide Standard for a protected groundwater source
Median = ND value replaced with median RL

Background period for inorganics is 2014 through 2023.

60711359/400/405/2024 AWQR/03-AWQR Tables

Table 6
Summary of Well/Detected Constituent Pairs with No Previous SSIs
2024 Annual Water Quality Report
Winneshiek County Landfill
Permit No. 96-SDP-1-74P

Well	Constituent	Units	GPS	2024 Results				Background Standard
				Spring Event	Summer Event	Fall Event	Winter Event	
Downgradient Water Table Wells								
MW-2R	Barium	µg/L	2000	91	--	129	--	292 LnPL
MW-3	Barium	µg/L	2000	147	--	205	--	292 LnPL
MW-4	Barium	µg/L	2000	485*	--	518**	--	292 LnPL
	Cadmium	µg/L	5	<0.1	--	0.254*	<0.1	0.209 NPL
	Cobalt	µg/L	3.4	1.85	--	2.04	--	3.4 NPL
	Nickel	µg/L	100	6.27	--	6.17	--	20.9 NPL
	Silver	µg/L	100	1.21	--	<0.5	--	1.24 NPL
MW-4B	Barium	µg/L	2000	184	--	225	--	292 LnPL
	Silver	µg/L	100	5.37*	<0.5	<0.5	--	1.24 NPL
MW-7A	Barium	µg/L	2000	190	--	425*	196	292 LnPL
	Nickel	µg/L	100	<2.1	--	8.81	--	20.9 NPL
MW-24A	Barium	µg/L	2000	152	--	117	--	292 LnPL
	Nickel	µg/L	100	8.53	--	2.95 J	--	20.9 NPL
MW-25A	Barium	µg/L	2000	178	--	229	--	292 LnPL
	Nickel	µg/L	100	<2.1	--	9.12	--	20.9 NPL
MW-29A	Arsenic	µg/L	10	4.54	--	6.75*	--	4.57 NPL
	Barium	µg/L	2000	151	--	161	--	292 LnPL
	Cobalt	µg/L	3.4	11.2*	--	16.5**	--	3.4 NPL
	Nickel	µg/L	100	63.9*	--	69.6**	--	20.9 NPL
	Silver	µg/L	100	1.1	--	<0.5	--	1.24 NPL
MW-31A	Barium	µg/L	2000	243	--	279	--	292 LnPL
	Cobalt	µg/L	3.4	3.48*	--	2.09	--	3.4 NPL
	Nickel	µg/L	100	30.3*	--	32.3**	--	20.9 NPL
MW-33A	Arsenic	µg/L	10	24.3*	51.8**	112**	--	4.57 NPL
	Barium	µg/L	2000	255	--	199	--	292 LnPL
	Cobalt	µg/L	3.4	4.51*	--	2.4	--	3.4 NPL
	Lead	µg/L	15	0.692	--	<0.26	--	3.25 NPL
	Acetone	µg/L	6300	37.7*	<3.1	<3.1	--	10 RL
	Benzene	µg/L	5	<0.22	--	2.45*	--	0.5 RL
	Chlorobenzene	µg/L	100	<0.4	--	2.37*	--	1 RL
MW-34A	Barium	µg/L	2000	70.1	--	67.5	--	292 LnPL
MW-38A	Barium	µg/L	2000	153	--	153	--	292 LnPL
MW-39A	Barium	µg/L	2000	152	--	156	--	292 LnPL
	Cobalt	µg/L	3.4	0.175 J	--	0.812	--	3.4 NPL
	Lead	µg/L	15	<0.26	--	0.589	--	3.25 NPL
	Zinc	µg/L	2000	68.3*	<9.7	<9.7	--	18.6 NPL
MW-40A	Barium	µg/L	2000	210	--	215	--	292 LnPL
	Cobalt	µg/L	3.4	1.69	--	2.14	--	3.4 NPL
	Nickel	µg/L	100	11.1	--	16.8	--	20.9 NPL
MW-41A	Barium	µg/L	2000	125	--	159	--	292 LnPL
MW-42A	Barium	µg/L	2000	128	--	177	--	292 LnPL
	Cobalt	µg/L	3.4	2.56	--	2.77	--	3.4 NPL
	Nickel	µg/L	100	16.6	--	27.6*	23.5**	20.9 NPL
MW-43A	Arsenic	µg/L	10	6.28*	--	6.32**	--	4.57 NPL
	Barium	µg/L	2000	163	--	214	--	292 LnPL
	Cobalt	µg/L	3.4	3.49*	--	3.83**	--	3.4 NPL
	Nickel	µg/L	100	17.3	--	25.9*	--	20.9 NPL
	Silver	µg/L	100	9.36*	<0.5	<0.5	--	1.24 NPL
MW-44A	Barium	µg/L	2000	137	--	159	--	292 LnPL
	Cadmium	µg/L	5	0.389*	--	0.181 J	--	0.209 NPL
	Nickel	µg/L	100	21.6*	--	34.2**	--	20.9 NPL
	Silver	µg/L	100	1.01	--	<0.5	--	1.24 NPL
MW-45A	Barium	µg/L	2000	103	118	128	--	292 LnPL
MW-46A	Barium	µg/L	2000	213	236	262	--	292 LnPL
	Nickel	µg/L	100	26.6*	26.6**	28.2**	--	20.9 NPL
	Silver	µg/L	100	9.06*	<0.5	<0.5	--	1.24 NPL
MW-101	Barium	µg/L	2000	177	--	221	--	292 LnPL
	Cobalt	µg/L	3.4	1.36	--	0.189 J	--	3.4 NPL
	Nickel	µg/L	100	6.92	--	8.19	--	20.9 NPL
Downgradient Bedrock Wells								
MW-11	Barium	µg/L	2000	14.3	--	dry	--	292 LnPL
	Nickel	µg/L	100	16.3	--	dry	--	20.9 NPL
	Zinc	µg/L	2000	60*	--	dry	--	18.6 NPL
MW-22	Barium	µg/L	2000	137	--	146	--	292 LnPL
	Nickel	µg/L	100	6.65	--	7.63	--	20.9 NPL
MW-35	Barium	µg/L	2000	280	--	186	--	292 LnPL
	Cobalt	µg/L	3.4	4.96*	--	1.98	--	3.4 NPL
	Nickel	µg/L	100	17.6	--	11.8	--	20.9 NPL
	Thallium	µg/L	2	1.14*	<0.57	<0.57	--	0.26 NPL
Upstream Surface Water								
SW-1	Barium	µg/L	2000	103	--	dry	--	201 NPL
Downstream Surface Water								
SW-2	Barium	µg/L	2000	104	--	110	--	201 NPL
	Lead	µg/L	15	0.583	--	<0.26	--	7.08 NPL
SW-5	Barium	µg/L	2000	70.1	--	87.2	--	201 NPL
	Cobalt	µg/L	4.36	0.679	--	<0.17	--	4.36 NPL
	Lead	µg/L	15	0.689	--	<0.26	--	7.08 NPL
Landfill Cell Groundwater Underdrains								
GU-1	Barium	µg/L	2000	228	--	241	--	NA
	Cobalt	µg/L	2.1	0.325 J	--	0.513	--	NA
	Nickel	µg/L	100	16.6	--	16.1	--	NA
GU-2	Insufficient underdrain water to sample							

Notes:

* Current result is above background, if confirmed by next sample an SSI will be identified

** Confirmed SSI

N = Assumed to be naturally occurring

NPL = Nonparametric prediction limit

PL = Parametric prediction limit

RL = Reporting limit

NA = Not applicable or not established

Gray Shading = groundwater concentration > GPS

Table 7
Summary of Ongoing and Newly Identified SSIs
2024 Annual Water Quality Report
Winneshiek County Landfill
Permit No. 96-SDP-1-74P

Well	Parameter	Units	Spring 2024 Event	Summer 2024 Event	Fall 2024 Event	Winter 2025 Event	Total Number Sample Events (n)	Percent Nondetects	LCL	IDNR Statewide Standard	Exceeds Standard ?	Background Sitewide Prediction Limit	Sample Dates		
													Initial Exceedance	Resample(s)	5th background sample
Shallow (Water Table)															
MW-4	Barium	µg/L	**485**	--	**518**	--	21	0	421	2000	No	292 LnPL	5/2/2014	11/4/2014; 5/6/2015; 9/18/2015	3/31/2016
MW-29A	Cobalt	µg/L	**11.2**	--	**16.5**	--	13	0	8.85	3.40	Yes	3.4 NPL	11/20/2019	2/26/2020; 6/30/2020; 8/26/2020	11/20/2020
	Nickel	µg/L	**63.9**	--	**69.6**	--	13	0	51.8	100	No	20.9 NPL	2/6/2020	6/30/2020; 8/26/2020; 11/3/2020	5/24/2021
MW-31A	Cobalt	µg/L	**3.48**	--	**2.09**	--	13	0	3.89	3.40	Yes	3.4 NPL	11/5/2019	2/7/2020; 6/18/2020; 8/26/2020	11/18/2020
	Nickel	µg/L	**30.3**	--	**32.3**	--	13	0	26.7	100	No	20.9 NPL	11/5/2019	2/7/2020; 6/18/2020; 8/26/2020	11/18/2020
MW-33A	Arsenic	µg/L	**24.3**	**51.8**	**112**	--	14	7.1	13.99	10	Yes	4.57 NPL	11/18/2019	2/12/2020; 6/30/2020; 8/25/2020	11/3/2020
MW-42A	Nickel	µg/L	**16.6**	--	**27.6**	**23.5**	8	0	10.29	100	No	20.9 NPL	8/31/2022	16/6/2022; 6/7/2023; 8/28/2023	11/2/2023
MW-43A	Arsenic	µg/L	**6.28**	--	**6.32**	--	7	0	6.3	10	No	4.57 NPL	9/1/2022	12/6/2022; 6/7/2023; 8/28/2023	11/2/2023
	Cobalt	µg/L	**3.49**	--	**3.83**	--	7	0	3.32	3.40	No	3.4 NPL	9/1/2022	12/6/2022; 6/7/2023; 8/28/2023	11/2/2023
	Nickel	µg/L	**17.3**	--	**25.9**	--	7	0	19.24	100	No	20.9 NPL	9/1/2022	12/6/2022; 6/7/2023; 8/28/2023	11/2/2023
MW-44A	Cadmium	µg/L	**0.389**	--	**0.181 J**	--	7	42.9	0.0602	5	No	0.209 NPL	8/31/2022	16/6/2022; 6/7/2023; 8/28/2023	11/2/2023
	Nickel	µg/L	**21.6**	--	**34.2**	--	7	0	20.86	100	No	20.9 NPL	8/31/2022	16/6/2022; 6/7/2023; 8/28/2023	11/2/2023
MW-46A	Nickel	µg/L	**26.6**	**26.6**	**28.2**	--	5	0	23.87	100	No	20.9 NPL	11/13/2023	1/23/2024; 6/11/2024; 9/5/2024	12/9/2024
Deep (Bedrock)															
MW-11	Zinc	µg/L	**60**	--	**dry**	--	7	0	64.85	2000	No	18.6 NPL	10/31/2018	12/17/2018; 6/3/2021; 8/3/2021	9/7/2022
MW-35	Cobalt	µg/L	**4.96**	--	**1.98**	--	13	0	5.53	3.40	Yes	3.4 NPL	11/15/2019	2/12/2020; 7/6/2020; 8/25/2020	11/5/2020

Notes:
NS = No statewide standard exists.
NPL = Nonparametric prediction limit; PL = parametric prediction limits
NA = Not applicable or not established.
Interwell NPL for organics equals reporting limits for the measurements shown
False positive rate for all comparisons to statewide standards is 1.0%.
Only 2024 data is presented here; refer to appendices for complete historical data used in the statistical tests.
60711359/400/405/2024 AWQR/Table 7.xlsx

Table 8
Summary of Ongoing and Newly Identified SSLs
2024 Annual Water Quality Report
Winneshiek County Landfill
Permit No. 96-SDP-1-74P

Well	Parameter	Units	Spring Event	Summer Event	Fall Event	Total Number Sample Events (n)	Percent Nondetects	UCL	Site-specific Standard	Exceeds Standard?	Background Sitewide Prediction Limit	Sample Dates	UCL < GWPS		
												Initial Exceedance	1st Year	2nd Year	3rd Year
Shallow (Water Table)															
MW-29A	Cobalt	µg/L	**11.2**	**--**	**16.5**	13	0.0	13.13	3.40	Yes	3.4 NPL	11/20/2019	--	--	--
MW-31A	Cobalt	µg/L	**3.48**	**--**	**2.09**	13	0.0	12.95	3.40	Yes	3.4 NPL	11/5/2019	--	--	--
MW-33A	Arsenic	µg/L	**24.3**	**51.8**	**112**	14	7.1	50.78	10	Yes	4.57 NPL	11/18/2019	--	--	--
MW-43A	Cobalt	µg/L	**3.49**	**--**	**3.83**	7	0.0	4.87	3.40	Yes	3.4 NPL	9/1/2022	--	--	--
Deep (Bedrock)															
MW-35	Cobalt	µg/L	**4.96**	**--**	**1.98**	13	0	7.68	3.40	Yes	3.4 NPL	11/15/2019	--	--	--

Notes:
NS = No statewide standard exists.
NPL = Nonparametric prediction limit; PL = parametric prediction limits
NA = Not applicable or not established.
Interwell NPL for organics equals reporting limits for the measurements shown
False positive rate for all comparisons to statewide standards is 1.0%.
Only 2024 data is presented here; refer to appendices for complete historical data used in the statistical tests.
60711359/400/405/2024 AWQR/03-AWQR Tables/Table 8.xlsx

Table 9
Summary of Field Quality Control Samples
2024 Annual Water Quality Report
Winneshiek County Sanitary Landfill
Permit No. 96-SDP-1-74P

Sampling Event	Sample Date	Eurofins Job ID	Trip Blank Lab Sample ID	Field Blank Lab Sample ID	Duplicate Lab Sample ID	Duplicate Sample Location
Spring (June-July 2024)	6/11/2024	310-283291	310-283291-3	--	--	--
	6/12/2024	310-283406	310-283406-3	--	--	--
	6/13/2024	310-283618	--	--	310-283618-3	MW-38A
	6/17/2024	310-283760	310-283760-4	--	--	--
	6/18/2024	310-283897	310-283897-4	--	--	--
	6/26/2024	310-284515	310-284515-2	310-284515-7	310-284515-6	MW-22
	7/1/2024	310-284799	310-284799-3	--	--	--
	7/3/2024	310-285077	310-285077-7	310-285077-6	310-285077-9	MW-34A
Resample (Aug-Sept 2024)	8/29/2024	310-289429	310-289429-6	--	--	--
	9/5/2024	310-289921	310-289921-5	310-289921-4	310-289921-3	MW-45A
Fall (Nov-Dec 2024)	11/19/2024	310-295649	310-295649-4	--	--	--
	11/21/2024	310-295856	310-295856-4	--	--	--
	12/3/2024	310-296412	310-296412-7	--	310-296412-1	MW-37A
	12/5/2024	310-296662	310-296662-2	--	--	--
	12/9/2024	310-296771	310-296771-7	310-296771-3	310-296771-2	MW-38A
	12/11/2024	310-297010	310-297010-4	--	--	--
	12/17/2024	310-297323	310-297323-9	310-297323-7	310-297323-8	MW-18
	12/18/2024	310-297452	310-297452-4	--	310-297452-2	SW-5
Resample Jan 2025	2/14/2025	310-300441	--	--	--	--

Notes:
NS - Quality Sample Not Required; Field Blanks collected 1 in 20 samples; Field Duplicates collected 1 in 10 samples

Table 10
Summary of Field Duplicate Detections
2024 Annual Water Quality Report
Winneshiek County Sanitary Landfill
Permit No. 96-SDP-1-74P

Sample Name	Lab Sample ID	Sample Date	Analyte	Result	DL	RL	Units	Qualifier	Sample Name	Lab Sample ID	Sample Date	Analyte	Result	DL	RL	Units	Qualifier	% Difference
MW-38A-FD	310-283618-3	6/13/2024	Barium	148	0.66	2	ug/L		MW-38A	310-283618-2	6/13/2024	Barium	153	0.66	2	ug/L		3.32
MW-38A-FD	310-283618-3	6/13/2024	Total Suspended Solids	2.5	1.39	1.88	mg/L		MW-38A	310-283618-2	6/13/2024	Total Suspended Solids	3.13	1.39	1.88	mg/L		22.38
MW-22-FD	310-284515-6	6/26/2024	Arsenic	0.647	0.53	2	ug/L	J	MW-22	310-284515-5	6/26/2024	Arsenic	0.801	0.53	2	ug/L	J	21.27
MW-22-FD	310-284515-6	6/26/2024	Barium	153	0.66	2	ug/L		MW-22	310-284515-5	6/26/2024	Barium	137	0.66	2	ug/L		11.03
MW-22-FD	310-284515-6	6/26/2024	Nickel	6.46	2.1	5	ug/L		MW-22	310-284515-5	6/26/2024	Nickel	6.65	2.1	5	ug/L		2.90
MW-22-FD	310-284515-6	6/26/2024	2-Butanone	2.26	2.1	10	ug/L	J	MW-22	310-284515-5	6/26/2024	2-Butanone	2.52	2.1	10	ug/L	J	10.88
MW-22-FD	310-284515-6	6/26/2024	Total Suspended Solids	<1.39	1.39	1.88	mg/L		MW-22	310-284515-5	6/26/2024	Total Suspended Solids	1.88	1.39	1.88	mg/L		29.97
Dup #3	310-285077-9	7/3/2024	Barium	70.2	0.66	2	ug/L		MW-34A	310-285077-8	7/3/2024	Barium	70.1	0.66	2	ug/L		0.14
Dup #3	310-285077-9	7/3/2024	Chromium	<1.2	1.2	5	ug/L		MW-34A	310-285077-8	7/3/2024	Chromium	1.31	1.2	5	ug/L	J	8.76
Dup #3	310-285077-9	7/3/2024	Total Suspended Solids	1.5	1.39	1.88	mg/L	J	MW-34A	310-285077-8	7/3/2024	Total Suspended Solids	<1.39	1.39	1.88	mg/L		7.61
Dup #1 20240905 MW-45A	310-289921-3	9/5/2024	Barium	120	0.66	2	ug/L		MW-45A	310-289921-1	9/5/2024	Barium	118	0.66	2	ug/L		1.68
Dup #1 20240905 MW-45A	310-289921-3	9/5/2024	Cadmium	0.213	0.1	0.2	ug/L		MW-45A	310-289921-1	9/5/2024	Cadmium	0.194	0.1	0.2	ug/L	J	9.34
Dup #1 20240905 MW-45A	310-289921-3	9/5/2024	Cobalt	0.389	0.17	0.5	ug/L	J	MW-45A	310-289921-1	9/5/2024	Cobalt	0.389	0.17	0.5	ug/L	J	0.00
Dup #1 20240905 MW-45A	310-289921-3	9/5/2024	Lead	<0.26	0.26	0.5	ug/L		MW-45A	310-289921-1	9/5/2024	Lead	0.265	0.26	0.5	ug/L	J	1.90
Dup #1 20240905 MW-45A	310-289921-3	9/5/2024	Total Suspended Solids	1.88	1.39	1.88	mg/L		MW-45A	310-289921-1	9/5/2024	Total Suspended Solids	2.63	1.39	1.88	mg/L		33.26
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Arsenic	99.3	0.53	2	ug/L		MW-37A	310-296412-2	12/3/2024	Arsenic	153	0.53	2	ug/L		42.57
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Barium	718	0.66	2	ug/L		MW-37A	310-296412-2	12/3/2024	Barium	849	0.66	2	ug/L		16.72
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Chromium	1.31	1.2	5	ug/L	J	MW-37A	310-296412-2	12/3/2024	Chromium	<1.2	1.2	5	ug/L		8.76
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Cobalt	11.8	0.17	0.5	ug/L		MW-37A	310-296412-2	12/3/2024	Cobalt	9.58	0.17	0.5	ug/L		20.77
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Lead	0.275	0.26	0.5	ug/L	J	MW-37A	310-296412-2	12/3/2024	Lead	<0.26	0.26	0.5	ug/L		5.61
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Nickel	5.75	2.1	5	ug/L		MW-37A	310-296412-2	12/3/2024	Nickel	4.39	2.1	5	ug/L	J	26.82
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	1,4-Dichlorobenzene	0.373	0.23	1	ug/L	J	MW-37A	310-296412-2	12/3/2024	1,4-Dichlorobenzene	0.321	0.23	1	ug/L	J	14.99
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Benzene	6.08	0.22	0.5	ug/L		MW-37A	310-296412-2	12/3/2024	Benzene	6.01	0.22	0.5	ug/L		1.16
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Chlorobenzene	0.678	0.4	1	ug/L	J	MW-37A	310-296412-2	12/3/2024	Chlorobenzene	0.71	0.4	1	ug/L	J	4.61
Dup #1 20241203 MW-37A-FD	310-296412-1	12/3/2024	Total Suspended Solids	18.5	5.55	7.5	mg/L		MW-37A	310-296412-2	12/3/2024	Total Suspended Solids	18	5.55	7.5	mg/L		2.74
Dup #2 20241209 MW-38A-FD	310-296771-2	12/9/2024	Barium	153	0.66	2	ug/L		MW-38A	310-296771-1	12/9/2024	Barium	153	0.66	2	ug/L		0.00
Dup #2 20241209 MW-38A-FD	310-296771-2	12/9/2024	Cobalt	0.186	0.17	0.5	ug/L	J	MW-38A	310-296771-1	12/9/2024	Cobalt	<0.17	0.17	0.5	ug/L		8.99
Dup #2 20241209 MW-38A-FD	310-296771-2	12/9/2024	Total Suspended Solids	3.25	1.39	1.88	mg/L		MW-38A	310-296771-1	12/9/2024	Total Suspended Solids	3	1.39	1.88	mg/L		8.00
Dup #3 20241217 MW-18	310-297323-8	12/17/2024	Barium	74.4	0.66	2	ug/L		MW-18	310-297323-1	12/17/2024	Barium	76.2	0.66	2	ug/L		2.39
Dup #3 20241217 MW-18	310-297323-8	12/17/2024	Cobalt	0.219	0.17	0.5	ug/L	J	MW-18	310-297323-1	12/17/2024	Cobalt	<0.17	0.17	0.5	ug/L		25.19
Dup #3 20241217 MW-18	310-297323-8	12/17/2024	Total Suspended Solids	4.33	3.7	5	mg/L	J	MW-18	310-297323-1	12/17/2024	Total Suspended Solids	5.33	3.7	5	mg/L		20.70
Dup #4 20241218 SW-5	310-297452-2	12/18/2024	Barium	87	0.66	2	ug/L		SW-5	310-297452-3	12/18/2024	Barium	87.2	0.66	2	ug/L		0.23

Notes:
J - estimated result
B - detected in lab blank

APPENDICES

Appendix A	Statistical Reports
Appendix B-1	Historical Data
Appendix B-2	2024 Spring Laboratory Reports
Appendix B-3	2024 Fall Laboratory Reports
Appendix B-4	2024 August Resample Reports
Appendix B-5	2025 February Resample Reports – Not Completed
Appendix C	Groundwater Sampling Field Sheets
Appendix D	Leachate Collection System Performance Evaluation Report
Appendix E	Methane Monitoring Program Report

Appendix A – Statistical Reports

2024 WATER TABLE

Table 9

Analytical Data Summary for MW-1

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	7/24/2009	10/5/2009	2/25/2010
Antimony	ug/L	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000
Arsenic	ug/L	<1.000	1.810	<1.000	1.950	<1.000	6.880	<1.000	<1.000	<1.000
Barium	ug/L	170.0	185.0	137.0	165.0	317.0	279.0	163.0	290.0	153.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L							<10.00		
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	5.0400	8.1000	<4.0000	5.3800	<4.0000
Mercury	ug/L							<.2000		
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L									
Turbidity, field	NTU									
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	51.200	<20.000	22.600	<20.000	42.900	51.200	36.600	50.800	<20.000

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

Table 9

Analytical Data Summary for MW-1

Constituents	4/21/2010	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014
Antimony	<6.0000	<6.0000	<6.0000	<2.7300	<1.4500	<.6000	.1360	.0993	<.4000
Arsenic	<1.000	<1.000	<1.000	<.600	<.216	3.950	2.310	1.450	.354
Barium	144.0	195.0	128.0	273.0	123.0	448.0	282.0	186.0	124.0
Beryllium	<1.0000	1.1200	<1.0000	.2760	<.0790	<.0890	<.0696	<.0696	<.0800
Cadmium	<.5000	<.5000	<.5000	<.1240	<.2290	.4000	.1200	<.1060	<.1000
Chromium	<20.000	<20.000	<20.000	2.800	<1.810	2.550	.643	<.418	.816
Cobalt	<20.0000	<20.0000	<20.0000	5.1900	<1.5500	4.7000	.8570	.7450	.2310
Copper	<20.000	<20.000	<20.000	19.000	3.940	18.200	7.010	2.250	1.040
Cyanide	<10.00								<3.10
Lead	<4.0000	<4.0000	<4.0000	3.4400	1.8400	4.6000	<.2070	.2120	<.1800
Mercury	<.2000								<.0710
Nickel	<50.000	<50.000	<50.000	19.400	4.800	46.000	21.000	12.900	4.010
Selenium	<5.000	<5.000	<5.000	<1.690	<.700	<1.480	4.980	4.170	1.150
Silver	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<.1350	<.0789	<.0789	<.0330
Thallium	<2.0000	<2.0000	<2.0000	<.8400	<.2880	<.0435	.0796	<.0267	<.0500
Total suspended solids									
Turbidity, field									
Vanadium	<50.000	<50.000	<50.000	3.590	2.740	6.350	.904	<.833	.676
Zinc	24.000	44.900	<20.000	13.900	<9.110	18.000	1.710	<.625	<2.000

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

Table 9

Analytical Data Summary for MW-1

Constituents	10/31/2014 11/10/2014	12/19/2014 12/22/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	12/9/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	<.1610		<.1610	<.1610		<.2370	<.2370	<.1850	<.1850
Arsenic	<.945		<.945	<.945		<.672	<.672	<.505	.662
Barium	190.0		104.0	166.0		93.8	114.0	95.1	130.0
Beryllium	<.0390		<.0390	<.0390		<.2210	<.2210	<.1250	<.1250
Cadmium	<.1120		<.1120	<.1120		<.0351	<.0351	<.0441	<.0441
Chromium	<1.240		<1.240	<1.240		.852	.423	<.729 .870J	<.729
Cobalt	.1680		<.0528	.1820		.0520	.0470	<.0453 .0650J	.0830
Copper	.906		<.485	.526		<1.220	<1.220	<2.190	<2.190
Cyanide				<3.04			<3.52		
Lead	<.0967		<.0967	.3030		<.2110	<.2110	<.3240	<.3240
Mercury				<.0926			<.1420		
Nickel	6.200		1.490	5.870		<1.530	<1.530	<.929 .971J	1.530
Selenium	<3.340		<3.340	<3.340		1.410	<.630	<.928	<.928
Silver	<.0420		<.0420	.1170		<.1530	<.1530	<.1400 .1420J	<.1400
Thallium	<.0325		<.0325	.0380		<.0255	<.0255	<.0644	<.0644
Total suspended solids	2.170		<1.200	<3.200	3.380	<.581	.875	<.581 1.750J	6.870
Turbidity, field	2.8350	1.9810	.3323	3.4630	7.8000	.0104	.1540	6.9930	1.6980
Vanadium	.510		<.449	.542		.466	.394	<.840	<.840
Zinc	<6.950		<6.950	<6.950		<5.210	<5.210	<11.500	<11.500

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

Table 9

Analytical Data Summary for MW-1

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021
Antimony	<.4200	<.4200	<1.3200	<.5300	<.5100	<.5100	<1.1000
Arsenic	<.570	<.570	<.232 .604J	<.750	<.880	<.880	<.750
Barium	119.0	142.0	93.8	124.0	94.9	184.0	146.0
Beryllium	<.1900	<.1900	<.5300	<.2700	<.2700	<.2700	<.2700
Cadmium	<.0600	<.0600	<.1670	<.0390	<.0490	<.0490	<.0510
Chromium	<.760	<.760 1.150J	<1.140 2.080J	<.980	<1.100	<1.100	<1.100
Cobalt	<.0610	<.0610 .0960J	<.4020	<.0910	<.0910	<.0910 .1050J	<.0910
Copper	<3.800 *	<1.600	<.497 .991J	<2.000	<1.500	<1.500	<1.400
Cyanide							
Lead	<.2500	<.2500 .4590J	<.1860	<.2700	<.1100	<.1100	<.2100
Mercury							
Nickel	<1.000 1.320J	<1.000 1.840J	<.625 1.880J	<1.700	<1.900	<1.900 3.250J	<1.900
Selenium	<.900	<.900	<.982	<1.000	<1.000	<1.000	<.960
Silver	<.3000	<.3000	<.1150	<.3700	<.3700	<.3700	<.4200
Thallium	<.1700	<.1700	<.5700	<.2700	<.2600	<.2600	<.2600
Total suspended solids	<.638	2.880	<.638	<.638	<.638 1.250J	<1.700	<.638 1.500J
Turbidity, field	1.7410	6.9230		.4400	.6400	1.0100	1.3700
Vanadium	<.520	<.520 .973J	<2.150	<.820 1.040J	<.850	<.850	<1.100
Zinc	<10.000	<10.000	<6.920	<10.000	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-1

Constituents	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.1000	<.6900	<.6900	<1.0000	<1.0000		<1.0000	<1.0000
Arsenic	<.750	<.750	<.750	<.530	<.530 1.030J		<.530	<.530
Barium	111.0	112.0	112.0	106.0	282.0		94.7	201.0
Beryllium	<.2700	<.2700	<.2700	<.3300	<.3300		<.3300	<.3300
Cadmium	<.0510	<.0550	<.0550	<.1000	.2090		<.1000	<.1000
Chromium	<1.100	<1.100	<1.100	<1.100	<1.100		<1.200	<1.200
Cobalt	<.1900	<.1900 .3170J	<.1900	<.1700	<.1700 .8440J		<.1700	<.1700 .2250J
Copper	<1.400	<1.800	<1.800	<1.800	5.270		<1.800	<1.800
Cyanide								
Lead	<.2100	<.2400	<.2400	<.2400	.9940		<.2600	<.2600
Mercury								
Nickel	<1.900	<1.900	<1.900	<1.900	20.900		<2.100	9.010
Selenium	<.960	<.960	<.960	<1.400	<1.400		<1.400	<1.400
Silver	<.4200	<.4900	<.4900	<.5000	<.5000		<.5000	<.5000
Thallium	<.2600	<.2600	<.2600	<.2600	<.2600		<.5700	<.5700
Total suspended solids	<.638 .750J	<.638	<.638	<.638	276.000		<1.390	3.860
Turbidity, field	3.4400	10.9700	.0000	.5700	146.7200	.5800	1.7300	10.6000
Vanadium	<1.100	<1.100	<1.100	<1.100	<1.100 1.530J		<1.100	<1.100
Zinc	<10.000	<10.000	<10.000	<6.400	<6.400		<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-101

Constituents	Units	6/4/2019 6/13/2019	8/13/2019 8/15/2019	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	11/3/2020 11/23/2020	2/3/2021 2/24/2021
Antimony	ug/L	<1.32	<1.32	<.53	<.58	<.51	<.51	
Arsenic	ug/L	<.232 .735J	<.232 .506J	<.750	<.880	<.880	<.880	
Barium	ug/L	196	213	207	194	198	205	191
Beryllium	ug/L	<.53	<.53	<.27	<.27	<.27	<.27	
Cadmium	ug/L	<.167	<.167	<.039 .045J	<.039	<.049	<.049	
Chromium	ug/L	<1.14	<1.14	<.98	<1.10	<1.10	<1.10	
Cobalt	ug/L	<.402	<.402 .521J	<.091 .480J	<.091 .434J	<.091	<.091 .113J	
Copper	ug/L	<.497 1.670J	<.497 .898J	<2.000	<3.200	<1.500	<1.500	
Lead	ug/L	<.186 .261J	<.186	<.270	<.270	<.110	<.110	
Nickel	ug/L	7.24	8.82	9.54	8.93	<1.90 4.61J	7.15	10.10
Selenium	ug/L	<.982	<.982	<1.000	<1.000	<1.000	<1.000	
Silver	ug/L	<.115	<.115	<.370	<.370	<.370	<.370	
Thallium	ug/L	<.57	<.57	<.27	<.26	<.26	<.26	
Total suspended solids	mg/L	<.638 1.630J	<.638 1.250J	<.638 1.630J	3.250	<.638 1.630J	2.630	1.880
Turbidity, field	NTU	.75	3.94	2.85	1.38	1.98	1.27	1.63
Vanadium	ug/L	<2.15 2.61J	<2.15	<.82	<.82	<.85	<.85	
Zinc	ug/L	<6.92 8.28J	<6.92 7.30J	<10.00	<10.00	<10.00	<10.00	

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

Table 9

Analytical Data Summary for MW-101

Constituents	5/17/2021 6/8/2021	9/21/2021 9/29/2021	8/16/2022 9/13/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.10	<1.10	<.69	<1.00	<1.00	<1.00
Arsenic	<.750	<.750	<.750	<.530	<.530 .541J	<.530
Barium	183	212	214	175	177	221
Beryllium	<.27	<.27	<.27	<.33	<.33	<.33
Cadmium	<.051	<.051	<.055	<.100	<.100	<.100
Chromium	<1.10	<1.10	<1.10	<1.10	<1.20	<1.20
Cobalt	<.091 .399J	<.190 .241J	<.190	<.170 .232J	1.360	<.170 .189J
Copper	<1.400	<1.400	<1.800	<1.800	<1.800 3.570J	<1.800
Lead	<.210	<.210	<.240	<.240	<.260	<.260
Nickel	10.40	8.31	<1.90 3.73J	9.62	6.92	8.19
Selenium	<.960	<.960	<.960	<1.400	<1.400	<1.400
Silver	<.420	<.420	<.490	<.500	<.500	<.500
Thallium	<.26	<.26	<.26	<.26	<.57	<.57
Total suspended solids	27.600	3.130	2.000	<1.700	<1.390 1.750J	<1.530
Turbidity, field	480.28	6.14	5.49	1.73	4.32	3.35
Vanadium	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Zinc	<10.00	<10.00	<10.00	<6.40	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-24A

Constituents	Units	2/25/2011	4/13/2011	6/22/2011	12/7/2011	2/21/2012	4/24/2012	6/21/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013
Antimony	ug/L	<6.000	<6.000	<6.000	<2.730	.200	4.410	<.120	<.120	.356
Arsenic	ug/L	<1.000	<2.000	<2.000	.679	<.730	<.216	<.730	<.730	1.670
Barium	ug/L	177.0	274.0	139.0	196.0	210.0	156.0	192.0	180.0	164.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<.0510	.0900	<.0790	.0200	.0500	<.0696
Cadmium	ug/L	<.5000	<.5000	<.5000	.1470	.0900	<.2290	<.0640	<.0640	.2240
Chromium	ug/L	<20.000	<20.000	<20.000	3.150	<.390	2.690	<.390	2.080	1.300
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	1.7900	3.6000	<1.5500	1.0700	1.0300	5.5600
Copper	ug/L	<20.00	26.60	<20.00	13.70	5.19	2.55	1.45	2.88	3.34
Cyanide	ug/L									
Lead	ug/L	<4.0000	4.1700	<4.0000	2.1900	2.7000	2.2100	.6300	.7300	.6310
Mercury	ug/L									
Nickel	ug/L	<50.00	<50.00	<50.00	6.15	12.60	6.60	5.89	6.70	16.50
Selenium	ug/L	<5.000	<5.000	<5.000	<1.690	<.297	<.700	<.297	<.297	<1.460
Silver	ug/L	<20.0000	<20.0000	<20.0000	<1.7000	<.0270	<1.7000	<.0270	<.0270	<.0789
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<.8400	<.0087	<.2880	<.0087	<.0087	.0402
Total suspended solids	mg/L									
Turbidity, field	NTU									
Vanadium	ug/L	<50.000	<50.000	<50.000	<2.100	3.090	2.900	1.300	1.340	1.520
Zinc	ug/L	43.500	28.100	<20.000	<9.110	22.900	15.300	1.840	7.620	<.625

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

Table 9

Analytical Data Summary for MW-24A

Constituents	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	3/24/2016 4/13/2016	5/5/2017 5/25/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018
Antimony	.243	.602	<.161	<.161	<.237	<.185	<.420	<.420
Arsenic	.836	<.330	<.945	<.945	<.672	<.505	<.570	<.570
Barium	169.0	135.0	187.0	168.0	124.0	142.0	130.0	145.0
Beryllium	<.0696	<.0800	<.0390	<.0390	<.2210	<.1250	<.1900	<.1900
Cadmium	.3710	<.1000	.3720	.1880	.0840	<.0441 .0850J	<.0600 .0770J	<.0600 .1440J
Chromium	.824	1.170	<1.240	<1.240	1.420	<.729 1.910J	<.760 1.350J	<.760 1.080J
Cobalt	3.0000	1.1200	.5490	.3510	.3060	<.0453 .3030J	<.0610 .3390J	<.0610 .4400J
Copper	4.18	2.74	1.25	1.25	2.27	<2.19	5.26	<1.60 1.68J
Cyanide								
Lead	.6710	.5520	<.0967	.1030	<.2110	<.3240	<.2500	<.2500
Mercury								
Nickel	27.80	15.70	17.50	14.60	8.78	8.80	9.67	10.60
Selenium	<1.460	<.700	<3.340	<3.340	.653	<.928	<.900 1.170J	<.900
Silver	<.0789	<.0330	<.0420	<.0420	<.1530	<.1400	<.3000 .3400J	<.3000
Thallium	<.0267	<.0500	<.0325	<.0325	<.0255	<.0644	<.1700	<.1700
Total suspended solids			<1.410	<1.200	<.581	<.581	<.887	<.638 1.630J
Turbidity, field			2.4670	.0270	.0912	1.3300	.3474	1.3390
Vanadium	1.180	1.580	.923	.759	.674	<.840	<.520 .848J	<.520 1.300J
Zinc	7.480	<2.000	7.530	<6.950	<5.210	<11.500	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-24A

Constituents	6/4/2019 6/13/2019	8/13/2019 8/15/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	8/16/2022 9/13/2022
Antimony	<1.320		<.530	<.510	1.990	<1.100	<.690
Arsenic	<.232 .498J		<.750	<.880	<.880	<.750	<.750
Barium	94.1		122.0	97.8	108.0	105.0	109.0
Beryllium	<.5300		<.2700	<.2700	<.2700	<.2700	<.2700
Cadmium	<.1670		.1280	<.0490 .0530J	.3330	<.0510	<.0550 .0800J
Chromium	<1.140 2.530J		<.980 1.240J	<1.100	<1.100	<1.100	<1.100
Cobalt	<.4020		<.0910 .3830J	<.0910 .3200J	.5700	<.0910 .3630J	<.1900 .3610J
Copper	2.12		<2.00	<1.50 1.79J	<1.50 1.80J	<1.40 1.78J	<1.80
Cyanide				<5.0			
Lead	<.1860		<.2700	<.1100	<.1100 .2950J	<.2100	<.2400
Mercury				<.100000			
Nickel	8.67	6.78	7.39	5.83	5.28	5.49	6.42
Selenium	<.982		<1.000 1.030J	<1.000	<1.000 1.390J	<.960	<.960
Silver	<.1150		<.3700	<.3700	<.3700	<.4200	<.4900
Thallium	<.5700		<.2700	<.2600	<.2600 .3520J	<.2600	<.2600
Total suspended solids	<.638	<.638	1.880	<.638	<.638 1.130J	<.638 .875J	<.638
Turbidity, field	5.0100	15.6100	.4500	1.0600	.0300	2.3100	.4900
Vanadium	<2.150		<.820 1.370J	<.850	<.850 1.230J	<1.100	<1.100
Zinc	<6.920		65.400	<10.000	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-24A

Constituents	6/6/2023 6/27/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.000	<1.000	<1.000
Arsenic	<.530	<.530	<.530
Barium	132.0	152.0	117.0
Beryllium	<.3300	<.3300	<.3300
Cadmium	<.1000	<.1000	<.1000
Chromium	<1.100 1.180J	<1.200	<1.200 1.910J
Cobalt	<.1700 .4110J	<.1700 .4070J	<.1700 .2040J
Copper	<1.80 2.82J	<1.80	<1.80
Cyanide		<3.5	
Lead	<.2400	<.2600	<.2600
Mercury		<.110000	
Nickel	7.85	8.53	<2.10 2.95J
Selenium	<1.400	<1.400	<1.400
Silver	<.5000	<.5000	<.5000
Thallium	<.2600	<.5700	<.5700
Total suspended solids	<.638 1.130J	<1.390	<1.480
Turbidity, field	1.7000	4.6900	1.3400
Vanadium	<1.100	<1.100	<1.100
Zinc	<6.400	<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-25A

Constituents	Units	12/27/2010	2/25/2011	4/13/2011	6/22/2011	8/25/2011	10/18/2011	12/7/2011	4/24/2012	10/24/2012 10/26/2012
Antimony	ug/L	<6.0000	<12.0000	<6.0000	<6.0000	<6.0000	<2.7300	<2.7300	3.9000	.3900
Arsenic	ug/L	<1.000	<1.000	<2.000	<2.000	<2.000	<.600	<.600	.877	.980
Barium	ug/L	250	181	235	206	208	217	218	246	246
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	.0540	<.0510	.2900	.1300
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.1240	.1300	<.2290	.3500
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<1.810	3.880	2.600	1.680
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<1.5500	3.3600	6.4900	3.1500
Copper	ug/L	<20.000	<20.000	24.900	<20.000	20.400	13.400	15.000	6.560	5.850
Lead	ug/L	4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<1.0000	1.6100	4.1800	2.6900
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	3.210	7.370	8.700	13.100
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<1.690	<1.690	<.700	<.297
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<1.7000	<.0270
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<.8400	<.8400	<.2880	<.0087
Total suspended solids	mg/L									
Turbidity, field	NTU									
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<2.100	<2.100	7.510	3.050
Zinc	ug/L	106.000	51.100	<20.000	<20.000	<20.000	<9.110	11.100	<9.110	14.900

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

Table 9

Analytical Data Summary for MW-25A

Constituents	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	.3740	.0911	.4150	<.1610	<.1610	<.2370	<.2370	<.1850	<.1850
Arsenic	1.170	.662	<.330	<.945	<.945	<.672	<.672	<.505	<.505
Barium	149	218	126	212	160	150	208	176	205
Beryllium	<.0696	<.0696	<.0800	<.0390	<.0390	<.2210	<.2210	<.1250	<.1250
Cadmium	.1750	.1890	<.1000	<.1120	<.1120	<.0351	<.0351	<.0441 .0540J	<.0441
Chromium	2.060	.990	1.380	<1.240	<1.240	1.820	<.355	<.729	<.729
Cobalt	1.3800	1.0200	<.0540	<.0528	.0730	.0940	.0750	<.0453 .0600J	.0580
Copper	5.520	1.900	1.660	<.485	<.485	<1.220	<1.220	<2.190	<2.190
Lead	.3770	<.2070	.3950	<.0967	.2520	<.2110	<.2110	<.3240	<.3240
Nickel	7.100	4.860	1.800	1.400	.972	<1.530	<1.530	<.929 2.060J	1.720
Selenium	2.960	<1.460	1.360	<3.340	<3.340	1.970	.696	<.928	1.400
Silver	<.0789	<.0789	<.0330	<.0420	<.0420	<.1530	<.1530	<.1400	.1460
Thallium	.0629	<.0267	<.0500	<.0325	<.0325	<.0255	<.0255	<.0644	<.0644
Total suspended solids				<1.410	<1.200	<.581	1.630	<.581 .625J	1.130
Turbidity, field				.3307	2.5710	.1175	.0964	2.0550	1.0350
Vanadium	1.800	.972	1.390	.710	.622	.750	.599	<.840	<.840
Zinc	4.110	<.625	<2.000	<6.950	<6.950	<5.210	<5.210	<11.500	<11.500

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

Table 9

Analytical Data Summary for MW-25A

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	11/3/2020 11/23/2020
Antimony	<.4200	<.4200	<1.3200	<.5300		<.5100	<.5100
Arsenic	<.570	<.570	<.232 .796J	<.750		<.880	<.880
Barium	163	190	153	188	174	147	197
Beryllium	<.1900	<.1900	<.5300	<.2700		<.2700	<.2700
Cadmium	<.0600	<.0600 .0940J	<.1670	<.0390		<.0490	<.0490
Chromium	<.760 1.590J	<.760 1.420J	<1.140 1.840J	<.980 1.810J		<1.100 1.520J	<1.100
Cobalt	<.0610 .0740J	<.0610 .3200J	<.4020	<.0910		<.0910	<.0910
Copper	<3.800 *	<1.600	<.497 1.310J	<2.000		<1.500	<1.500
Lead	<.2500	<.2500	<.1860 .3570J	<.2700		<.1100	<.1100
Nickel	<1.000 1.170J	<1.000 3.800J	<.625 1.130J	<1.700		<1.900	<1.900
Selenium	<.900 1.190J	<.900 .994J	<.982 1.070J	<1.000 1.360J		<1.000 1.300J	<1.000 1.080J
Silver	<.3000	<.3000	<.1150	<.3700		<.3700	<.3700
Thallium	<.1700	<.1700	<.5700	<.2700		<.2600	<.2600
Total suspended solids	<.638	3.130	4.130	<.638 .875J	<.638	<.638 .750J	<.638
Turbidity, field	1.5560	3.1780	2.7300	.9400	.0000	.7600	.6500
Vanadium	<.520 .763J	<.520 1.090J	<2.150 3.000J	<.820 1.320J		<.850	<.850 .948J
Zinc	<10.000	<10.000	<6.920 14.700J	85.200	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-25A

Constituents	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024
Antimony	<1.1000	<1.1000	<.6900	<.6900	<1.0000	<1.0000	
Arsenic	<.750	<.750	<.750	<.750	<.530	<.530	
Barium	199	192	154	159	189	219	
Beryllium	<.2700	<.2700	<.2700	<.2700	<.3300	<.3300	
Cadmium	<.0510	<.0510	<.0550	<.0550 .0640J	<.1000	<.1000	
Chromium	<1.100	<1.100 1.580J	<1.100 1.650J	<1.100 1.360J	<1.100	<1.100	
Cobalt	<.0910 .1350J	<.1900	<.1900	<.1900	<.1700 .1760J	<.1700 .3910J	
Copper	<1.400	<1.400	<1.800	<1.800	<1.800	<1.800	
Lead	<.2100	<.2100	<.2400	<.2400	<.2400	<.2400	
Nickel	<1.900	<1.900	<1.900	<1.900 2.260J	<1.900	17.000	<1.900 3.930J
Selenium	<.960 2.690J	<.960 1.960J	<.960 1.760J	<.960	<1.400	<1.400	
Silver	<.4200	<.4200	<.4900	<.4900	<.5000	<.5000	
Thallium	<.2600	<.2600	<.2600	<.2600	<.2600	<.2600	
Total suspended solids	<.638	<.638	<.638 1.380J	<.638 1.130J	<.638	<.638	<.638
Turbidity, field	.8900	3.9700	2.2400	.9400	.9500	.6900	.4300
Vanadium	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100	
Zinc	<10.000	<10.000	<10.000	<10.000	<6.400	<6.400	

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

Table 9

Analytical Data Summary for MW-25A

Constituents	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.0000	<1.0000
Arsenic	<.530	<.530
Barium	178	229
Beryllium	<.3300	<.3300
Cadmium	<.1000	<.1000
Chromium	<1.200 2.640J	<1.200
Cobalt	<.1700	<.1700 .2760J
Copper	<1.800	<1.800
Lead	<.2600	<.2600
Nickel	<2.100	9.120
Selenium	<1.400 2.020J	<1.400
Silver	<.5000	<.5000
Thallium	<.5700	<.5700
Total suspended solids	<1.390	<1.480
Turbidity, field	2.8200	3.3800
Vanadium	<1.100	<1.100
Zinc	<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-29A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022
Antimony	ug/L	<.53	<.58	<.51	<.51	<.51	<1.10	<1.10	<.69
Arsenic	ug/L	<.75 1.74J	2.28	3.40	6.84	4.59	4.09	6.09	5.57
Barium	ug/L	272	217	168	180	138	150	173	182
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	.131	.104	<.049	.180	<.049	<.051	<.051 .059J	<.055 .066J
Chromium	ug/L	<.98	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10 1.67J
Cobalt	ug/L	8.43	9.64	9.98	10.70	10.10	11.90	7.90	7.38
Copper	ug/L	<2.00	<3.20	<1.50	<1.50	<1.50	<1.40	<1.40	<1.80
Cyanide	ug/L					<5.0	<5.3		<4.3
Lead	ug/L	<.27	<.27	<.11	<.11	<.11	<.21	<.21	<.24
Mercury	ug/L					<.100000	<.150000		<.110000
Nickel	ug/L	49.7	49.2	51.1	57.0	47.2	55.5	51.0	63.6
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00	<.96	<.96	<.96
Silver	ug/L	<.37	<.37	<.37	<.37	<.37	<.42	<.42	<.49
Thallium	ug/L	<.27	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	<1.28 3.25J	5.00	6.25	10.40	4.80	5.38	7.50	<1.70 4.33J
Turbidity, field	NTU	1.33	4.47	22.71	63.02	45.29	56.29	43.58	48.96
Vanadium	ug/L	<.82	<.82	<.85	<.85	<.85	<1.10	<1.10	<1.10
Zinc	ug/L	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	42.10

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

Table 9

Analytical Data Summary for MW-29A

Constituents	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony		<2.76		<1.00	<1.00	<1.00	<1.00
Arsenic		10.20		4.37	6.49	4.54	6.75
Barium		191		187	163	151	161
Beryllium		<1.08		<.33	<.33	<.33	<.33
Cadmium		<.055 .092J		<.100 .120J	<.100	<.100	<.100
Chromium		<1.10		<1.10	<1.10	<1.20	<1.20
Cobalt		10.10		12.50	18.70	11.20	16.50
Copper		<1.80		<1.80	<1.80	<1.80 1.82J	<1.80
Cyanide							
Lead		<.24		<.24	<.24	<.26	<.26
Mercury							
Nickel		69.1		76.0	87.0	63.9	69.6
Selenium		<.96		<1.40	<1.40	<1.40	<1.40
Silver		<1.96		<.50	<.50	1.10	<.50
Thallium		<.26		<.26	<.26	<.57	<.57
Total suspended solids		14.30		3.87	4.00	7.00	13.70
Turbidity, field	74.41	5.11	21.07	59.78	15.27	55.13	32.22
Vanadium		<1.10		<1.10	<1.10	<1.10	<1.10
Zinc		<10.00		<6.40 7.90J	<6.40 8.31J	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-2R

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	4/21/2010	10/14/2010
Antimony	ug/L	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000
Arsenic	ug/L	<1.000	<1.000	<1.000	<1.000	1.730	<1.000	<1.000	<2.000	<2.000
Barium	ug/L	137.0	118.0	127.0	101.0	197.0	108.0	114.0	108.0	113.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	26.900	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	6.2000	<4.0000	<4.0000	<4.0000	<4.0000
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L									
Turbidity, field	NTU									
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	52.300	<20.000	27.200	<20.000	52.700	28.700	34.600	<20.000	<20.000

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

Table 9

Analytical Data Summary for MW-2R

Constituents	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	2/20/2013	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014
Antimony	<6.000	<2.730	<1.450	<.600		<.541	.422	<.400	<.161
Arsenic	<1.000	<.600	<.216	3.950		<5.440	.571	<.330	<.945
Barium	93.2	101.0	136.0	133.0		132.0	128.0	115.0	127.0
Beryllium	<1.0000	<.0510	<.0790	<.0890		<.6960	<.0696	<.0800	<.0390
Cadmium	<.5000	.2400	<.2290	<.3200		<1.0600	.1160	<.1000	<.1120
Chromium	<20.000	<1.810	<1.810	<1.950		<4.180	.448	<.500	<1.240
Cobalt	<20.0000	<1.5500	<1.5500	.5000		<.5540	1.0300	.2380	.1620
Copper	<20.000	5.580	4.100	3.750		2.390	3.360	1.020	.669
Lead	<4.0000	<1.0000	2.6800	<.1450		<2.0700	.3460	<.1800	<.0967
Nickel	<50.000	3.210	6.820	11.900		4.570	5.910	2.420	2.040
Selenium	<5.000	<1.690	<.700	5.250	<1.830	<14.600	<1.460	<.700	<3.340
Silver	<20.0000	<1.7000	<1.7000	<.1350		<.7890	<.0789	<.0330	<.0420
Thallium	<2.0000	<.8400	<.2880	<.0435		<.2670	<.0267	<.0500	<.0325
Total suspended solids									1.500
Turbidity, field									.8694
Vanadium	<50.000	<2.100	2.250	<4.700		<8.330	<.833	<.500	<.449
Zinc	<20.000	<9.110	17.100	<4.600		<3.130	<.625	<2.000	<6.950

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

Table 9

Analytical Data Summary for MW-2R

Constituents	5/1/2015 5/12/2015	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018
Antimony	<.161	<.161	<.237	<.237	<.185	<.185	<.420	<.420
Arsenic	<.945	<.945	<.672	<.672	<.505	.533	<.570	<.570
Barium	107.0	123.0	103.0	128.0	119.0	121.0	103.0	97.5
Beryllium	.0390	<.0390	<.2210	<.2210	<.1250	<.1250	<.1900	<.1900
Cadmium	<.1120	<.1120	<.0351	<.0351	<.0441	<.0441	<.0600	<.0600
Chromium	<1.240	<1.240	<.355	<.355	<.729	<.729	<.760	<.760
Cobalt	.0990	.1410	.0930	.1630	<.0453 .1760J	.1140	<.0610 .0670J	<.0610 .0950J
Copper	.825	<.485	<1.220	<1.220	<2.190	<2.190	<1.600	<1.600
Lead	<.0967	<.0967	<.2110	<.2110	<.3240	<.3240	<.2500	<.2500
Nickel	1.900	2.160	1.600	3.510	<.929 2.640J	2.680	<1.000 1.470J	<1.000
Selenium	<3.340	<3.340	1.150	1.180	<.928 .986J	<.928	<.900 1.170J	<.900 .989J
Silver	<.0420	<.0420	<.1530	<.1530	<.1400	<.1400	<.3000	<.3000
Thallium	<.0325	<.0325	<.0255	<.0255	<.0644	<.0644	<.1700	<.1700
Total suspended solids	<1.200	1.380	2.130	2.130	<.581 1.750J	1.000	<1.020	<.638 1.380J
Turbidity, field	.1373	3.2990	1.7520	1.4730	2.2420	.9645	2.3440	4.2830
Vanadium	<.449	<.449	<.255	<.255	<.840	<.840	<.520	<.520 .534J
Zinc	<6.950	<6.950	5.350	<5.210	<11.500	<11.500	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-2R

Constituents	6/4/2019 6/13/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022
Antimony	<1.320	<.530	<.510	<.510	<1.100	<1.100	<.690
Arsenic	<.232 .486J	<.750	<.880	<.880	<.750	<.750	<.750
Barium	82.8	86.2	79.0	124.0	120.0	129.0	120.0
Beryllium	<.5300	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700
Cadmium	<.1670	<.0390	<.0490	<.0490	<.0510	<.0510	<.0550
Chromium	<1.140	<.980	<1.100	<1.100	<1.100	<1.100	<1.100
Cobalt	<.4020	<.0910	<.0910	<.0910	<.0910 .1070J	<.1900	<.1900
Copper	2.250	<2.000	<1.500	<1.500	<1.400	<1.400	<1.800
Lead	.5200	<.2700	<.1100	<.1100	<.2100	<.2100	<.2400
Nickel	<.625 .921J	<1.700	<1.900	<1.900	<1.900	<1.900	<1.900
Selenium	<.982	<1.000 1.010J	<1.000	<1.000 1.140J	<.960 1.400J	<.960 2.040J	<.960 1.510J
Silver	<.1150	<.3700	<.3700	<.3700	<.4200	<.4200	<.4900
Thallium	<.5700	<.2700	<.2600	<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638 .875J	<.638 1.250J	<.638	<.638	<.638 .875J	<.638 .750J	<.638 .750J
Turbidity, field	13.4900	1.6700	.4700	.0000	.5200	4.1600	5.1600
Vanadium	<2.150 2.400J	<.820	<.850	<.850	<1.100	<1.100	<1.100
Zinc	<6.920 7.240J	<10.000	<10.000	<10.000	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-2R

Constituents	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<.690	<1.000	<1.000		<1.000	<1.000
Arsenic	<.750	<.530	<.530		<.530	<.530
Barium	86.6	96.7	118.0		91.0	129.0
Beryllium	<.2700	<.3300	<.3300		<.3300	<.3300
Cadmium	<.0550	<.1000	<.1000		<.1000	<.1000
Chromium	<1.100	<1.100	<1.100		<1.200	<1.200
Cobalt	<.1900	<.1700	<.1700		<.1700	<.1700
Copper	<1.800	<1.800	<1.800 2.660J		<1.800	<1.800
Lead	<.2400	<.2400	<.2400		<.2600	<.2600
Nickel	<1.900	<1.900	<1.900		<2.100	<2.100
Selenium	<.960 1.000J	<1.400 2.080J	<1.400		<1.400	<1.400
Silver	<.4900	<.5000	<.5000		<.5000	<.5000
Thallium	<.2600	<.2600	<.2600		<.5700	<.5700
Total suspended solids	<.638	<.638 1.500J	<.638 1.380J	<.638 1.750J	<1.390	2.630
Turbidity, field	6.3300	.7900	.3800	.0000	1.3700	1.3500
Vanadium	<1.100	<1.100	<1.100		<1.100	<1.100
Zinc	<10.000	<6.400	21.000	<6.400 8.480J	<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-3

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	4/21/2010	10/14/2010
Antimony	ug/L	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000
Arsenic	ug/L	1.780	1.180	<1.000	1.420	<1.000	<1.000	<1.000	<1.000	<1.000
Barium	ug/L	153	140	154	151	140	143	128	147	146
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	38.500	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L									
Turbidity, field	NTU									
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	35.900	<20.000	40.300	<20.000	<20.000	27.400	23.000	21.200	<20.000

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

Table 9

Analytical Data Summary for MW-3

Constituents	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015
Antimony	<6.0000	<2.7300	<1.4500	<.6000	<.0541	<.0541	<.4000	<.1610	<.1610
Arsenic	<1.000	<.600	.782	4.150	1.600	1.520	1.320	2.030	2.030
Barium	140	132	172	147	160	176	148	193	170
Beryllium	<1.0000	<.0510	<.0790	<.0890	<.0696	<.0696	<.0800	<.0390	.0490
Cadmium	<.5000	<.1240	<.2290	<.3200	<.1060	<.1060	<.1000	<.1120	<.1120
Chromium	<20.000	<1.810	<1.810	<1.950	<.418	.920	<.500	<1.240	<1.240
Cobalt	<20.0000	<1.5500	<1.5500	<.0750	.3240	.4730	.1070	.0830	.0820
Copper	<20.000	6.600	<1.510	<.600	1.100	1.600	<.560	<.485	<.485
Lead	<4.0000	<1.0000	<.8040	<.1450	<.2070	<.2070	.1820	.0970	.1720
Nickel	<50.000	<2.580	<2.580	<1.200	1.840	1.440	.931	<.581	<.581
Selenium	<5.000	<1.690	<.700	<1.480	<1.460	<1.460	<.700	<3.340	<3.340
Silver	<20.0000	<1.7000	<1.7000	<.1350	<.0789	<.0789	<.0330	<.0420	.0600
Thallium	<2.0000	<.8400	<.2880	<.0435	<.0267	<.0267	.1490	<.0325	<.0325
Total suspended solids								9.170	7.670
Turbidity, field								8.3890	12.2000
Vanadium	<50.000	<2.100	<2.100	<4.700	<.833	<.833	<.500	<.449	<.449
Zinc	<20.000	<9.110	17.400	<4.600	<.625	<.625	<2.000	<6.950	<6.950

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

Table 9

Analytical Data Summary for MW-3

Constituents	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019
Antimony	<.1610	<.2370	<.2370	<.1850	.2070	<.4200	<.4200	<1.3200
Arsenic	1.610	2.090	1.300	<.505 .610J	.992	<.570	2.280	1.110
Barium	180	180	184	168	166	176	189	158
Beryllium	<.0390	<.2210	<.2210	<.1250	<.1250	<.1900	<.1900	<.5300
Cadmium	<.1120	<.0351	<.0351	<.0441	<.0441	<.0600	<.0600	<.1670
Chromium	<1.240	<.355	<.355	<.729	<.729	<.760	<.760 1.120J	<1.140
Cobalt	.0790	.0910	.0510	<.0453 .0490J	.0680	<.0610 .2830J	<.0610 .2890J	<.4020
Copper	<.485	<1.220	<1.220	<2.190	<2.190	<3.800 *	<1.600	<.497 .686J
Lead	<.0967	<.2110	<.2110	<.3240	<.3240	<.2500	<.2500 .4080J	<.1860 .2060J
Nickel	.788	<1.530	<1.530	<.929	<.929	<1.000 1.390J	<1.000 2.150J	<.625 .888J
Selenium	<3.340	.785	.674	<.928	1.090	<.900	<.900	<.982
Silver	.0910	<.1530	<.1530	<.1400	<.1400	<.3000	<.3000	<.1150
Thallium	<.0325	<.0255	<.0255	<.0644	<.0644	<.1700	<.1700	<.5700
Total suspended solids	5.630	6.500	3.250	2.000	5.630	<.638 1.380J	11.000	3.630
Turbidity, field	9.0940	10.0200	7.0280	.5395	2.9880	7.0420	5.2410	18.7300
Vanadium	<.449	<.255	<.255	<.840	<.840	<.520	<.520 1.180J	<2.150 2.780J
Zinc	<6.950	<5.210	<5.210	<11.500	<11.500	<10.000	<10.000	<6.920

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

Table 9

Analytical Data Summary for MW-3

Constituents	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	8/2/2021 8/3/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022
Antimony	<.5300	<.5100	<.5100	<1.1000		<1.1000	<.6900	
Arsenic	<.750 .988J	2.240	<.880 1.220J	<.750 1.390J		<.750	3.700	<.750
Barium	163	176	193	199	171	188	210	
Beryllium	<.2700	<.2700	<.2700	<.2700		<.2700	<.2700	
Cadmium	<.0390	<.0490	<.0490	<.0510		<.0510	<.0550	
Chromium	<.980	<1.100	<1.100	<1.100		<1.100	<1.100	
Cobalt	<.0910	<.0910 .1140J	<.0910	<.0910		<.1900	<.1900	
Copper	<2.000	<1.500	<1.500	<1.400		<1.400	<1.800	
Lead	<.2700	<.1100 .1220J	<.1100	<.2100		<.2100	<.2400	
Nickel	<1.700	<1.900	<1.900	<1.900		<1.900	<1.900	
Selenium	<1.000	<1.000	<1.000	<.960		<.960	<.960	
Silver	<.3700	<.3700	<.3700	<.4200		<.4200	<.4900	
Thallium	<.2700	<.2600	<.2600	<.2600		<.2600	<.2600	
Total suspended solids	4.130	9.500	3.380	4.130	3.750	3.130	14.300	5.880
Turbidity, field	2.0100	21.0100	17.4100	7.4700	4.6900	4.3600	28.3800	10.8200
Vanadium	<.820	<.850	<.850	<1.100		<1.100	<1.100	
Zinc	<10.000	<10.000	<10.000	<10.000		<10.000	<10.000	

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

Table 9

Analytical Data Summary for MW-3

Constituents	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<.6900	<1.0000	<1.0000		<1.0000	<1.0000
Arsenic	<.750 .858J	<.530	<.530 1.060J		<.530	<.530 1.340J
Barium	205	176	193		146	205
Beryllium	<.2700	<.3300	<.3300		<.3300	<.3300
Cadmium	<.0550	<.1000	<.1000		<.1000	<.1000
Chromium	<1.100	<1.100	<1.100		<1.200	<1.200
Cobalt	<.1900	<.1700	<.1700		<.1700	<.1700
Copper	<1.800	<1.800	<1.800		<1.800	<1.800
Lead	<.2400	<.2400	<.2400		<.2600	<.2600
Nickel	<1.900	<1.900	<1.900		<2.100	<2.100
Selenium	<.960	<1.400	<1.400		<1.400	<1.400
Silver	<.4900	<.5000 .7020J	<.5000		<.5000	<.5000
Thallium	<.2600	<.2600	<.2600		<.5700	<.5700
Total suspended solids	3.250	2.630	2.880		2.380	5.000
Turbidity, field	35.6400	6.3600	3.0900	1.3400	4.1900	14.7800
Vanadium	<1.100	<1.100	<1.100		<1.100	<1.100
Zinc	<10.000	<6.400	<6.400		<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-31A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	2/3/2021 2/24/2021	5/17/2021 6/8/2021	8/2/2021 8/3/2021
Antimony	ug/L	<.530	<.580	<.510	<.510	<.510 .771J		<1.100	
Arsenic	ug/L	2.950	<.880 1.420J	2.470	3.830	2.570		<.750 .821J	
Barium	ug/L	602	591	279	317	449		160	
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27		<.27	
Cadmium	ug/L	.179	<.039 .080J	.316	<.049	.424		.260	
Chromium	ug/L	<.98	<1.10	<1.10 1.34J	<1.10	<1.10 2.50J		<1.10 1.31J	
Cobalt	ug/L	13.40	12.40	13.60	12.00	10.00		10.40	
Copper	ug/L	<2.00	<3.20	<1.50 1.84J	<1.50	5.01		<1.40 3.47J	
Cyanide	ug/L					<5.0		<5.3	
Lead	ug/L	1.150	<.270	1.370	<.110	.583		.609	
Mercury	ug/L					<.100000		<.150000	
Nickel	ug/L	20.4	21.6	27.5	47.0	52.8		53.4	
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00 1.13J		<.96	
Silver	ug/L	<.37	<.37	<.37	<.37	<.37		<.42	
Thallium	ug/L	<.270	<.260	<.260	<.260	<.260 .286J		<.260	
Total suspended solids	mg/L	9.000	2.630	19.000	10.400	7.250		1.880	
Turbidity, field	NTU	2.06	.26	1.79	26.27	8.36	12.41	4.53 *	4.29
Vanadium	ug/L	<.820	<.820	<.850 .997J	<.850	<.850 .873J		<1.100	
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0 13.8J		<10.0	

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

Table 9

Analytical Data Summary for MW-31A

Constituents	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.100	<.690	2.220	<1.000	<1.000	<1.000	<1.000
Arsenic	<.750	<.750	<3.000	<.530 .602J	<.530 .571J	<.530	<.530 .562J
Barium	205	145	441	220	247	243	279
Beryllium	<.27	<.27	<.27	<.33	<.33	<.33	<.33
Cadmium	2.040	.302	.984	.340	<.100	<.100 .160J	<.100 .161J
Chromium	<1.10 1.39J	<1.10	7.31	<1.10	<1.10	<1.20	<1.20
Cobalt	3.37	3.01	32.20	3.75	4.62	3.48	2.09
Copper	9.84	<1.80 3.31J	21.30	<1.80 3.61J	<1.80	<1.80 1.91J	<1.80 2.60J
Cyanide		<4.3					
Lead	<.210	<.240	1.680	<.240 .283J	<.240	<.260	<.260
Mercury		<.110000					
Nickel	47.7	28.1	112.0	39.7	30.8	30.3	32.3
Selenium	<.96	<.96	<.96 1.86J	<1.40	<1.40	<1.40	<1.40
Silver	<.42	<.49	<.49	<.50	<.50	<.50	<.50
Thallium	<.260 .355J	<.260	<.260 .777J	<.260	<.260	<.570	<.570
Total suspended solids	<.638 1.630J	<.638	5.000	6.070	<.638 1.250J	2.250	<3.700
Turbidity, field	5.51	.86	74.50	4.71	4.04	2.38	5.30
Vanadium	<1.100	<1.100 1.620J	<1.100 3.260J	<1.100	<1.100	<1.100	<1.100
Zinc	<10.0	<10.0	<10.0 18.1J	23.5	<6.4	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-33A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	8/2/2021 8/3/2021	9/21/2021 9/29/2021
Antimony	ug/L	<.530	<.580	<.510	<.510	<.510	<1.100	<1.100	<1.100
Arsenic	ug/L	42.40	80.90	5.23	65.80	17.90	35.30	52.70	18.40
Barium	ug/L	144	176	105	203	177	168	149	152
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.039	<.039	<.049	<.049	<.049	<.051	<.051 .098J	<.051 .068J
Chromium	ug/L	<.98	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Cobalt	ug/L	3.000	2.590	<.091 .478J	2.340	1.830	3.200	3.200	2.030
Copper	ug/L	<2.00	<3.20	<1.50	<1.50	<1.50	<1.40	<1.40	<1.40
Cyanide	ug/L								<5.0 5.3J
Lead	ug/L	<.270	<.270	<.110	<.110 .316J	<.110 .116J	<.210	<.210 .303J	<.210
Mercury	ug/L								<.00 .15J
Nickel	ug/L	<1.70 2.65J	<1.90 2.37J	<1.90 2.79J	<1.90 2.89J	<1.90 3.32J	<1.90 2.95J	<1.90 2.95J	<1.90
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00	<.96	<.96	<.96
Silver	ug/L	<.37	<.37	<.37	<.37	<.37	<.42	<.42	<.42
Thallium	ug/L	<.27	<.26	<.26	<.26	<.26	<.26	<.26 .91J	<.26
Total suspended solids	mg/L	47.00	52.00	5.25	74.00	8.75	50.30	29.90	8.33
Turbidity, field	NTU	97.42	17.14	22.42	506.36	82.50	8.74	33.68	
Vanadium	ug/L	<.82	<.82	<.85	<.85 2.91J	<.85 1.16J	<1.10	<1.10	<1.10
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

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

Table 9

Analytical Data Summary for MW-33A

Constituents	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	<.690 .846J	<.690	<1.000	<1.000		<1.000
Arsenic	11.30	13.80	<.53 1.16J	24.30	51.80	112.00
Barium	176	138	108	255		199
Beryllium	<.27	<.27	<.33	<.33		<.33
Cadmium	<.055 .062J	.108	<.100 .113J	<.100		<.100
Chromium	<1.10	<1.10	<1.10	<1.20		<1.20
Cobalt	.503	.743	<.170 .396J	4.510		2.400
Copper	<1.80	<1.80	<1.80	<1.80 4.25J		<1.80
Cyanide		<4.3				
Lead	<.240	<.240	<.240	.692		<.260
Mercury		<.11				
Nickel	<1.90 2.82J	5.16	<1.90	<2.10 3.31J		<2.10 2.15J
Selenium	<.96 1.56J	<.96	<1.40	<1.40		<1.40
Silver	<.49	<.49	<.50	<.50		<.50
Thallium	<.26	<.26	<.26	<.57		<.57
Total suspended solids	7.62	14.80	4.50	59.00	52.00	43.00
Turbidity, field	28.51	11.49	5.19	51.45	6.21	13.51
Vanadium	<1.10 1.15J	<1.10 2.48J	<1.10	<1.10 1.11J		<1.10
Zinc	<10.0	<10.0	<6.4	<9.7 12.9J		<9.7

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

Table 9

Analytical Data Summary for MW-34A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022
Antimony	ug/L	<.53	<.58	<.51	<.51	<.51	<1.10	<1.10	<.69
Arsenic	ug/L	<.75	<.88	<.88	<.88	<.88	<.75	<.75	<.75
Barium	ug/L	80.4	80.0	76.3	75.2	73.6	76.9	74.9	69.7
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.039	<.039	<.049	<.049	<.049	<.051	<.051	<.055
Chromium	ug/L	<.98 1.37J	<1.10 1.66J	<1.10 1.63J	<1.10 3.06J	<1.10 1.36J	<1.10 1.29J	<1.10 1.41J	<1.10 1.56J
Cobalt	ug/L	<.091	<.091 .122J	<.091	<.091	<.091	<.091	<.190	<.190
Copper	ug/L	<2.0	<3.2	<1.5	<1.5	<1.5	<1.4	<1.4	<1.8
Lead	ug/L	<.27	<.27	<.11	<.11	<.11	<.21	<.21	<.24
Nickel	ug/L	<1.7	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
Selenium	ug/L	<1.00 1.85J	<1.00 1.95J	<1.00 1.23J	<1.00	<1.00 1.69J	<.96 1.59J	<.96 1.59J	<.96 1.74J
Silver	ug/L	<.370	<.370	<.370	<.370	<.370	<.420	<.420	<.490
Thallium	ug/L	<.27	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	1.880	4.500	3.130	<.638 1.630J	<.638 1.250J	2.750	2.000	2.880
Turbidity, field	NTU	1.46	6.78	5.06	5.97	5.00	2.73	10.46	8.91
Vanadium	ug/L	<.82	<.82	<.85	<.85 1.72J	<.85	<1.10	<1.10	<1.10
Zinc	ug/L	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00

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

Table 9

Analytical Data Summary for MW-34A

Constituents	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<.69	<1.00	<1.00	<1.00	<1.00
Arsenic	<.75	<.53	<.53	<.53	<.53
Barium	79.5	65.5	69.3	70.1	67.5
Beryllium	<.27	<.33	<.33	<.33	<.33
Cadmium	<.055	<.100	<.100	<.100	<.100
Chromium	<1.10 1.81J	<1.10 1.48J	<1.10 1.96J	<1.20 1.31J	<1.20 1.88J
Cobalt	<.190	<.170	<.170	<.170	<.170
Copper	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	<.24	<.24	<.24	<.26	<.26
Nickel	<1.9	<1.9	<1.9	<2.1	<2.1
Selenium	<.96 2.27J	<1.40 1.46J	<1.40 2.12J	<1.40	<1.40 2.01J
Silver	<.490 .747J	<.500	<.500	<.500	<.500
Thallium	<.26	<.26	<.26	<.57	<.57
Total suspended solids	<2.220	2.500	2.250	<1.390	6.000
Turbidity, field	12.61	2.00	4.28	5.88	8.37
Vanadium	<1.10	<1.10	<1.10	<1.10	<1.10
Zinc	<10.00	<6.40	<6.40 8.31J	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-37A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00	<1.00
Arsenic	ug/L	<.75 1.38J	<.75	4.57	<.75	<.75	<.75 .91J	<.53	<.53 1.62J
Barium	ug/L	202	137	273	144	122	247	111	134
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.33	<.33
Cadmium	ug/L	<.051 .052J	<.051	<.055	<.055	<.055	<.055	<.100	<.100
Chromium	ug/L	<1.10 1.50J	<1.10 1.16J	<1.10	<1.10 1.57J	<1.10 1.33J	<1.10	<1.10 1.33J	<1.20
Cobalt	ug/L	.681	<.190 .194J	<.190 .263J	<.190	<.190	<.190	<.170 .179J	.714
Copper	ug/L	<1.4 2.5J	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	ug/L	1.060	<.210 .275J	<.240	<.240	<.240	<.240	<.240 .244J	<.260
Nickel	ug/L	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<2.10
Selenium	ug/L	<.96	<.96	<.96	<.96	<.96	<.96	<1.40	<1.40
Silver	ug/L	<.420 .503J	<.420	<.490	<.490	<.490	<.490	<.500	<.500
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26	<.57
Total suspended solids	mg/L	159.000	45.600	17.300	31.300	<.638 1.000J	4.880	26.500	4.620
Turbidity, field	NTU	97.89	47.38	16.61	9.81	.00	10.27	26.51	11.39
Vanadium	ug/L	<1.10 1.67J	<1.10 1.30J	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4	<9.7

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

Table 9

Analytical Data Summary for MW-37A

Constituents	11/19/2024 12/18/2024
Antimony	<1.00
Arsenic	153.00
Barium	849
Beryllium	<.33
Cadmium	<.100
Chromium	<1.20
Cobalt	9.580
Copper	<1.8
Lead	<.260
Nickel	<2.10 4.39J
Selenium	<1.40
Silver	<.500
Thallium	<.57
Total suspended solids	18.000
Turbidity, field	1.87
Vanadium	<1.10
Zinc	<9.7

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

Table 9

Analytical Data Summary for MW-38A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00	<1.00
Arsenic	ug/L	<.75	<.75	<.75	20.80	<.75	<.75	<.53	<.53
Barium	ug/L	148.0	94.3	139.0	200.0	133.0	145.0	133.0	141.0
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.33	<.33
Cadmium	ug/L	<.051	<.051	<.055	<.055	<.055	<.055	<.100	<.100
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<.190 .249J	<.190	<.190	<.190	<.190	<.190	<.170 .181J	<.170
Copper	ug/L	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	ug/L	<.21	<.21	<.24	<.24	<.24	<.24	<.24	<.24
Nickel	ug/L	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90 2.01J
Selenium	ug/L	<.96	<.96	<.96	<.96 2.77J	<.96	<.96	<1.40	<1.40
Silver	ug/L	<.42	<.42	<.49	<.49	<.49	<.49	<.50	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	8.630	14.300	<1.700 2.670J	<.638 .875J	<.638	<.638 1.130J	9.120	3.500
Turbidity, field	NTU	11.36	29.12	2.49	.08	3.12	.00	6.34	1.10
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4	<6.4

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

Table 9

Analytical Data Summary for MW-38A

Constituents	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.00	<1.00
Arsenic	<.53	<.53
Barium	153.0	153.0
Beryllium	<.33	<.33
Cadmium	<.100	<.100
Chromium	<1.2	<1.2
Cobalt	<.170	<.170
Copper	<1.8	<1.8
Lead	<.26	<.26
Nickel	<2.10	<2.10
Selenium	<1.40	<1.40
Silver	<.50	<.50
Thallium	<.57	<.57
Total suspended solids	3.130	3.000
Turbidity, field	1.62	15.68
Vanadium	<1.1	<1.1
Zinc	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-39A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00	<1.00
Arsenic	ug/L	<.75	<.75	<.75	<.75	<.75	<.75	<.53	<.53
Barium	ug/L	156	146	144	152	136	149	138	145
Beryllium	ug/L	<.270	<.270	<.270	<.270	<.270	<.270	<.330	<.330
Cadmium	ug/L	<.051	<.051	<.055	<.055	<.055	<.055	<.100	<.100
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	.857	<.190 .382J	<.190	<.190	<.190	<.190 .199J	<.170 .345J	<.170 .376J
Copper	ug/L	<1.40	<1.40	<1.80	<1.80	<1.80	<1.80	<1.80	<1.80
Lead	ug/L	<.210 .259J	<.210 .343J	<.240	<.240	<.240	<.240	<.240 .339J	<.240 .252J
Nickel	ug/L	<1.90 3.68J	<1.90 2.01J	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90 2.54J
Selenium	ug/L	<.96	<.96	<.96	<.96	<.96	<.96	<1.40	<1.40
Silver	ug/L	<.42	<.42	<.49	<.49	<.49	<.49	<.50	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	54.600	45.200	<1.700 3.670J	5.630	<.638 .750J	13.300	43.700	52.000
Turbidity, field	NTU	102.71	70.75	10.72	10.22	.51	20.65	71.92	71.35
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4	<6.4

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

Table 9

Analytical Data Summary for MW-39A

Constituents	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	<1.00		<1.00
Arsenic	<.53		<.53
Barium	152		156
Beryllium	<.330 .353J		<.330
Cadmium	<.100		<.100
Chromium	<1.2		<1.2
Cobalt	<.170 .175J		.812
Copper	<1.80		<1.80 2.08J
Lead	<.260		.589
Nickel	<2.10		<2.10 2.86J
Selenium	<1.40		<1.40
Silver	<.50		<.50
Thallium	<.57		<.57
Total suspended solids	14.300	34.600	116.000
Turbidity, field	25.54	66.58	271.18
Vanadium	<1.1		<1.1
Zinc	68.3	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-4

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	2/25/2010
Antimony	ug/L	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000
Arsenic	ug/L	23.600	16.600	21.400	7.640	4.720	3.400	5.900	7.850
Barium	ug/L	742.0	603.0	793.0	544.0	514.0	549.0	623.0	564.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	1.210000	.834000	1.360000	<.500000	<.500000	<.500000	<.500000	.530000
Chromium	ug/L	<20.000	<20.000	28.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L								
Lead	ug/L	<4.0000	<4.0000	4.1500	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000
Mercury	ug/L								
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	69.099998	<20.000000	36.500000	<20.000000	21.100000	50.700001	52.599998	<20.000000

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

Table 9

Analytical Data Summary for MW-4

Constituents	4/21/2010	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014
Antimony	<6.000	<6.000	<6.000	<2.730	<1.450	<.120	3.740	.108	.422
Arsenic	6.440	8.540	6.570	4.050	2.100	2.460	16.400	1.870	1.240
Barium	580.0	529.0	542.0	513.0	533.0	710.0	774.0	514.0	513.0
Beryllium	<1.0000	<1.0000	<1.0000	<.0510	<.0790	.0600	<.0696	<.0696	<.0800
Cadmium	<.500000	<.500000	<.500000	.236000	<.229000	.410000	.430000	.191000	.144000
Chromium	<20.000	<20.000	<20.000	<1.810	<1.810	.420	6.890	<.418	147.000
Cobalt	<20.0000	<20.0000	<20.0000	8.2700	5.8500	10.1000	10.0000	4.3700	6.0900
Copper	<20.000	<20.000	23.600	12.000	<1.510	2.080	6.130	2.390	4.710
Cyanide	<10.00								<3.10
Lead	<4.0000	<4.0000	<4.0000	<1.0000	.9000	.7800	2.4500	.3240	<.1800
Mercury	<.2000								<.0710
Nickel	<50.000	<50.000	<50.000	14.000	13.300	12.800	18.200	15.800	105.000
Selenium	<5.000	<5.000	<5.000	<1.690	<.700	<.297	1.640	1.520	<.700
Silver	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<.0270	<.0789	<.0789	<.0330
Thallium	<2.0000	<2.0000	<2.0000	<.8400	<.2880	.0100	.1480	.0371	.0790
Total suspended solids									
Turbidity, field									
Vanadium	<50.000	<50.000	<50.000	<2.100	3.660	3.250	9.470	.843	7.190
Zinc	41.000000	47.099998	<20.000000	<9.110000	14.200000	4.500000	13.600000	<.625000	2.010000

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

Table 9

Analytical Data Summary for MW-4

Constituents	10/31/2014 11/10/2014	12/19/2014 12/22/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	<.161		<.161	<.161	<.237	<.237	<.185	.691
Arsenic	<.945		<.945	<.945	<.672	<.672	<.505	.784
Barium	469.0		463.0	479.0	484.0	539.0	482.0	40.6
Beryllium	<.0390		<.0390	<.0390	<.2210	<.2210	<.1250	<.1250
Cadmium	.117000		.149000	.133000	.170000	.142000	<.044100 .168000J	.273000
Chromium	<1.240		<1.240	<1.240	<.355	<.355	<.729	2.280
Cobalt	.9670		.4480	.3300	.4110	.4410	<.0453 .2420J	3.7500
Copper	.520		<.485	<.485	<1.220	<1.220	<2.190	5.840
Cyanide				<3.04		<3.52		<3.46
Lead	.1090		<.0967	<.0967	<.2110	<.2110	<.3240	<.3240
Mercury				<.0926		<.1420		<.1120
Nickel	5.990		5.630	4.310	5.700	4.280	<.929 3.220J	11.900
Selenium	<3.340		<3.340	<3.340	<.630	<.630	<.928	31.600
Silver	<.0420		<.0420	<.0420	.1650	<.1530	<.1400	<.1400
Thallium	<.0325		<.0325	<.0325	.0310	.0280	<.0644 .1010J	<.0644
Total suspended solids	4.830		<1.200	<1.200	<.581	<.581	2.880	1.880
Turbidity, field	10.5800	1.3090	.0997	1.0810	.1490	1.8430	8.7800	.7597
Vanadium	1.020		.695	.787	.785	.948	<.840	1.070
Zinc	<6.950000		<6.950000	<6.950000	<5.210000	<5.210000	<11.500000	<11.500000

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

Table 9

Analytical Data Summary for MW-4

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021
Antimony	<.420	<.420	<1.320	<.530	<.510	<.510	<1.100
Arsenic	<.570 .637J	<.570	<.232 .653J	<.750	<.880	<.880	<.750
Barium	530.0	464.0	451.0	191.0	421.0	409.0	475.0
Beryllium	<.1900	<.1900	<.5300	<.2700	<.2700	<.2700	<.2700
Cadmium	<.060000 .124000J	<.060000 .158000J	<.167000	<.039000	.139000	.163000	.184000
Chromium	<.760	<.760	<1.140 1.680J	<.980	<1.100	<1.100	<1.100
Cobalt	1.4400	<.0610 .4580J	<.4020	<.0910	<.0910 .2640J	1.4800	.9370
Copper	<4.533 *	<1.600	<.497 .966J	<2.000	<1.500	<1.500	<1.400
Cyanide							
Lead	<.2500	<.2500	<.1860	<.2700	<.1100	<.1100	<.2100
Mercury							
Nickel	5.780	<1.000 3.990J	5.230	<1.700	<1.900 3.580J	11.900	5.360
Selenium	<.900	<.900	<.982	<1.000	<1.000	<1.000	<.960
Silver	<.3000	<.3000	<.1150	<.3700	<.3700	<.3700	<.4200
Thallium	<.1700	<.1700	<.5700	<.2700	<.2600	<.2600	<.2600
Total suspended solids	2.500	2.750	<.638	<.638 .750J	<.638 .750J	<.638	<.638 1.000J
Turbidity, field	1.4180	7.7670		.4900	1.2500	.0000	
Vanadium	<.520 .913J	<.520 1.230J	<2.150	<.820 1.230J	<.850 .892J	<.850 1.060J	<1.100
Zinc	<10.000000	<10.000000	<6.920000	<10.000000	<10.000000	<10.000000	<10.000000

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

Table 9

Analytical Data Summary for MW-4

Constituents	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.100	<.690	<.690	<1.000	<1.000	<1.000	<1.000
Arsenic	<.750	<.750	<.750 .762J	<.530	<.530 1.150J	<.530 .792J	<.530 1.050J
Barium	482.0	503.0	536.0	134.0	514.0	485.0	518.0
Beryllium	<.2700	<.2700	<.2700	<.3300	<.3300	<.3300	<.3300
Cadmium	.122000	.118000	<.055000 .076000J	<.100000	<.100000	<.100000	.254000
Chromium	<1.100	<1.100	<1.100	<1.100	<1.100	<1.200	<1.200
Cobalt	1.0700	1.4400	1.6100	<.1700	1.5400	1.8500	2.0400
Copper	<1.400	<1.800	<1.800	<1.800	<1.800	<1.800	<1.800
Cyanide				<4.30			
Lead	<.2100	<.2400	<.2400	<.2400	<.2400	<.2600 .2700J	<.2600
Mercury				<.1400			
Nickel	5.050	7.470	7.160	<1.900	5.360	6.270	6.170
Selenium	<.960	<.960	<.960	<1.400	<1.400	<1.400	<1.400
Silver	<.4200	<.4900	<.4900	<.5000	<.5000	1.2100	<.5000
Thallium	<.2600	<.2600	<.2600	<.2600	<.2600	<.5700	<.5700
Total suspended solids	<.638 1.380J	<1.700	<.638 1.630J	<.638 1.380J	8.500	2.250	2.450
Turbidity, field	3.8100	.0000	.0000	1.1500	1.1400	.8800	1.1700
Vanadium	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
Zinc	<10.000000	<10.000000	<10.000000	<6.400000	<6.400000	<9.700001	<9.700000

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

Table 9

Analytical Data Summary for MW-4

Constituents	2/14/2025
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	<.100000
Chromium	
Cobalt	
Copper	
Cyanide	
Lead	
Mercury	
Nickel	
Selenium	
Silver	
Thallium	
Total suspended solids	
Turbidity, field	.8400
Vanadium	
Zinc	

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

Table 9

Analytical Data Summary for MW-40A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00	<1.00
Arsenic	ug/L	<.750	<.750 .759J	<.750	<.750	<.750	<.750	<.530	<.530 .558J
Barium	ug/L	279	278	260	257	162	238	216	228
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.33	<.33
Cadmium	ug/L	<.051	<.051	<.055	<.055	<.055 .064J	<.055	<.100 .163J	<.100
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	3.220	1.060	1.170	.807	1.470	2.190	1.510	1.860
Copper	ug/L	<1.40 2.64J	<1.40	<1.80	<1.80	<1.80 2.08J	<1.80	7.71	<1.80
Cyanide	ug/L								<4.3
Lead	ug/L	<.210 .379J	<.210 .271J	<.240	<.240	<.240 .272J	<.240	<.240	<.240
Mercury	ug/L								<.14
Nickel	ug/L	17.00	7.32	11.00	7.85	10.20	12.70	19.00	17.40
Selenium	ug/L	<.96 1.55J	<.96	<.96	<.96	<.96	<.96	<1.40	<1.40
Silver	ug/L	<.42	<.42	<.49	<.49	<.49	<.49	<.50	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	81.50	33.00	12.30	21.40	47.70	24.50	6.75	8.25
Turbidity, field	NTU	100.92	26.96	40.36	17.09	98.21	13.86	5.58	20.13
Vanadium	ug/L	<1.10	<1.10	<1.10 1.12J	<1.10	<1.10 1.69J	<1.10	<1.10 1.91J	<1.10
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4	<6.4

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

Table 9

Analytical Data Summary for MW-40A

Constituents	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.00	<1.00
Arsenic	<.530	<.530
Barium	210	215
Beryllium	<.33	<.33
Cadmium	<.100	<.100
Chromium	<1.2	<1.2
Cobalt	1.690	2.140
Copper	<1.80	<1.80
Cyanide	<3.5	
Lead	<.260	<.260 .282J
Mercury	<.11	
Nickel	11.10	16.80
Selenium	<1.40	<1.40
Silver	<.50	<.50
Thallium	<.57	<.57
Total suspended solids	7.13	22.30
Turbidity, field	12.07	42.50
Vanadium	<1.10	<1.10
Zinc	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-41A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	ug/L	<.690 .761J	<.690	<1.000	<1.000	<1.000		<1.000	<1.000
Arsenic	ug/L	<.750	<.750	<.530 .708J	<.530 .866J	<.530		<.530 .595J	<.530 .967J
Barium	ug/L	154	143	145	141	169		125	159
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33		<.33	<.33
Cadmium	ug/L	<.055	<.055	<.100	<.100	<.100		<.100	<.100
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1		<1.2	<1.2
Cobalt	ug/L	.647	<.190 .415J	.710	.541	1.010	<.170	<.170 .215J	<.170 .211J
Copper	ug/L	<1.8	<1.8	<1.8	<1.8	<1.8		<1.8	<1.8
Lead	ug/L	<.24	<.24	<.24	<.24	<.24		<.26	<.26
Nickel	ug/L	<1.9	<1.9	<1.9	<1.9	<1.9		<2.1	<2.1
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40		<1.40	<1.40
Silver	ug/L	<.49	<.49	<.50	<.50	<.50		<.50	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26		<.57	<.57
Total suspended solids	mg/L	4.380	3.130	4.130	3.630	<.638 1.500J	<.638 1.750J	2.630	6.000
Turbidity, field	NTU	12.37	2.00	1.78	4.40	.57	.98	1.73	12.99
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1		<1.1	<1.1
Zinc	ug/L	<10.0	<10.0	<6.4	<6.4	<6.4		<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-42A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024	2/14/2025
Antimony	ug/L	<.69	<.69	<1.00	<1.00	<1.00	<1.00	<1.00	
Arsenic	ug/L	<.750	2.960	<.530	<.530 .560J	<.530 .541J	<.530	<.530 .547J	
Barium	ug/L	281.0	119.0	83.4	125.0	101.0	128.0	177.0	
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33	<.33	<.33	
Cadmium	ug/L	.281	<.055	<.100	<.100	<.100	<.100	<.100	
Chromium	ug/L	<1.10 1.95J	<1.10	<1.10	<1.10	<1.10	<1.20	<1.20	
Cobalt	ug/L	3.980	3.310	.518	2.460	2.560	2.560	2.770	
Copper	ug/L	9.67	<1.80	<1.80	<1.80	<1.80	<1.80	<1.80 2.00J	
Cyanide	ug/L						<3.5		
Lead	ug/L	<.24 .41J	<.24	<.24	<.24	<.24	<.26	<.26	
Mercury	ug/L						<.11		
Nickel	ug/L	37.20	14.70	8.62	19.30	14.80	16.60	27.60	23.50
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40	<1.40	<1.40	
Silver	ug/L	<.49	<.49	<.50	<.50	<.50	<.50	<.50	
Thallium	ug/L	<.260 .385J	<.260	<.260	<.260	<.260	<.570	<.570	
Total suspended solids	mg/L	6.25	13.30	18.60	7.00	8.00	4.38	14.10	
Turbidity, field	NTU	18.52	6.50	17.27	3.57	8.67	9.00	33.63	4.29
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
Zinc	ug/L	<10.0	<10.0	<6.4	<6.4	<6.4	<9.7	<9.7	

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

Table 9

Analytical Data Summary for MW-43A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	8/27/2024 9/5/2024
Antimony	ug/L	<.69	<.69	<1.00	<4.00	<1.00	<1.00	
Arsenic	ug/L	8.06	7.34	8.28	8.85	9.81	6.28	
Barium	ug/L	157	167	180	250	274	163	
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33	<.33	
Cadmium	ug/L	<.055000	<.055000	<.100000	<.100000	<.100000	<.100000	
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	12.0	<1.2	
Cobalt	ug/L	3.68	3.27	4.51	4.93	4.75	3.49	
Copper	ug/L	<1.8	<1.8	<1.8	<1.8	6.4	<1.8	
Cyanide	ug/L						<3.5	
Lead	ug/L	<.24	<.24	<.24	<.24	<.24	<.26	
Nickel	ug/L	24.4	25.6	31.0	41.5	36.4	17.3	
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40	<1.40	
Silver	ug/L	<.49	<.49	<.50	<.50	<.50	9.36	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.57	
Total suspended solids	mg/L	31.5	26.0	30.3	39.0	37.0	22.0	28.5
Turbidity, field	NTU	22.75	26.61	67.20	14.62	5.00	3.89	11.63
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
Zinc	ug/L	<10.000000	<10.000000	<6.400000	<6.400000 8.740000J	<6.400000 7.360000J	<9.700001	

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

Table 9

Analytical Data Summary for MW-43A

Constituents	11/19/2024 12/18/2024
Antimony	<1.00
Arsenic	6.32
Barium	214
Beryllium	<.33
Cadmium	<.100000
Chromium	<1.2
Cobalt	3.83
Copper	<1.8
Cyanide	
Lead	<.26
Nickel	25.9
Selenium	<1.40
Silver	<.50
Thallium	<.57
Total suspended solids	29.0
Turbidity, field	12.02
Vanadium	<1.1
Zinc	<9.700000 12.800000J

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

Table 9

Analytical Data Summary for MW-44A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	ug/L	<.69	<.69	<1.00	<1.00	<1.00	<1.00	<1.00
Arsenic	ug/L	<.750	<.750	<.530	<.530	<.530 .666J	<.530 .663J	<.530
Barium	ug/L	168	212	157	239	253	137	159
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33	<.33	<.33
Cadmium	ug/L	<.055	<.055 .082J	.306	.416	.795	.389	<.100 .181J
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Cobalt	ug/L	.530	.583	<.170 .251J	.603	<.170 .327J	<.170 .423J	<.170 .435J
Copper	ug/L	<1.80	<1.80	<1.80	<1.80	<1.80 2.58J	<1.80 9.56J	<1.80
Cyanide	ug/L						<3.5	
Lead	ug/L	<.240	<.240	<.240	<.240	<.240	<.260 .313J	<.260
Mercury	ug/L						<.11	
Nickel	ug/L	21.7	51.8	28.7	70.2	66.6	21.6	34.2
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40	<1.40 1.99J	<1.40
Silver	ug/L	<.49	<.49	<.50	<.50	<.50	1.01	<.50
Thallium	ug/L	<.260	<.260	<.260	<.260	<.260	<.570 .748J	<.570
Total suspended solids	mg/L	8.000	2.880	<.638 1.130J	<.638 1.500J	<.638 .875J	1.880	7.670
Turbidity, field	NTU	1.79	2.06	10.04	1.56	.38	2.63	9.13
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0 13.4J	21.3	<6.4 18.1J	27.3	26.0	<9.7 13.8J	<9.7 19.5J

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

Table 9

Analytical Data Summary for MW-45A

Constituents	Units	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	ug/L	<1	<1	<1	<1	<1
Arsenic	ug/L	<.53	<.53	<.53	<.53	<.53
Barium	ug/L	218	137	103	118	128
Beryllium	ug/L	<.33	<.33	<.33	<.33	<.33
Cadmium	ug/L	<.100	<.100	<.100	<.100 .194J	<.100 .132J
Chromium	ug/L	<1.10 2.02J	<1.10	<1.20	<1.20	<1.20
Cobalt	ug/L	<.170 .394J	<.170 .263J	<.170 .257J	<.170 .389J	<.170 .296J
Copper	ug/L	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	ug/L	<.240	<.240	<.260	<.260 .265J	<.260
Nickel	ug/L	<1.9	<1.9	<2.1	<2.1	<2.1
Selenium	ug/L	<1.4	<1.4	<1.4	<1.4	<1.4
Silver	ug/L	<.5	<.5	<.5	<.5	<.5
Thallium	ug/L	<.26	<.26	<.57	<.57	<.57
Total suspended solids	mg/L	2.500	<.638 1.130J	<1.390	2.630	3.250
Turbidity, field	NTU	1.87	.00	.67	2.16	6.59
Vanadium	ug/L	<1.10 1.13J	<1.10	<1.10	<1.10	<1.10
Zinc	ug/L	<6.40	<6.40 8.46J	<9.70	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-46A

Constituents	Units	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	ug/L	<1	<1	<1	<1	<1
Arsenic	ug/L	<.530 .780J	<.530 .984J	<.530 .714J	<.530 .770J	<.530 .805J
Barium	ug/L	262	275	213	236	262
Beryllium	ug/L	<.33	<.33	<.33	<.33	<.33
Cadmium	ug/L	<.100000	<.100000 .123000J	<.100000	<.100000	<.100000 .115000J
Chromium	ug/L	<1.10	<1.10 1.12J	<1.20	<1.20	<1.20
Cobalt	ug/L	<.170 .405J	<.170 .253J	<.170	<.170 .241J	<.170 .288J
Copper	ug/L	<1.80	<1.80 2.39J	<1.80	<1.80 1.99J	<1.80 1.99J
Lead	ug/L	<.240	<.240 .393J	<.260	<.260 .386J	<.260 .307J
Nickel	ug/L	33.8	35.0	26.6	26.6	28.2
Selenium	ug/L	<1.4	<1.4	<1.4	<1.4	<1.4
Silver	ug/L	<.50	<.50	9.06	<.50	<.50
Thallium	ug/L	<.26	<.26	<.57	<.57	<.57
Total suspended solids	mg/L	11.5	36.1	10.3	26.3	19.6
Turbidity, field	NTU	79.73	173.01	12.22	68.05	103.12
Vanadium	ug/L	<1.10	<1.10 2.14J	<1.10	<1.10 1.17J	<1.10 1.35J
Zinc	ug/L	<6.400000	<6.400000 7.190000J	<9.700001	<9.700000	<9.700000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	2/25/2010
Antimony	ug/L	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	10.600
Arsenic	ug/L	<1.000	2.260	<1.000	<1.000	<1.000	2.290	1.450	2.340
Barium	ug/L	344	358	337	264	343	447	372	441
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.500000	<.500000	<.500000	<.500000	<.500000	<.500000	<.500000	<.500000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L								<10.00
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	7.6800	<4.0000	<4.0000
Mercury	ug/L								<.2000
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	52.200001	<20.000000	26.200001	<20.000000	<20.000000	36.299999	31.700001	<20.000000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	4/21/2010	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014
Antimony	<6.000	<6.000	<6.000	<2.730	<1.450	.220	.698	.256	.994
Arsenic	<1.000	<1.000	<1.000	1.140	2.530	14.100	15.300	1.190	1.190
Barium	339	346	211	404	540	920	644	333	462
Beryllium	<1.0000	<1.0000	<1.0000	<.0510	<.0790	.1200	.1090	<.0696	.1140
Cadmium	<.500000	<.500000	<.500000	<.124000	<.229000	.250000	.189000	.137000	<.100000
Chromium	<20.000	<20.000	<20.000	3.500	4.470	8.600	36.000	<.418	.650
Cobalt	<20.0000	<20.0000	<20.0000	4.4300	8.7000	18.7000	15.1000	4.6700	6.7900
Copper	<20.000	<20.000	<20.000	11.800	<1.510	11.800	12.100	3.760	2.390
Cyanide									
Lead	13.8000	5.3200	<4.0000	<1.0000	.9100	3.6800	3.9700	5.5500	<.1800
Mercury									
Nickel	<50.000	<50.000	<50.000	24.400	38.700	57.600	62.400	16.000	22.300
Selenium	<5.000	<5.000	<5.000	<1.690	<.700	<.297	1.740	2.240	<.700
Silver	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<.0270	<.0789	<.0789	<.0330
Thallium	<2.0000	<2.0000	<2.0000	<.8400	<.2880	.0100	.1550	.0384	.3080
Total suspended solids									
Turbidity, field									
Vanadium	<50.000	<50.000	<50.000	<2.100	<2.100	8.180	11.300	1.550	.783
Zinc	27.100000	22.000000	<20.000000	<9.110000	10.800000	7.010000	13.300000	<.625000	3.490000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	10/31/2014 11/10/2014	12/19/2014 12/22/2014	5/1/2015 5/12/2015	7/1/2015	9/14/2015 9/22/2015	12/9/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017
Antimony	<.161		<.161		<.161		<.237	<.237	<.185
Arsenic	<.945		<.945		<.945		1.170	<.672	<.505
Barium	144		307		237		396	205	213
Beryllium	<.0390		<.0390		.0520		<.2210	<.2210	<.1250
Cadmium	<.112000		<.112000		<.112000		.121000	<.035100	<.044100
Chromium	<1.240		<1.240		<1.240		.400	.451	<.729
Cobalt	.9680		2.0500		1.7700		6.0500	.0350	<.0453 .0590J
Copper	4.110		1.670		.618		1.880	<1.220	<2.190
Cyanide	<3100.00				<3.04			<3.52	
Lead	.1170		<.0967		.1410		<.2110	<.2110	<.3240
Mercury	<71.0000				<.0926			<.1420	
Nickel	2.510		9.830		4.500		13.400	<1.530	<.929
Selenium	<3.340		<3.340		<3.340		<.630	.884	<.928
Silver	<.0420		.0530		<.0420		.1730	<.1530	<.1400
Thallium	<.0325		<.0325		<.0325		.0300	<.0255	<.0644 .0710J
Total suspended solids	2.130		6.830	15.500	6.000	37.000	14.400	<.581	<.581
Turbidity, field	10.8700	1.3560	.8004	1.1470	9.4000	3.7900	75.6900	1.5710	1.3420
Vanadium	1.110		.782		.707		.709	1.060	<.840 1.090J
Zinc	<6.950000		<6.950000		<6.950000		<5.210000	<5.210000	<11.500000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020
Antimony	<.185	<.420	<.420 .503J	<1.320	<.530		<.510
Arsenic	<.505	<.570	<.570	<.232 .547J	<.750		<.880
Barium	217	305	206	187	455	168	180
Beryllium	<.1250	<.1900	<.1900	<.5300	<.2700		<.2700
Cadmium	<.044100	<.060000	<.060000	<.167000	.135000	<.039000	<.049000
Chromium	<.729	<.760	<.760 1.040J	<1.140 2.130J	<.980		<1.100
Cobalt	.3620	.8340	<.0610 .0680J	<.4020	<.0910 .2210J		<.0910
Copper	<2.190	<3.800 *	<1.600	2.090	<2.000		<1.500
Cyanide	<3.46						
Lead	<.3240	<.2500	<.2500	<.1860	<.2700		<.1100
Mercury	<.1120						
Nickel	2.910	5.110	<1.000	<.625 1.570J	<1.700 3.570J		<1.900
Selenium	1.030	<.900	<.900	<.982	<1.000		<1.000
Silver	<.1400	<.3000	<.3000	<.1150	<.3700		<.3700
Thallium	<.0644	<.1700	<.1700	<.5700	<.2700		<.2600
Total suspended solids	1.380	5.370	<.638 1.000J	<.638 1.250J	<.638	<.638 .875J	<.638 1.250J
Turbidity, field	9.3110	7.8590	9.4300		.8900	1.6700	.8200
Vanadium	1.010	<.520 .990J	<.520 1.360J	<2.150	<.820 .956J		<.850 1.060J
Zinc	<11.500000	<10.000000	<10.000000	<6.920000	<10.000000		<10.000000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023
Antimony	<.510	<1.100	<1.100	<.690	<.690	<1.000	<1.000
Arsenic	<.880	<.750	<.750	<.750	<.750	<.530	<.530
Barium	178	176	189	184	209	183	267
Beryllium	<.2700	<.2700	<.2700	<.2700	<.2700	<.3300	<.3300
Cadmium	<.049000	<.051000	<.051000	<.055000	<.055000	<.100000	<.100000
Chromium	<1.100	<1.100	<1.100	<1.100 1.670J	<1.100	<1.100	<1.100
Cobalt	<.0910 .1490J	<.0910	<.1900	<.1900	<.1900	<.1700	<.1700 .2130J
Copper	<1.500	<1.400	<1.400	<1.800	<1.800	<1.800	<1.800
Cyanide							
Lead	<.1100	<.2100	<.2100	<.2400	<.2400	<.2400	<.2400
Mercury							
Nickel	<1.900	<1.900	<1.900	<1.900	<1.900	<1.900	<1.900 3.500J
Selenium	<1.000	<.960	<.960	<.960	<.960	<1.400	<1.400
Silver	<.3700	<.4200	<.4200	<.4900	<.4900	<.5000	<.5000
Thallium	<.2600	<.2600	<.2600	<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638 .750J	<.638	<.638 1.130J	<1.700	<.638	<.638 .750J	<.638 1.750J
Turbidity, field	3.9800		5.1500	.0600	.0000	.6700	1.9500
Vanadium	<.850 1.410J	<1.100 1.140J	<1.100	<1.100	<1.100 1.150J	<1.100	<1.100 1.500J
Zinc	<10.000000	<10.000000	<10.000000	<10.000000	<10.000000	<6.400000	<6.400000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	1/23/2024 1/25/2024	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony		<1.000		<1.000
Arsenic		<.530		<.530
Barium	413	184		225
Beryllium		<.3300		<.3300
Cadmium		<.100000		<.100000
Chromium		<1.200		<1.200
Cobalt		<.1700		<.1700
Copper		<1.800		<1.800
Cyanide				
Lead		<.2600		<.2600
Mercury				
Nickel		<2.100		<2.100
Selenium		<1.400		<1.400
Silver		5.3700	<.5000	<.5000
Thallium		<.5700		<.5700
Total suspended solids	2.130	<1.390	<1.390	<1.430
Turbidity, field	.8700	1.7500	2.3700	1.1400
Vanadium		<1.100		<1.100
Zinc		<9.700001		<9.700000

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

Table 9

Analytical Data Summary for MW-7A

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	4/21/2010	10/14/2010
Antimony	ug/L	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000
Arsenic	ug/L	<1.000	1.450	1.150	<1.000	2.230	<1.000	<1.000	<2.000	<1.000
Barium	ug/L	191.0	202.0	301.0	185.0	381.0	195.0	220.0	181.0	263.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	64.500	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	21.4000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	50.700	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L									
Lead	ug/L	<4.0000	<4.0000	4.1600	<4.0000	9.4600	<4.0000	<4.0000	<4.0000	5.4100
Mercury	ug/L									
Nickel	ug/L	<50.000	<50.000	53.600	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L									
Turbidity, field	NTU									
Vanadium	ug/L	<50.000	<50.000	75.600	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	45.800	<20.000	94.900	<20.000	67.000	35.000	41.800	25.900	38.600

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

Table 9

Analytical Data Summary for MW-7A

Constituents	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015
Antimony	<6.0000	<2.7300	1.8400	<.1200	.4350	.0751	.9880	.1640	<.1610
Arsenic	<1.000	<.600	.876	.810	.970	<.544	<.330	<.945	<.945
Barium	197.0	319.0	307.0	316.0	155.0	326.0	149.0	184.0	152.0
Beryllium	<1.0000	.1590	.7820	.0600	<.0696	<.0696	<.0800	<.0390	<.0390
Cadmium	<.5000	<.1240	<.2290	.0800	<.1060	<.1060	<.1000	<.1120	<.1120
Chromium	<20.000	1.990	4.530	.520	6.590	.771	4.600	4.200	3.750
Cobalt	<20.0000	3.6800	7.5100	1.0300	.6610	.6040	.1500	<.0528	<.0528
Copper	<20.000	18.700	16.600	2.250	4.700	1.860	.579	<.485	<.485
Cyanide									
Lead	<4.0000	4.7200	8.9600	.8400	1.5200	.2110	.2240	.1130	<.0967
Mercury									
Nickel	<50.000	9.700	9.510	7.270	3.350	6.390	.459	.586	<.581
Selenium	<5.000	<1.690	<.700	<.297	<1.460	<1.460	<.700	<3.340	<3.340
Silver	<20.0000	<1.7000	<1.7000	<.0270	<.0789	<.0789	<.0330	<.0420	<.0420
Thallium	<2.0000	<.8400	<.2880	.0100	.0840	<.0267	.1510	<.0325	<.0325
Total suspended solids								<1.410	<1.130
Turbidity, field								.7996	.6573
Vanadium	<50.000	2.140	11.500	1.440	1.630	<.833	1.200	.727	.459
Zinc	<20.000	15.200	17.600	2.420	8.060	<.625	3.260	7.010	<6.950

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

Table 9

Analytical Data Summary for MW-7A

Constituents	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019
Antimony	<.1610	<.2370	<.2370	<.1850	<.1850	<.4200	<.4200	<1.3200
Arsenic	<.945	<.672	<.672	<.505	<.505	<.570	<.570	<.232 .430J
Barium	240.0	165.0	315.0	150.0	172.0	166.0	171.0	160.0
Beryllium	<.0390	<.2210	<.2210	<.1250	<.1250	<.1900	<.1900	<.5300
Cadmium	<.1120	<.0351	<.0351	<.0441	<.0441	<.0600	<.0600	<.1670
Chromium	<1.240	4.020	.425	<.729 2.450J	3.220	5.260	<.760 3.270J	<1.140 4.920J
Cobalt	.0780	<.0274	.0290	<.0453	<.0453	<.0610 .0660J	<.0610	<.4020
Copper	<.485	<1.220	<1.220	<2.190	<2.190	<3.800 *	<1.600	<.497 1.020J
Cyanide								
Lead	.8000	<.2110	<.2110	<.3240	<.3240	<.2500	<.2500	<.1860
Mercury								
Nickel	3.600	<1.530	6.700	<.929 1.110J	<.929	<1.000 1.680J	<1.000	2.070
Selenium	<3.340	.821	<.630	<.928	<.928	<.900	<.900	<.982
Silver	<.0420	<.1530	<.1530	<.1400	<.1400	<.3000	<.3000	<.1150
Thallium	<.0325	<.0255	.0500	<.0644	<.0644	<.1700	<.1700	<.5700
Total suspended solids	<1.200	.750	.875	<.581 1.130J	.750	<.638 1.250J	2.500	<.638
Turbidity, field	1.0020	.5112	.6005	5.6610	1.1160	.3710	4.2110	
Vanadium	.666	.429	.377	<.840	.917	<.520 .603J	<.520 .673J	<2.150
Zinc	26.500	<5.210	<5.210	<11.500	<11.500	<10.000	<10.000	<6.920 6.990J

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

Table 9

Analytical Data Summary for MW-7A

Constituents	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	11/3/2020 11/23/2020	2/3/2021 2/24/2021	5/17/2021 6/8/2021	9/21/2021 9/29/2021
Antimony	<.5300		<.5100	1.6700	<1.1000	<1.1000	<1.1000
Arsenic	<.750		<.880	<.880		<.750	<.750
Barium	185.0	174.0	139.0	160.0		166.0	156.0
Beryllium	<.2700		<.2700	<.2700		<.2700	<.2700
Cadmium	<.0390 .0610J		<.0490	<.0490 .0580J		<.0510	<.0510
Chromium	<.980 2.950J		<1.100 2.120J	<1.100 2.390J		<1.100 3.290J	<1.100 3.380J
Cobalt	<.0910		<.0910	<.0910		<.0910	<.1900
Copper	<2.000		<1.500	<1.500		<1.400	<1.400
Cyanide							
Lead	<.2700		<.1100	<.1100		<.2100	<.2100
Mercury							
Nickel	<1.700		<1.900	<1.900		<1.900	<1.900
Selenium	<1.000		<1.000	<1.000		<.960	<.960
Silver	<.3700		<.3700	<.3700		<.4200	<.4200
Thallium	<.2700		<.2600	<.2600		<.2600	<.2600
Total suspended solids	2.630	<.638	2.500	<.638 1.000J	<.638 .875J	<.638	<.638 1.000J
Turbidity, field	1.0400	.0000	4.4100	.7600	.5100		3.3200
Vanadium	<.820 .862J		<.850	<.850		<1.100	<1.100
Zinc	35.800	<10.000	<10.000	<10.000		<10.000	<10.000

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

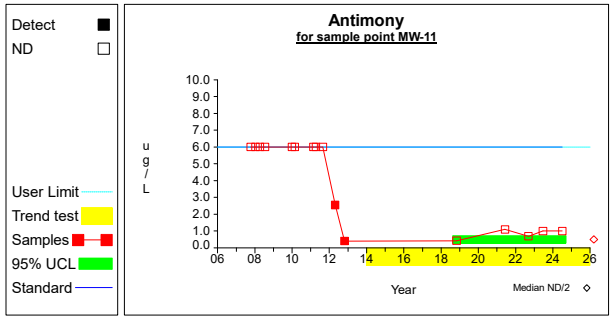
Table 9

Analytical Data Summary for MW-7A

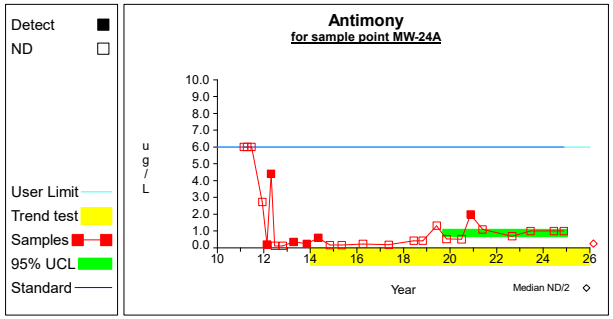
Constituents	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024	2/14/2025
Antimony	<.6900	<.6900	<1.0000		<1.0000	<1.0000	<1.0000	
Arsenic	<.750	<.750	<.530		<.530	<.530	<.530	
Barium	143.0	71.9	323.0	366.0	451.0	190.0	425.0	196.0
Beryllium	<.2700	<.2700	<.3300		<.3300	<.3300	<.3300	
Cadmium	<.0550	<.0550	<.1000		<.1000	<.1000	<.1000	
Chromium	<1.100 3.010J	<1.100	<1.100		<1.100	<1.200 3.340J	<1.200	
Cobalt	<.1900	<.1900 .3390J	<.1700		<.1700 .2570J	<.1700	<.1700	
Copper	<1.800	<1.800	<1.800		<1.800	<1.800	<1.800	
Cyanide						<3.5		
Lead	<.2400	<.2400	<.2400		<.2400	<.2600	<.2600	
Mercury						<.11		
Nickel	<1.900	<1.900	5.110		12.800	<2.100	8.810	
Selenium	<.960	<.960	<1.400		<1.400	<1.400	<1.400	
Silver	<.4900	<.4900	<.5000		<.5000	<.5000	<.5000	
Thallium	<.2600	<.2600	<.2600		<.2600	<.5700	<.5700	
Total suspended solids	<.638	1.880	<.638	5.130	3.130	<1.390	<1.540	
Turbidity, field	.0000	2.2400	.8400	1.1100	1.4200	1.8300	.2200	.7500
Vanadium	<1.100 1.210J	<1.100	<1.100		<1.100	<1.100	<1.100	
Zinc	<10.000	<10.000	<6.400		<6.400	<9.700	<9.700	

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

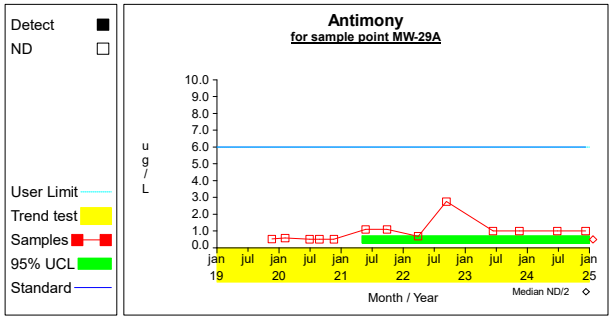
Confidence Limits (Assessment)



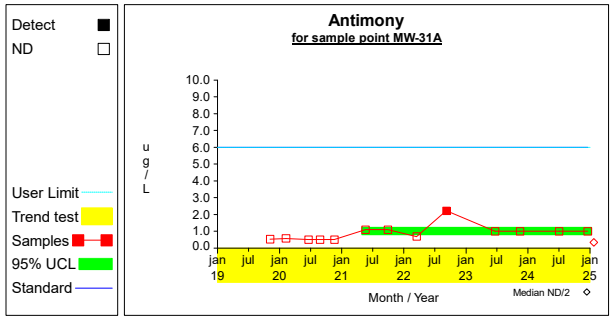
Graph 1



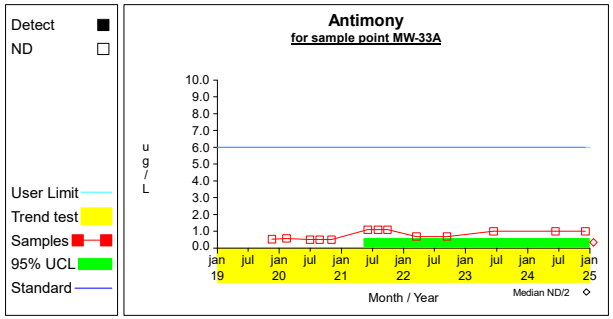
Graph 2



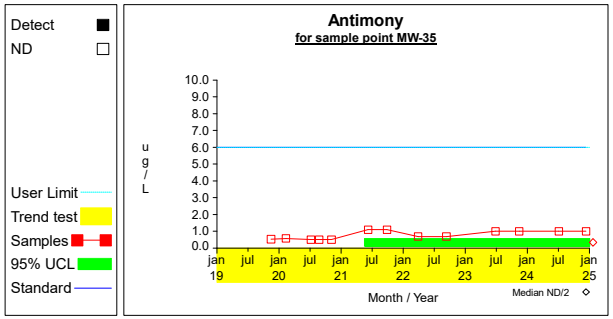
Graph 3



Graph 4



Graph 5



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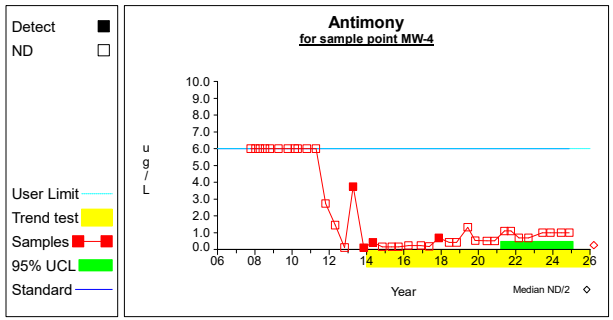

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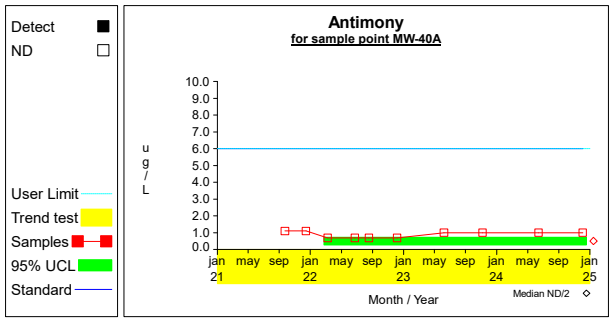
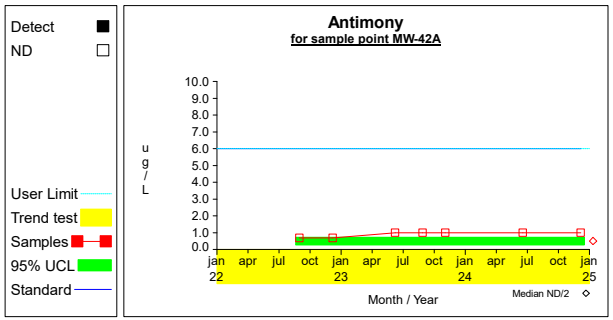
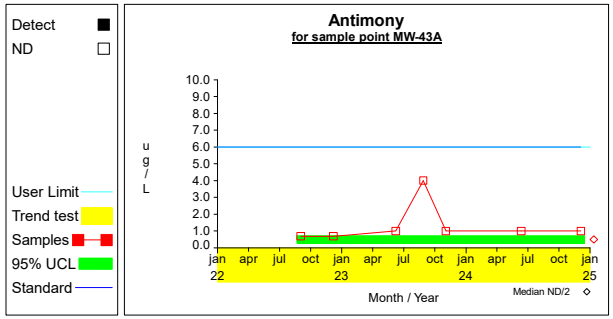


Graph 8

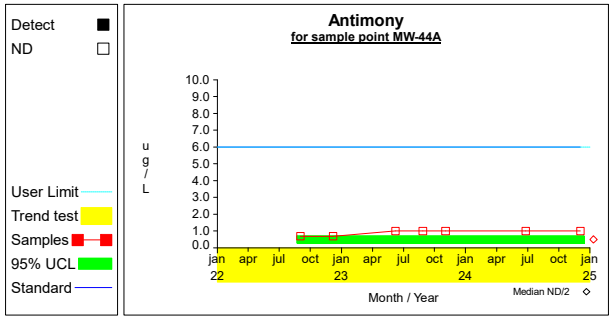


Graph 9

Confidence Limits (Assessment)



Graph 10



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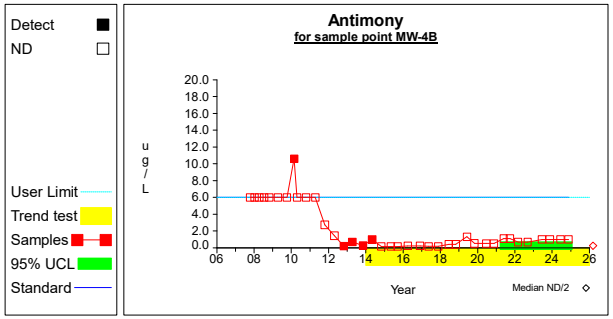
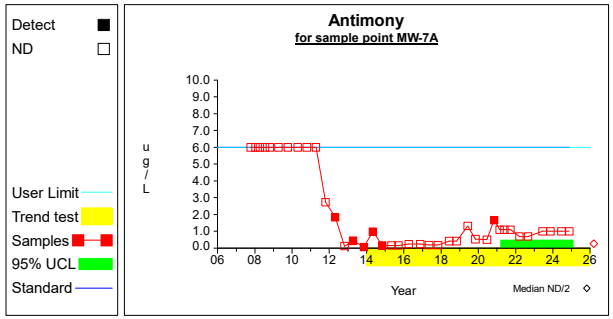
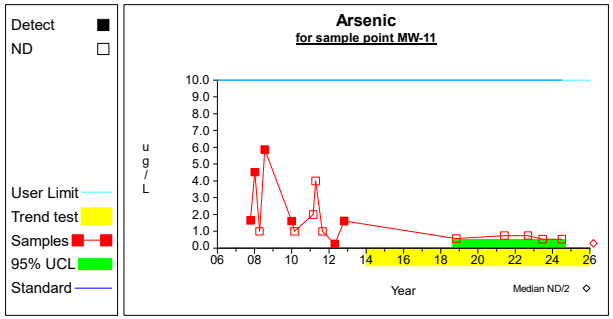


Graph 12



Graph 13



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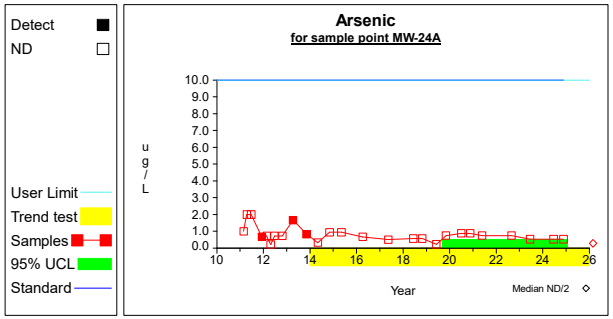
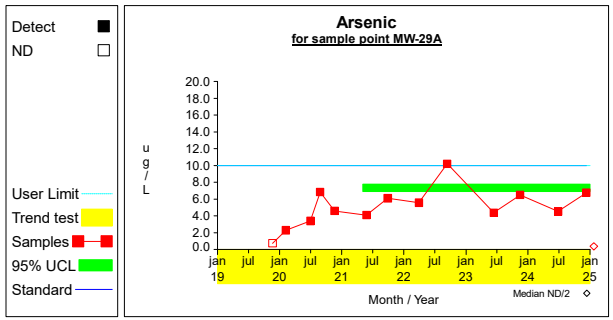


Graph 15



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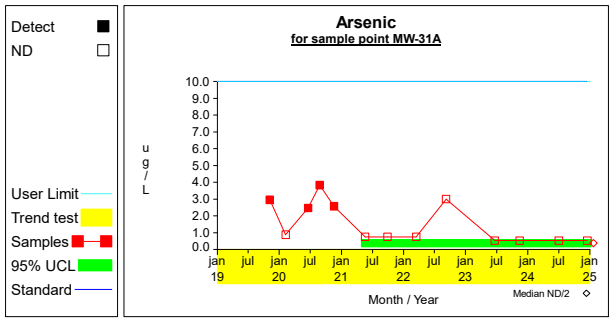
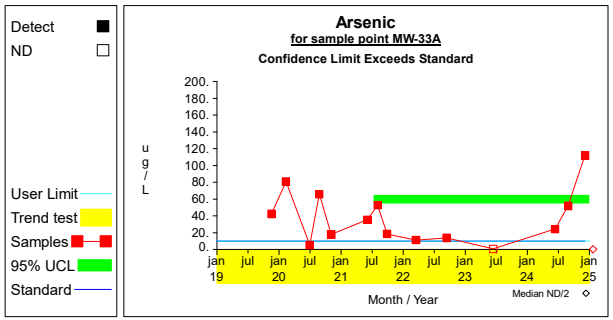
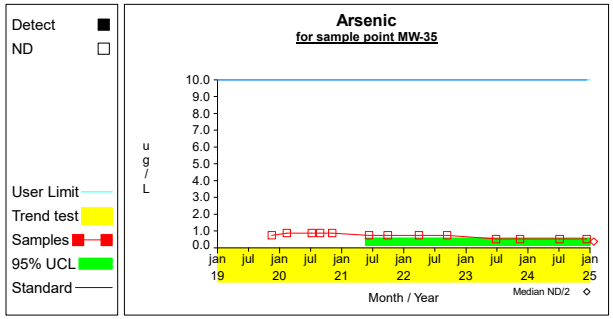


Graph 17

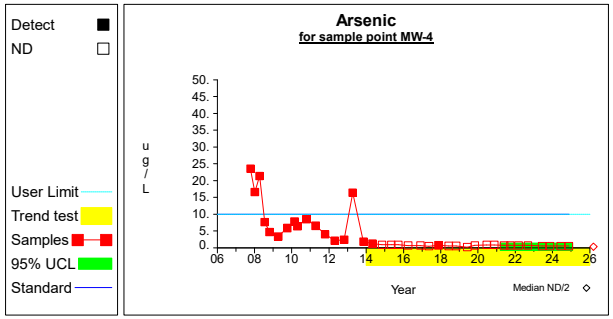


Graph 18

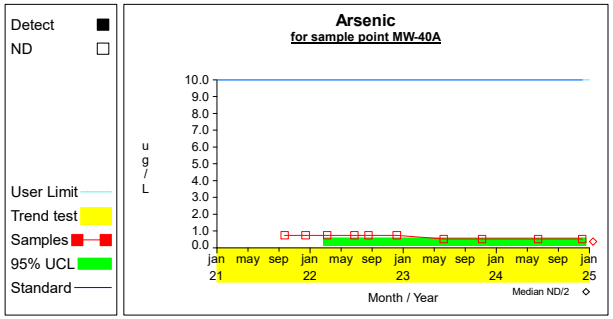
Confidence Limits (Assessment)



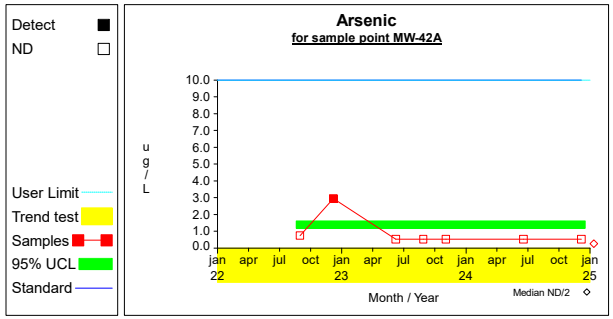
Graph 19



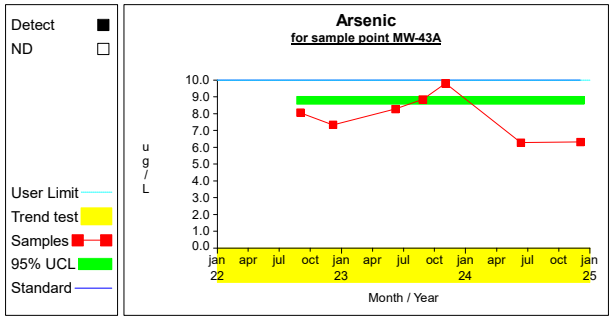
Graph 20



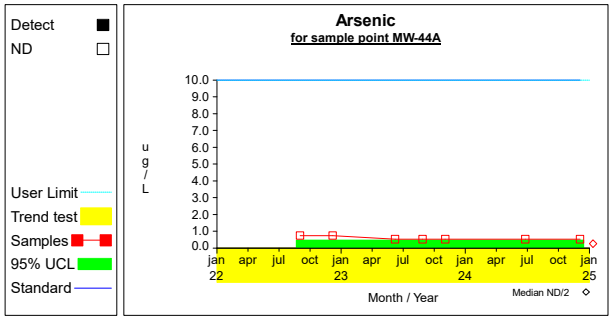
Graph 21



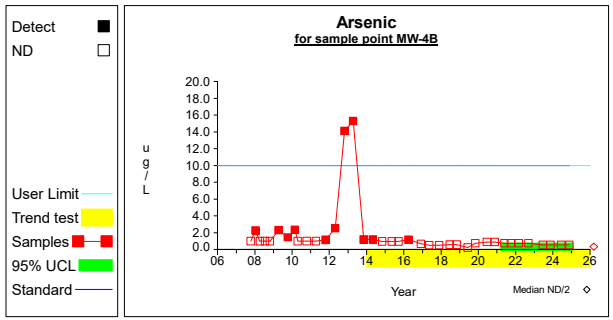
Graph 22



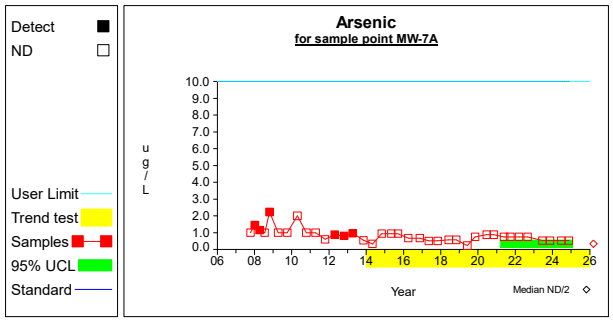
Graph 23



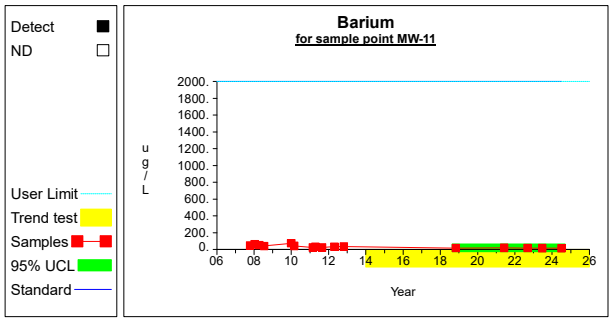
Graph 24



Graph 25

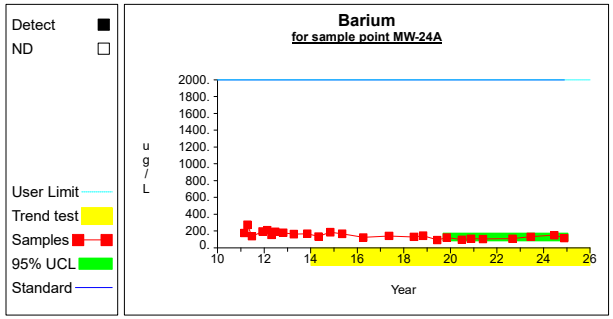


Graph 26

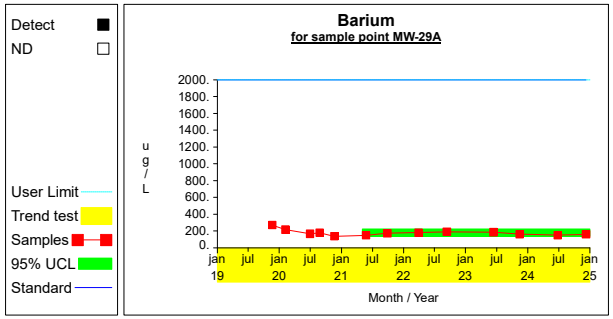


Graph 27

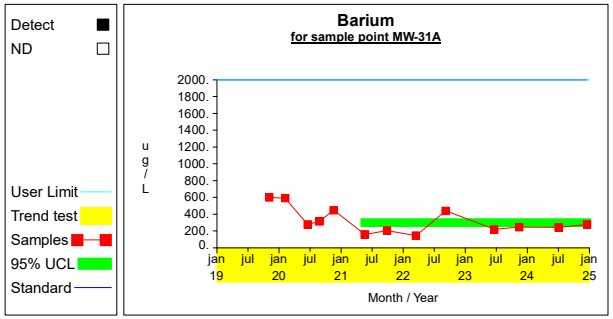
Confidence Limits (Assessment)



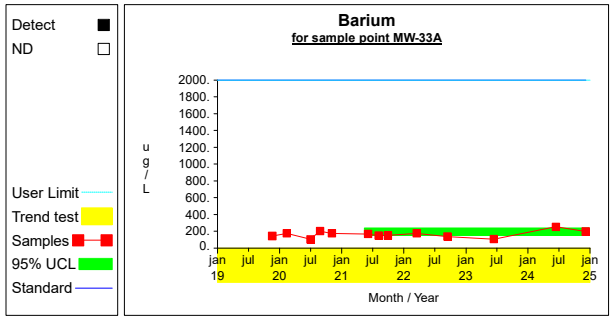
Graph 28



Graph 29



Graph 30



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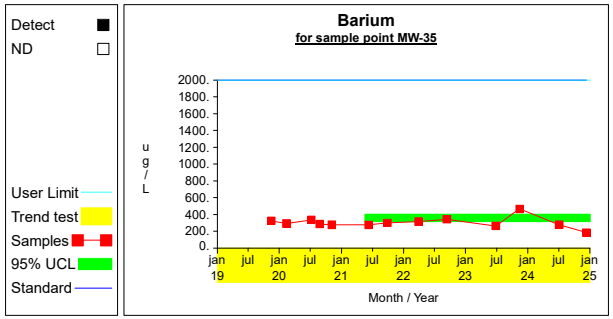
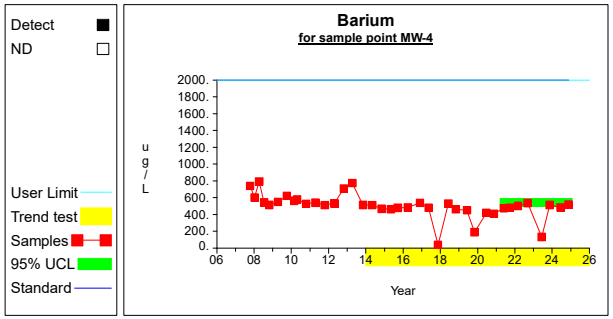
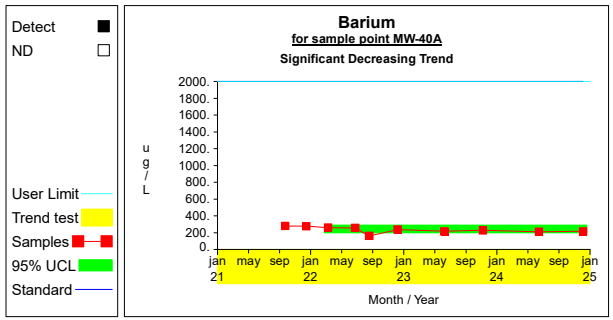


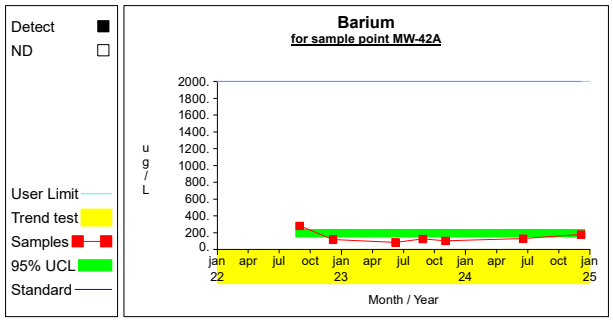
Graph 32



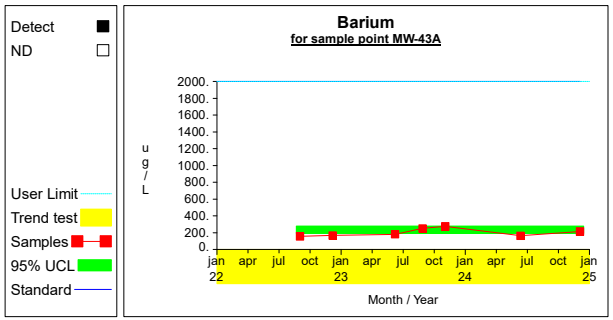
Graph 33



Graph 34

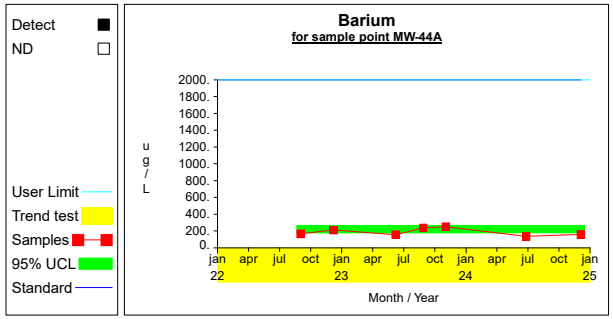


Graph 35

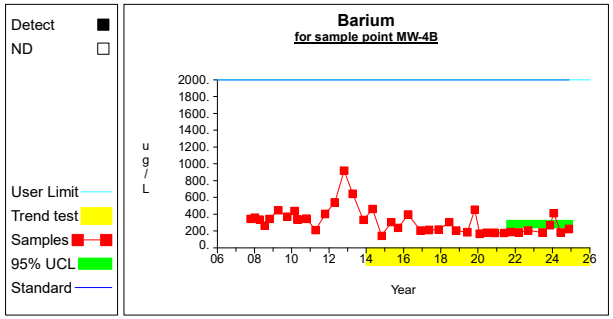


Graph 36

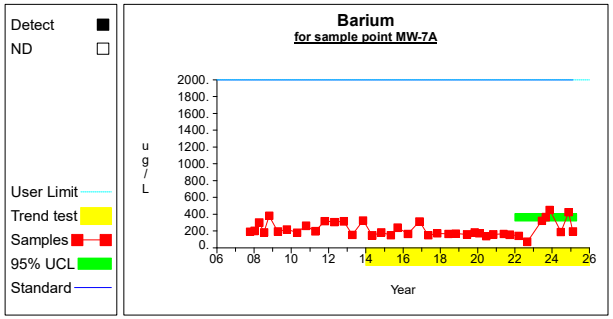
Confidence Limits (Assessment)



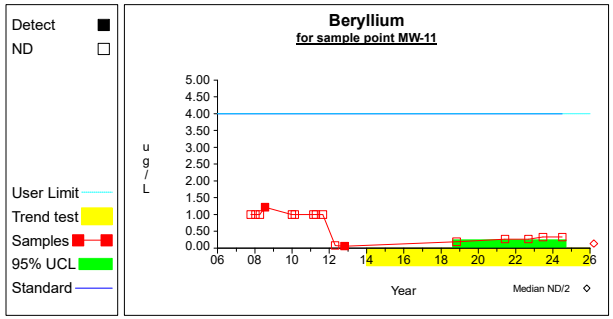
Graph 37



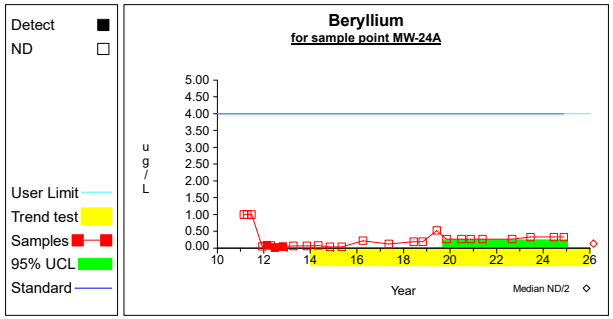
Graph 38



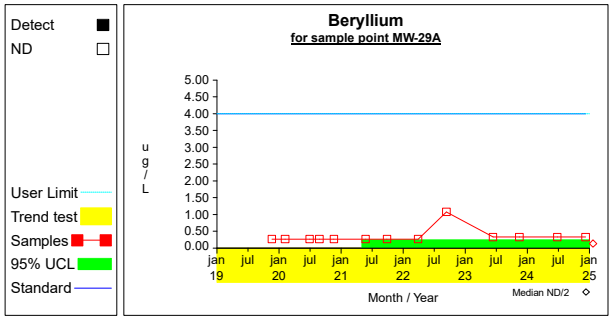
Graph 39



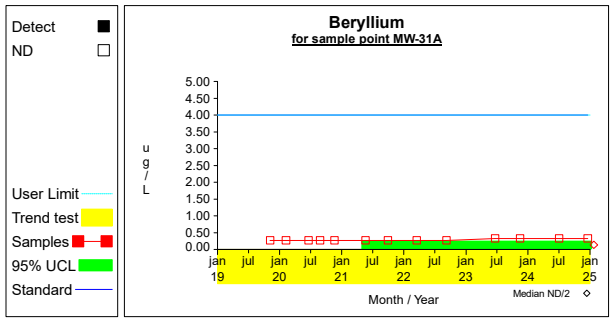
Graph 40



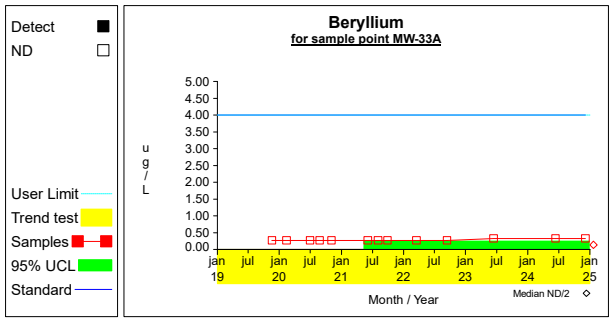
Graph 41



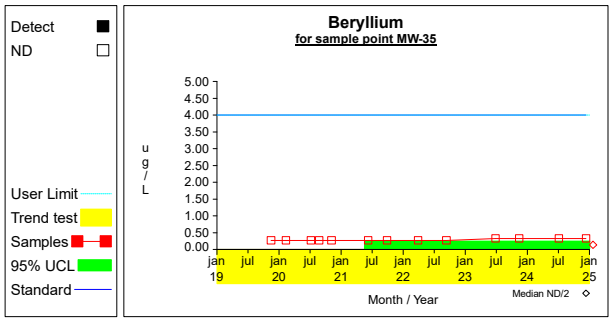
Graph 42



Graph 43

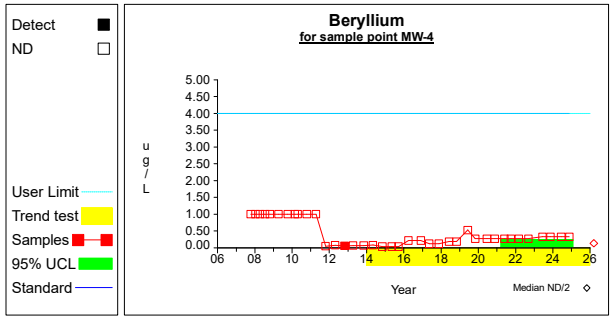


Graph 44

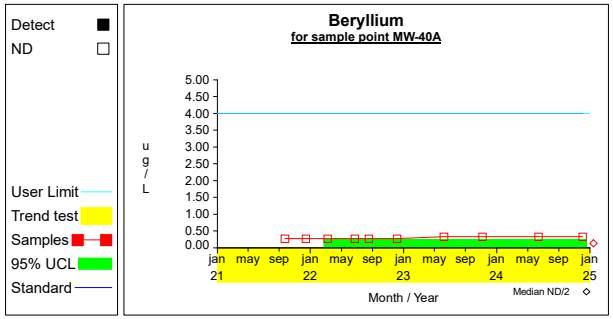


Graph 45

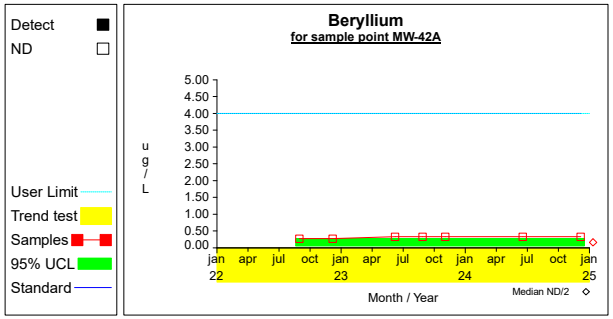
Confidence Limits (Assessment)



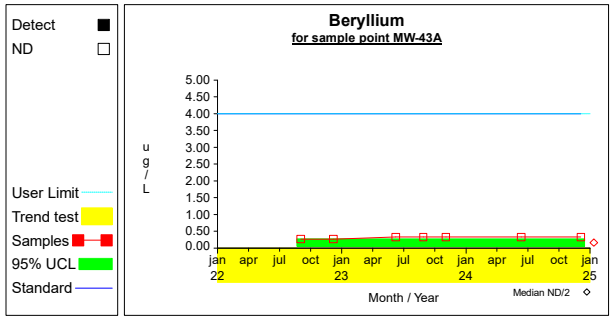
Graph 46



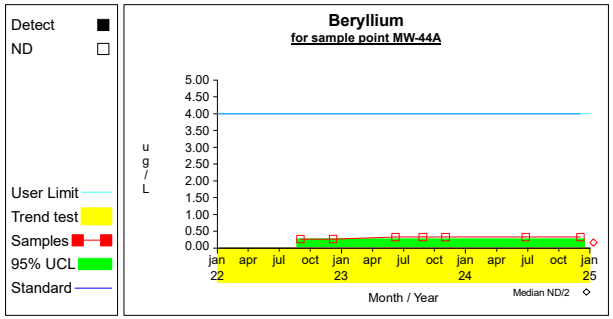
Graph 47



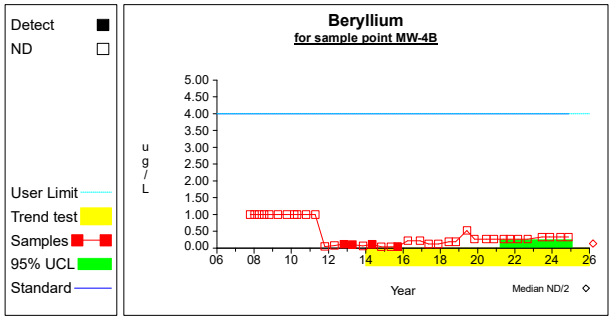
Graph 48



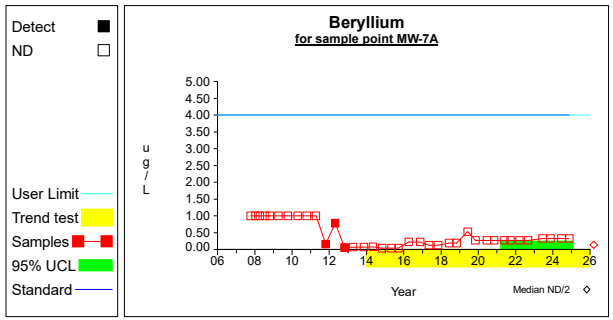
Graph 49



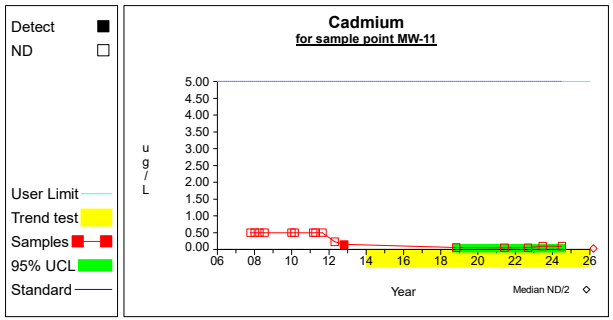
Graph 50



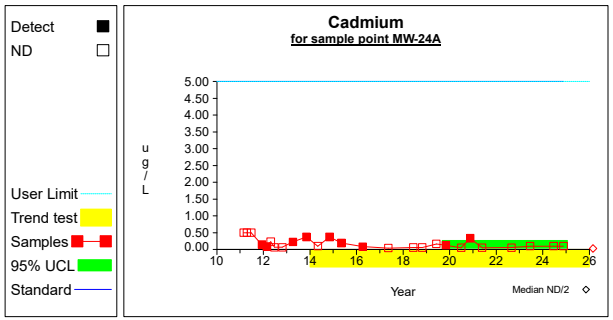
Graph 51



Graph 52

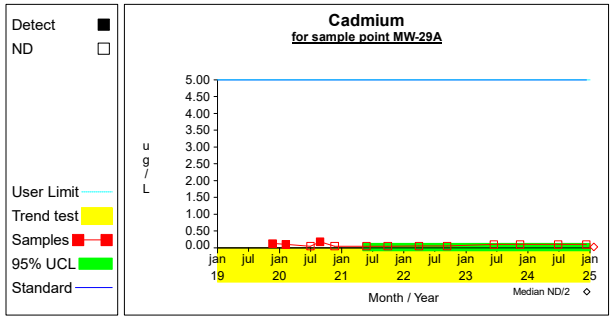


Graph 53

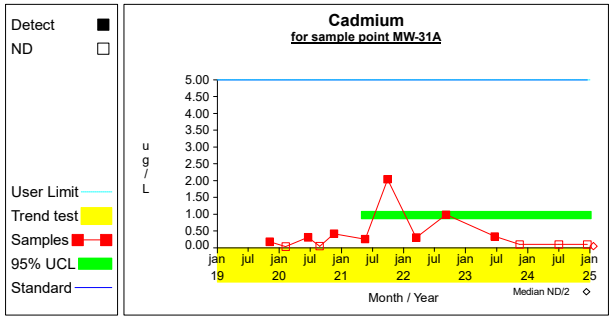


Graph 54

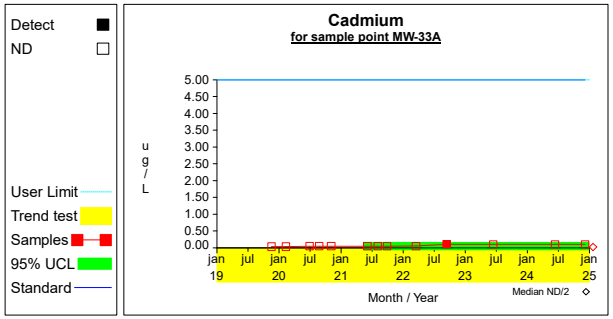
Confidence Limits (Assessment)



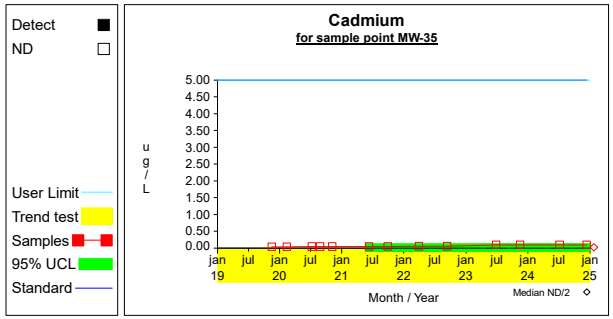
Graph 55



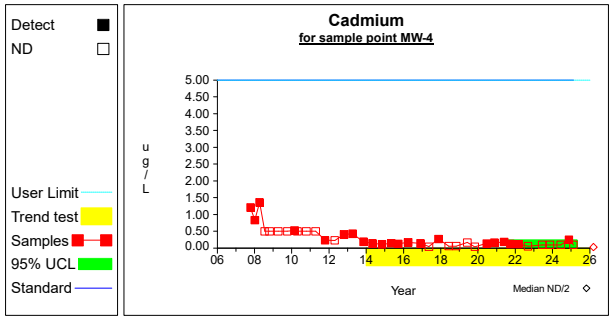
Graph 56



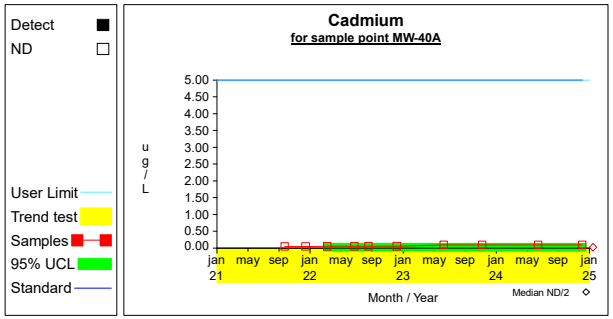
Graph 57



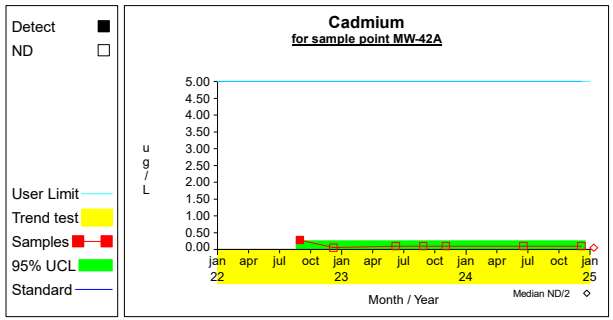
Graph 58



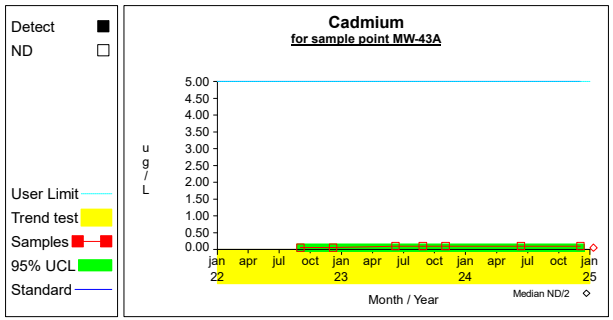
Graph 59



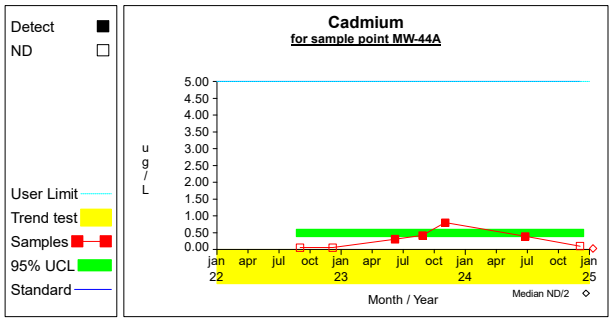
Graph 60



Graph 61

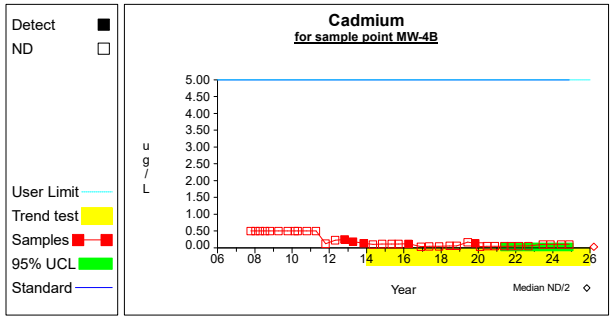


Graph 62

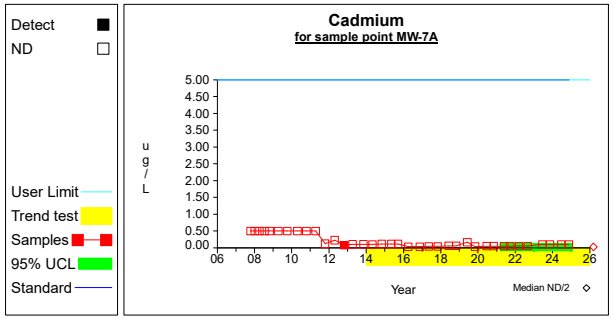


Graph 63

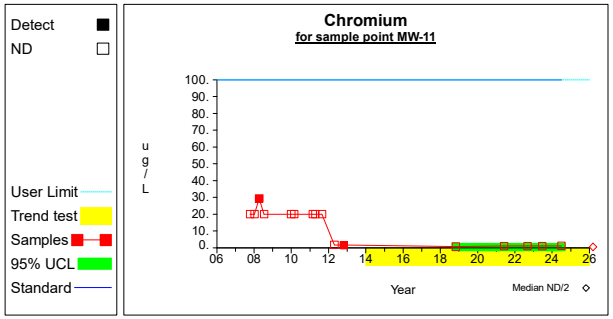
Confidence Limits (Assessment)



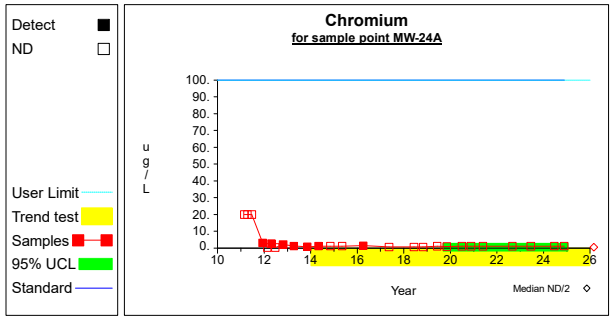
Graph 64



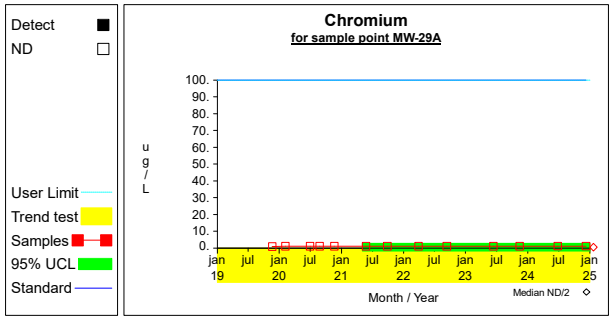
Graph 65



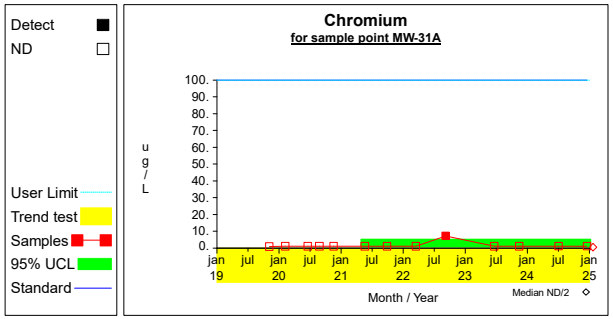
Graph 66



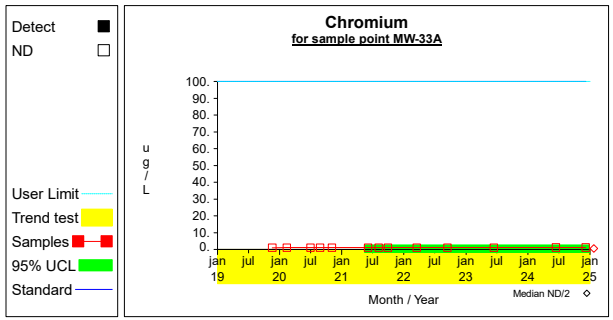
Graph 67



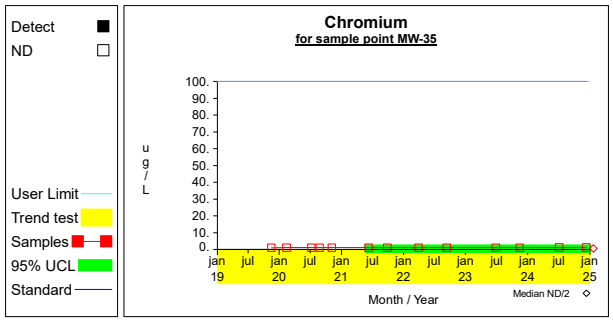
Graph 68



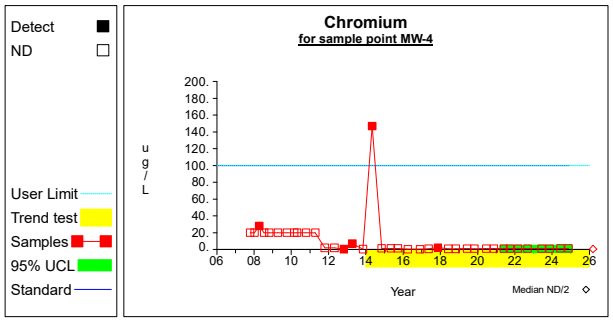
Graph 69



Graph 70

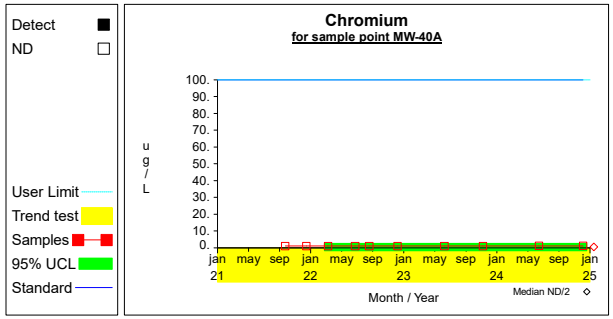


Graph 71

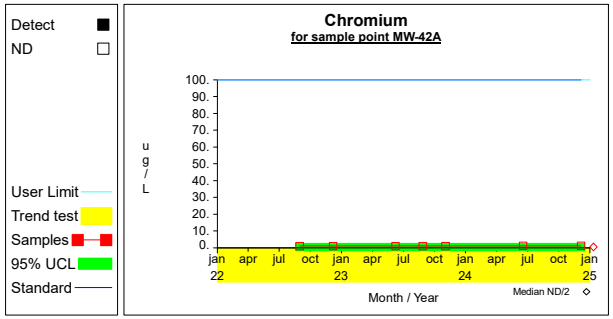


Graph 72

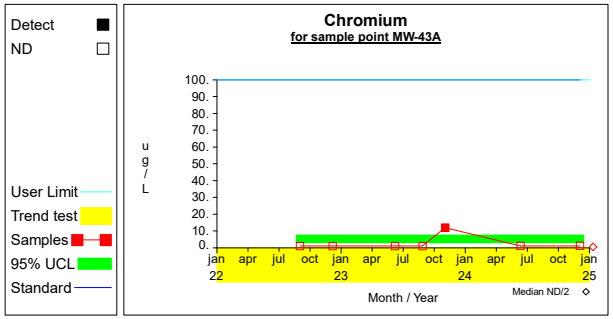
Confidence Limits (Assessment)



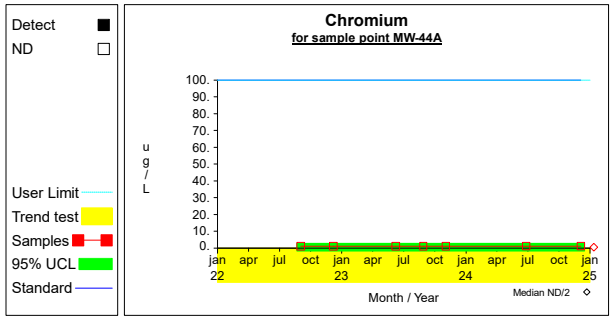
Graph 73



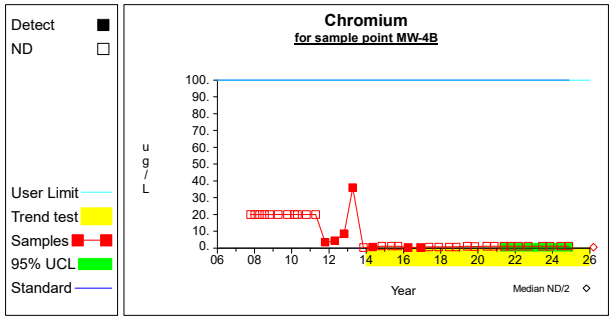
Graph 74



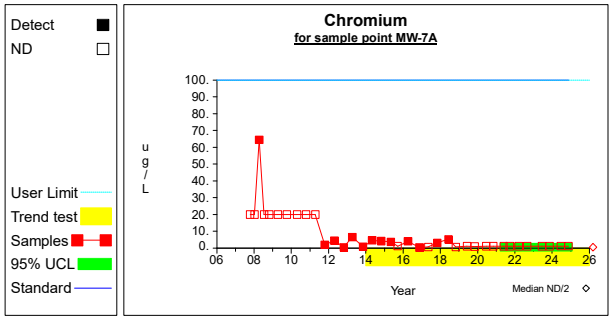
Graph 75



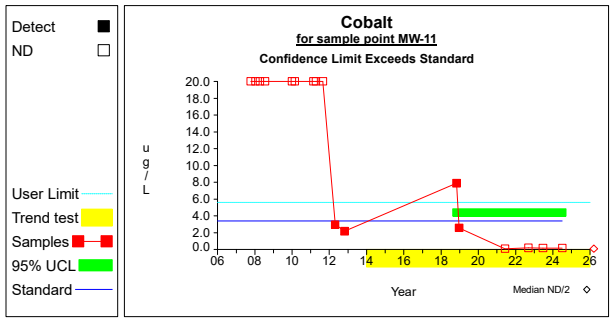
Graph 76



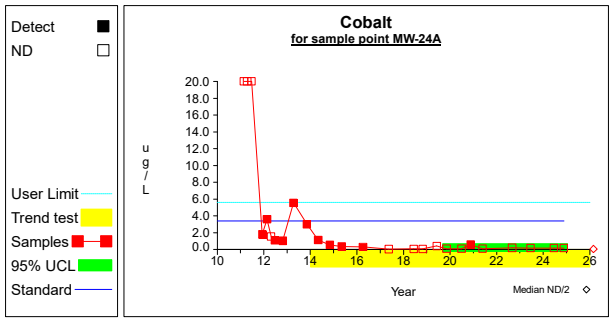
Graph 77



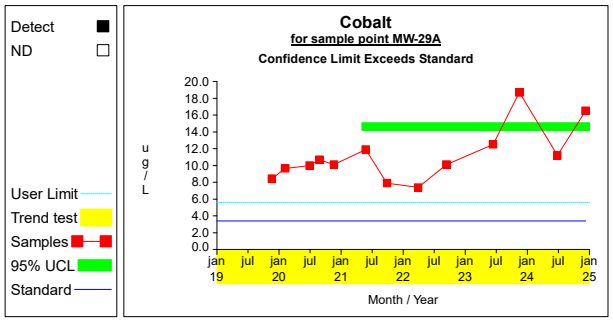
Graph 78



Graph 79

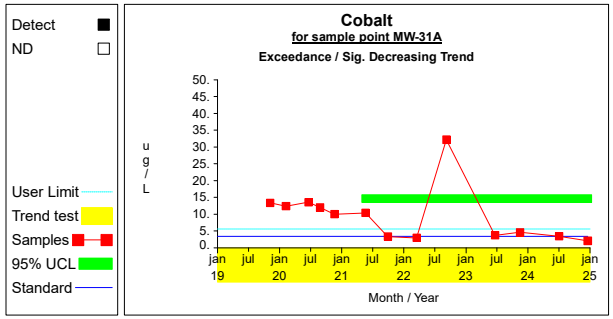


Graph 80

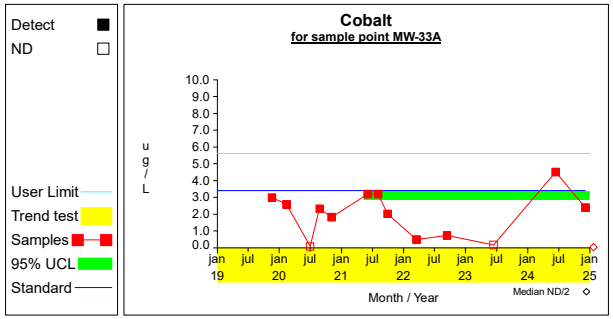


Graph 81

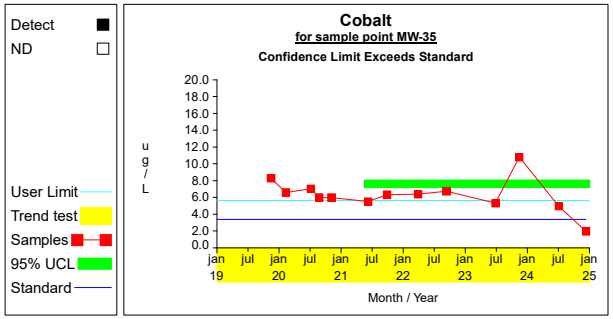
Confidence Limits (Assessment)



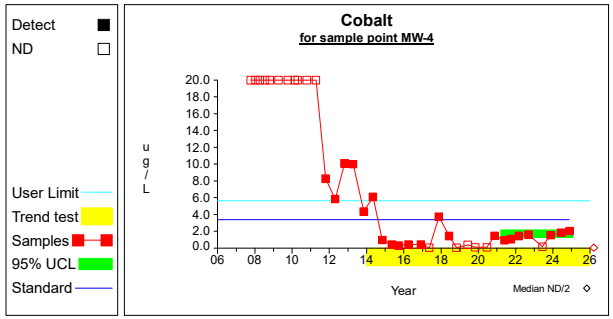
Graph 82



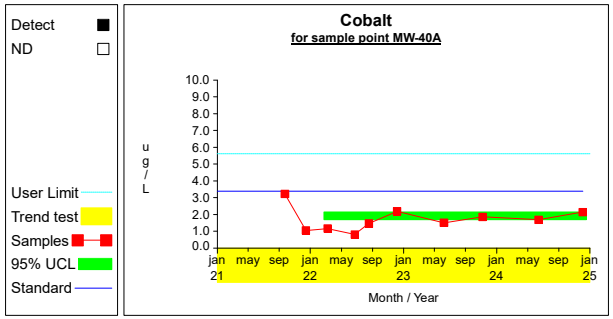
Graph 83



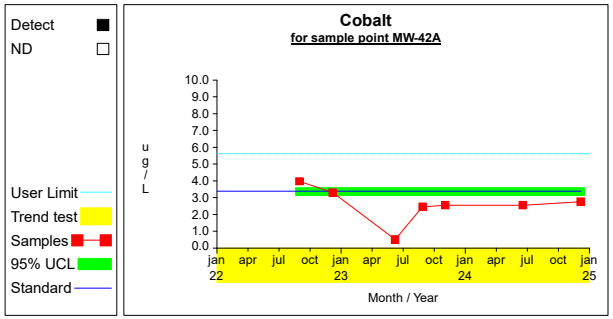
Graph 84



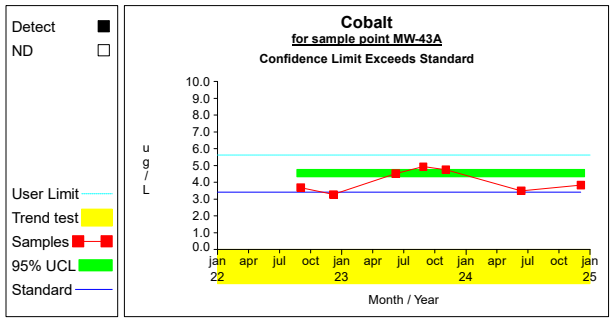
Graph 85



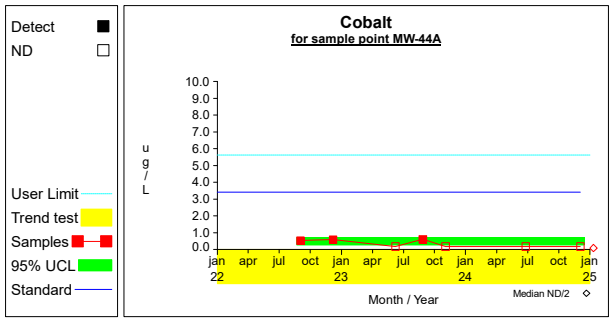
Graph 86



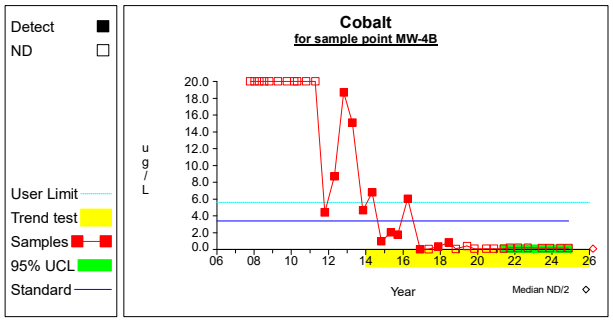
Graph 87



Graph 88

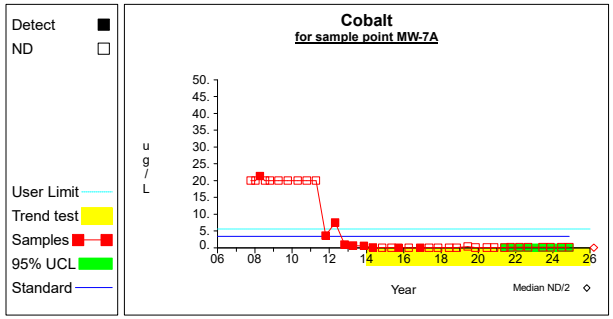


Graph 89

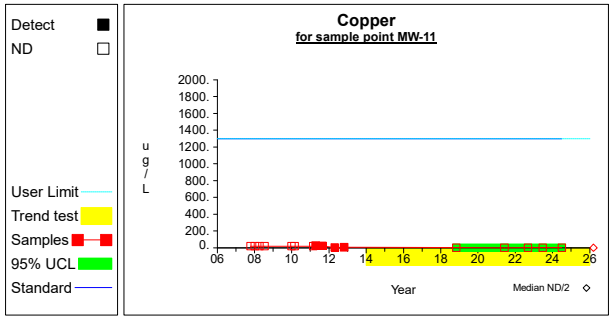


Graph 90

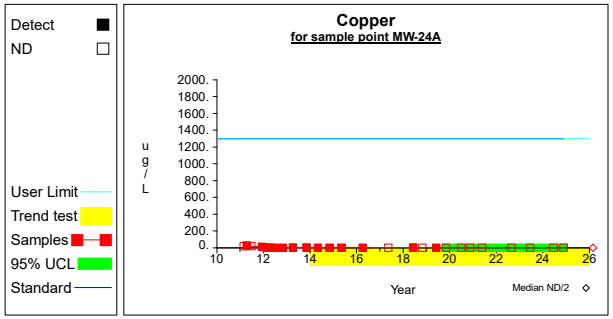
Confidence Limits (Assessment)



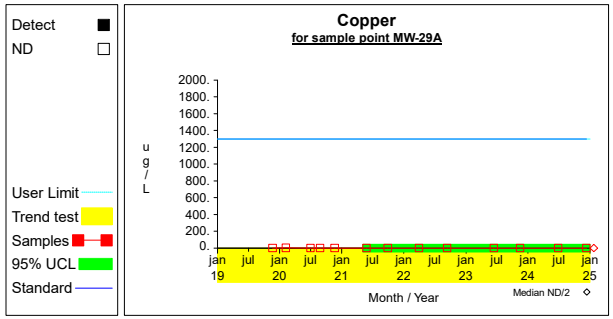
Graph 91



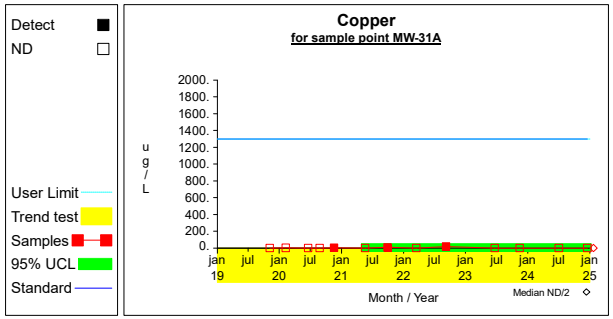
Graph 92



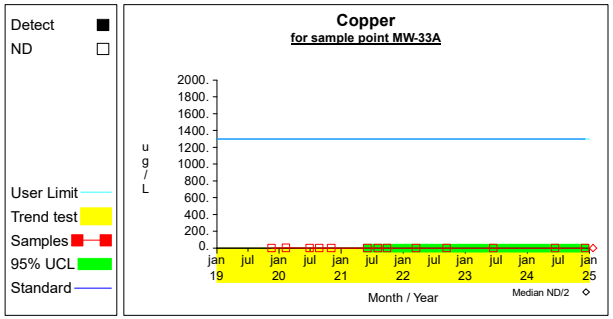
Graph 93



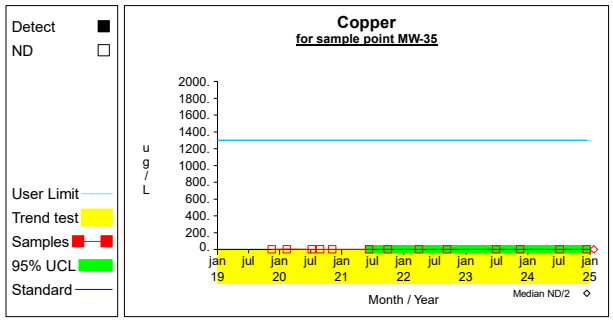
Graph 94



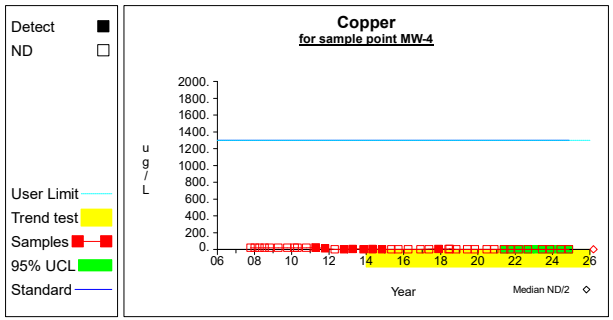
Graph 95



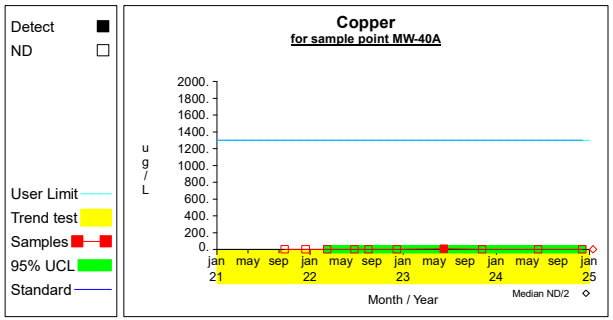
Graph 96



Graph 97

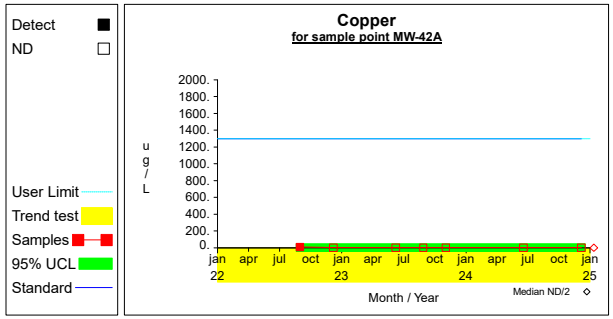


Graph 98

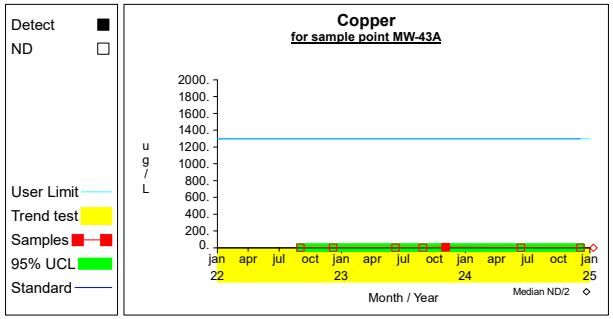


Graph 99

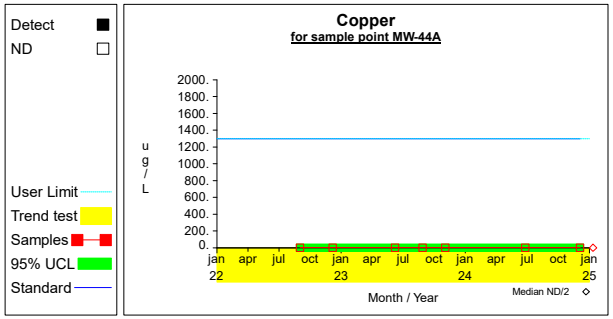
Confidence Limits (Assessment)



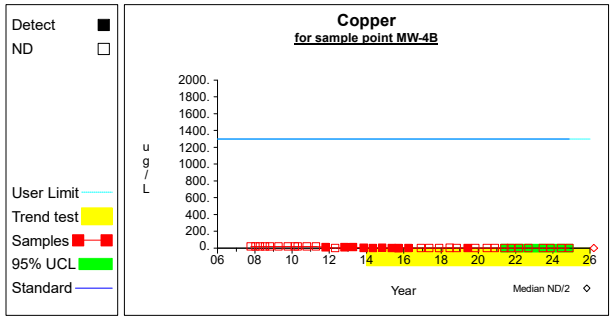
Graph 100



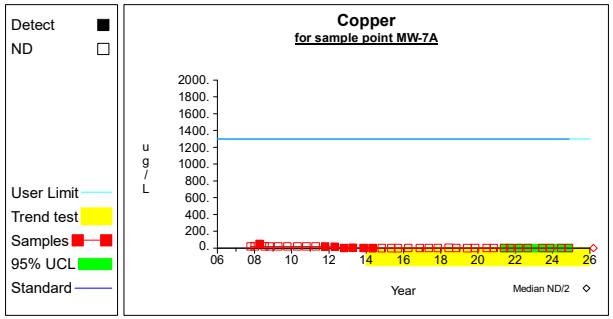
Graph 101



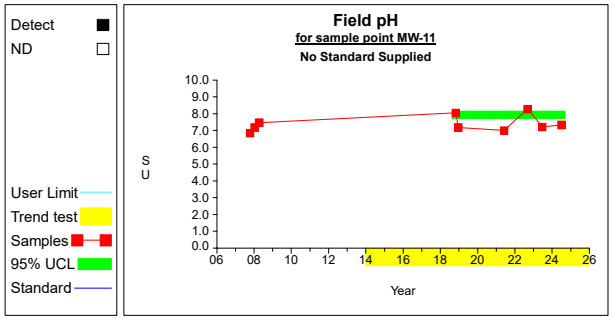
Graph 102



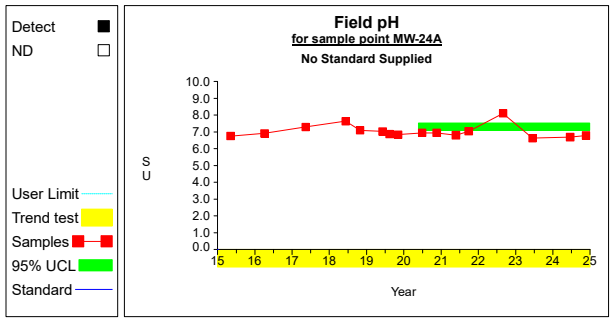
Graph 103



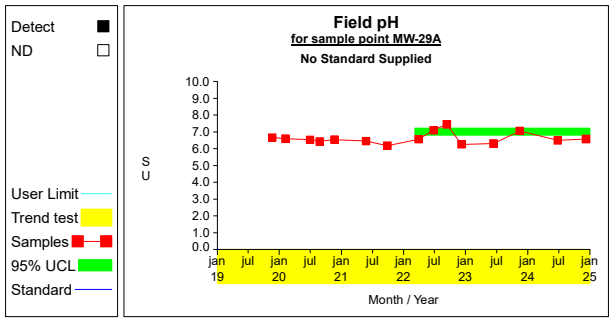
Graph 104



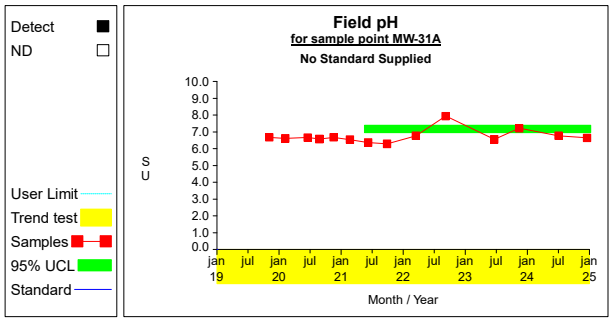
Graph 105



Graph 106

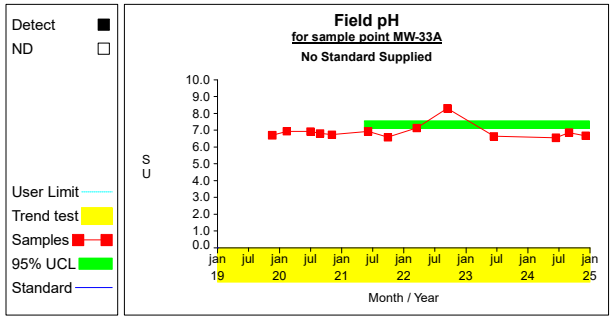


Graph 107

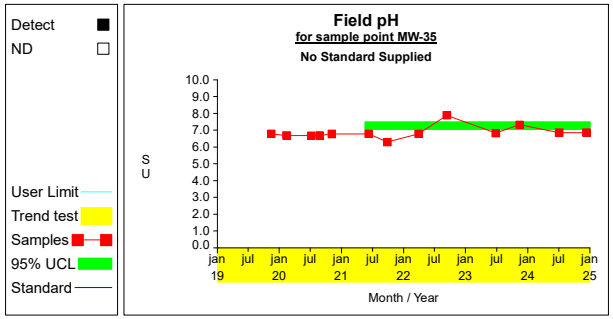


Graph 108

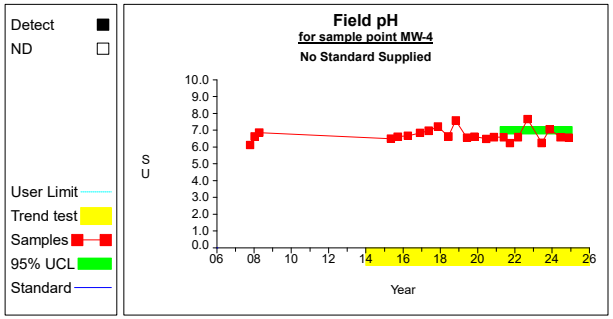
Confidence Limits (Assessment)



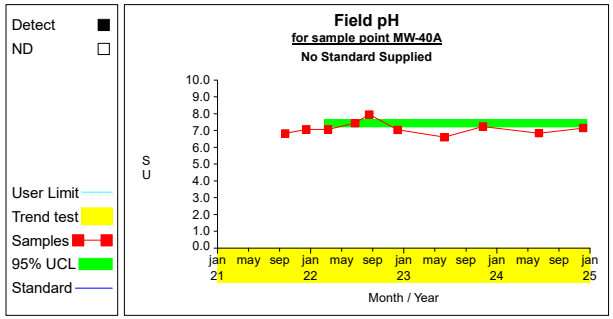
Graph 109



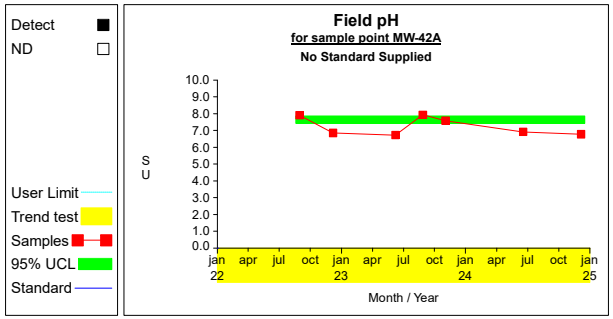
Graph 110



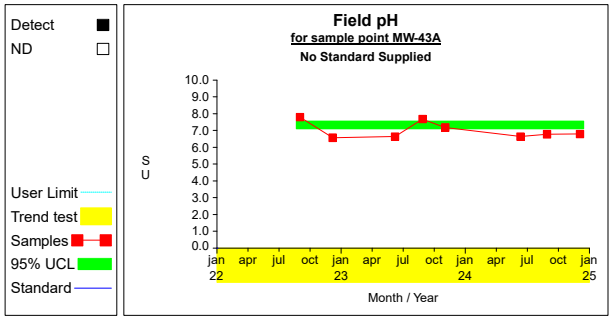
Graph 111



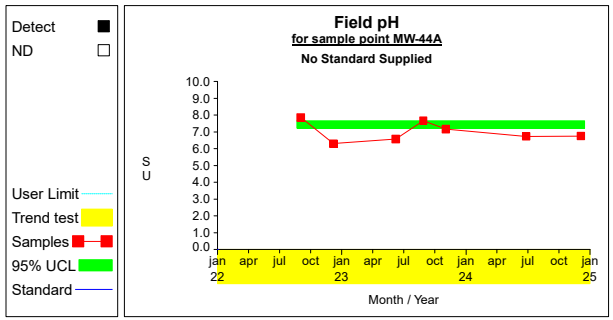
Graph 112



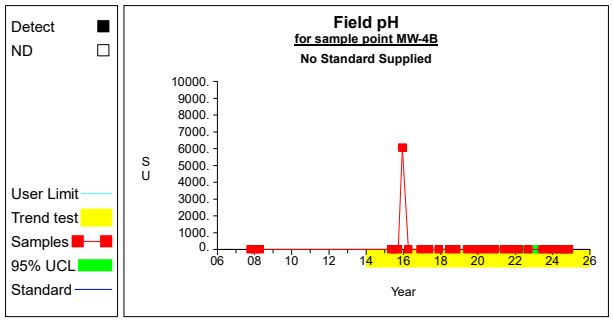
Graph 113



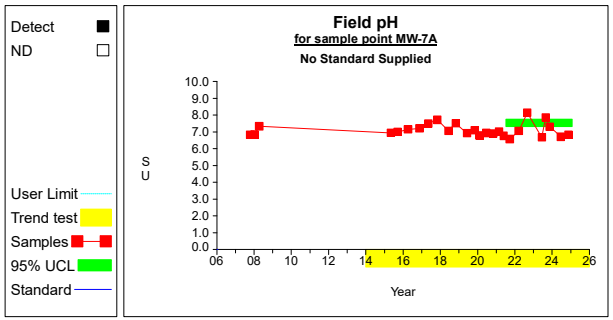
Graph 114



Graph 115

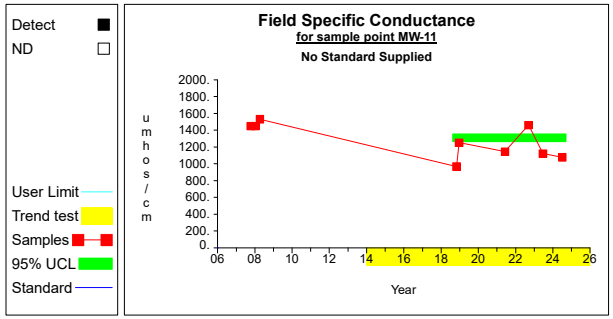


Graph 116

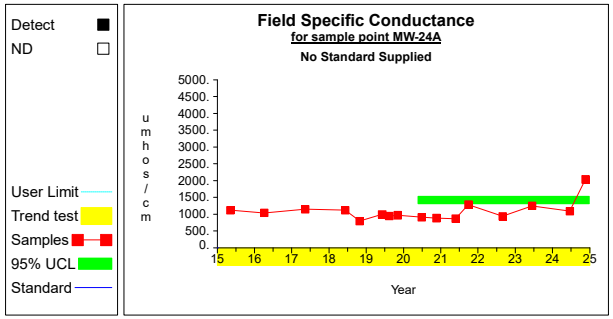


Graph 117

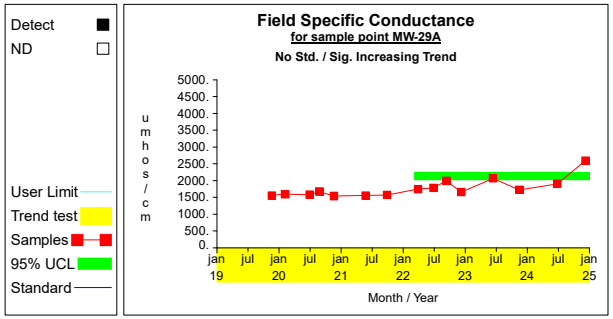
Confidence Limits (Assessment)



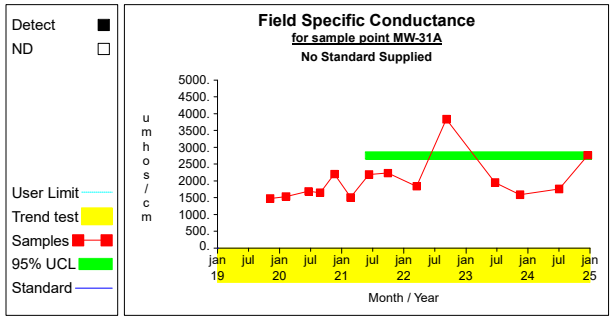
Graph 118



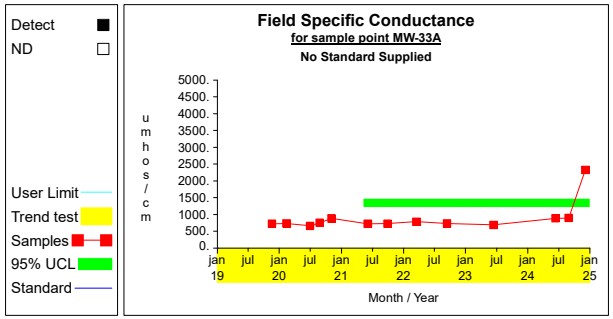
Graph 119



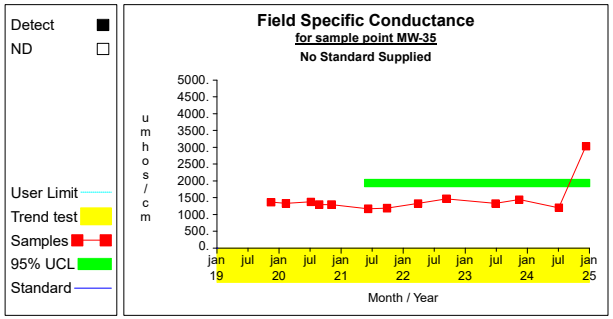
Graph 120



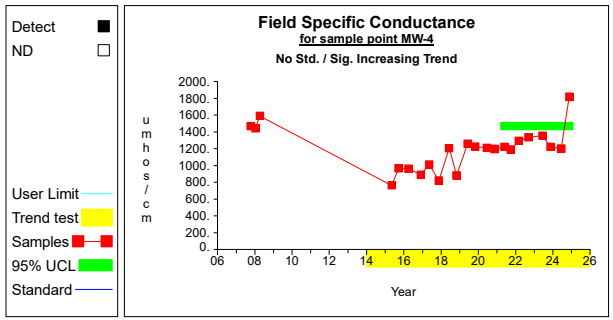
Graph 121



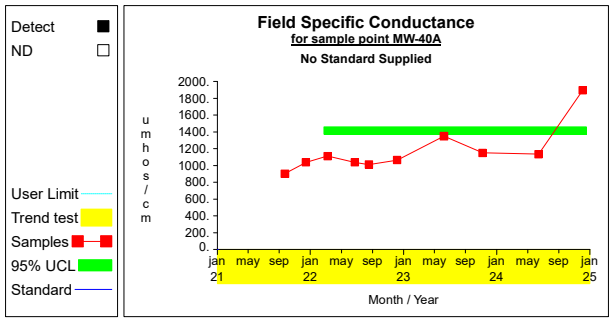
Graph 122



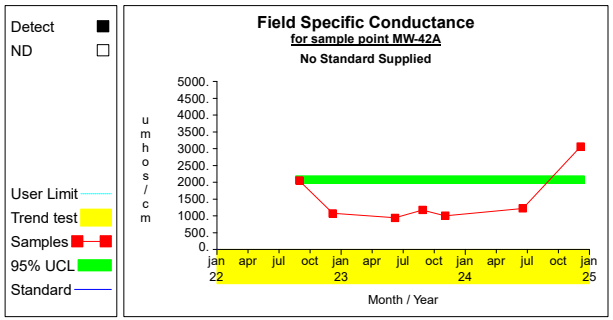
Graph 123



Graph 124

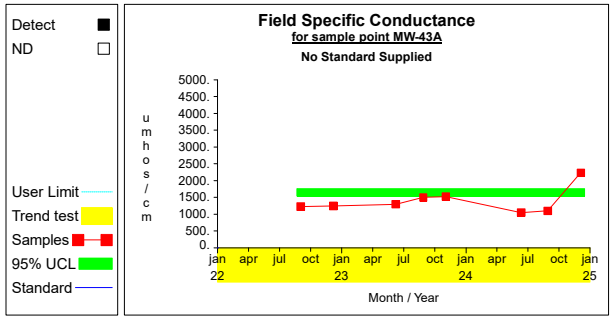


Graph 125

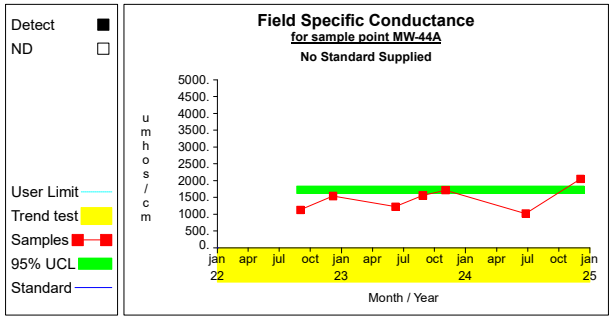


Graph 126

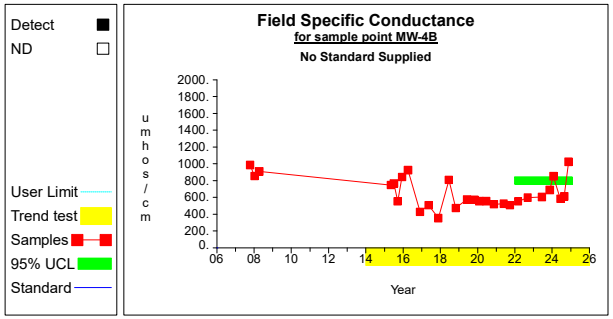
Confidence Limits (Assessment)



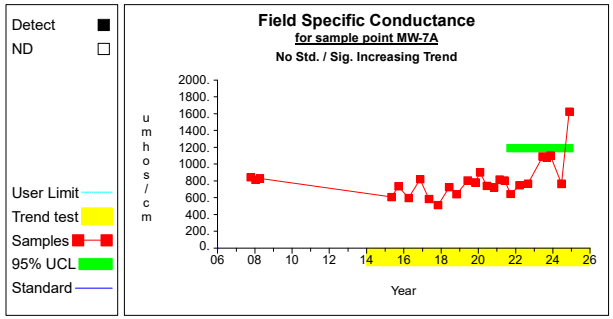
Graph 127



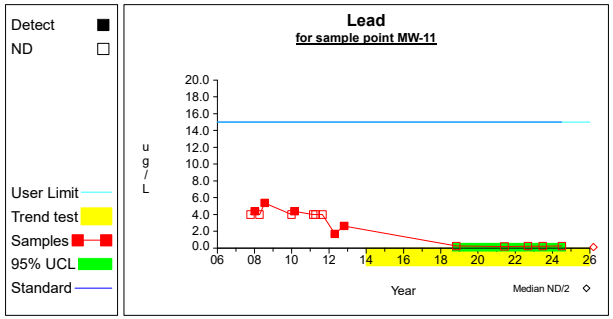
Graph 128



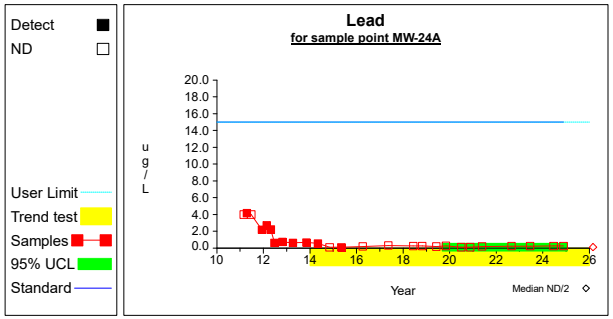
Graph 129



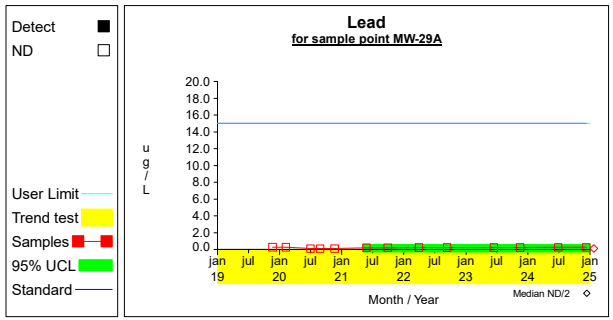
Graph 130



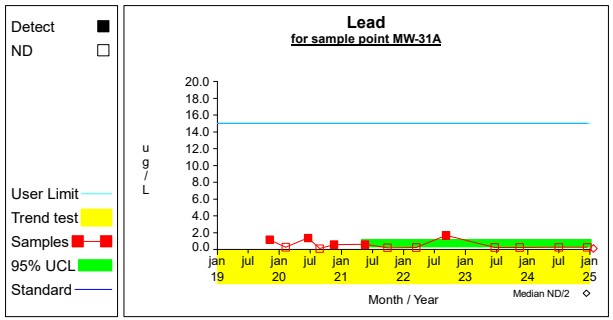
Graph 131



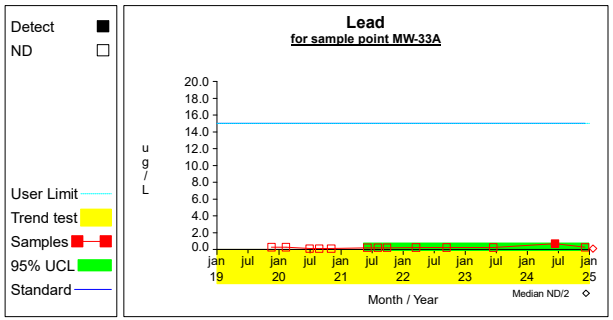
Graph 132



Graph 133

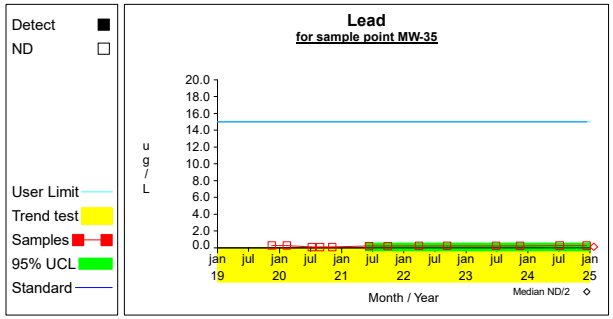


Graph 134

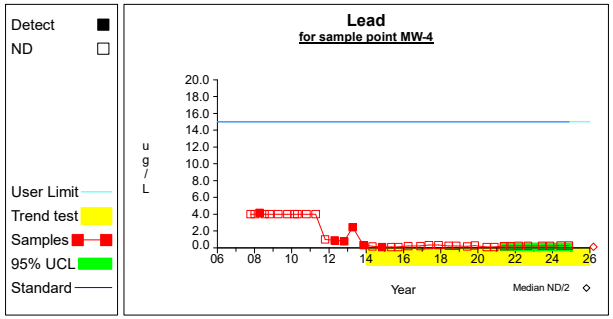


Graph 135

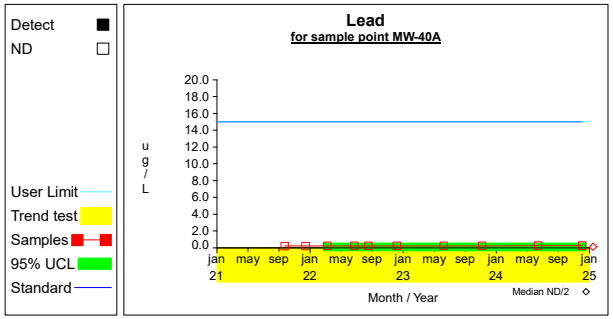
Confidence Limits (Assessment)



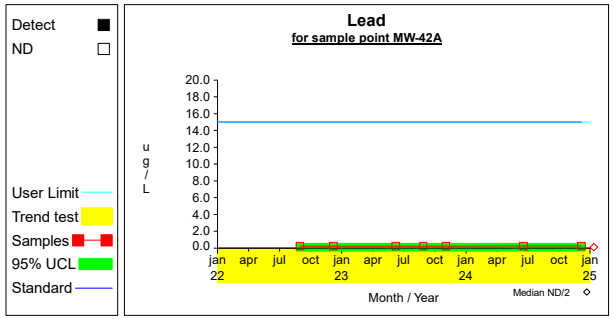
Graph 136



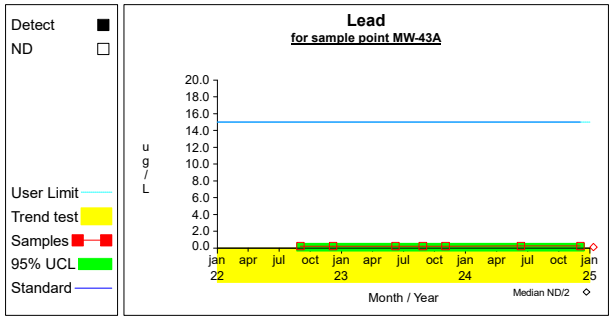
Graph 137



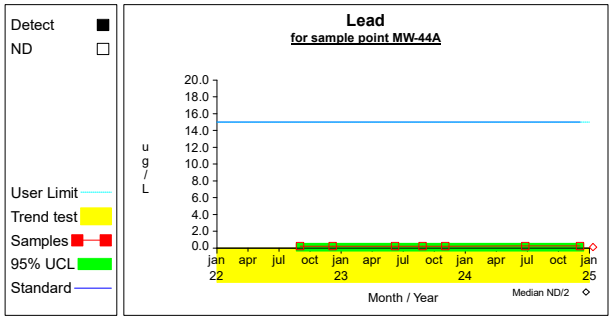
Graph 138



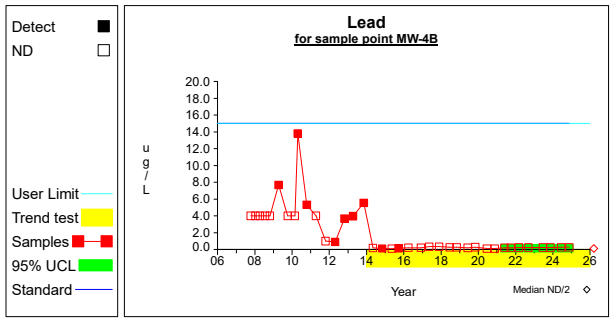
Graph 139



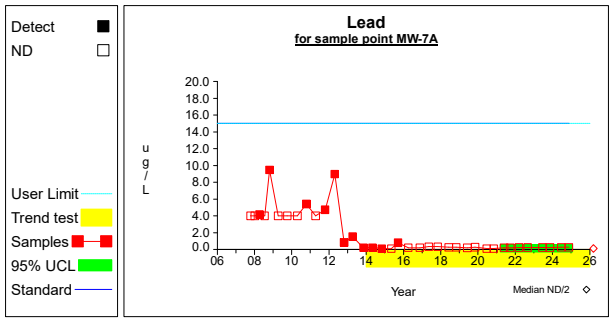
Graph 140



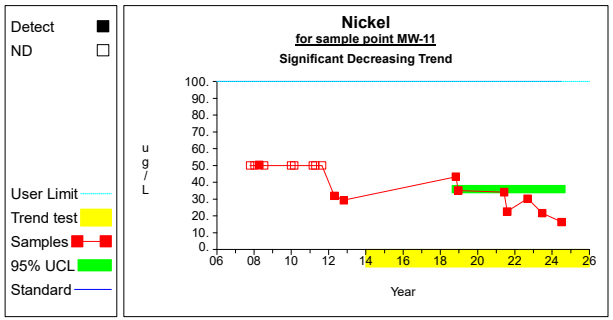
Graph 141



Graph 142

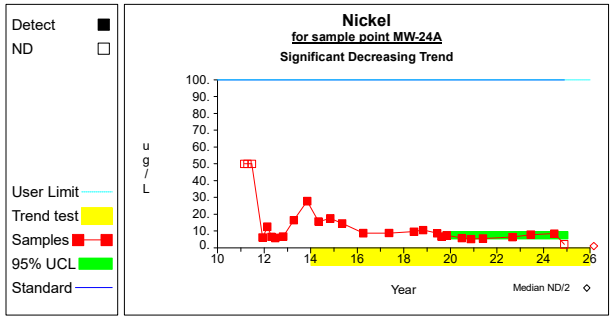


Graph 143

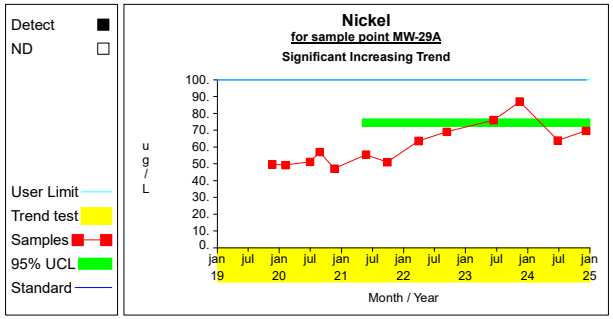


Graph 144

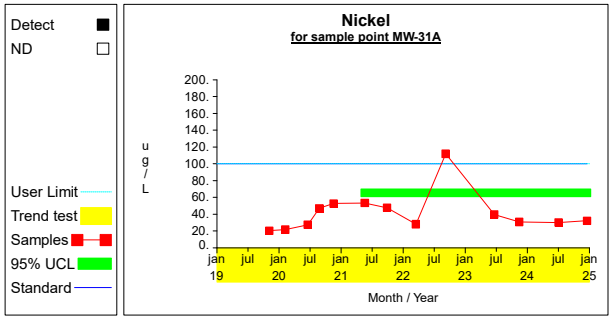
Confidence Limits (Assessment)



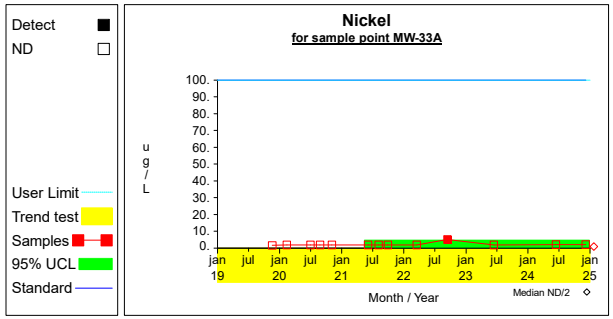
Graph 145



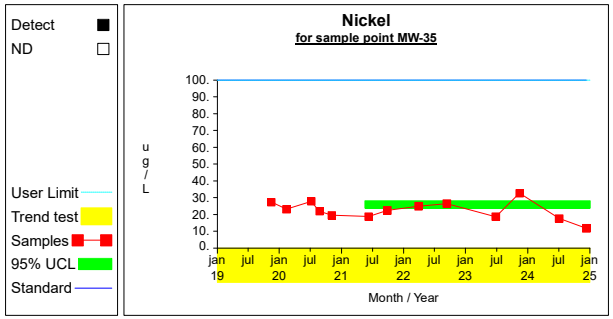
Graph 146



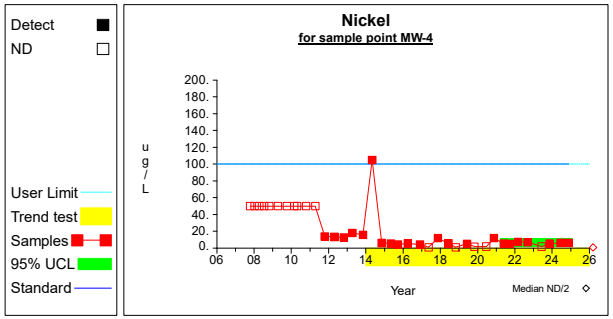
Graph 147



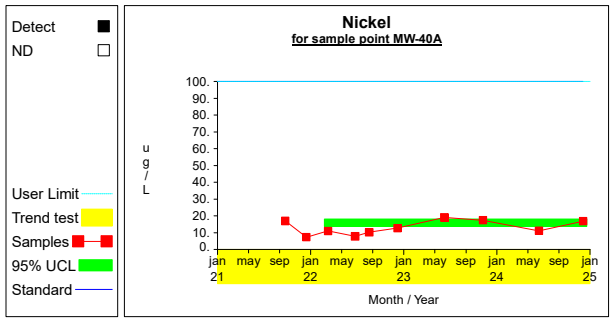
Graph 148



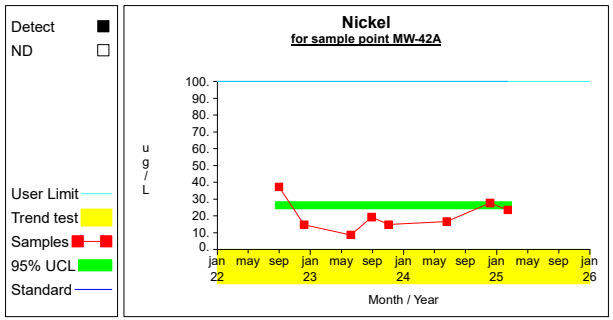
Graph 149



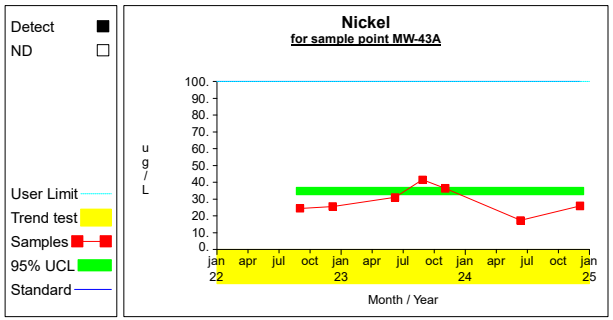
Graph 150



Graph 151

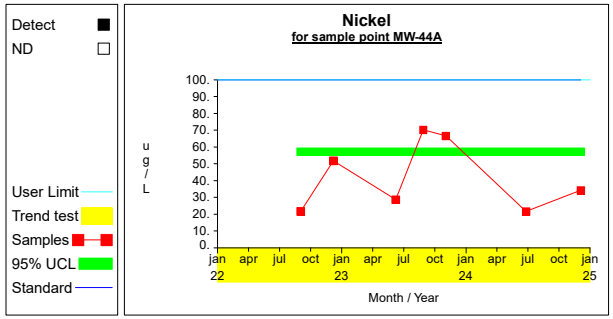


Graph 152

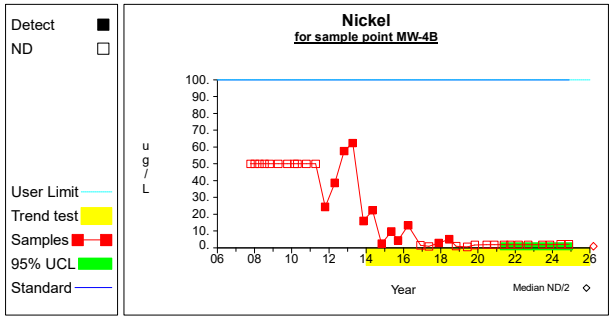


Graph 153

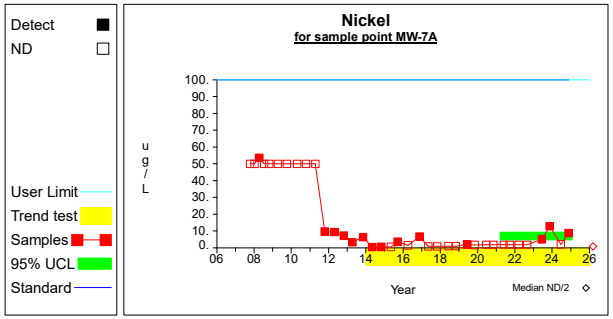
Confidence Limits (Assessment)



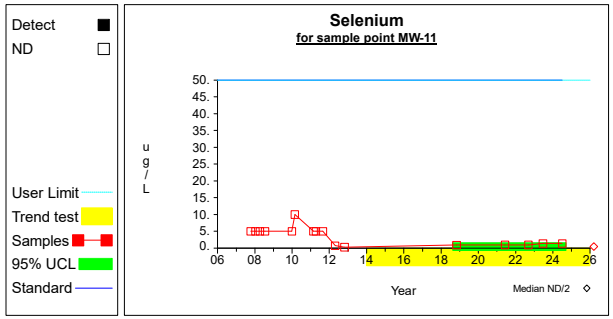
Graph 154



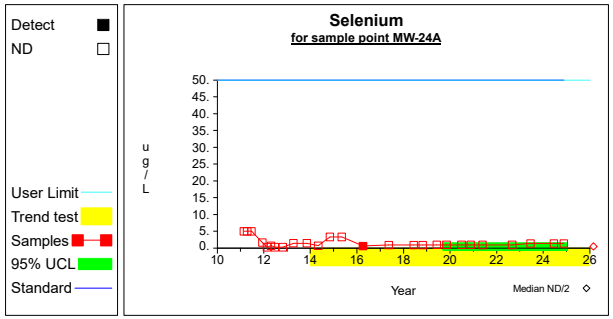
Graph 155



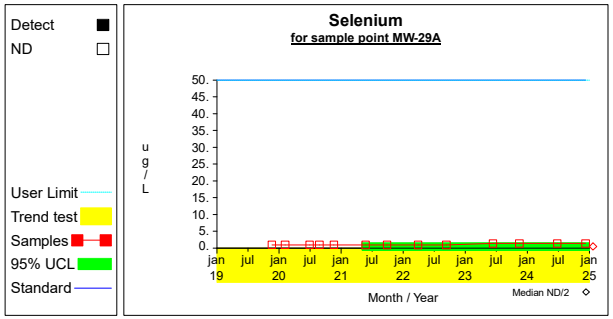
Graph 156



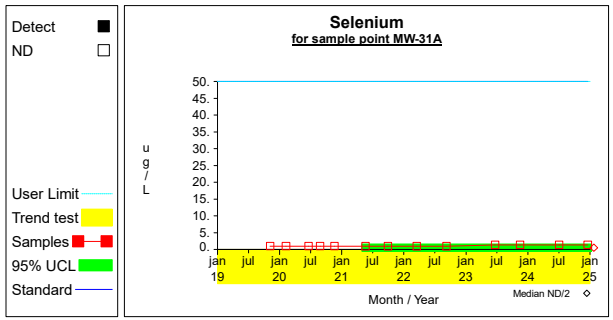
Graph 157



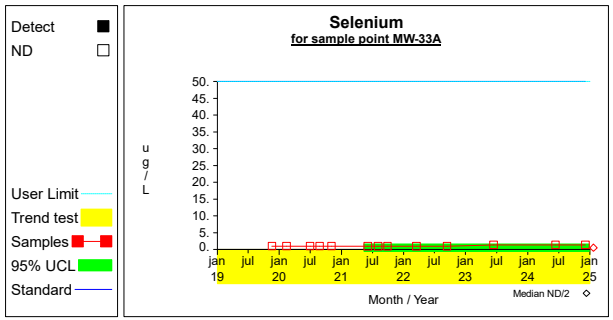
Graph 158



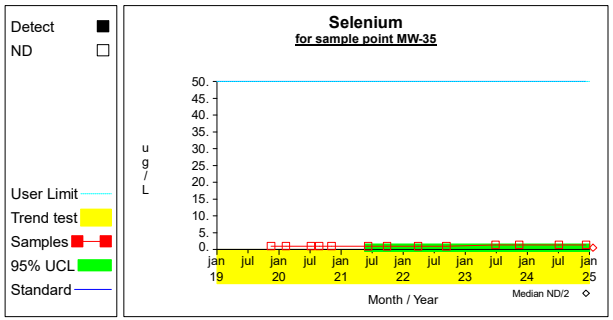
Graph 159



Graph 160

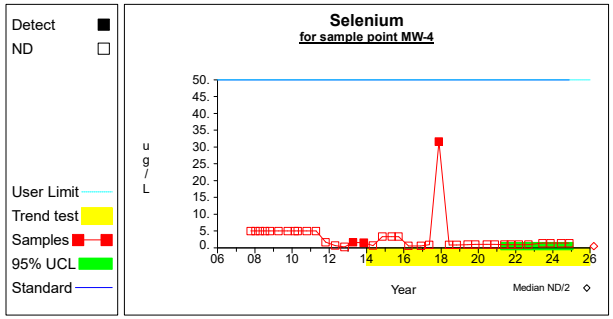


Graph 161

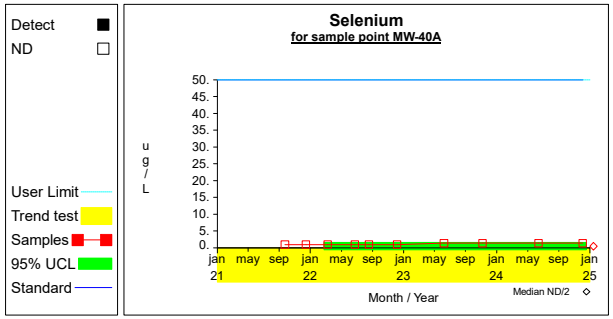


Graph 162

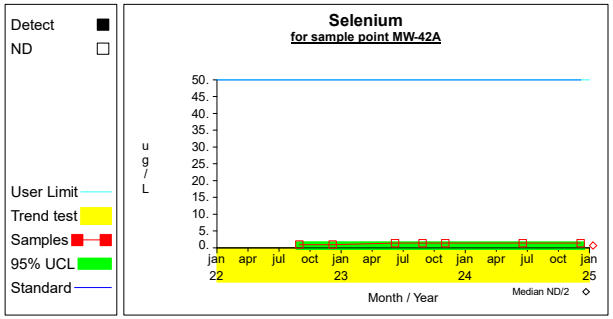
Confidence Limits (Assessment)



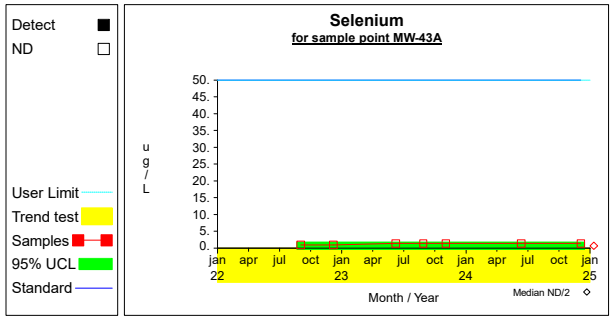
Graph 163



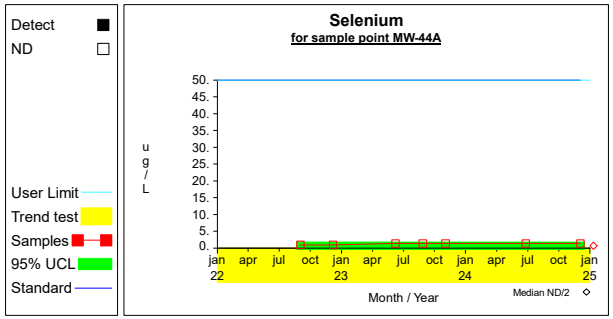
Graph 164



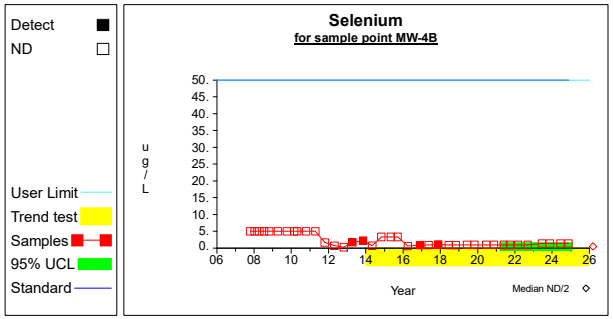
Graph 165



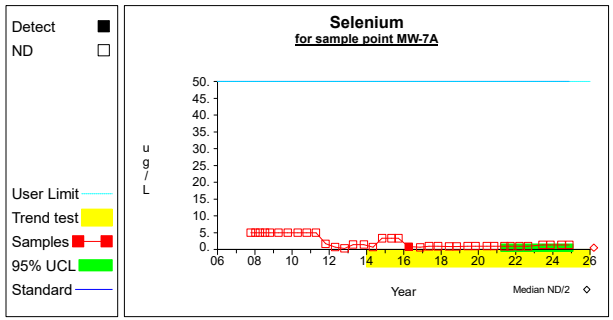
Graph 166



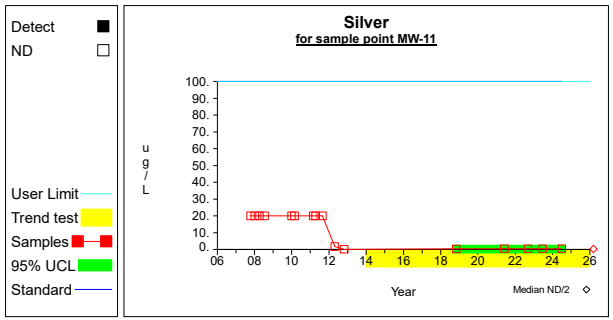
Graph 167



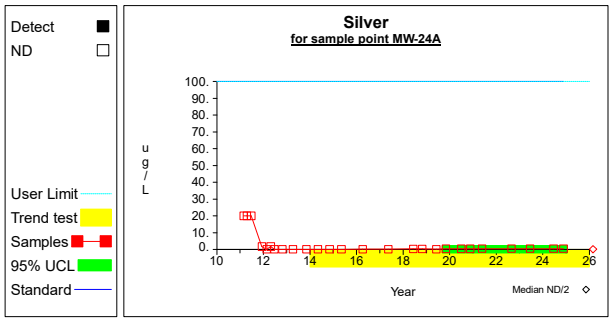
Graph 168



Graph 169

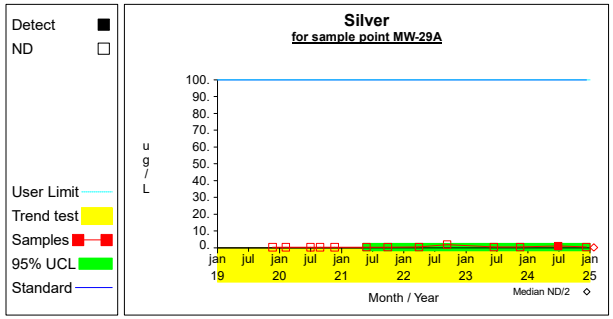


Graph 170

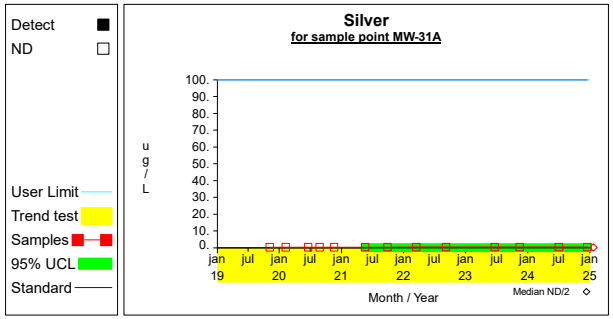


Graph 171

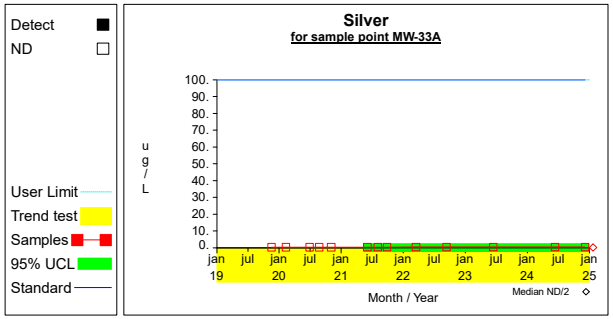
Confidence Limits (Assessment)



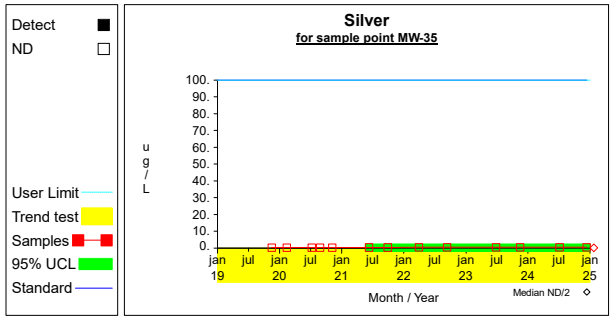
Graph 172



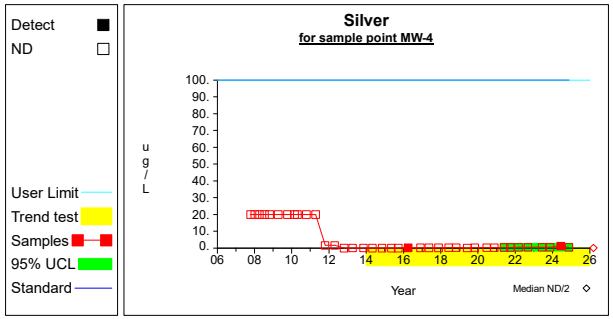
Graph 173



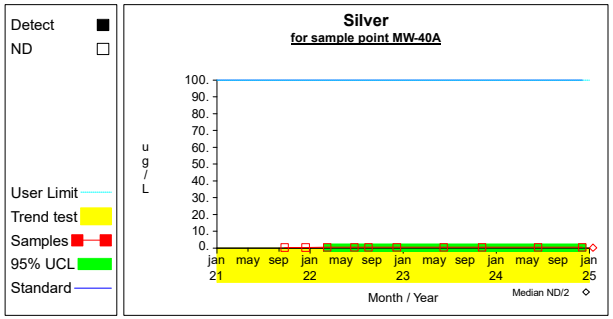
Graph 174



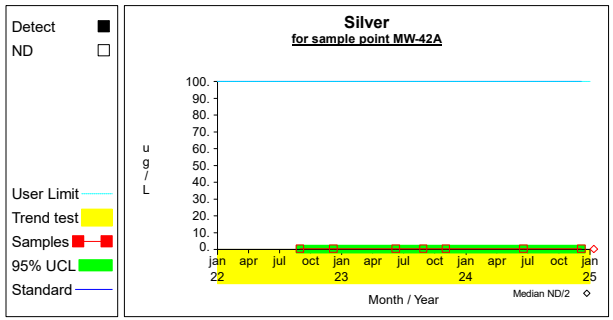
Graph 175



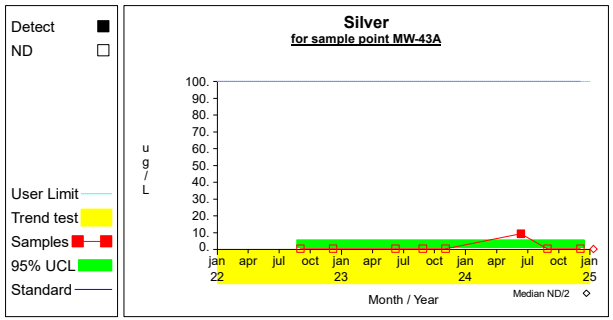
Graph 176



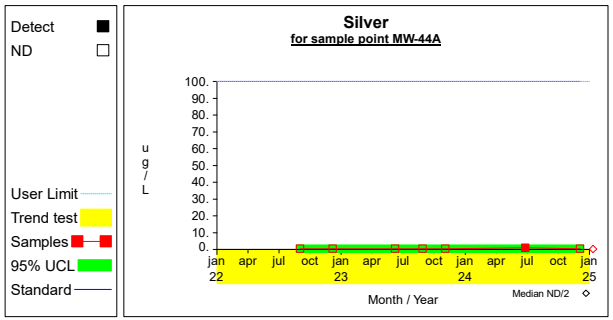
Graph 177



Graph 178

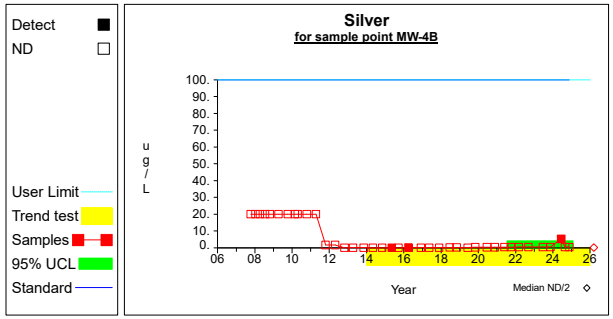


Graph 179

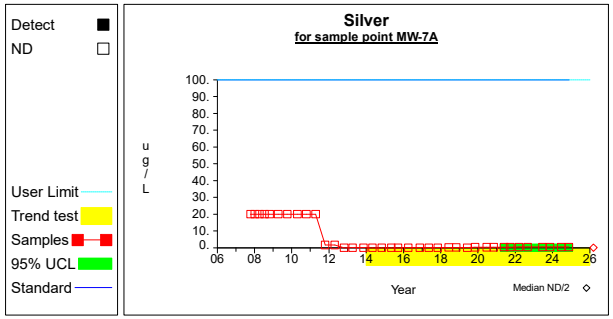


Graph 180

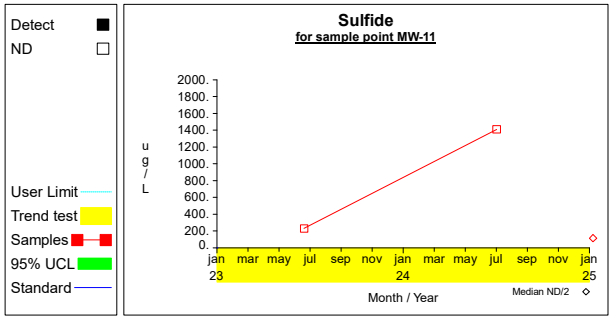
Confidence Limits (Assessment)



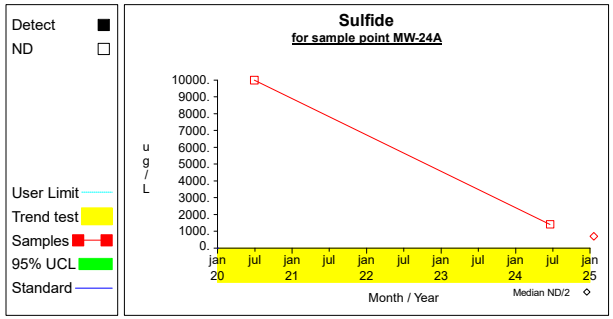
Graph 181



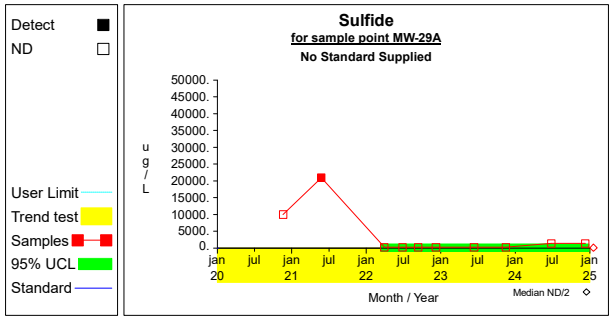
Graph 182



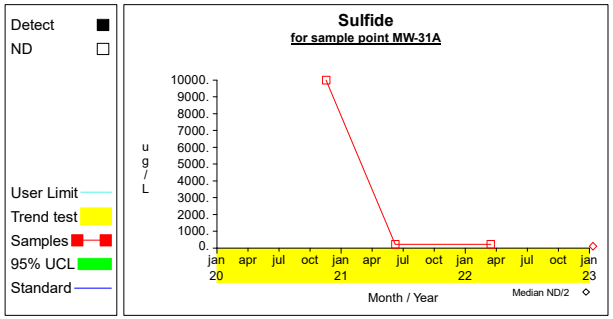
Graph 183



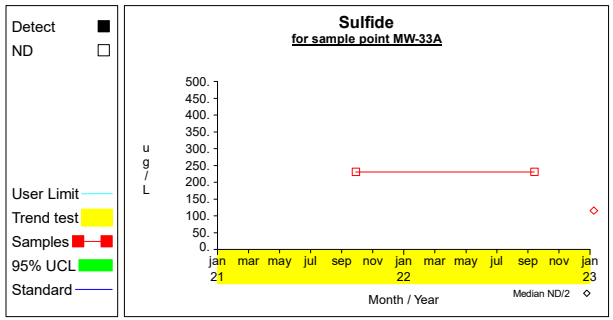
Graph 184



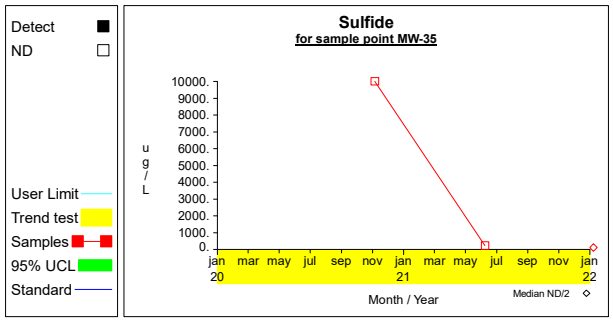
Graph 185



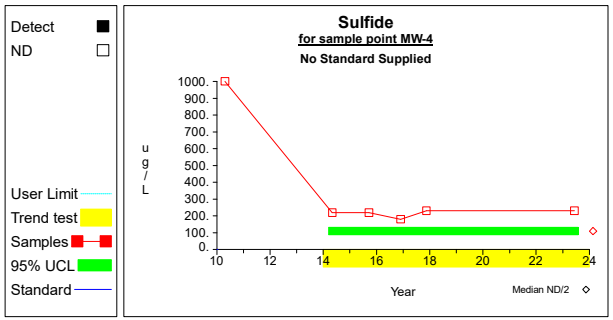
Graph 186



Graph 187

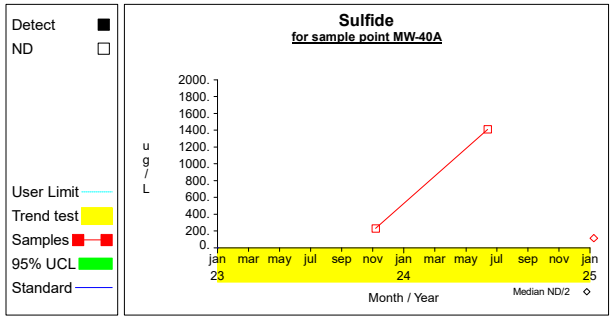


Graph 188

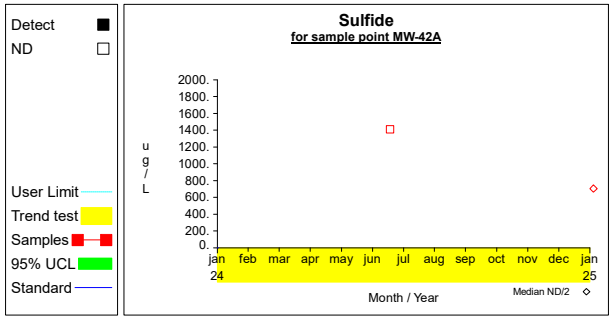


Graph 189

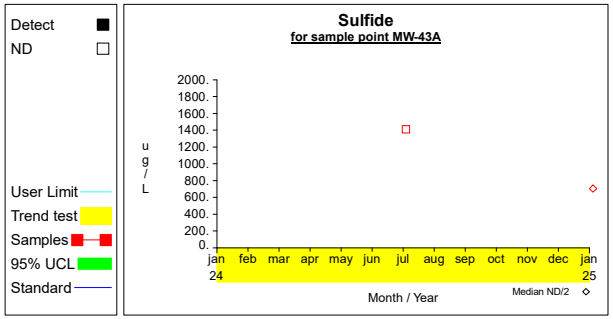
Confidence Limits (Assessment)



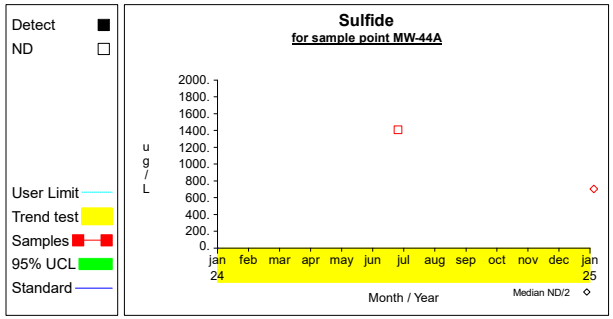
Graph 190



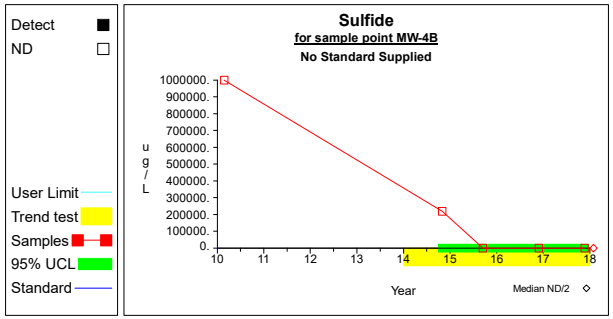
Graph 191



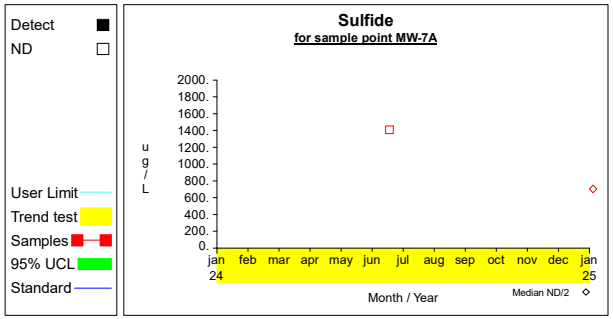
Graph 192



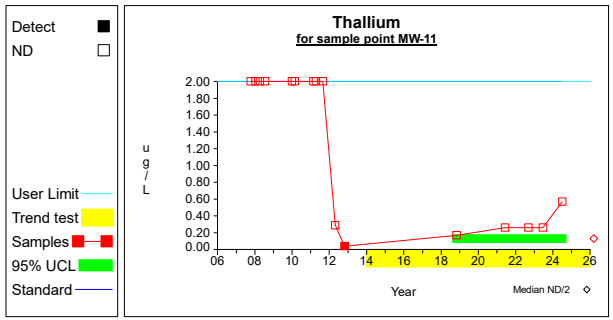
Graph 193



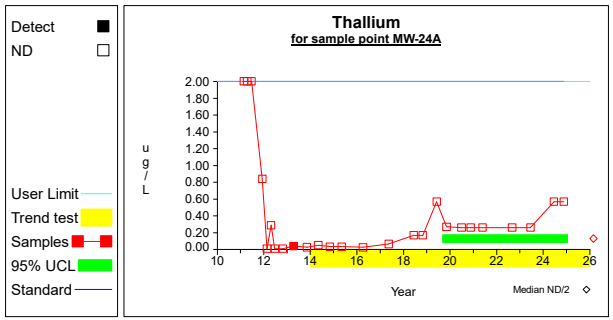
Graph 194



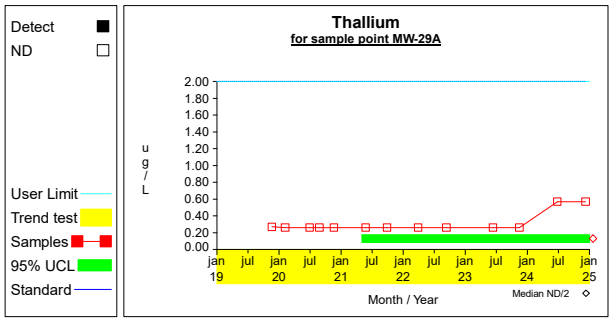
Graph 195



Graph 196

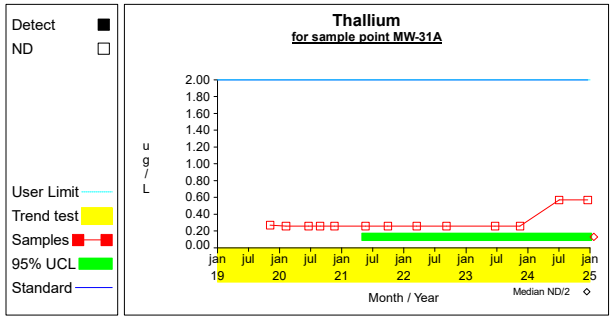


Graph 197

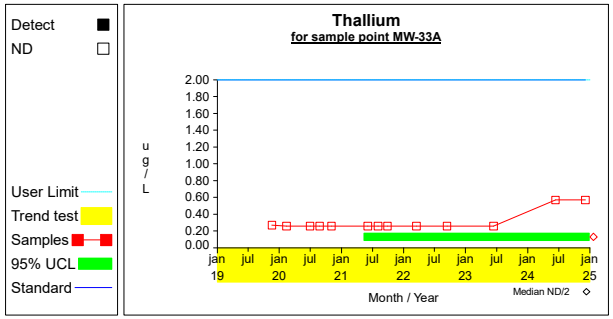


Graph 198

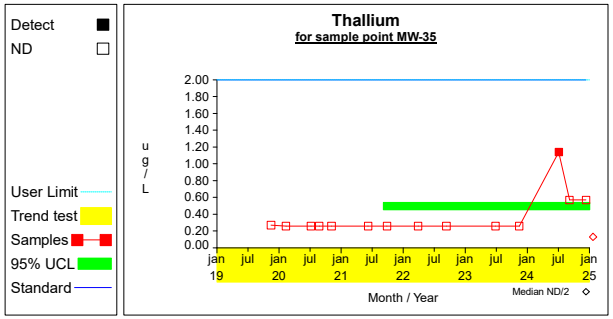
Confidence Limits (Assessment)



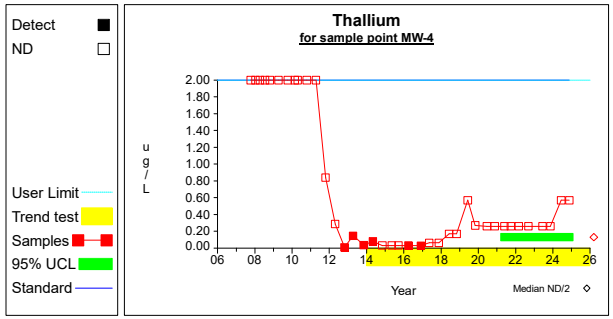
Graph 199



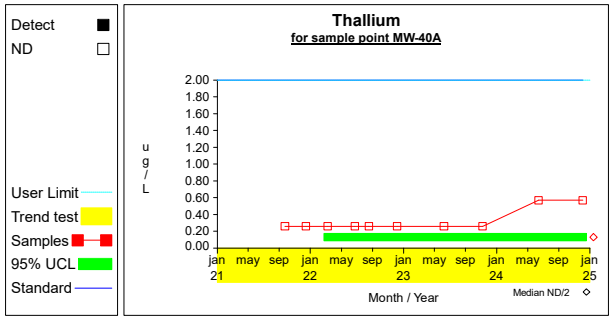
Graph 200



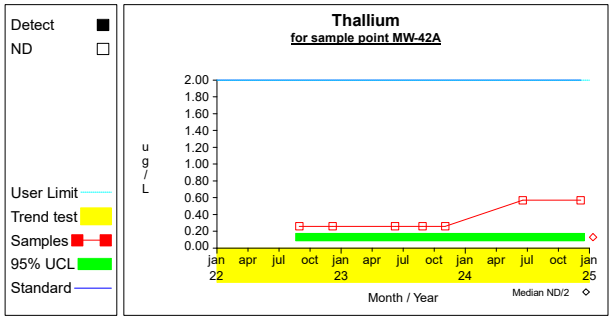
Graph 201



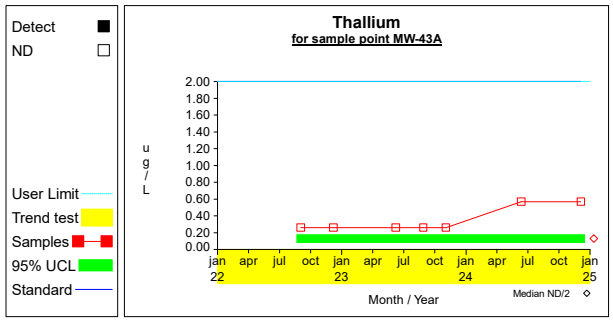
Graph 202



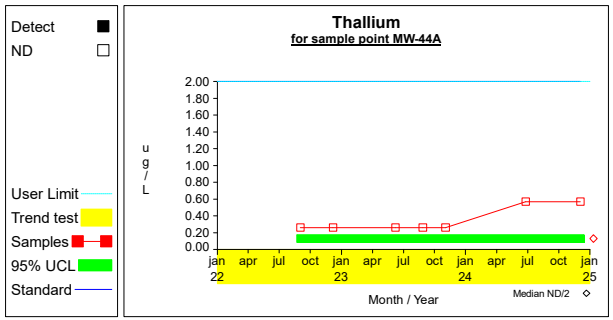
Graph 203



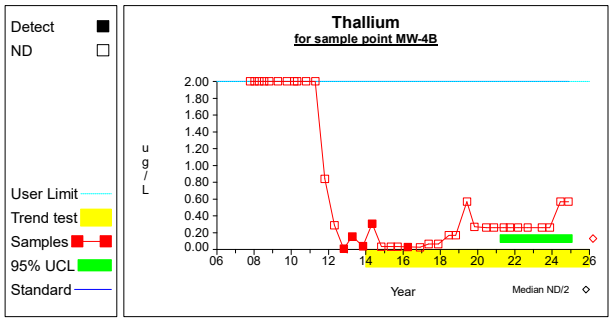
Graph 204



Graph 205

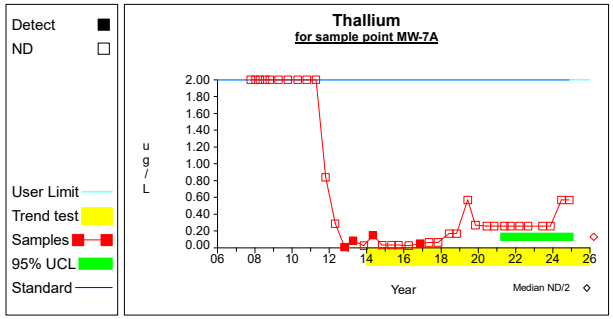


Graph 206

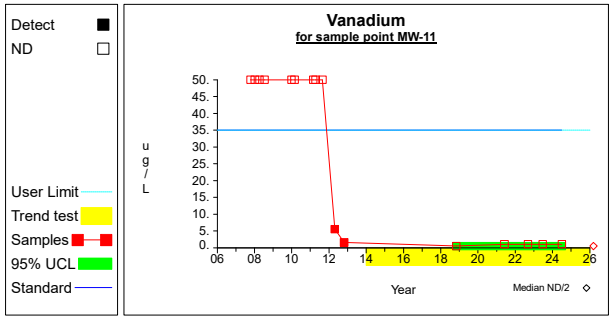


Graph 207

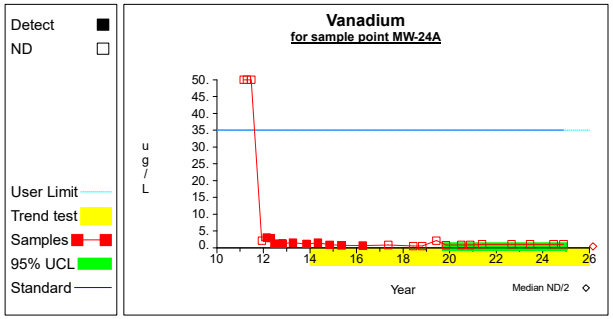
Confidence Limits (Assessment)



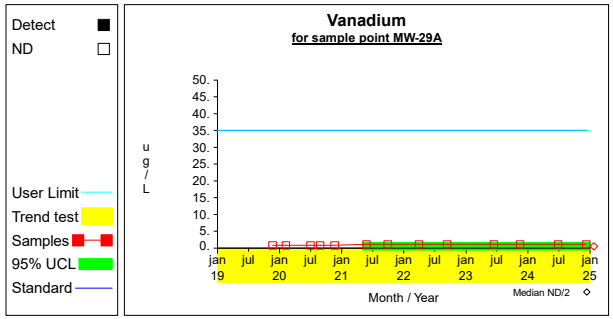
Graph 208



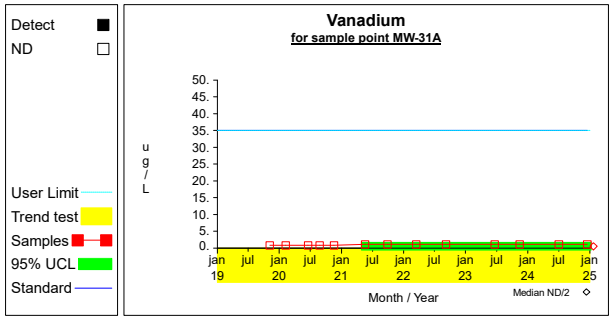
Graph 209



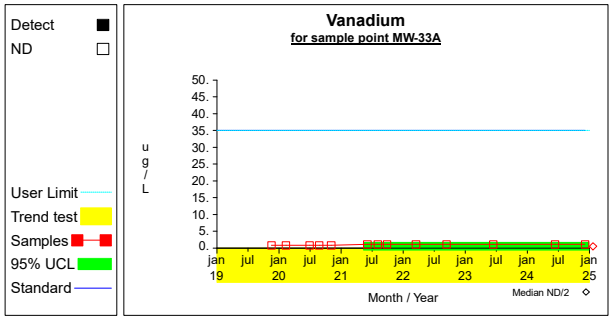
Graph 210



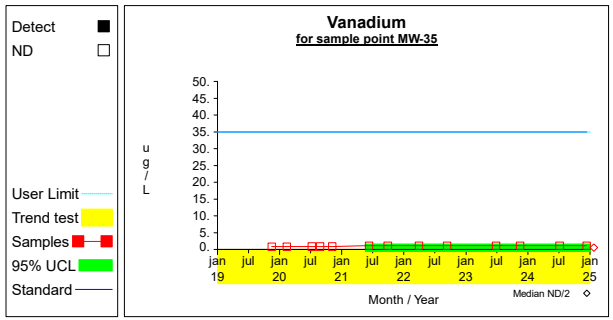
Graph 211



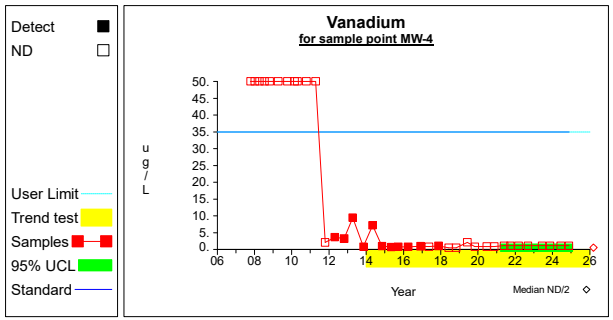
Graph 212



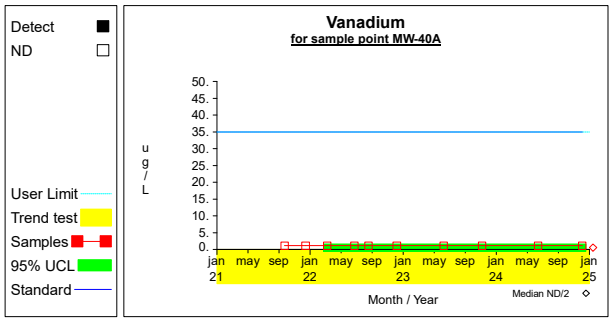
Graph 213



Graph 214

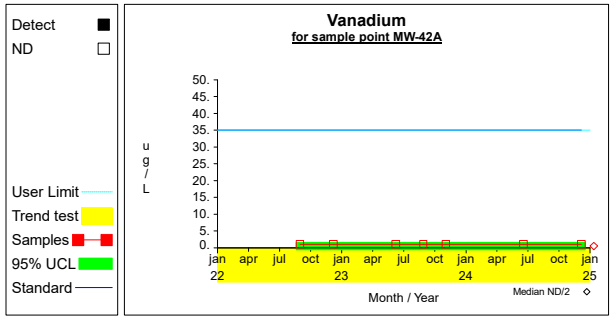


Graph 215

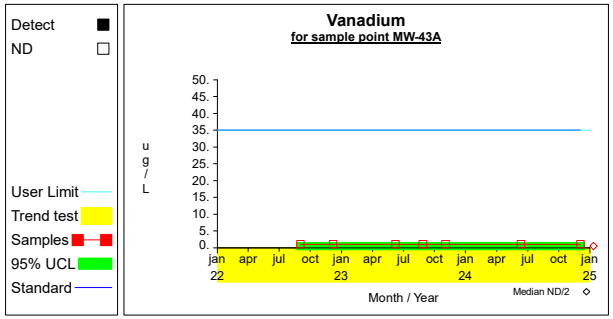


Graph 216

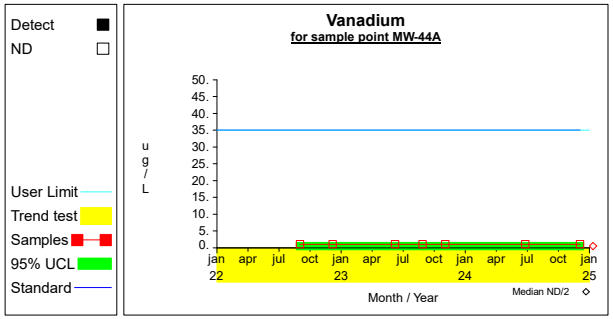
Confidence Limits (Assessment)



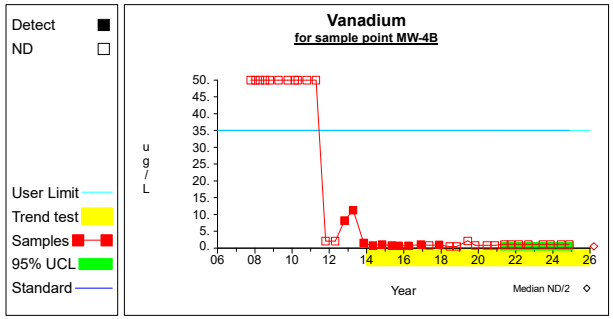
Graph 217



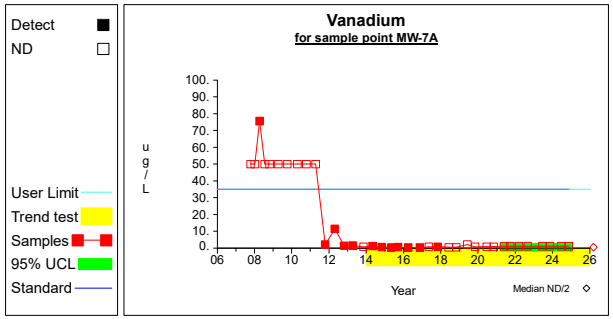
Graph 218



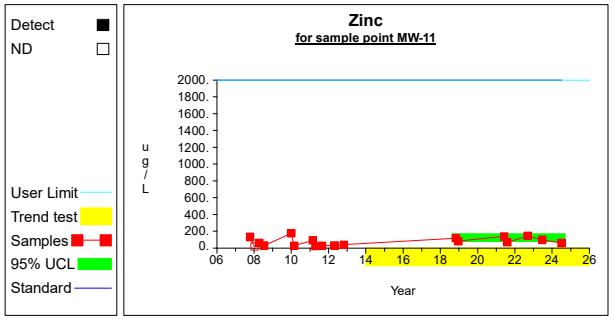
Graph 219



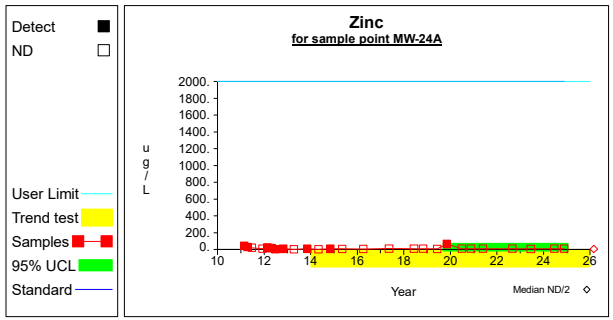
Graph 220



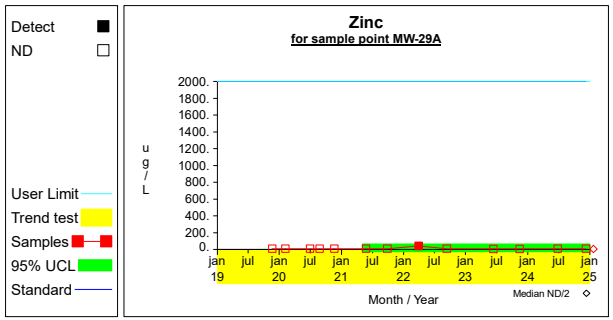
Graph 221



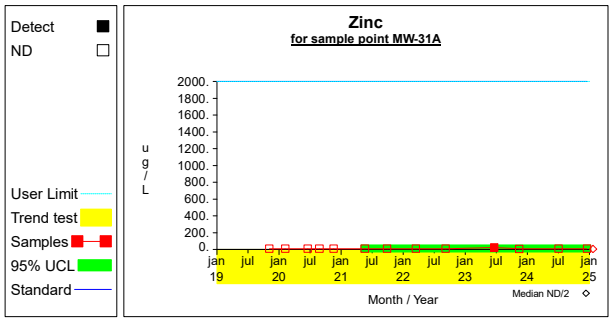
Graph 222



Graph 223

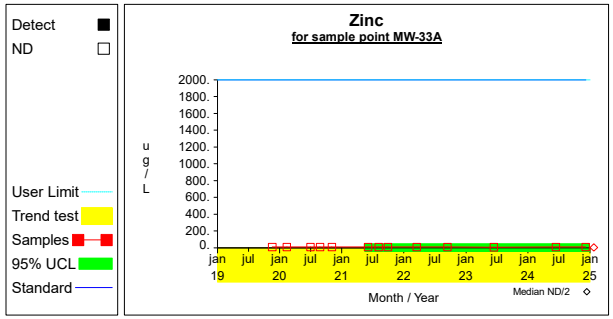


Graph 224

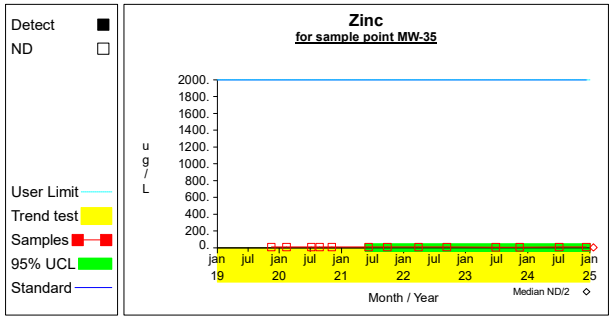


Graph 225

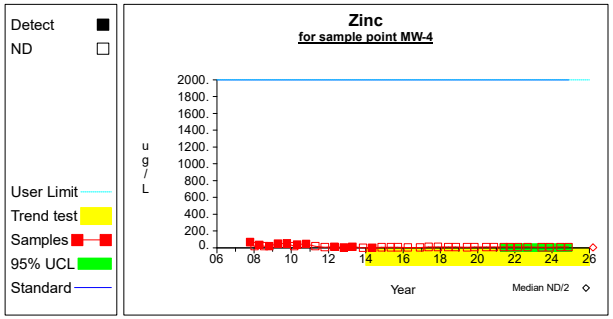
Confidence Limits (Assessment)



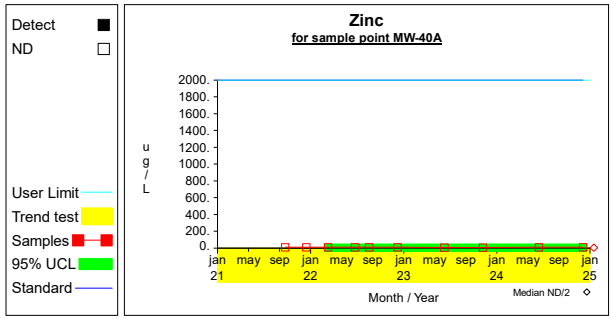
Graph 226



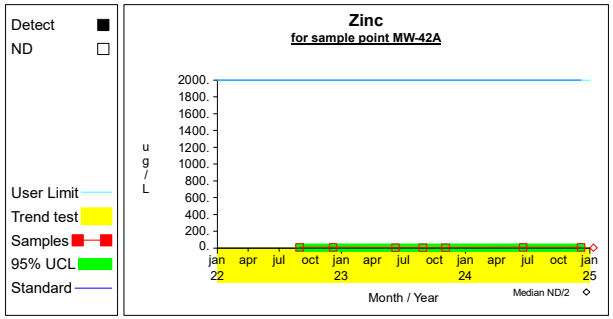
Graph 227



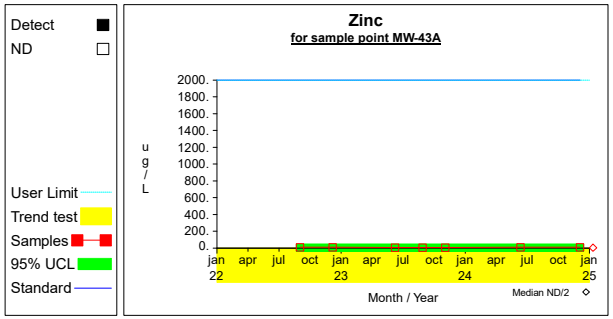
Graph 228



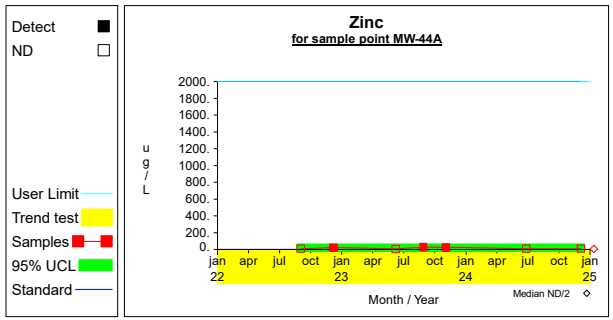
Graph 229



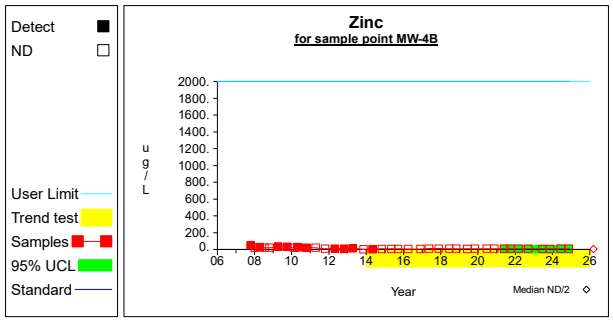
Graph 230



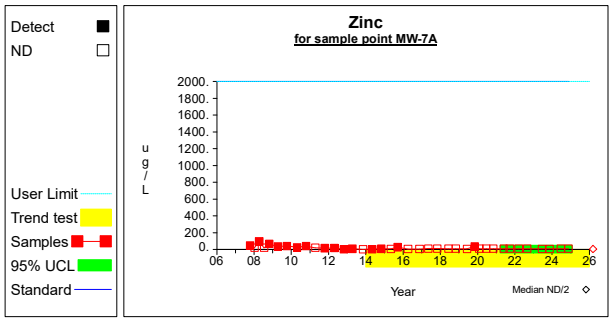
Graph 231



Graph 232



Graph 233



Graph 234

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Antimony	ug/L	MW-11	5	0.500	0.000	0.953	0.500	0.500	6.000		
Antimony	ug/L	MW-24A	8	0.472	0.613	0.670	0.061	0.883	6.000		
Antimony	ug/L	MW-29A	8	0.500	0.000	0.670	0.500	0.500	6.000		
Antimony	ug/L	MW-31A	8	0.579	0.663	0.670	0.135	1.023	6.000		
Antimony	ug/L	MW-33A	8	0.345	0.000	0.670	0.345	0.345	6.000		
Antimony	ug/L	MW-35	8	0.345	0.000	0.670	0.345	0.345	6.000		
Antimony	ug/L	MW-4	8	0.255	0.000	0.670	0.255	0.255	6.000		
Antimony	ug/L	MW-40A	8	0.500	0.000	0.670	0.500	0.500	6.000		
Antimony	ug/L	MW-42A	7	0.500	0.000	0.734	0.500	0.500	6.000		
Antimony	ug/L	MW-43A	7	0.500	0.000	0.734	0.500	0.500	6.000		
Antimony	ug/L	MW-44A	7	0.500	0.000	0.734	0.500	0.500	6.000		
Antimony	ug/L	MW-4B	8	0.255	0.000	0.670	0.255	0.255	6.000		
Antimony	ug/L	MW-7A	8	0.265	0.000	0.670	0.265	0.265	6.000		
Arsenic	ug/L	MW-11	5	0.285	0.000	0.953	0.285	0.285	10.000		
Arsenic	ug/L	MW-24A	8	0.285	0.000	0.670	0.285	0.285	10.000		
Arsenic	ug/L	MW-29A	8	6.013	1.967	0.670	4.695	7.330	10.000		
Arsenic	ug/L	MW-31A	8	0.375	0.000	0.670	0.375	0.375	10.000		
Arsenic	ug/L	MW-33A	8	35.571	36.114	0.670	11.381	59.760	10.000		**
Arsenic	ug/L	MW-35	8	0.375	0.000	0.670	0.375	0.375	10.000		
Arsenic	ug/L	MW-4	8	0.336	0.000	0.670	0.336	0.336	10.000		
Arsenic	ug/L	MW-40A	8	0.375	0.000	0.670	0.375	0.375	10.000		
Arsenic	ug/L	MW-42A	7	0.650	1.019	0.734	0.000	1.398	10.000		
Arsenic	ug/L	MW-43A	7	7.849	1.300	0.734	6.894	8.803	10.000		
Arsenic	ug/L	MW-44A	7	0.265	0.000	0.734	0.265	0.265	10.000		

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Arsenic	ug/L	MW-4B	8	0.336	0.000	0.670	0.336	0.336	10.000		
Arsenic	ug/L	MW-7A	8	0.336	0.000	0.670	0.336	0.336	10.000		
Barium	ug/L	MW-11	5	16.600	1.764	0.953	14.919	18.281	2000.000		
Barium	ug/L	MW-24A	8	117.850	17.431	0.670	106.175	129.525	2000.000		
Barium	ug/L	MW-29A	8	169.750	15.917	0.670	159.088	180.412	2000.000		
Barium	ug/L	MW-31A	8	242.500	91.792	0.670	181.017	303.983	2000.000		
Barium	ug/L	MW-33A	8	168.125	44.257	0.670	138.481	197.769	2000.000		
Barium	ug/L	MW-35	8	304.375	80.433	0.670	250.500	358.250	2000.000		
Barium	ug/L	MW-4	8	455.875	131.681	0.670	367.673	544.077	2000.000		
Barium	ug/L	MW-40A	8	223.250	31.116	0.670	202.408	244.092	2000.000	dec	
Barium	ug/L	MW-42A	7	144.914	66.603	0.734	96.021	193.808	2000.000		
Barium	ug/L	MW-43A	7	200.714	46.324	0.734	166.708	234.721	2000.000		
Barium	ug/L	MW-44A	7	189.286	45.080	0.734	156.192	222.380	2000.000		
Barium	ug/L	MW-4B	8	231.750	78.760	0.670	178.996	284.504	2000.000		
Barium	ug/L	MW-7A	8	270.738	139.415	0.670	177.356	364.119	2000.000		
Beryllium	ug/L	MW-11	5	0.135	0.000	0.953	0.135	0.135	4.000		
Beryllium	ug/L	MW-24A	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-29A	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-31A	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-33A	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-35	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-4	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-40A	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-42A	7	0.165	0.000	0.734	0.165	0.165	4.000		

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LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Beryllium	ug/L	MW-43A	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beryllium	ug/L	MW-44A	7	0.165	0.000	0.734	0.165	0.165	4.000		
Beryllium	ug/L	MW-4B	8	0.135	0.000	0.670	0.135	0.135	4.000		
Beryllium	ug/L	MW-7A	8	0.135	0.000	0.670	0.135	0.135	4.000		
Cadmium	ug/L	MW-11	5	0.030	0.000	0.953	0.030	0.030	5.000		
Cadmium	ug/L	MW-24A	8	0.080	0.108	0.670	0.008	0.152	5.000		
Cadmium	ug/L	MW-29A	8	0.028	0.000	0.670	0.028	0.028	5.000		
Cadmium	ug/L	MW-31A	8	0.509	0.690	0.670	0.047	0.972	5.000		
Cadmium	ug/L	MW-33A	8	0.036	0.029	0.670	0.016	0.055	5.000		
Cadmium	ug/L	MW-35	8	0.026	0.000	0.670	0.026	0.026	5.000		
Cadmium	ug/L	MW-4	8	0.081	0.081	0.670	0.026	0.135	5.000		
Cadmium	ug/L	MW-40A	8	0.028	0.000	0.670	0.028	0.028	5.000		
Cadmium	ug/L	MW-42A	7	0.083	0.087	0.734	0.019	0.147	5.000		
Cadmium	ug/L	MW-43A	7	0.050	0.000	0.734	0.050	0.050	5.000		
Cadmium	ug/L	MW-44A	7	0.284	0.285	0.734	0.075	0.493	5.000		
Cadmium	ug/L	MW-4B	8	0.030	0.000	0.670	0.030	0.030	5.000		
Cadmium	ug/L	MW-7A	8	0.028	0.000	0.670	0.028	0.028	5.000		
Chromium	ug/L	MW-11	5	0.550	0.000	0.953	0.550	0.550	100.000		
Chromium	ug/L	MW-24A	8	0.550	0.000	0.670	0.550	0.550	100.000		
Chromium	ug/L	MW-29A	8	0.550	0.000	0.670	0.550	0.550	100.000		
Chromium	ug/L	MW-31A	8	1.395	2.390	0.670	0.000	2.996	100.000		
Chromium	ug/L	MW-33A	8	0.550	0.000	0.670	0.550	0.550	100.000		
Chromium	ug/L	MW-35	8	0.550	0.000	0.670	0.550	0.550	100.000		
Chromium	ug/L	MW-4	8	0.550	0.000	0.670	0.550	0.550	100.000		

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Chromium	ug/L	MW-40A	8	0.550	0.000	0.670	0.550	0.550	100.000		
Chromium	ug/L	MW-42A	7	0.550	0.000	0.734	0.550	0.550	100.000		
Chromium	ug/L	MW-43A	7	2.186	4.328	0.734	0.000	5.363	100.000		
Chromium	ug/L	MW-44A	7	0.550	0.000	0.734	0.550	0.550	100.000		
Chromium	ug/L	MW-4B	8	0.550	0.000	0.670	0.550	0.550	100.000		
Chromium	ug/L	MW-7A	8	0.550	0.000	0.670	0.550	0.550	100.000		
Cobalt	ug/L	MW-11	6	1.800	3.145	0.822	0.000	4.386	3.400		**
Cobalt	ug/L	MW-24A	8	0.111	0.185	0.670	0.000	0.235	3.400		
Cobalt	ug/L	MW-29A	8	12.023	3.924	0.670	9.394	14.651	3.400		**
Cobalt	ug/L	MW-31A	8	7.865	10.159	0.670	1.060	14.670	3.400	dec	**
Cobalt	ug/L	MW-33A	8	2.079	1.555	0.670	1.037	3.121	3.400		
Cobalt	ug/L	MW-35	8	6.005	2.443	0.670	4.369	7.641	3.400		**
Cobalt	ug/L	MW-4	8	1.317	0.630	0.670	0.894	1.739	3.400		
Cobalt	ug/L	MW-40A	8	1.605	0.471	0.670	1.289	1.920	3.400		
Cobalt	ug/L	MW-42A	7	2.594	1.064	0.734	1.813	3.375	3.400		
Cobalt	ug/L	MW-43A	7	4.066	0.656	0.734	3.584	4.547	3.400		**
Cobalt	ug/L	MW-44A	7	0.294	0.261	0.734	0.102	0.485	3.400		
Cobalt	ug/L	MW-4B	8	0.085	0.000	0.670	0.085	0.085	3.400		
Cobalt	ug/L	MW-7A	8	0.045	0.000	0.670	0.045	0.046	3.400		
Copper	ug/L	MW-11	5	0.900	0.000	0.953	0.900	0.900	1300.000		
Copper	ug/L	MW-24A	8	0.900	0.000	0.670	0.900	0.900	1300.000		
Copper	ug/L	MW-29A	8	0.900	0.000	0.670	0.900	0.900	1300.000		
Copper	ug/L	MW-31A	8	4.567	7.450	0.670	0.000	9.557	1300.000		
Copper	ug/L	MW-33A	8	0.900	0.000	0.670	0.900	0.900	1300.000		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Copper	ug/L	MW-35	8	0.900	0.000	0.670	0.900	0.900	1300.000		
Copper	ug/L	MW-4	8	0.800	0.000	0.670	0.800	0.800	1300.000		
Copper	ug/L	MW-40A	8	1.751	2.408	0.670	0.139	3.364	1300.000		
Copper	ug/L	MW-42A	7	2.153	3.315	0.734	0.000	4.586	1300.000		
Copper	ug/L	MW-43A	7	1.686	2.079	0.734	0.160	3.212	1300.000		
Copper	ug/L	MW-44A	7	0.900	0.000	0.734	0.900	0.900	1300.000		
Copper	ug/L	MW-4B	8	0.900	0.000	0.670	0.900	0.900	1300.000		
Copper	ug/L	MW-7A	8	0.800	0.000	0.670	0.800	0.800	1300.000		
Field pH	SU	MW-11	6	7.508	0.525	0.822	7.077	7.940			
Field pH	SU	MW-24A	8	6.989	0.470	0.670	6.674	7.304			
Field pH	SU	MW-29A	8	6.724	0.426	0.670	6.438	7.009			
Field pH	SU	MW-31A	8	6.814	0.534	0.670	6.456	7.172			
Field pH	SU	MW-33A	8	6.959	0.578	0.670	6.572	7.346			
Field pH	SU	MW-35	8	6.956	0.468	0.670	6.643	7.270			
Field pH	SU	MW-4	8	6.690	0.467	0.670	6.377	7.003			
Field pH	SU	MW-40A	8	7.165	0.405	0.670	6.894	7.436			
Field pH	SU	MW-42A	7	7.247	0.545	0.734	6.847	7.647			
Field pH	SU	MW-43A	8	7.009	0.486	0.670	6.683	7.334			
Field pH	SU	MW-44A	7	7.004	0.579	0.734	6.579	7.429			
Field pH	SU	MW-4B	8	6.941	0.465	0.670	6.630	7.253			
Field pH	SU	MW-7A	8	7.140	0.583	0.670	6.750	7.530			
Field Specific Conductance	umhos/cm	MW-11	6	1170.917	169.201	0.822	1031.769	1310.065			
Field Specific Conductance	umhos/cm	MW-24A	8	1159.845	391.046	0.670	897.917	1421.773			
Field Specific Conductance	umhos/cm	MW-29A	8	1935.613	302.012	0.670	1733.321	2137.904		inc	

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Field Specific Conductance	umhos/cm	MW-31A	8	2271.938	728.405	0.670	1784.042	2759.833			
Field Specific Conductance	umhos/cm	MW-33A	8	973.610	552.844	0.670	603.308	1343.912			
Field Specific Conductance	umhos/cm	MW-35	8	1521.500	622.313	0.670	1104.666	1938.334			
Field Specific Conductance	umhos/cm	MW-4	8	1329.163	206.789	0.670	1190.653	1467.672		inc	
Field Specific Conductance	umhos/cm	MW-40A	8	1218.663	292.646	0.670	1022.644	1414.681			
Field Specific Conductance	umhos/cm	MW-42A	7	1502.973	781.654	0.734	929.155	2076.791			
Field Specific Conductance	umhos/cm	MW-43A	8	1398.088	377.295	0.670	1145.370	1650.805			
Field Specific Conductance	umhos/cm	MW-44A	7	1463.571	362.641	0.734	1197.354	1729.789			
Field Specific Conductance	umhos/cm	MW-4B	8	690.099	164.706	0.670	579.777	800.421			
Field Specific Conductance	umhos/cm	MW-7A	8	977.389	318.808	0.670	763.847	1190.930		inc	
Lead	ug/L	MW-11	5	0.120	0.000	0.953	0.120	0.120	15.000		
Lead	ug/L	MW-24A	8	0.120	0.000	0.670	0.120	0.120	15.000		
Lead	ug/L	MW-29A	8	0.120	0.000	0.670	0.120	0.120	15.000		
Lead	ug/L	MW-31A	8	0.376	0.554	0.670	0.005	0.747	15.000		
Lead	ug/L	MW-33A	8	0.178	0.208	0.670	0.039	0.317	15.000		
Lead	ug/L	MW-35	8	0.120	0.000	0.670	0.120	0.120	15.000		
Lead	ug/L	MW-4	8	0.120	0.000	0.670	0.120	0.120	15.000		
Lead	ug/L	MW-40A	8	0.120	0.000	0.670	0.120	0.120	15.000		
Lead	ug/L	MW-42A	7	0.120	0.000	0.734	0.120	0.120	15.000		
Lead	ug/L	MW-43A	7	0.120	0.000	0.734	0.120	0.120	15.000		
Lead	ug/L	MW-44A	7	0.120	0.000	0.734	0.120	0.120	15.000		
Lead	ug/L	MW-4B	8	0.120	0.000	0.670	0.120	0.120	15.000		
Lead	ug/L	MW-7A	8	0.120	0.000	0.670	0.120	0.120	15.000		
Nickel	ug/L	MW-11	7	29.029	9.364	0.734	22.154	35.903	100.000	dec	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Nickel	ug/L	MW-24A	8	5.980	2.306	0.670	4.435	7.525	100.000	dec	
Nickel	ug/L	MW-29A	8	66.962	11.349	0.670	59.361	74.564	100.000	inc	
Nickel	ug/L	MW-31A	8	46.788	27.862	0.670	28.125	65.450	100.000		
Nickel	ug/L	MW-33A	8	1.476	1.488	0.670	0.479	2.473	100.000		
Nickel	ug/L	MW-35	8	21.688	6.405	0.670	17.397	25.978	100.000		
Nickel	ug/L	MW-4	8	5.461	2.054	0.670	4.085	6.837	100.000		
Nickel	ug/L	MW-40A	8	13.256	3.988	0.670	10.585	15.928	100.000		
Nickel	ug/L	MW-42A	8	20.290	8.959	0.670	14.289	26.291	100.000		
Nickel	ug/L	MW-43A	7	28.871	8.105	0.734	22.922	34.821	100.000		
Nickel	ug/L	MW-44A	7	42.114	20.665	0.734	26.944	57.285	100.000		
Nickel	ug/L	MW-4B	8	0.950	0.000	0.670	0.950	0.950	100.000		
Nickel	ug/L	MW-7A	8	3.871	4.649	0.670	0.757	6.985	100.000		
Selenium	ug/L	MW-11	5	0.480	0.000	0.953	0.480	0.480	50.000		
Selenium	ug/L	MW-24A	8	0.500	0.000	0.670	0.500	0.500	50.000		
Selenium	ug/L	MW-29A	8	0.500	0.000	0.670	0.500	0.500	50.000		
Selenium	ug/L	MW-31A	8	0.500	0.000	0.670	0.500	0.500	50.000		
Selenium	ug/L	MW-33A	8	0.500	0.000	0.670	0.500	0.500	50.000		
Selenium	ug/L	MW-35	8	0.500	0.000	0.670	0.500	0.500	50.000		
Selenium	ug/L	MW-4	8	0.491	0.000	0.670	0.491	0.491	50.000		
Selenium	ug/L	MW-40A	8	0.480	0.000	0.670	0.480	0.480	50.000		
Selenium	ug/L	MW-42A	7	0.700	0.000	0.734	0.700	0.700	50.000		
Selenium	ug/L	MW-43A	7	0.700	0.000	0.734	0.700	0.700	50.000		
Selenium	ug/L	MW-44A	7	0.700	0.000	0.734	0.700	0.700	50.000		
Selenium	ug/L	MW-4B	8	0.491	0.000	0.670	0.491	0.491	50.000		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Selenium	ug/L	MW-7A	8	0.491	0.000	0.670	0.491	0.491	50.000		
Silver	ug/L	MW-11	5	0.245	0.000	0.953	0.245	0.245	100.000		
Silver	ug/L	MW-24A	8	0.150	0.000	0.670	0.150	0.150	100.000		
Silver	ug/L	MW-29A	8	0.321	0.315	0.670	0.110	0.532	100.000		
Silver	ug/L	MW-31A	8	0.210	0.000	0.670	0.210	0.210	100.000		
Silver	ug/L	MW-33A	8	0.210	0.000	0.670	0.210	0.210	100.000		
Silver	ug/L	MW-35	8	0.210	0.000	0.670	0.210	0.210	100.000		
Silver	ug/L	MW-4	8	0.283	0.375	0.670	0.031	0.534	100.000		
Silver	ug/L	MW-40A	8	0.245	0.000	0.670	0.245	0.245	100.000		
Silver	ug/L	MW-42A	7	0.250	0.000	0.734	0.250	0.250	100.000		
Silver	ug/L	MW-43A	8	1.389	3.221	0.670	0.000	3.546	100.000		
Silver	ug/L	MW-44A	7	0.359	0.287	0.734	0.148	0.569	100.000		
Silver	ug/L	MW-4B	8	0.833	1.833	0.670	0.000	2.061	100.000		
Silver	ug/L	MW-7A	8	0.150	0.000	0.670	0.150	0.150	100.000		
Sulfide	ug/L	MW-11	2								*
Sulfide	ug/L	MW-24A	2								*
Sulfide	ug/L	MW-29A	8	115.500	0.000	0.670	115.500	115.500			
Sulfide	ug/L	MW-31A	3								*
Sulfide	ug/L	MW-33A	2								*
Sulfide	ug/L	MW-35	2								*
Sulfide	ug/L	MW-4	5	109.500	0.000	0.953	109.500	109.500			
Sulfide	ug/L	MW-40A	2								*
Sulfide	ug/L	MW-42A	1								*
Sulfide	ug/L	MW-43A	1								*

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Sulfide	ug/L	MW-44A	1								*
Sulfide	ug/L	MW-4B	4	109.500	0.000	1.176	109.500	109.500			
Sulfide	ug/L	MW-7A	1								*
Thallium	ug/L	MW-11	5	0.130	0.000	0.953	0.130	0.130	2.000		
Thallium	ug/L	MW-24A	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-29A	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-31A	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-33A	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-35	8	0.256	0.357	0.670	0.017	0.495	2.000		
Thallium	ug/L	MW-4	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-40A	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-42A	7	0.130	0.000	0.734	0.130	0.130	2.000		
Thallium	ug/L	MW-43A	7	0.130	0.000	0.734	0.130	0.130	2.000		
Thallium	ug/L	MW-44A	7	0.130	0.000	0.734	0.130	0.130	2.000		
Thallium	ug/L	MW-4B	8	0.130	0.000	0.670	0.130	0.130	2.000		
Thallium	ug/L	MW-7A	8	0.130	0.000	0.670	0.130	0.130	2.000		
Vanadium	ug/L	MW-11	5	0.550	0.000	0.953	0.550	0.550	35.000		
Vanadium	ug/L	MW-24A	8	0.425	0.000	0.670	0.425	0.425	35.000		
Vanadium	ug/L	MW-29A	8	0.550	0.000	0.670	0.550	0.550	35.000		
Vanadium	ug/L	MW-31A	8	0.550	0.000	0.670	0.550	0.550	35.000		
Vanadium	ug/L	MW-33A	8	0.550	0.000	0.670	0.550	0.550	35.000		
Vanadium	ug/L	MW-35	8	0.550	0.000	0.670	0.550	0.550	35.000		
Vanadium	ug/L	MW-4	8	0.550	0.000	0.670	0.550	0.550	35.000		
Vanadium	ug/L	MW-40A	8	0.550	0.000	0.670	0.550	0.550	35.000		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Vanadium	ug/L	MW-42A	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vanadium	ug/L	MW-43A	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vanadium	ug/L	MW-44A	7	0.550	0.000	0.734	0.550	0.550	35.000		
Vanadium	ug/L	MW-4B	8	0.550	0.000	0.670	0.550	0.550	35.000		
Vanadium	ug/L	MW-7A	8	0.550	0.000	0.670	0.550	0.550	35.000		
Zinc	ug/L	MW-11	7	102.343	33.741	0.734	77.573	127.112	2000.000		
Zinc	ug/L	MW-24A	8	12.419	21.408	0.670	0.000	26.758	2000.000		
Zinc	ug/L	MW-29A	8	9.638	13.117	0.670	0.852	18.423	2000.000		
Zinc	ug/L	MW-31A	8	7.313	6.541	0.670	2.931	11.694	2000.000		
Zinc	ug/L	MW-33A	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Zinc	ug/L	MW-35	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Zinc	ug/L	MW-4	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Zinc	ug/L	MW-40A	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Zinc	ug/L	MW-42A	7	4.850	0.000	0.734	4.850	4.850	2000.000		
Zinc	ug/L	MW-43A	7	4.850	0.000	0.734	4.850	4.850	2000.000		
Zinc	ug/L	MW-44A	7	13.429	10.853	0.734	5.461	21.396	2000.000		
Zinc	ug/L	MW-4B	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Zinc	ug/L	MW-7A	8	5.000	0.000	0.670	5.000	5.000	2000.000		

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Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.5** / **5** = **0.5**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**1.25** - **6.25**/**5**) / (**5**-1))$^{1/2}$ = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$ = **0.5** - **2.132** * **0.0**/**5**$^{1/2}$ = **0.5**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$ = **0.5** + **2.132** * **0.0**/**5**$^{1/2}$ = **0.5**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N**' ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**10** ± **2.576** * **0.0**$^{1/2}$) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.775** / **8** = **0.472**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.415** - **14.251**/**8**) / (**8**-1))^{½} = **0.613**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.472** - **1.895** * **0.613**/**8**^{½} = **0.061**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.472** + **1.895** * **0.613**/**8**^{½} = **0.883**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **159.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **159.667**^{½}) / 2 = [**43.725**, **76.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.635** / **8** = **0.579**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.762** - **21.483**/**8**) / (**8**-1))^{½} = **0.663**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.579** - **1.895** * **0.663**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.579** + **1.895** * **0.663**/**8**^{½} = **1.023**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.76** / **8** = **0.345**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.952** - **7.618**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.345** - **1.895** * **0.0**/**8**^{½} = **0.345**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.345** + **1.895** * **0.0**/**8**^{½} = **0.345**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.76** / **8** = **0.345**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.952** - **7.618**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.345** - **1.895** * **0.0**/**8**^{½} = **0.345**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.345** + **1.895** * **0.0**/**8**^{½} = **0.345**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.04** / **8** = **0.255**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.52** - **4.162**/**8**) / (**8**-1))^{½} = **5.40**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.895** * **5.40**x**10**$^{-9}$/**8**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.895** * **5.40**x**10**$^{-9}$/**8**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.5** / **7** = **0.5**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.75** - **12.25**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.942** * **0.0**/**7**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.942** * **0.0**/**7**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.04** / **8** = **0.255**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.52** - **4.162**/**8**) / (**8**-1))^{½} = **5.40**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.255** - **1.895** * **5.40**x**10**$^{-9}$/**8**^{½} = **0.255**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.255** + **1.895** * **5.40**x**10**$^{-9}$/**8**^{½} = **0.255**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Antimony (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.12** / **8** = **0.265**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.562** - **4.494**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.895** * **0.0**/**8**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.895** * **0.0**/**8**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.425** / **5** = **0.285**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.406** - **2.031**/**5**) / (**5**-1))^{½} = **3.86**x**10**$^{-9}$	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.285** - **2.132** * **3.86**x**10**$^{-9}$/**5**^{½} = **0.285**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.285** + **2.132** * **3.86**x**10**$^{-9}$/**5**^{½} = **0.285**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.28** / **8** = **0.285**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.65** - **5.198**/**8**) / (**8**-1))^{½} = **2.52**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.285** - **1.895** * **2.52**x**10**$^{-9}$/**8**^{½} = **0.285**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.285** + **1.895** * **2.52**x**10**$^{-9}$/**8**^{½} = **0.285**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **0.0**^{½}) / 2 = [**60.0**, **60.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **48.1** / **8** = **6.013**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**316.272** - **2313.61**/**8**) / (**8**-1))^{½} = **1.967**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.013** - **1.895** * **1.967**/**8**^{½} = **4.695**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.013** + **1.895** * **1.967**/**8**^{½} = **7.33**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.837**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.148**, **2.948**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.0** / **8** = **0.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.125** - **9.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.895** * **0.0**/**8**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.895** * **0.0**/**8**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **176.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **176.667**^{½}) / 2 = [**21.88**, **56.12**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.855**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **284.565** / **8** = **35.571**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**19251.78** - **80977.239**/**8**) / (**8**-1))^{½} = **36.114**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **35.571** - **1.895** * **36.114**/**8**^{½} = **11.381**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **35.571** + **1.895** * **36.114**/**8**^{½} = **59.76**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **-2.204**	Sen's estimator of trend.
7	var(S) = **333.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **333.667**^{½}) / 2 = [**21.973**, **69.027**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-23.435**, **17.8**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.0** / **8** = **0.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.125** - **9.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.895** * **0.0**/**8**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.895** * **0.0**/**8**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.688** / **8** = **0.336**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.903** - **7.225**/**8**) / (**8**-1))^{½} = **6.19**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.336** - **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.336** + **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.0** / **8** = **0.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.125** - **9.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.895** * **0.0**/**8**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.895** * **0.0**/**8**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.55** / **7** = **0.65**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**9.183** - **20.703**/**7**) / (**7**-1))^{½} = **1.019**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.65** - **1.942** * **1.019**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.65** + **1.942** * **1.019**/**7**^{½} = **1.398**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.88**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **54.94** / **7** = **7.849**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**441.337** - **3018.404**/**7**) / (**7**-1))^{½} = **1.3**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.849** - **1.942** * **1.3**/**7**^{½} = **6.894**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.849** + **1.942** * **1.3**/**7**^{½} = **8.803**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.512**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.456**, **2.803**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.855** / **7** = **0.265**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.492** - **3.441**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.265** - **1.942** * **0.0**/**7**^{½} = **0.265**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.265** + **1.942** * **0.0**/**7**^{½} = **0.265**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.688** / **8** = **0.336**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.903** - **7.225**/**8**) / (**8**-1))^{½} = **6.19**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.336** - **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.336** + **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.688** / **8** = **0.336**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.903** - **7.225**/**8**) / (**8**-1))^{½} = **6.19**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.336** - **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.336** + **1.895** * **6.19**x**10**$^{-9}$/**8**^{½} = **0.336**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **83.0** / **5** = **16.6**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1390.24** - **6889.0**/**5**) / (**5**-1))^{½} = **1.764**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **16.6** - **2.132** * **1.764**/**5**^{½} = **14.919**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **16.6** + **2.132** * **1.764**/**5**^{½} = **18.281**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **-0.929**	Sen's estimator of trend.
7	var(S) = **16.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **16.667**^{½}) / 2 = [**-0.258**, **10.258**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.935**, **0.695**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **942.8** / **8** = **117.85**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**113235.84** - **888871.84**/**8**) / (**8**-1))^{½} = **17.431**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **117.85** - **1.895** * **17.431**/**8**^{½} = **106.175**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **117.85** + **1.895** * **17.431**/**8**^{½} = **129.525**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **-3.669**	Sen's estimator of trend.
7	var(S) = **493.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **493.333**^{½}) / 2 = [**31.392**, **88.608**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-10.424**, **3.004**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1358.0** / **8** = **169.75**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**232294.0** - **1.84**x**10^6**/**8**) / (**8**-1))^{½} = **15.917**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **169.75** - **1.895** * **15.917**/**8**^{½} = **159.088**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **169.75** + **1.895** * **15.917**/**8**^{½} = **180.412**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-6.995**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-27.508**, **6.619**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1940.0** / **8** = **242.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**529430.0** - **3.76**x**10^6**/**8**) / (**8**-1))^{½} = **91.792**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **242.5** - **1.895** * **91.792**/**8**^{½} = **181.017**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **242.5** + **1.895** * **91.792**/**8**^{½} = **303.983**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-49.741**	Sen's estimator of trend.
7	var(S) = **267.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **267.667**^{½}) / 2 = [**17.928**, **60.072**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-148.837**, **29.625**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1345.0** / **8** = **168.125**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**239839.0** - **1.81**x**10^6**/**8**) / (**8**-1))^{½} = **44.257**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **168.125** - **1.895** * **44.257**/**8**^{½} = **138.481**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **168.125** + **1.895** * **44.257**/**8**^{½} = **197.769**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **3.612**	Sen's estimator of trend.
7	var(S) = **267.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **267.667**^{½}) / 2 = [**17.928**, **60.072**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-26.547**, **34.458**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2435.0** / **8** = **304.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**786439.0** - **5.93**x**10^6**/**8**) / (**8**-1))^{½} = **80.433**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **304.375** - **1.895** * **80.433**/**8**^{½} = **250.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **304.375** + **1.895** * **80.433**/**8**^{½} = **358.25**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-8.029**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-34.277**, **28.079**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3647.0** / **8** = **455.875**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.78**x**10^6** - **1.33**x**10^7**/**8**) / (**8**-1))^{½} = **131.681**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **455.875** - **1.895** * **131.681**/**8**^{½} = **367.673**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **455.875** + **1.895** * **131.681**/**8**^{½} = **544.077**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **1.11**	Sen's estimator of trend.
7	var(S) = **1256.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **1256.667**^{½}) / 2 = [**69.841**, **161.159**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-12.186**, **11.458**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1786.0** / **8** = **223.25**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**405502.0** - **3.19**x**10^6**/**8**) / (**8**-1))^{½} = **31.116**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **223.25** - **1.895** * **31.116**/**8**^{½} = **202.408**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **223.25** + **1.895** * **31.116**/**8**^{½} = **244.092**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **-23.808**	Sen's estimator of trend.
7	var(S) = **125.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **125.0**^{½}) / 2 = [**8.1**, **36.9**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-42.018**, **-4.595**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1014.4** / **7** = **144.914**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**173616.56** - **1.03**x**10^6**/**7**) / (**7**-1))^{½} = **66.603**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **144.914** - **1.942** * **66.603**/**7**^{½} = **96.021**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **144.914** + **1.942** * **66.603**/**7**^{½} = **193.808**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **5.871**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-284.312**, **72.404**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1405.0** / **7** = **200.714**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**294879.0** - **1.97**x**10^6**/**7**) / (**7**-1))^{½} = **46.324**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **200.714** - **1.942** * **46.324**/**7**^{½} = **166.708**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **200.714** + **1.942** * **46.324**/**7**^{½} = **234.721**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **25.929**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-115.93**, **140.251**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1325.0** / **7** = **189.286**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**262997.0** - **1.76**x**10^6**/**7**) / (**7**-1))^{½} = **45.08**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **189.286** - **1.942** * **45.08**/**7**^{½} = **156.192**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **189.286** + **1.942** * **45.08**/**7**^{½} = **222.38**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-3.991**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-127.316**, **172.566**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1854.0** / **8** = **231.75**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**473086.0** - **3.44**x**10^6**/**8**) / (**8**-1))^{½} = **78.76**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **231.75** - **1.895** * **78.76**/**8**^{½} = **178.996**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **231.75** + **1.895** * **78.76**/**8**^{½} = **284.504**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **24** * (**24**-1) / 2 = **276**	Number of sample pairs during trend detection period.
6	S = **-4.483**	Sen's estimator of trend.
7	var(S) = **1624.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**276** ± **2.576** * **1624.333**^{½}) / 2 = [**86.09**, **189.91**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-15.692**, **6.722**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2165.9** / **8** = **270.738**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**722445.61** - **4.69**x**10^6**/**8**) / (**8**-1))^{½} = **139.415**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **270.738** - **1.895** * **139.415**/**8**^{½} = **177.356**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **270.738** + **1.895** * **139.415**/**8**^{½} = **364.119**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **3.333**	Sen's estimator of trend.
7	var(S) = **1831.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1831.333**^{½}) / 2 = [**94.881**, **205.119**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.16**, **15.872**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.675** / **5** = **0.135**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.091** - **0.456**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **2.132** * **0.0**/**5**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **2.132** * **0.0**/**5**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **0.0**^{½}) / 2 = [**60.0**, **60.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.155** / **7** = **0.165**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.191** - **1.334**/**7**) / (**7**-1))^{½} = **1.49**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.165** - **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.165** + **1.942** * **1.49**x**10**$^{-9}$/**7**^{½} = **0.165**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Beryllium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.08** / **8** = **0.135**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.146** - **1.166**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.135** - **1.895** * **0.0**/**8**^{½} = **0.135**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.135** + **1.895** * **0.0**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.15** / **5** = **0.03**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.005** - **0.023**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **2.132** * **0.0**/**5**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **2.132** * **0.0**/**5**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.641** / **8** = **0.08**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.133** - **0.411**/**8**) / (**8**-1))^{½} = **0.108**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.08** - **1.895** * **0.108**/**8**^{½} = **0.008**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.08** + **1.895** * **0.108**/**8**^{½} = **0.152**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **328.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **328.333**^{½}) / 2 = [**36.661**, **83.339**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.018**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.22** / **8** = **0.028**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.006** - **0.048**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.028** - **1.895** * **0.0**/**8**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.028** + **1.895** * **0.0**/**8**^{½} = **0.028**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **143.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **143.667**^{½}) / 2 = [**23.562**, **54.438**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.027**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.076** / **8** = **0.51**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.412** - **16.614**/**8**) / (**8**-1))^{½} = **0.69**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.51** - **1.895** * **0.69**/**8**^{½} = **0.047**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.51** + **1.895** * **0.69**/**8**^{½} = **0.972**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **252.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **252.0**^{½}) / 2 = [**18.554**, **59.446**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.137**, **0.228**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.287** / **8** = **0.036**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.016** - **0.082**/**8**) / (**8**-1))^{½} = **0.029**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.036** - **1.895** * **0.029**/**8**^{½} = **0.016**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.036** + **1.895** * **0.029**/**8**^{½} = **0.055**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.204** / **8** = **0.026**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.005** - **0.042**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.026** - **1.895** * **0.0**/**8**^{½} = **0.026**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.026** + **1.895** * **0.0**/**8**^{½} = **0.026**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.644** / **8** = **0.081**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.098** - **0.415**/**8**) / (**8**-1))^{½} = **0.081**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.081** - **1.895** * **0.081**/**8**^{½} = **0.026**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.081** + **1.895** * **0.081**/**8**^{½} = **0.135**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-8.45**x**10**$^{-4}$	Sen's estimator of trend.
7	var(S) = **1308.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1308.667**^{½}) / 2 = [**79.906**, **173.094**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.018**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.22** / **8** = **0.028**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.006** - **0.048**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.028** - **1.895** * **0.0**/**8**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.028** + **1.895** * **0.0**/**8**^{½} = **0.028**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.581** / **7** = **0.083**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.094** - **0.338**/**7**) / (**7**-1))^{½} = **0.087**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.083** - **1.942** * **0.087**/**7**^{½} = **0.019**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.083** + **1.942** * **0.087**/**7**^{½} = **0.147**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.119**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.35** / **7** = **0.05**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.018** - **0.123**/**7**) / (**7**-1))^{½} = **8.05**x**10**$^{-10}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.05** - **1.942** * **8.05**x**10**$^{-10}$/**7**^{½} = **0.05**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.05** + **1.942** * **8.05**x**10**$^{-10}$/**7**^{½} = **0.05**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.989** / **7** = **0.284**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.052** - **3.954**/**7**) / (**7**-1))^{½} = **0.285**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.284** - **1.942** * **0.285**/**7**^{½} = **0.075**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.284** + **1.942** * **0.285**/**7**^{½} = **0.493**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.199**	Sen's estimator of trend.
7	var(S) = **40.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **40.667**^{½}) / 2 = [**2.286**, **18.714**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.684**, **0.792**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.24** / **8** = **0.03**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.007** - **0.058**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **1.895** * **0.0**/**8**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **1.895** * **0.0**/**8**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **337.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **337.0**^{½}) / 2 = [**102.855**, **150.145**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.22** / **8** = **0.028**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.006** - **0.048**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.028** - **1.895** * **0.0**/**8**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.028** + **1.895** * **0.0**/**8**^{½} = **0.028**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.75** / **5** = **0.55**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.513** - **7.563**/**5**) / (**5**-1))^{½} = **6.66**x**10**$^{-9}$	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **2.132** * **6.66**x**10**$^{-9}$/**5**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **2.132** * **6.66**x**10**$^{-9}$/**5**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **159.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **159.667**^{½}) / 2 = [**43.725**, **76.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.16** / **8** = **1.395**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**55.554** - **124.546**/**8**) / (**8**-1))^{½} = **2.39**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.395** - **1.895** * **2.39**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.395** + **1.895** * **2.39**/**8**^{½} = **2.996**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15.3** / **7** = **2.186**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**145.815** - **234.09**/**7**) / (**7**-1))^{½} = **4.328**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.186** - **1.942** * **4.328**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.186** + **1.942** * **4.328**/**7**^{½} = **5.363**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **440.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **440.667**^{½}) / 2 = [**88.462**, **142.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chromium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **849.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **849.333**^{½}) / 2 = [**77.963**, **153.037**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.437**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.8** / **6** = **1.8**	Compute the mean of the last 6 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**68.886** - **116.64**/**6**) / (**6**-1))^{½} = **3.145**	Compute sd of the last 6 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.8** - **2.014** * **3.145**/**6**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 6 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.8** + **2.014** * **3.145**/**6**^{½} = **4.386**	Compute upper confidence limit for the mean of the last 6 measurements.
5	N' = **N** * (**N**-1) / 2 = **6** * (**6**-1) / 2 = **15**	Number of sample pairs during trend detection period.
6	S = **-0.551**	Sen's estimator of trend.
7	var(S) = **19.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**15** ± **2.576** * **19.667**^{½}) / 2 = [**1.788**, **13.212**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-11.131**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.889** / **8** = **0.111**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.339** - **0.789**/**8**) / (**8**-1))^{½} = **0.185**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.111** - **1.895** * **0.185**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.111** + **1.895** * **0.185**/**8**^{½} = **0.235**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **328.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **328.333**^{½}) / 2 = [**36.661**, **83.339**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.076**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **96.18** / **8** = **12.023**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1264.124** - **9250.592**/**8**) / (**8**-1))^{½} = **3.924**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **12.023** - **1.895** * **3.924**/**8**^{½} = **9.394**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **12.023** + **1.895** * **3.924**/**8**^{½} = **14.651**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **1.173**	Sen's estimator of trend.
7	var(S) = **267.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **267.667**^{½}) / 2 = [**17.928**, **60.072**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.304**, **2.679**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **62.92** / **8** = **7.865**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1217.302** - **3958.926**/**8**) / (**8**-1))^{½} = **10.159**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.865** - **1.895** * **10.159**/**8**^{½} = **1.06**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.865** + **1.895** * **10.159**/**8**^{½} = **14.67**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-2.217**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.564**, **-0.228**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **16.632** / **8** = **2.079**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**51.508** - **276.607**/**8**) / (**8**-1))^{½} = **1.555**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.079** - **1.895** * **1.555**/**8**^{½} = **1.037**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.079** + **1.895** * **1.555**/**8**^{½} = **3.121**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-0.173**	Sen's estimator of trend.
7	var(S) = **266.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **266.667**^{½}) / 2 = [**17.967**, **60.033**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.165**, **0.576**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **48.04** / **8** = **6.005**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**330.26** - **2307.842**/**8**) / (**8**-1))^{½} = **2.443**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.005** - **1.895** * **2.443**/**8**^{½} = **4.369**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.005** + **1.895** * **2.443**/**8**^{½} = **7.641**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-0.507**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.172**, **0.374**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.533** / **8** = **1.317**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**16.646** - **110.934**/**8**) / (**8**-1))^{½} = **0.63**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.317** - **1.895** * **0.63**/**8**^{½} = **0.894**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.317** + **1.895** * **0.63**/**8**^{½} = **1.739**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.072**	Sen's estimator of trend.
7	var(S) = **1228.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **1228.333**^{½}) / 2 = [**70.359**, **160.641**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.11**, **0.221**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.837** / **8** = **1.605**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**22.153** - **164.789**/**8**) / (**8**-1))^{½} = **0.471**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.605** - **1.895** * **0.471**/**8**^{½} = **1.289**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.605** + **1.895** * **0.471**/**8**^{½} = **1.92**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.272**	Sen's estimator of trend.
7	var(S) = **125.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **125.0**^{½}) / 2 = [**8.1**, **36.9**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.835**, **0.729**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18.158** / **7** = **2.594**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**53.897** - **329.713**/**7**) / (**7**-1))^{½} = **1.064**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.594** - **1.942** * **1.064**/**7**^{½} = **1.813**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.594** + **1.942** * **1.064**/**7**^{½} = **3.375**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.27**	Sen's estimator of trend.
7	var(S) = **43.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **43.333**^{½}) / 2 = [**2.021**, **18.979**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.47**, **1.969**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **28.46** / **7** = **4.066**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**118.292** - **809.972**/**7**) / (**7**-1))^{½} = **0.656**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.066** - **1.942** * **0.656**/**7**^{½} = **3.584**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.066** + **1.942** * **0.656**/**7**^{½} = **4.547**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.145**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.847**, **1.901**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.056** / **7** = **0.294**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.013** - **4.227**/**7**) / (**7**-1))^{½} = **0.261**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.294** - **1.942** * **0.261**/**7**^{½} = **0.102**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.294** + **1.942** * **0.261**/**7**^{½} = **0.485**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.197**	Sen's estimator of trend.
7	var(S) = **35.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **35.667**^{½}) / 2 = [**2.808**, **18.192**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.696**, **0.036**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.68** / **8** = **0.085**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.058** - **0.462**/**8**) / (**8**-1))^{½} = **1.76**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.085** - **1.895** * **1.76**x**10**$^{-9}$/**8**^{½} = **0.085**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.085** + **1.895** * **1.76**x**10**$^{-9}$/**8**^{½} = **0.085**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **-0.037**	Sen's estimator of trend.
7	var(S) = **924.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **924.0**^{½}) / 2 = [**76.348**, **154.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.229**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.364** / **8** = **0.046**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.017** - **0.132**/**8**) / (**8**-1))^{½} = **6.33**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.046** - **1.895** * **6.33**x**10**$^{-10}$/**8**^{½} = **0.045**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.046** + **1.895** * **6.33**x**10**$^{-10}$/**8**^{½} = **0.046**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **440.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **440.667**^{½}) / 2 = [**88.462**, **142.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.5** / **5** = **0.9**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.05** - **20.25**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **2.132** * **0.0**/**5**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **2.132** * **0.0**/**5**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **-0.038**	Sen's estimator of trend.
7	var(S) = **367.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **367.333**^{½}) / 2 = [**35.314**, **84.686**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.21**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **36.54** / **8** = **4.568**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**555.376** - **1335.172**/**8**) / (**8**-1))^{½} = **7.45**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.568** - **1.895** * **7.45**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.568** + **1.895** * **7.45**/**8**^{½} = **9.557**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **143.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **143.667**^{½}) / 2 = [**23.562**, **54.438**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.4** / **8** = **0.8**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.12** - **40.96**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.8** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.8**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.8** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.8**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **14.01** / **8** = **1.751**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**65.114** - **196.28**/**8**) / (**8**-1))^{½} = **2.408**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.751** - **1.895** * **2.408**/**8**^{½} = **0.139**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.751** + **1.895** * **2.408**/**8**^{½} = **3.364**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **33.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **33.0**^{½}) / 2 = [**15.101**, **29.899**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15.07** / **7** = **2.153**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**98.369** - **227.105**/**7**) / (**7**-1))^{½} = **3.315**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2.153** - **1.942** * **3.315**/**7**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2.153** + **1.942** * **3.315**/**7**^{½} = **4.586**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.527**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.8** / **7** = **1.686**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**45.82** - **139.24**/**7**) / (**7**-1))^{½} = **2.079**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.686** - **1.942** * **2.079**/**7**^{½} = **0.16**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.686** + **1.942** * **2.079**/**7**^{½} = **3.212**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.3** / **7** = **0.9**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.67** - **39.69**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.942** * **0.0**/**7**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.942** * **0.0**/**7**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **764.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **764.333**^{½}) / 2 = [**79.891**, **151.109**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.096**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.4** / **8** = **0.8**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5.12** - **40.96**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.8** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.8**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.8** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.8**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **45.05** / **6** = **7.508**	Compute the mean of the last 6 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**339.626** - **2029.503**/**6**) / (**6**-1))^{½} = **0.525**	Compute sd of the last 6 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.508** - **2.014** * **0.525**/**6**^{½} = **7.077**	Compute lower confidence limit for the mean of the last 6 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.508** + **2.014** * **0.525**/**6**^{½} = **7.94**	Compute upper confidence limit for the mean of the last 6 measurements.
5	N' = **N** * (**N**-1) / 2 = **6** * (**6**-1) / 2 = **15**	Number of sample pairs during trend detection period.
6	S = **0.007**	Sen's estimator of trend.
7	var(S) = **28.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**15** ± **2.576** * **28.333**^{½}) / 2 = [**0.644**, **14.356**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-6.756**, **0.551**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **55.91** / **8** = **6.989**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**392.288** - **3125.928**/**8**) / (**8**-1))^{½} = **0.47**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.989** - **1.895** * **0.47**/**8**^{½} = **6.674**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.989** + **1.895** * **0.47**/**8**^{½} = **7.304**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **-0.036**	Sen's estimator of trend.
7	var(S) = **492.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **492.333**^{½}) / 2 = [**31.421**, **88.579**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.112**, **0.062**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **53.79** / **8** = **6.724**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**362.942** - **2893.364**/**8**) / (**8**-1))^{½} = **0.426**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.724** - **1.895** * **0.426**/**8**^{½} = **6.438**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.724** + **1.895** * **0.426**/**8**^{½} = **7.009**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **-0.004**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.147**, **0.17**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **54.51** / **8** = **6.814**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**373.415** - **2971.34**/**8**) / (**8**-1))^{½} = **0.534**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.814** - **1.895** * **0.534**/**8**^{½} = **6.456**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.814** + **1.895** * **0.534**/**8**^{½} = **7.172**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.021**	Sen's estimator of trend.
7	var(S) = **331.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **331.667**^{½}) / 2 = [**22.043**, **68.957**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.195**, **0.161**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **55.67** / **8** = **6.959**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**389.732** - **3099.149/8**) / (**8**-1))^{½} = **0.578**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS/N**^{½} = **6.959** - **1.895** * **0.578/8**^{½} = **6.572**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS/N**^{½} = **6.959** + **1.895** * **0.578/8**^{½} = **7.346**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-0.017**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.167**, **0.182**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **55.65** / **8** = **6.956**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**388.647** - **3096.923**/**8**) / (**8**-1))^{½} = **0.468**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.956** - **1.895** * **0.468**/**8**^{½} = **6.643**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.956** + **1.895** * **0.468**/**8**^{½} = **7.27**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.037**	Sen's estimator of trend.
7	var(S) = **263.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **263.0**^{½}) / 2 = [**18.112**, **59.888**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.192**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **53.52** / **8** = **6.69**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**359.574** - **2864.39**/**8**) / (**8**-1))^{½} = **0.467**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.69** - **1.895** * **0.467**/**8**^{½} = **6.377**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.69** + **1.895** * **0.467**/**8**^{½} = **7.003**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **-0.011**	Sen's estimator of trend.
7	var(S) = **946.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **946.0**^{½}) / 2 = [**55.385**, **134.615**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.078**, **0.053**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **57.32** / **8** = **7.165**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**411.847** - **3285.582**/**8**) / (**8**-1))^{½} = **0.405**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.165** - **1.895** * **0.405**/**8**^{½} = **6.894**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.165** + **1.895** * **0.405**/**8**^{½} = **7.436**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.004**	Sen's estimator of trend.
7	var(S) = **124.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **124.0**^{½}) / 2 = [**8.157**, **36.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.547**, **0.715**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **50.73** / **7** = **7.247**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**369.427** - **2573.533**/**7**) / (**7**-1))^{½} = **0.545**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.247** - **1.942** * **0.545**/**7**^{½} = **6.847**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.247** + **1.942** * **0.545**/**7**^{½} = **7.647**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.273**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.089**, **1.536**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **56.07** / **8** = **7.009**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**394.636** - **3143.845**/**8**) / (**8**-1))^{½} = **0.486**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.009** - **1.895** * **0.486**/**8**^{½} = **6.683**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.009** + **1.895** * **0.486**/**8**^{½} = **7.334**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **-0.056**	Sen's estimator of trend.
7	var(S) = **64.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **64.333**^{½}) / 2 = [**3.669**, **24.331**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.381**, **0.657**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **49.03** / **7** = **7.004**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**345.431** - **2403.941**/**7**) / (**7**-1))^{½} = **0.579**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.004** - **1.942** * **0.579**/**7**^{½} = **6.579**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.004** + **1.942** * **0.579**/**7**^{½} = **7.429**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-0.202**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.006**, **1.487**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **55.53** / **8** = **6.941**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**386.964** - **3083.581**/**8**) / (**8**-1))^{½} = **0.465**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.941** - **1.895** * **0.465**/**8**^{½} = **6.63**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.941** + **1.895** * **0.465**/**8**^{½} = **7.253**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **-0.002**	Sen's estimator of trend.
7	var(S) = **1826.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1826.667**^{½}) / 2 = [**94.951**, **205.049**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.108**, **0.039**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field pH (SU) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **57.12** / **8** = **7.14**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**410.213** - **3262.694**/**8**) / (**8**-1))^{½} = **0.583**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.14** - **1.895** * **0.583**/**8**^{½} = **6.75**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.14** + **1.895** * **0.583**/**8**^{½} = **7.53**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **-0.029**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.093**, **0.056**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7025.5** / **6** = **1170.917**	Compute the mean of the last 6 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**8.37**x**10^6** - **4.94**x**10^7**/**6**) / (**6**-1))^{½} = **169.201**	Compute sd of the last 6 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1170.917** - **2.014** * **169.201**/**6**^{½} = **1031.769**	Compute lower confidence limit for the mean of the last 6 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1170.917** + **2.014** * **169.201**/**6**^{½} = **1310.065**	Compute upper confidence limit for the mean of the last 6 measurements.
5	N' = **N** * (**N**-1) / 2 = **6** * (**6**-1) / 2 = **15**	Number of sample pairs during trend detection period.
6	S = **-11.238**	Sen's estimator of trend.
7	var(S) = **28.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**15** ± **2.576** * **28.333**^{½}) / 2 = [**0.644**, **14.356**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-430.853**, **944.287**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **9278.76** / **8** = **1159.845**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.18**x**10^7** - **8.61**x**10^7**/**8**) / (**8**-1))^{½} = **391.046**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1159.845** - **1.895** * **391.046**/**8**^{½} = **897.917**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1159.845** + **1.895** * **391.046**/**8**^{½} = **1421.773**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **9.466**	Sen's estimator of trend.
7	var(S) = **492.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **492.333**^{½}) / 2 = [**31.421**, **88.579**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-44.471**, **91.655**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **15484.9** / **8** = **1935.613**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.06**x**10^7** - **2.40**x**10^8**/**8**) / (**8**-1))^{½} = **302.012**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1935.613** - **1.895** * **302.012**/**8**^{½} = **1733.321**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1935.613** + **1.895** * **302.012**/**8**^{½} = **2137.904**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **15** * (**15**-1) / 2 = **105**	Number of sample pairs during trend detection period.
6	S = **85.654**	Sen's estimator of trend.
7	var(S) = **408.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**105** ± **2.576** * **408.333**^{½}) / 2 = [**26.473**, **78.527**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**30.202**, **210.679**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **18175.5** / **8** = **2271.938**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.50**x**10^7** - **3.30**x**10^8**/**8**) / (**8**-1))^{½} = **728.405**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **2271.938** - **1.895** * **728.405**/**8**^{½} = **1784.042**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **2271.938** + **1.895** * **728.405**/**8**^{½} = **2759.833**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **133.08**	Sen's estimator of trend.
7	var(S) = **333.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **333.667**^{½}) / 2 = [**21.973**, **69.027**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-117.542**, **451.939**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7788.88** / **8** = **973.61**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**9.72**x**10^6** - **6.07**x**10^7**/**8**) / (**8**-1))$^{1/2}$ = **552.844**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$ = **973.61** - **1.895** * **552.844**/**8**$^{1/2}$ = **603.308**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$ = **973.61** + **1.895** * **552.844**/**8**$^{1/2}$ = **1343.912**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **35.333**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**78** ± **2.576** * **268.667**$^{1/2}$) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-8.976**, **165.657**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12172.0** / **8** = **1521.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.12**x**10^7** - **1.48**x**10^8**/**8**) / (**8**-1))^{½} = **622.313**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1521.5** - **1.895** * **622.313**/**8**^{½} = **1104.666**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1521.5** + **1.895** * **622.313**/**8**^{½} = **1938.334**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **13.383**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-88.415**, **128.609**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10633.3** / **8** = **1329.163**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.44**x**10^7** - **1.13**x**10^8**/**8**) / (**8**-1))^{½} = **206.789**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1329.163** - **1.895** * **206.789**/**8**^{½} = **1190.653**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1329.163** + **1.895** * **206.789**/**8**^{½} = **1467.672**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **20** * (**20**-1) / 2 = **190**	Number of sample pairs during trend detection period.
6	S = **55.257**	Sen's estimator of trend.
7	var(S) = **950.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**190** ± **2.576** * **950.0**^{½}) / 2 = [**55.301**, **134.699**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**22.844**, **91.966**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **9749.3** / **8** = **1218.663**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.25**x**10^7** - **9.50**x**10^7**/**8**) / (**8**-1))^{½} = **292.646**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1218.663** - **1.895** * **292.646**/**8**^{½} = **1022.644**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1218.663** + **1.895** * **292.646**/**8**^{½} = **1414.681**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **116.857**	Sen's estimator of trend.
7	var(S) = **125.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **125.0**^{½}) / 2 = [**8.1**, **36.9**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-20.712**, **366.112**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10520.81** / **7** = **1502.973**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.95**x**10^7** - **1.11**x**10^8**/**7**) / (**7**-1))^{½} = **781.654**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1502.973** - **1.942** * **781.654**/**7**^{½} = **929.155**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1502.973** + **1.942** * **781.654**/**7**^{½} = **2076.791**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **137.874**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1613.516**, **1515.168**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11184.7** / **8** = **1398.088**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.66**x**10^7** - **1.25**x**10^8**/**8**) / (**8**-1))^{½} = **377.295**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1398.088** - **1.895** * **377.295**/**8**^{½} = **1145.37**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1398.088** + **1.895** * **377.295**/**8**^{½} = **1650.805**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **186.185**	Sen's estimator of trend.
7	var(S) = **65.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **65.333**^{½}) / 2 = [**3.589**, **24.411**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-448.133**, **636.733**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10245.0** / **7** = **1463.571**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.58**x**10^7** - **1.05**x**10^8**/**7**) / (**7**-1))^{½} = **362.641**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1463.571** - **1.942** * **362.641**/**7**^{½} = **1197.354**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1463.571** + **1.942** * **362.641**/**7**^{½} = **1729.789**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **306.686**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-683.894**, **1508.977**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **5520.79** / **8** = **690.099**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.00**x**10^6** - **3.05**x**10^7**/**8**) / (**8**-1))^{½} = **164.706**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **690.099** - **1.895** * **164.706**/**8**^{½} = **579.777**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **690.099** + **1.895** * **164.706**/**8**^{½} = **800.421**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **25** * (**25**-1) / 2 = **300**	Number of sample pairs during trend detection period.
6	S = **8.095**	Sen's estimator of trend.
7	var(S) = **1833.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**300** ± **2.576** * **1833.333**^{½}) / 2 = [**94.851**, **205.149**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-27.237**, **29.731**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Field Specific Conductance (umhos/cm) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7819.11** / **8** = **977.389**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**8.35**x**10^6** - **6.11**x**10^7**/**8**) / (**8**-1))^{½} = **318.808**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **977.389** - **1.895** * **318.808**/**8**^{½} = **763.847**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **977.389** + **1.895** * **318.808**/**8**^{½} = **1190.93**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **39.386**	Sen's estimator of trend.
7	var(S) = **1433.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **1433.667**^{½}) / 2 = [**77.731**, **175.269**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**6.119**, **80.32**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.6** / **5** = **0.12**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.072** - **0.36**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **2.132** * **0.0**/**5**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **2.132** * **0.0**/**5**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **159.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **159.667**^{½}) / 2 = [**43.725**, **76.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.009** / **8** = **0.376**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.28** - **9.054**/**8**) / (**8**-1))^{½} = **0.554**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.376** - **1.895** * **0.554**/**8**^{½} = **0.005**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.376** + **1.895** * **0.554**/**8**^{½} = **0.747**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **203.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **203.333**^{½}) / 2 = [**20.634**, **57.366**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.351**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.427** / **8** = **0.178**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.556** - **2.036**/**8**) / (**8**-1))^{½} = **0.208**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.178** - **1.895** * **0.208**/**8**^{½} = **0.039**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.178** + **1.895** * **0.208**/**8**^{½} = **0.317**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.84** / **7** = **0.12**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.101** - **0.706**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.942** * **0.0**/**7**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.942** * **0.0**/**7**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.84** / **7** = **0.12**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.101** - **0.706**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.942** * **0.0**/**7**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.942** * **0.0**/**7**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.84** / **7** = **0.12**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.101** - **0.706**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.942** * **0.0**/**7**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.942** * **0.0**/**7**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **440.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **440.667**^{½}) / 2 = [**88.462**, **142.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **203.2** / **7** = **29.029**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6424.76** - **41290.24**/**7**) / (**7**-1))^{½} = **9.364**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **29.029** - **1.942** * **9.364**/**7**^{½} = **22.154**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **29.029** + **1.942** * **9.364**/**7**^{½} = **35.903**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-4.681**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-64.07**, **-0.523**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **47.84** / **8** = **5.98**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**323.322** - **2288.666**/**8**) / (**8**-1))^{½} = **2.306**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.98** - **1.895** * **2.306**/**8**^{½} = **4.435**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.98** + **1.895** * **2.306**/**8**^{½} = **7.525**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **17** * (**17**-1) / 2 = **136**	Number of sample pairs during trend detection period.
6	S = **-1.089**	Sen's estimator of trend.
7	var(S) = **589.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**136** ± **2.576** * **589.333**^{½}) / 2 = [**36.732**, **99.268**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.685**, **-0.366**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **535.7** / **8** = **66.963**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**36773.39** - **286974.49**/**8**) / (**8**-1))^{½} = **11.349**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **66.963** - **1.895** * **11.349**/**8**^{½} = **59.361**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **66.963** + **1.895** * **11.349**/**8**^{½} = **74.564**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **5.673**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**1.052**, **10.451**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **374.3** / **8** = **46.788**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**22946.57** - **140100.49**/**8**) / (**8**-1))^{½} = **27.862**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **46.788** - **1.895** * **27.862**/**8**^{½} = **28.125**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **46.788** + **1.895** * **27.862**/**8**^{½} = **65.45**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **1.57**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-6.231**, **16.934**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.81** / **8** = **1.476**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**32.943** - **139.476**/**8**) / (**8**-1))^{½} = **1.488**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.476** - **1.895** * **1.488**/**8**^{½} = **0.479**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.476** + **1.895** * **1.488**/**8**^{½} = **2.473**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **173.5** / **8** = **21.688**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4049.93** - **30102.25**/**8**) / (**8**-1))^{½} = **6.405**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **21.688** - **1.895** * **6.405**/**8**^{½} = **17.397**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **21.688** + **1.895** * **6.405**/**8**^{½} = **25.978**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-1.306**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.746**, **2.234**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **43.69** / **8** = **5.461**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**268.133** - **1908.816**/**8**) / (**8**-1))^{½} = **2.054**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.461** - **1.895** * **2.054**/**8**^{½} = **4.085**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.461** + **1.895** * **2.054**/**8**^{½} = **6.837**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **1239.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **1239.0**^{½}) / 2 = [**70.163**, **160.837**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.985**, **0.32**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **106.05** / **8** = **13.256**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1517.163** - **11246.603**/**8**) / (**8**-1))^{½} = **3.988**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.256** - **1.895** * **3.988**/**8**^{½} = **10.585**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.256** + **1.895** * **3.988**/**8**^{½} = **15.928**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **2.058**	Sen's estimator of trend.
7	var(S) = **125.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **125.0**^{½}) / 2 = [**8.1**, **36.9**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-3.815**, **7.801**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **162.32** / **8** = **20.29**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3855.334** - **26347.782**/**8**) / (**8**-1))^{½} = **8.959**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **20.29** - **1.895** * **8.959**/**8**^{½} = **14.289**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **20.29** + **1.895** * **8.959**/**8**^{½} = **26.291**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **2.87**	Sen's estimator of trend.
7	var(S) = **65.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **65.333**^{½}) / 2 = [**3.589**, **24.411**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-22.655**, **12.127**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **202.1** / **7** = **28.871**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6229.03** - **40844.41**/**7**) / (**7**-1))^{½} = **8.105**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **28.871** - **1.942** * **8.105**/**7**^{½} = **22.922**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **28.871** + **1.942** * **8.105**/**7**^{½} = **34.821**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.665**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-30.774**, **18.283**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **294.8** / **7** = **42.114**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**14977.62** - **86907.04**/**7**) / (**7**-1))^{½} = **20.665**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **42.114** - **1.942** * **20.665**/**7**^{½} = **26.944**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **42.114** + **1.942** * **20.665**/**7**^{½} = **57.285**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **3.69**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-59.459**, **95.062**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.6** / **8** = **0.95**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**7.22** - **57.76**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.95** - **1.895** * **0.0**/**8**^{½} = **0.95**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.95** + **1.895** * **0.0**/**8**^{½} = **0.95**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **849.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **849.333**^{½}) / 2 = [**77.963**, **153.037**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.747**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **30.97** / **8** = **3.871**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**271.181** - **959.141**/**8**) / (**8**-1))^{½} = **4.649**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.871** - **1.895** * **4.649**/**8**^{½} = **0.757**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.871** + **1.895** * **4.649**/**8**^{½} = **6.985**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **924.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **924.0**^{½}) / 2 = [**76.348**, **154.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.166**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.4** / **5** = **0.48**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.152** - **5.76**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **2.132** * **0.0**/**5**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **2.132** * **0.0**/**5**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **85.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **85.0**^{½}) / 2 = [**48.125**, **71.875**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.0** / **8** = **0.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.0** - **16.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.5** - **1.895** * **0.0**/**8**^{½} = **0.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.5** + **1.895** * **0.0**/**8**^{½} = **0.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.928** / **8** = **0.491**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.929** - **15.429**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.491** - **1.895** * **0.0**/**8**^{½} = **0.491**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.491** + **1.895** * **0.0**/**8**^{½} = **0.491**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.84** / **8** = **0.48**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.843** - **14.746**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.48** - **1.895** * **0.0**/**8**^{½} = **0.48**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.48** + **1.895** * **0.0**/**8**^{½} = **0.48**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.9** / **7** = **0.7**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.43** - **24.01**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **1.942** * **0.0**/**7**^{½} = **0.7**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **1.942** * **0.0**/**7**^{½} = **0.7**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.928** / **8** = **0.491**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.929** - **15.429**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.491** - **1.895** * **0.0**/**8**^{½} = **0.491**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.491** + **1.895** * **0.0**/**8**^{½} = **0.491**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Selenium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.928** / **8** = **0.491**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.929** - **15.429**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.491** - **1.895** * **0.0**/**8**^{½} = **0.491**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.491** + **1.895** * **0.0**/**8**^{½} = **0.491**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.225** / **5** = **0.245**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.3** - **1.501**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.245** - **2.132** * **0.0**/**5**^{½} = **0.245**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.245** + **2.132** * **0.0**/**5**^{½} = **0.245**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.2** / **8** = **0.15**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.18** - **1.44**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.15** - **1.895** * **0.0**/**8**^{½} = **0.15**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.15** + **1.895** * **0.0**/**8**^{½} = **0.15**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **0.0**^{½}) / 2 = [**60.0**, **60.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.57** / **8** = **0.321**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.519** - **6.605**/**8**) / (**8**-1))^{½} = **0.315**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.321** - **1.895** * **0.315**/**8**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.321** + **1.895** * **0.315**/**8**^{½} = **0.532**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **8** = **0.21**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.353** - **2.822**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.895** * **0.0**/**8**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.895** * **0.0**/**8**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **8** = **0.21**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.353** - **2.822**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.895** * **0.0**/**8**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.895** * **0.0**/**8**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.68** / **8** = **0.21**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.353** - **2.822**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.21** - **1.895** * **0.0**/**8**^{½} = **0.21**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.21** + **1.895** * **0.0**/**8**^{½} = **0.21**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.26** / **8** = **0.283**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.622** - **5.108**/**8**) / (**8**-1))^{½} = **0.375**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.283** - **1.895** * **0.375**/**8**^{½} = **0.031**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.283** + **1.895** * **0.375**/**8**^{½} = **0.534**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.96** / **8** = **0.245**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.48** - **3.842**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.245** - **1.895** * **0.0**/**8**^{½} = **0.245**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.245** + **1.895** * **0.0**/**8**^{½} = **0.245**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.75** / **7** = **0.25**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.438** - **3.063**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.25** - **1.942** * **0.0**/**7**^{½} = **0.25**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.25** + **1.942** * **0.0**/**7**^{½} = **0.25**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **11.11** / **8** = **1.389**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**88.047** - **123.432**/**8**) / (**8**-1))^{½} = **3.221**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.389** - **1.895** * **3.221**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.389** + **1.895** * **3.221**/**8**^{½} = **3.546**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **8** * (**8**-1) / 2 = **28**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **21.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**28** ± **2.576** * **21.0**^{½}) / 2 = [**8.098**, **19.902**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.51** / **7** = **0.359**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.395** - **6.3**/**7**) / (**7**-1))^{½} = **0.287**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.359** - **1.942** * **0.287**/**7**^{½} = **0.148**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.359** + **1.942** * **0.287**/**7**^{½} = **0.569**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **16.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **16.0**^{½}) / 2 = [**5.348**, **15.652**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.665** / **8** = **0.833**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**29.076** - **44.422**/**8**) / (**8**-1))^{½} = **1.833**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.833** - **1.895** * **1.833**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.833** + **1.895** * **1.833**/**8**^{½} = **2.061**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **483.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **483.667**^{½}) / 2 = [**98.174**, **154.826**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Silver (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.2** / **8** = **0.15**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.18** - **1.44**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.15** - **1.895** * **0.0**/**8**^{½} = **0.15**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.15** + **1.895** * **0.0**/**8**^{½} = **0.15**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **0.0**^{½}) / 2 = [**115.5**, **115.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Sulfide (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **924.0** / **8** = **115.5**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**106722.0** - **853776.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **115.5** - **1.895** * **0.0**/**8**^{½} = **115.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **115.5** + **1.895** * **0.0**/**8**^{½} = **115.5**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **33.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **33.0**^{½}) / 2 = [**15.101**, **29.899**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Sulfide (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **547.5** / **5** = **109.5**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**59951.25** - **299756.25**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **109.5** - **2.132** * **0.0**/**5**^{½} = **109.5**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **109.5** + **2.132** * **0.0**/**5**^{½} = **109.5**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Sulfide (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **438.0** / **4** = **109.5**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**47961.0** - **191844.0**/**4**) / (**4**-1))^{½} = **0.0**	Compute sd of the last 4 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **109.5** - **2.353** * **0.0**/**4**^{½} = **109.5**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **109.5** + **2.353** * **0.0**/**4**^{½} = **109.5**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **4** * (**4**-1) / 2 = **6**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**6** ± **2.576** * **0.0**^{½}) / 2 = [**3.0**, **3.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.65** / **5** = **0.13**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.085** - **0.423**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **2.132** * **0.0**/**5**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **2.132** * **0.0**/**5**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **0.0**^{½}) / 2 = [**60.0**, **60.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.05** / **8** = **0.256**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.418** - **4.203**/**8**) / (**8**-1))^{½} = **0.357**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.256** - **1.895** * **0.357**/**8**^{½} = **0.017**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.256** + **1.895** * **0.357**/**8**^{½} = **0.495**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **65.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **65.0**^{½}) / 2 = [**35.116**, **55.884**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **440.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **440.667**^{½}) / 2 = [**88.462**, **142.538**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.91** / **7** = **0.13**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.118** - **0.828**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.942** * **0.0**/**7**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.942** * **0.0**/**7**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.91** / **7** = **0.13**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.118** - **0.828**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.942** * **0.0**/**7**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.942** * **0.0**/**7**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.91** / **7** = **0.13**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.118** - **0.828**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.942** * **0.0**/**7**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.942** * **0.0**/**7**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Thallium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.04** / **8** = **0.13**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.135** - **1.082**/**8**) / (**8**-1))^{½} = **8.76**x**10**$^{-10}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.13** - **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.13** + **1.895** * **8.76**x**10**$^{-10}$/**8**^{½} = **0.13**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **307.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **307.667**^{½}) / 2 = [**92.908**, **138.092**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.75** / **5** = **0.55**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.513** - **7.563**/**5**) / (**5**-1))^{½} = **6.66**x**10**$^{-9}$	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **2.132** * **6.66**x**10**$^{-9}$/**5**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **2.132** * **6.66**x**10**$^{-9}$/**5**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.4** / **8** = **0.425**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.445** - **11.56**/**8**) / (**8**-1))^{½} = **8.58**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.425** - **1.895** * **8.58**x**10**$^{-9}$/**8**^{½} = **0.425**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.425** + **1.895** * **8.58**x**10**$^{-9}$/**8**^{½} = **0.425**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **280.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **280.667**^{½}) / 2 = [**38.422**, **81.578**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.062**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **849.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **849.333**^{½}) / 2 = [**77.963**, **153.037**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.051**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.85** / **7** = **0.55**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.118** - **14.823**/**7**) / (**7**-1))^{½} = **9.58**x**10**$^{-9}$	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.942** * **9.58**x**10**$^{-9}$/**7**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **849.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **849.333**^{½}) / 2 = [**77.963**, **153.037**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.036**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Vanadium (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.4** / **8** = **0.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.42** - **19.36**/**8**) / (**8**-1))^{½} = **1.17**x**10**$^{-8}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.55** - **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.55** + **1.895** * **1.17**x**10**$^{-8}$/**8**^{½} = **0.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **849.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **849.333**^{½}) / 2 = [**77.963**, **153.037**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **716.4** / **7** = **102.343**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**80149.1** - **513228.96**/**7**) / (**7**-1))^{½} = **33.741**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **102.343** - **1.942** * **33.741**/**7**^{½} = **77.573**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **102.343** + **1.942** * **33.741**/**7**^{½} = **127.112**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-4.422**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-291.539**, **17.451**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-24A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **99.35** / **8** = **12.419**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4441.818** - **9870.423**/**8**) / (**8**-1))^{½} = **21.408**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **12.419** - **1.895** * **21.408**/**8**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **12.419** + **1.895** * **21.408**/**8**^{½} = **26.758**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **16** * (**16**-1) / 2 = **120**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **159.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**120** ± **2.576** * **159.667**^{½}) / 2 = [**43.725**, **76.275**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-29A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **77.1** / **8** = **9.638**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1947.41** - **5944.41**/**8**) / (**8**-1))^{½} = **13.117**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **9.638** - **1.895** * **13.117**/**8**^{½} = **0.852**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **9.638** + **1.895** * **13.117**/**8**^{½} = **18.423**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-31A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **58.5** / **8** = **7.313**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**727.25** - **3422.25**/**8**) / (**8**-1))^{½} = **6.541**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **7.313** - **1.895** * **6.541**/**8**^{½} = **2.931**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **7.313** + **1.895** * **6.541**/**8**^{½} = **11.694**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **56.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **56.0**^{½}) / 2 = [**29.361**, **48.639**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-33A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-4

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-40A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **10** * (**10**-1) / 2 = **45**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**45** ± **2.576** * **0.0**^{½}) / 2 = [**22.5**, **22.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-42A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-43A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **33.95** / **7** = **4.85**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**164.658** - **1152.603**/**7**) / (**7**-1))^{½} = **0.0**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **4.85** - **1.942** * **0.0**/**7**^{½} = **4.85**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **4.85** + **1.942** * **0.0**/**7**^{½} = **4.85**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **0.0**^{½}) / 2 = [**10.5**, **10.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-44A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **94.0** / **7** = **13.429**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1969.07** - **8836.0**/**7**) / (**7**-1))^{½} = **10.853**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **13.429** - **1.942** * **10.853**/**7**^{½} = **5.461**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **13.429** + **1.942** * **10.853**/**7**^{½} = **21.396**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **35.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **35.667**^{½}) / 2 = [**2.808**, **18.192**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-28.154**, **28.359**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

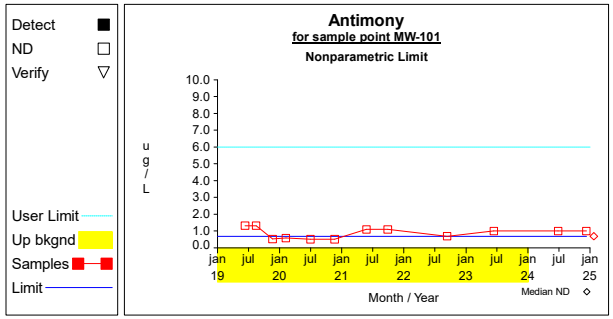
Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-4B

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **161.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**231** ± **2.576** * **161.0**^{½}) / 2 = [**99.157**, **131.843**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

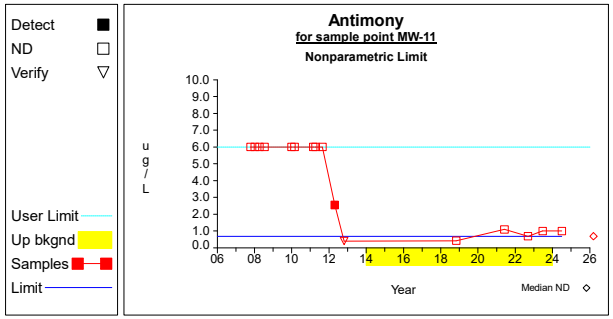
Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-7A

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **23** * (**23**-1) / 2 = **253**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **616.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**253** ± **2.576** * **616.667**^{½}) / 2 = [**94.515**, **158.485**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

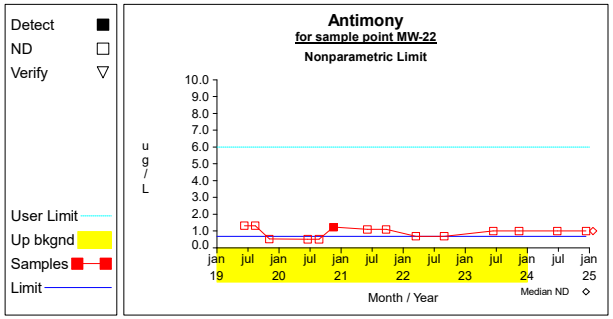
Up vs. Down Prediction Limits



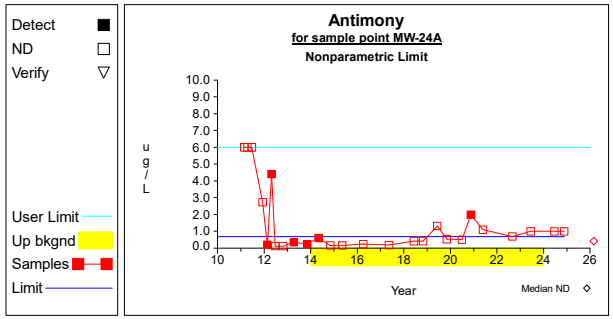
Graph 1



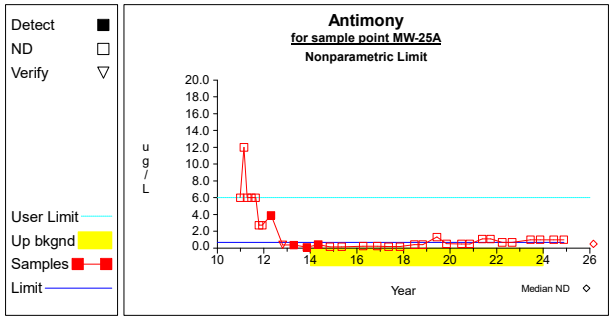
Graph 2



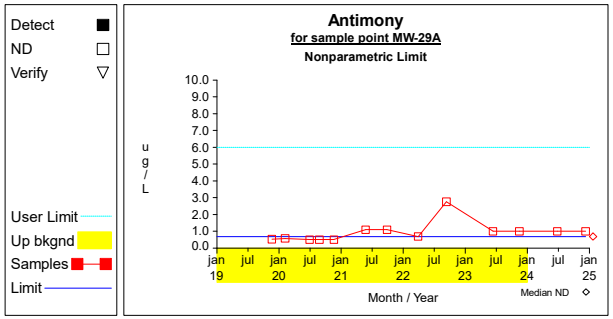
Graph 3



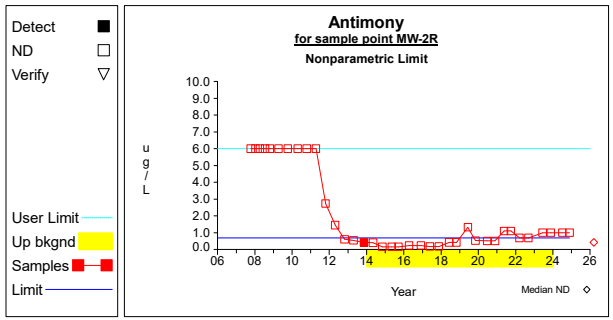
Graph 4



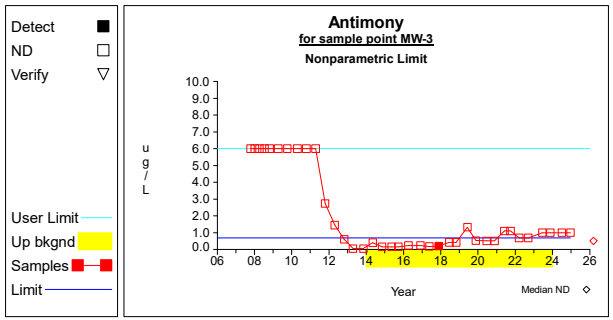
Graph 5



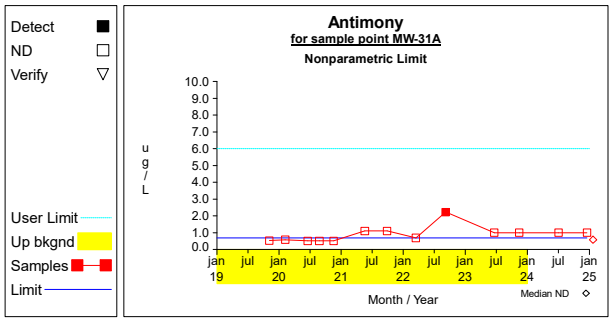
Graph 6



Graph 7

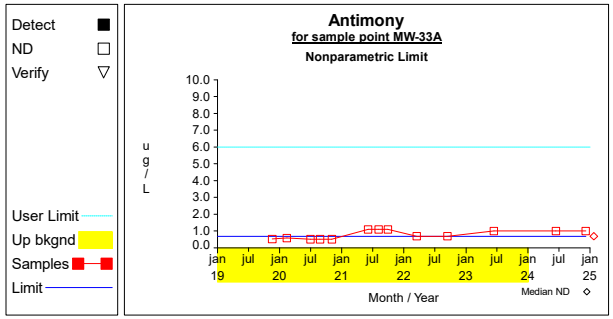


Graph 8

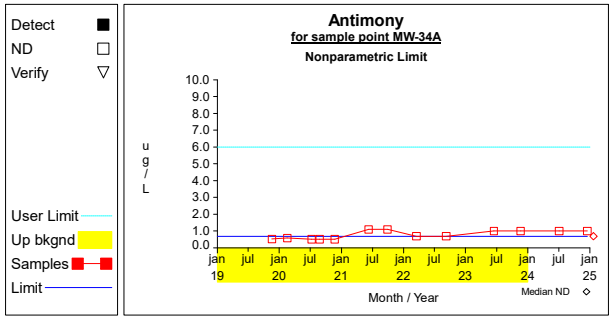


Graph 9

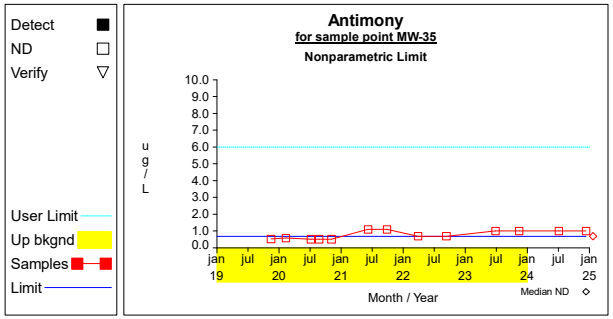
Up vs. Down Prediction Limits



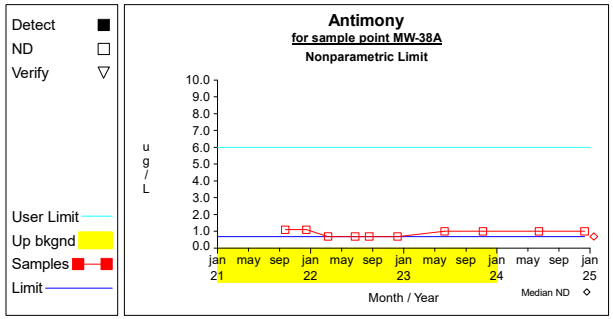
Graph 10



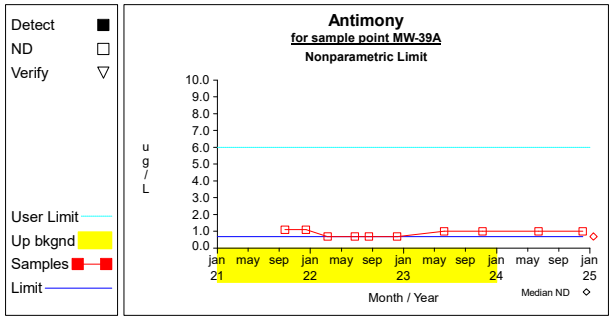
Graph 11



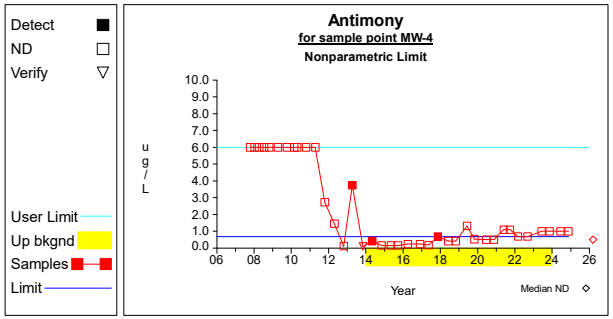
Graph 12



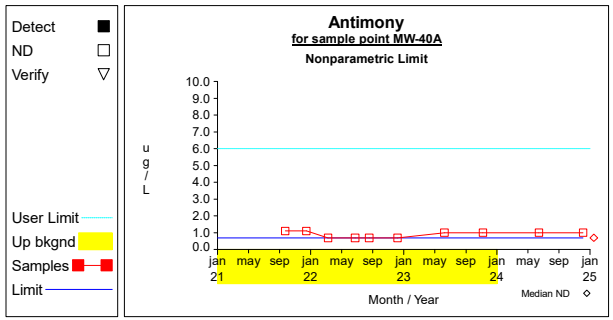
Graph 13



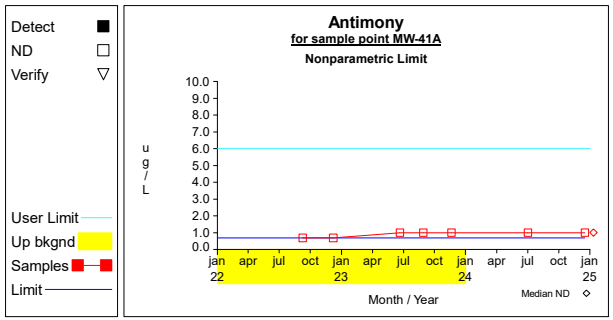
Graph 14



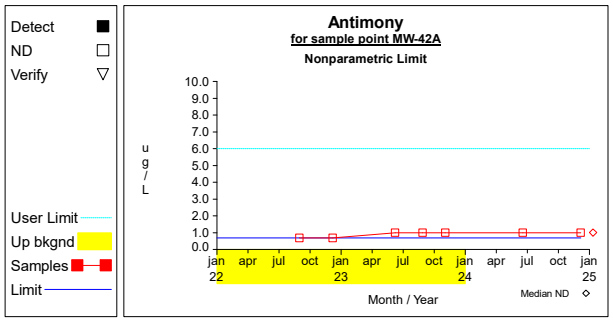
Graph 15



Graph 16

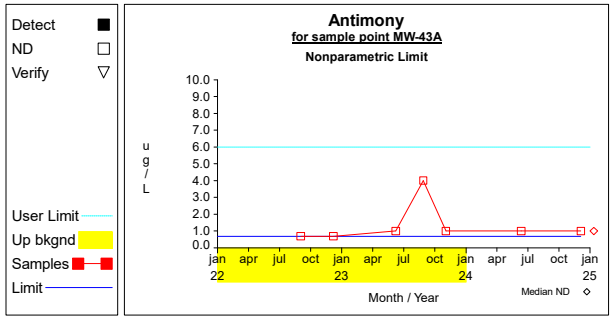


Graph 17

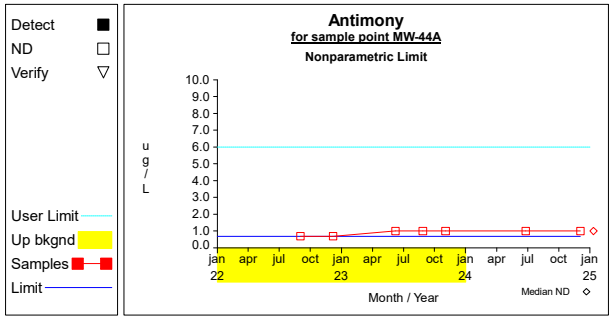


Graph 18

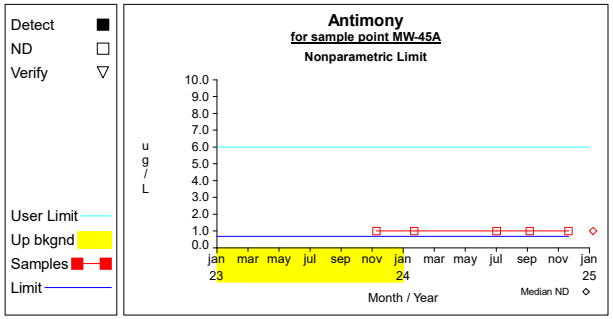
Up vs. Down Prediction Limits



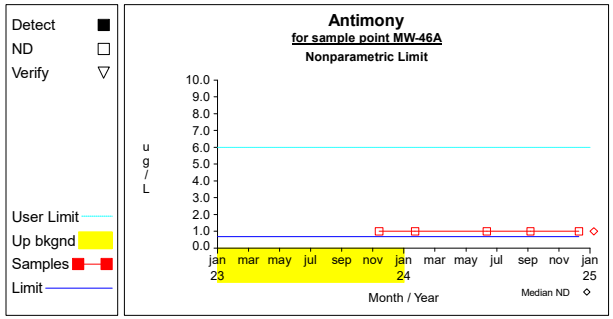
Graph 19



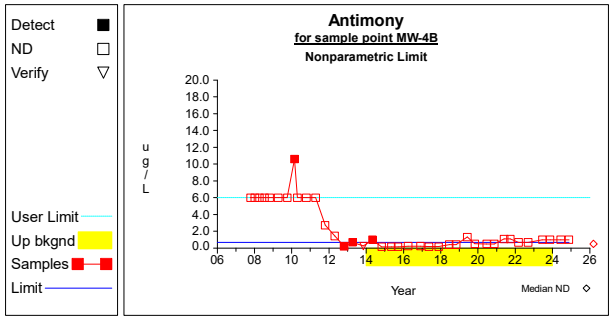
Graph 20



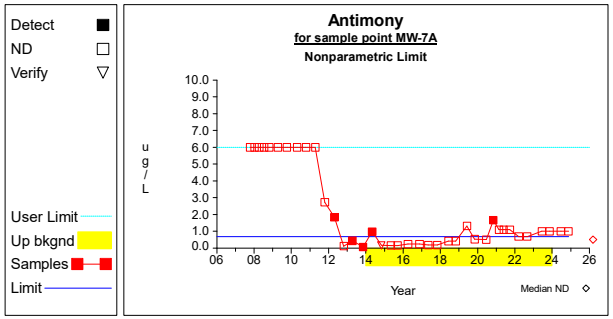
Graph 21



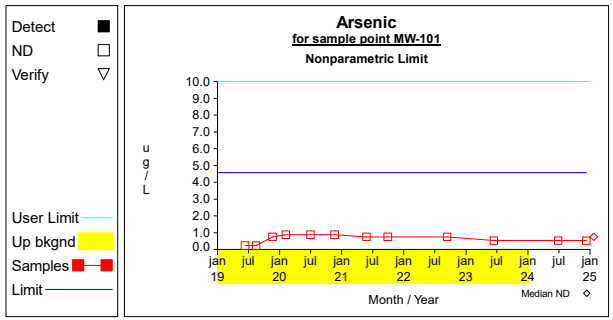
Graph 22



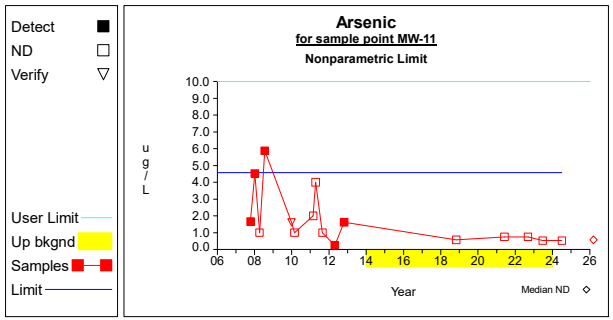
Graph 23



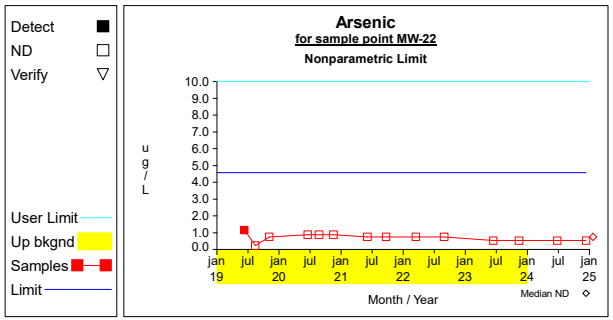
Graph 24



Graph 25

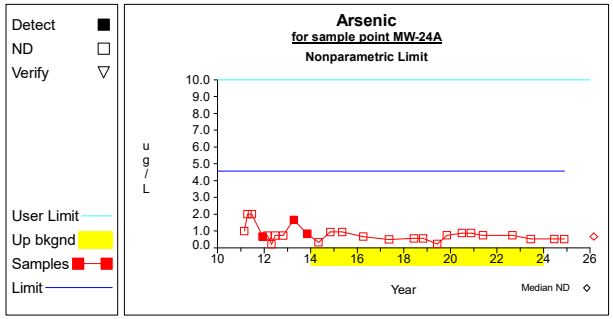


Graph 26

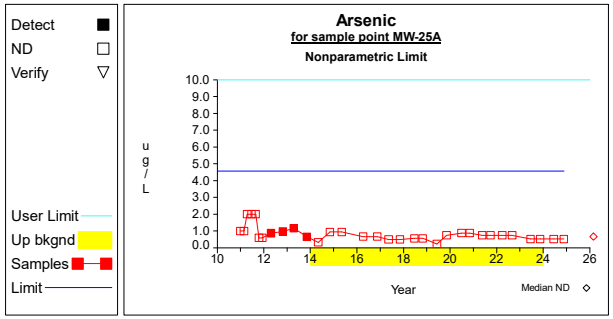


Graph 27

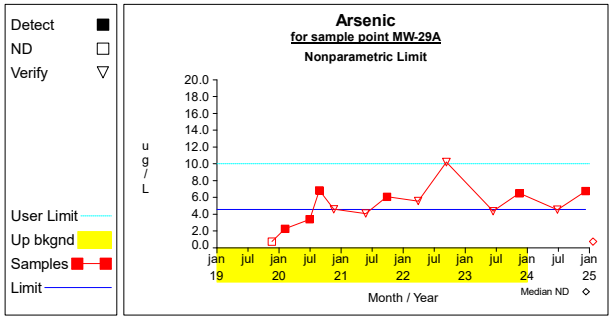
Up vs. Down Prediction Limits



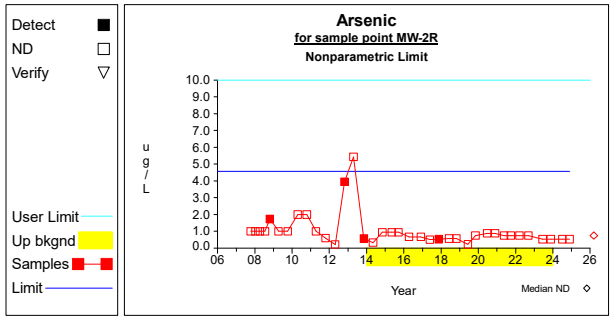
Graph 28



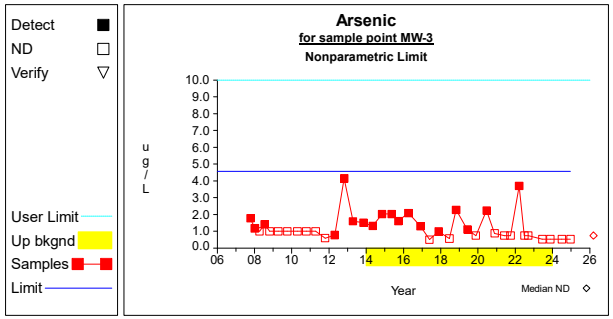
Graph 29



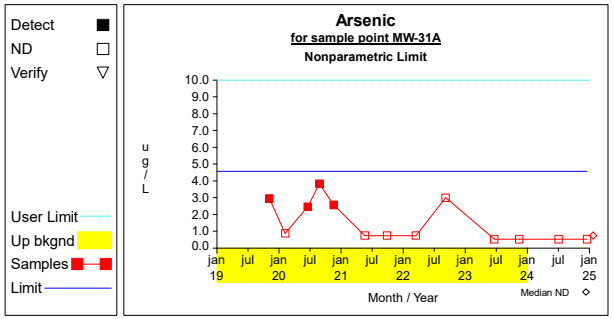
Graph 30



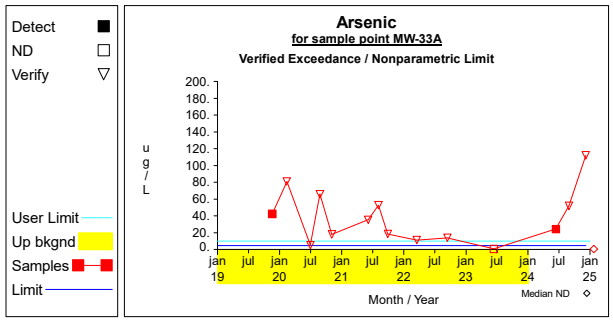
Graph 31



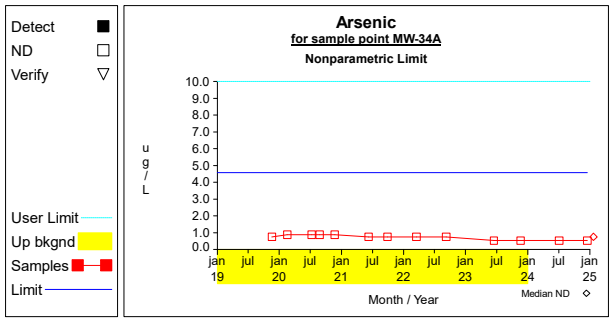
Graph 32



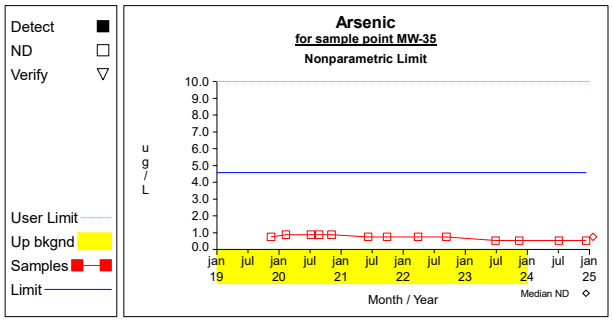
Graph 33



Graph 34

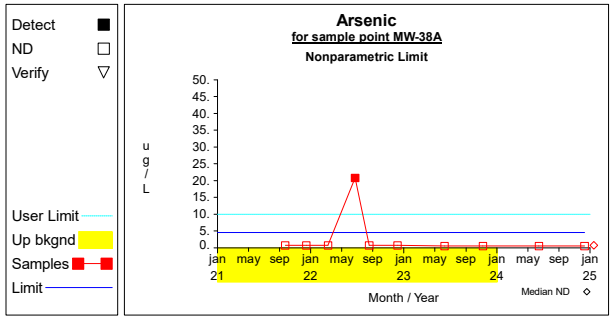


Graph 35

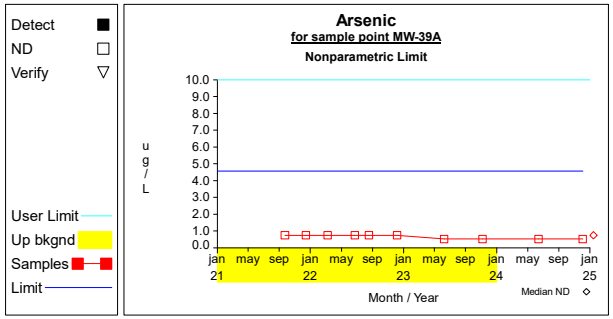


Graph 36

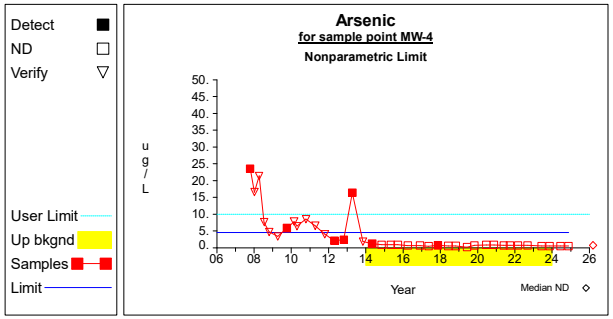
Up vs. Down Prediction Limits



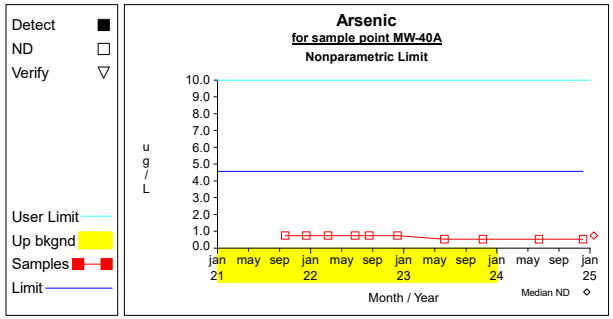
Graph 37



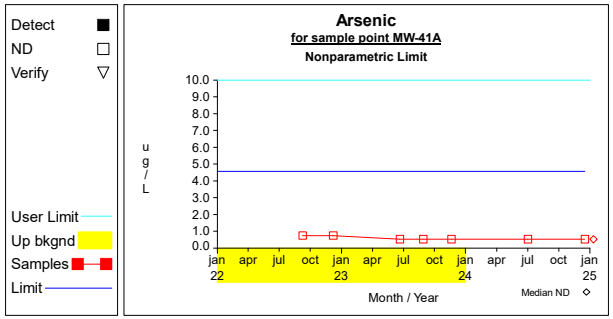
Graph 38



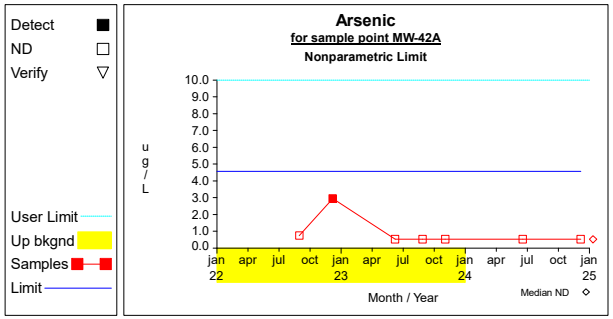
Graph 39



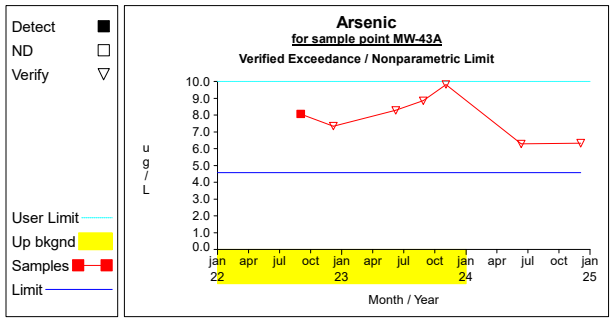
Graph 40



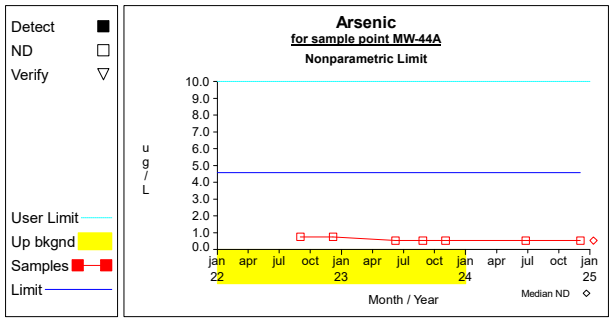
Graph 41



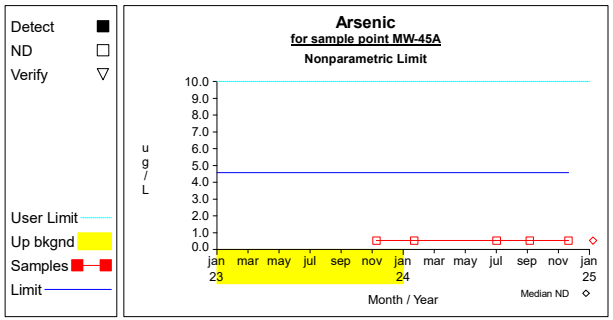
Graph 42



Graph 43

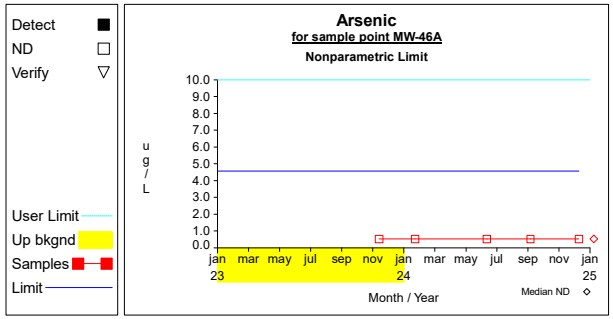


Graph 44

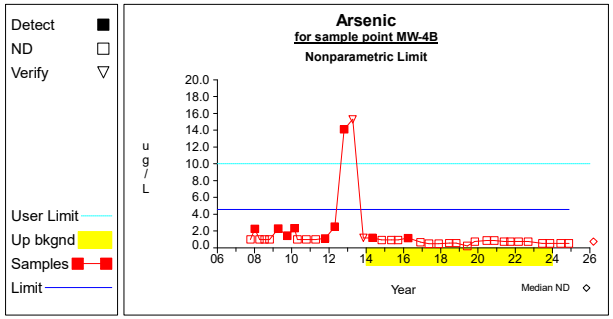


Graph 45

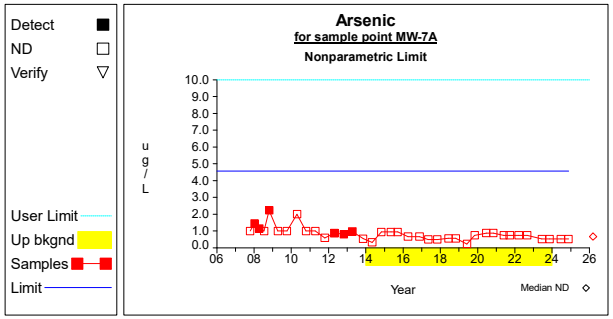
Up vs. Down Prediction Limits



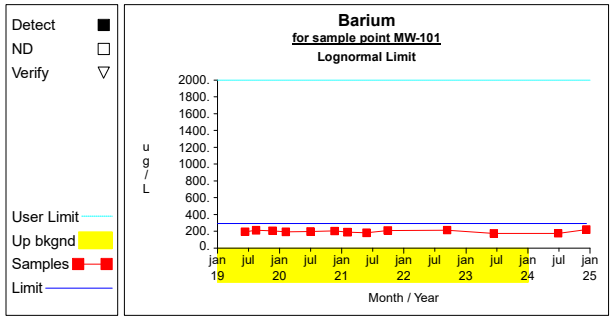
Graph 46



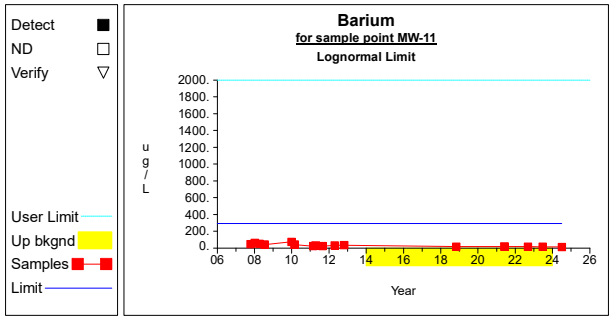
Graph 47



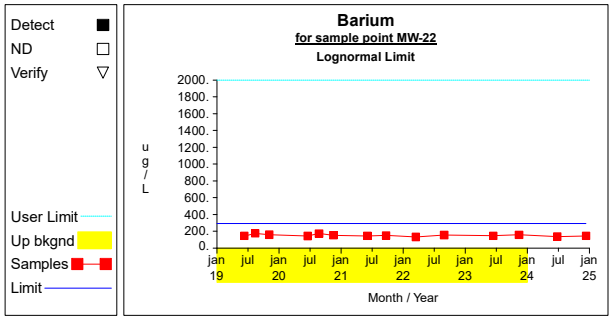
Graph 48



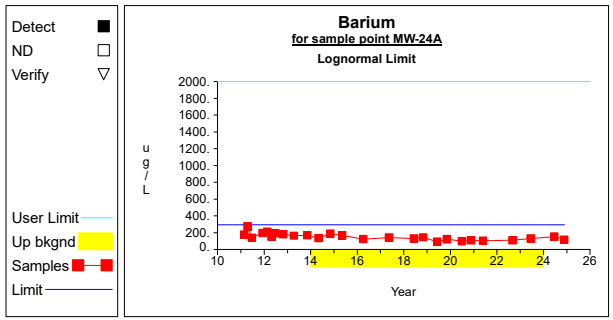
Graph 49



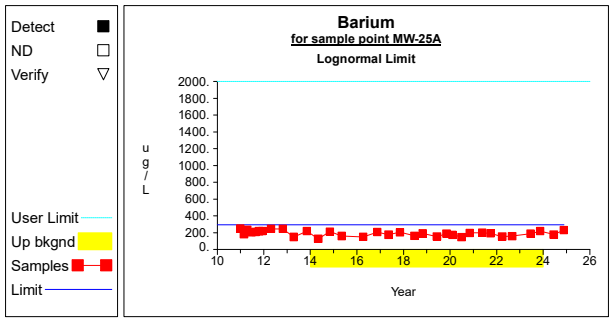
Graph 50



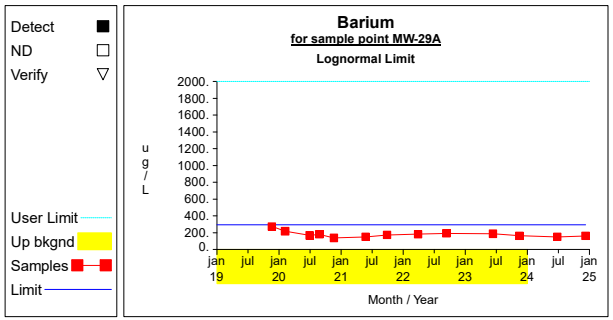
Graph 51



Graph 52

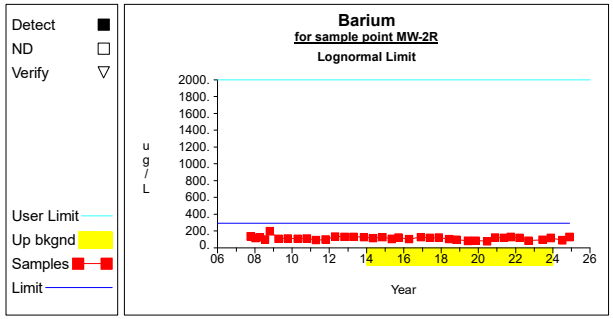


Graph 53

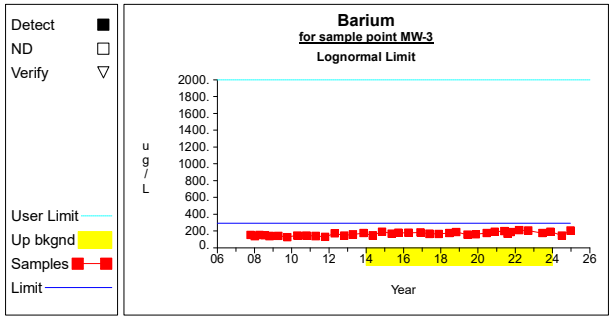


Graph 54

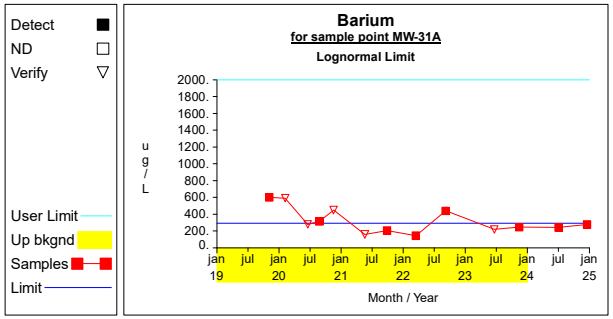
Up vs. Down Prediction Limits



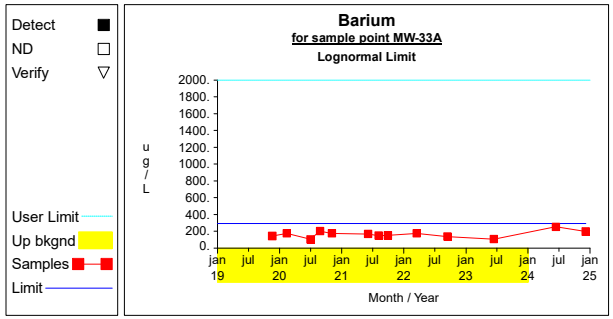
Graph 55



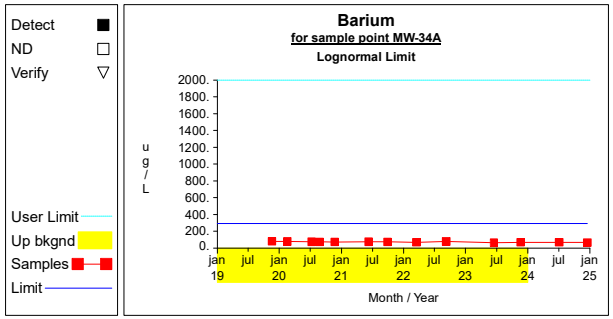
Graph 56



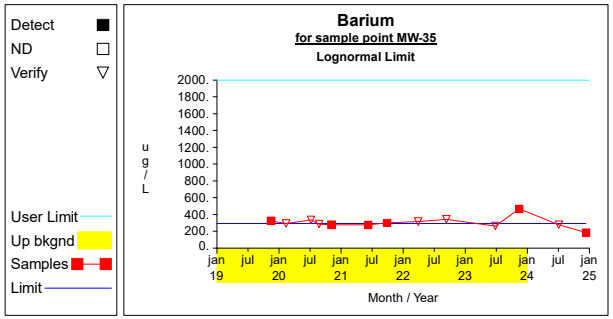
Graph 57



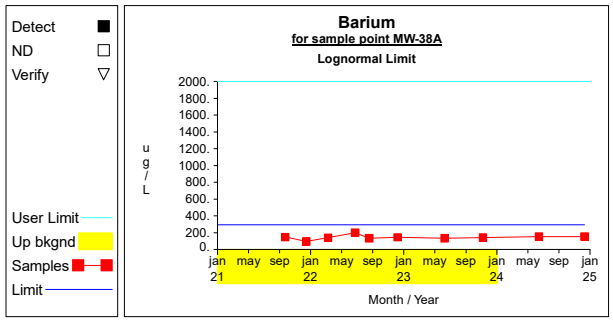
Graph 58



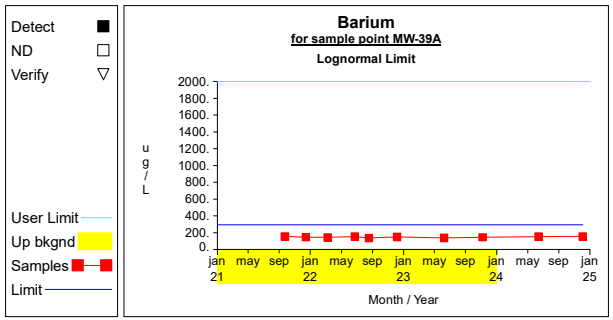
Graph 59



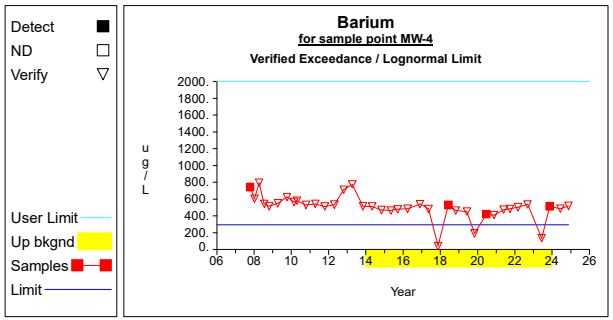
Graph 60



Graph 61

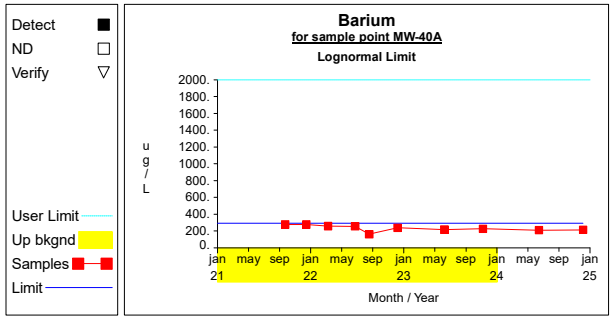


Graph 62

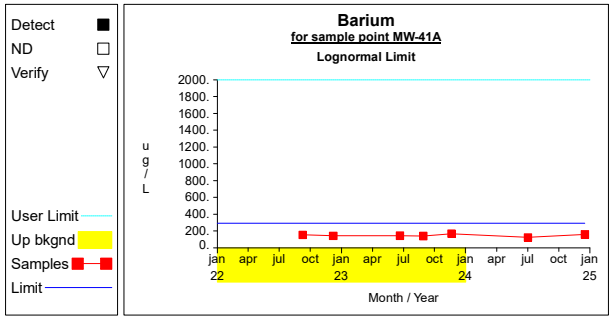


Graph 63

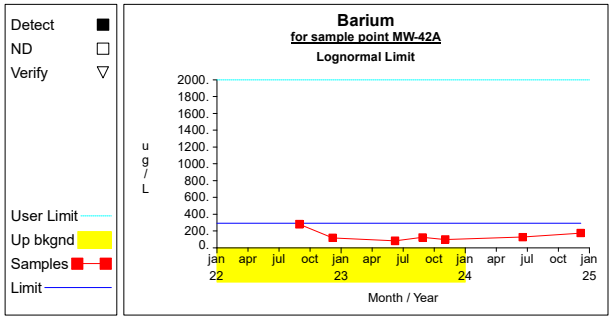
Up vs. Down Prediction Limits



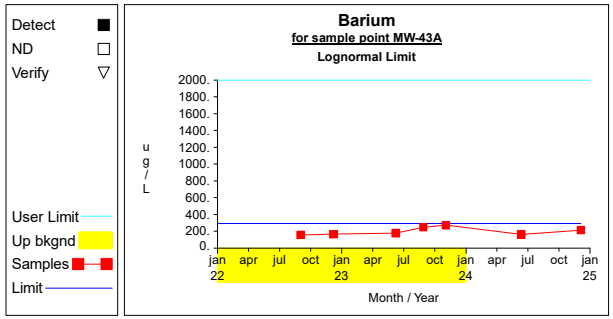
Graph 64



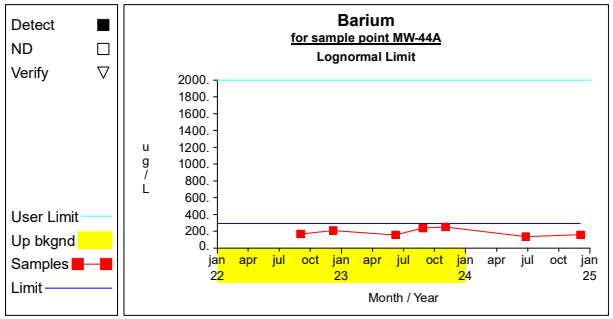
Graph 65



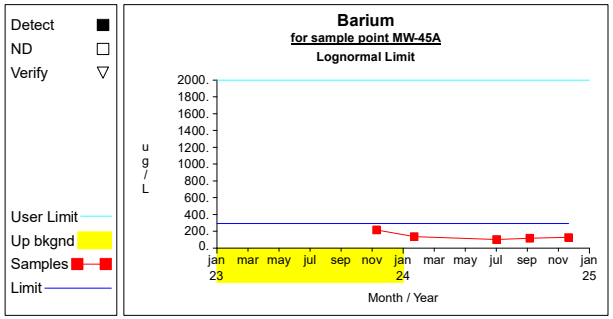
Graph 66



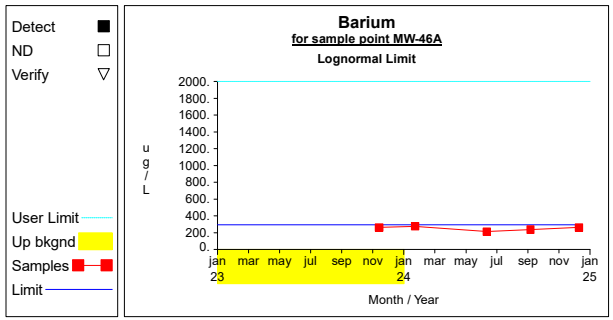
Graph 67



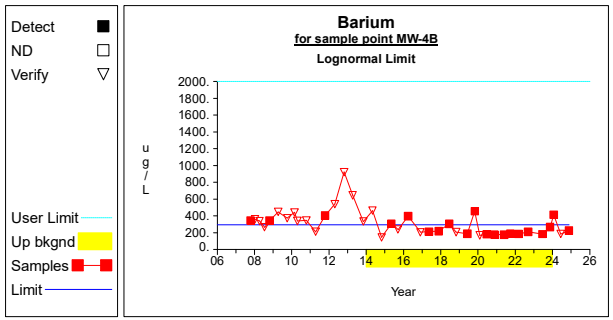
Graph 68



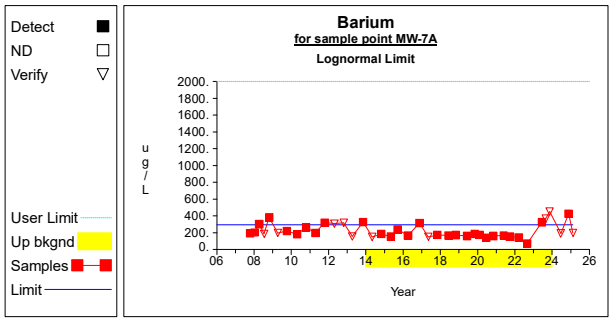
Graph 69



Graph 70

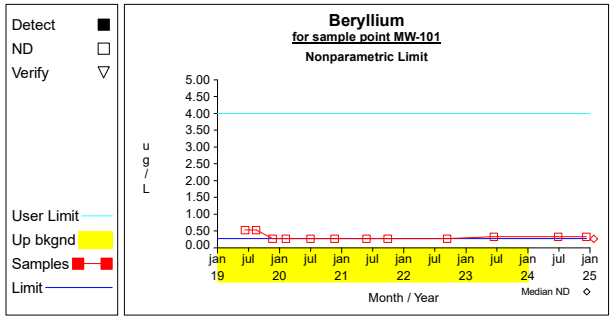


Graph 71

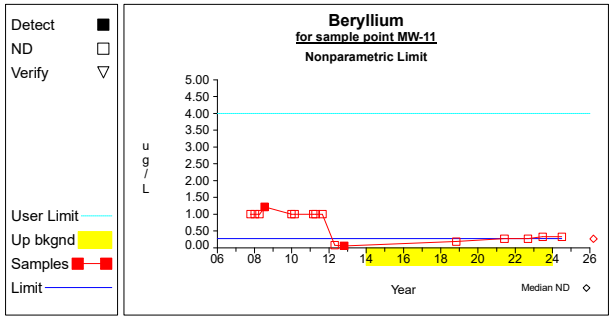


Graph 72

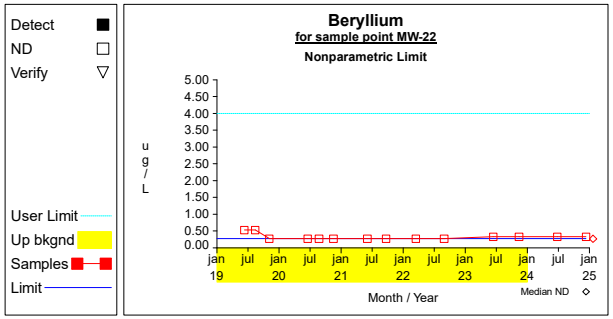
Up vs. Down Prediction Limits



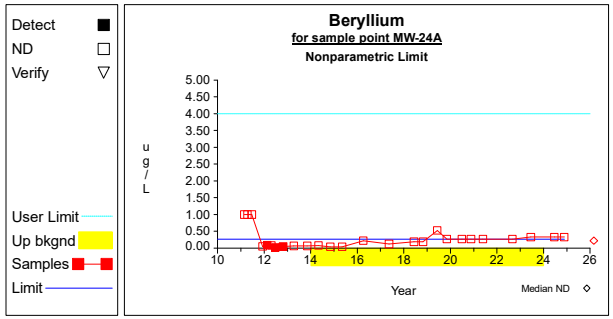
Graph 73



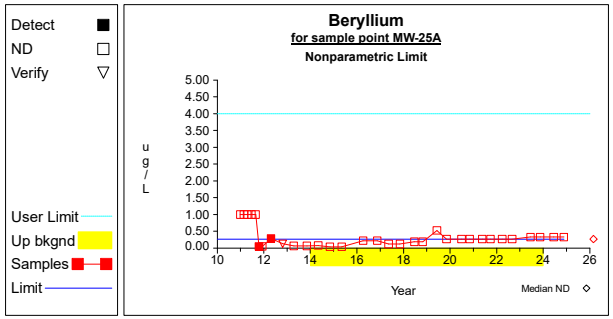
Graph 74



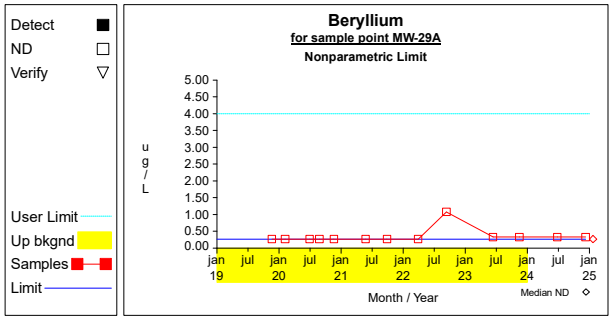
Graph 75



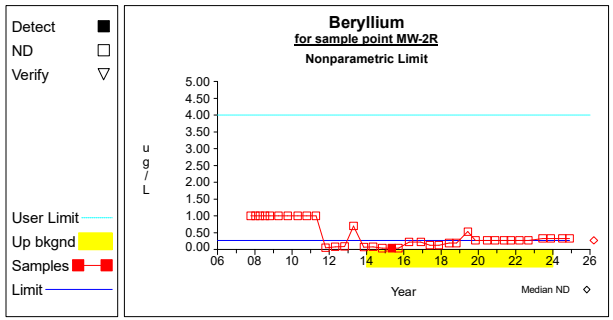
Graph 76



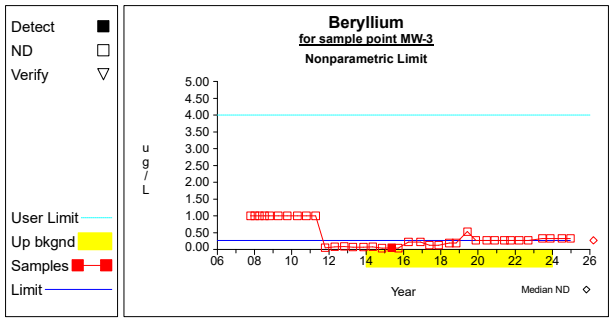
Graph 77



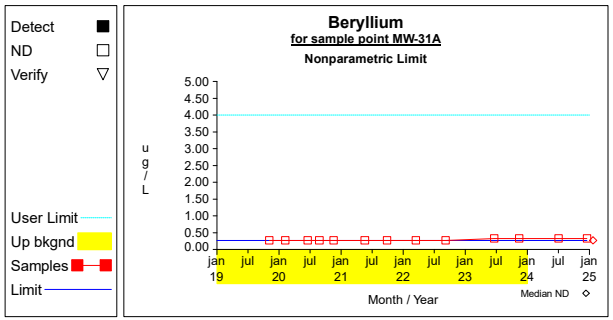
Graph 78



Graph 79

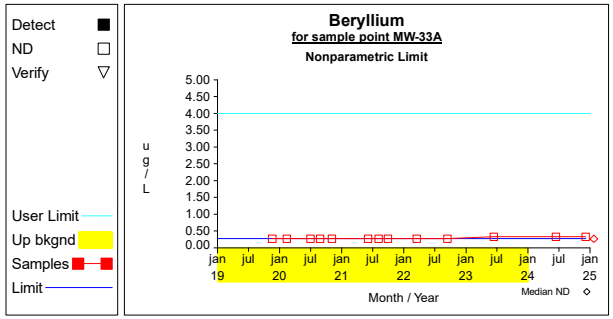


Graph 80

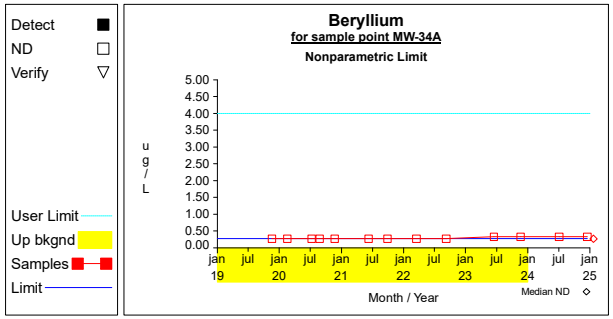


Graph 81

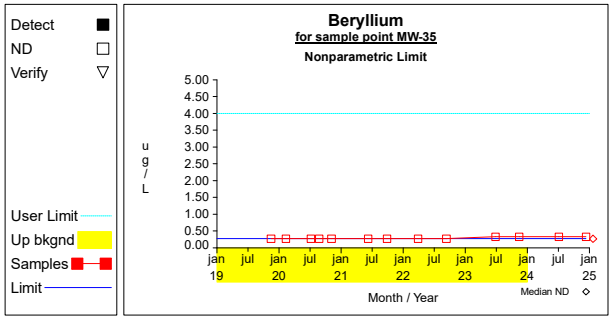
Up vs. Down Prediction Limits



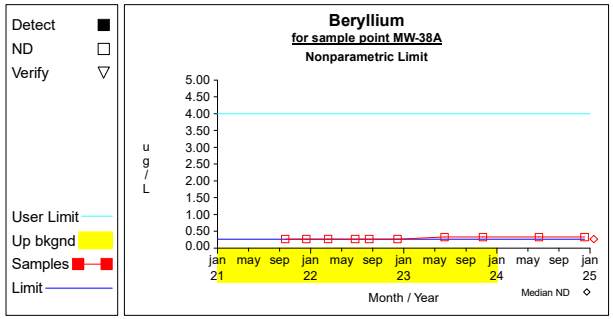
Graph 82



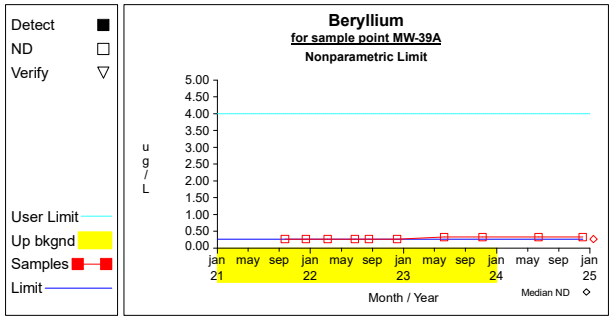
Graph 83



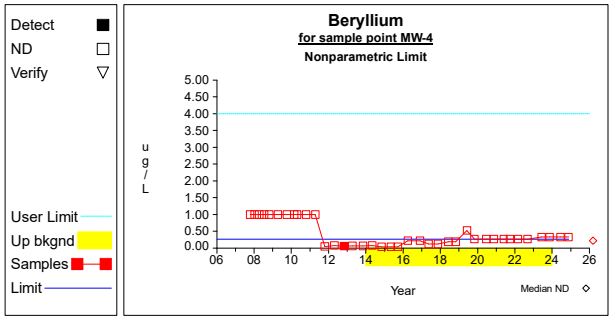
Graph 84



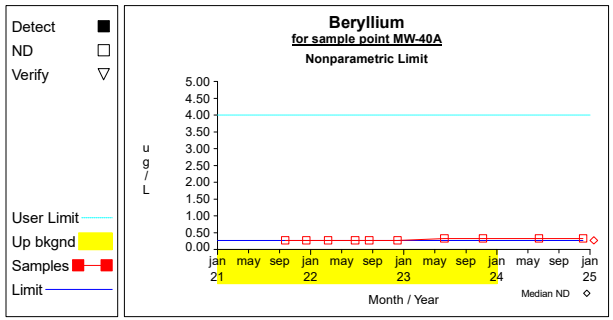
Graph 85



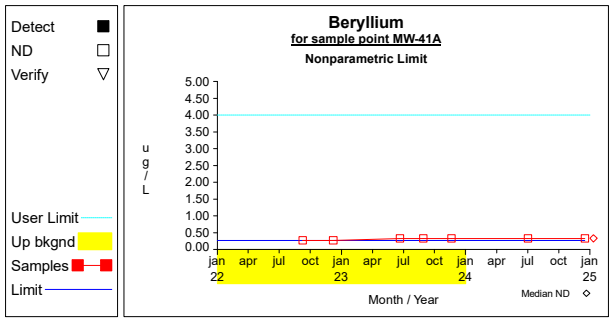
Graph 86



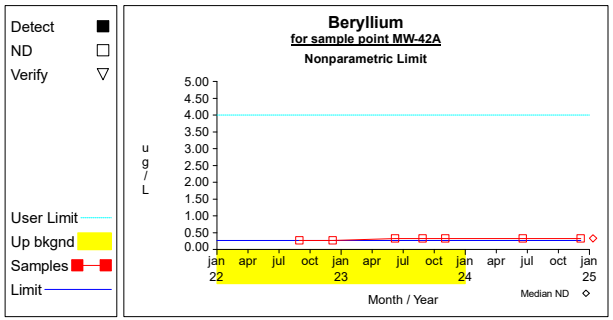
Graph 87



Graph 88

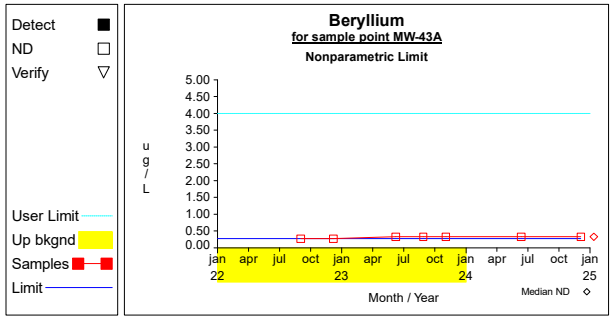


Graph 89

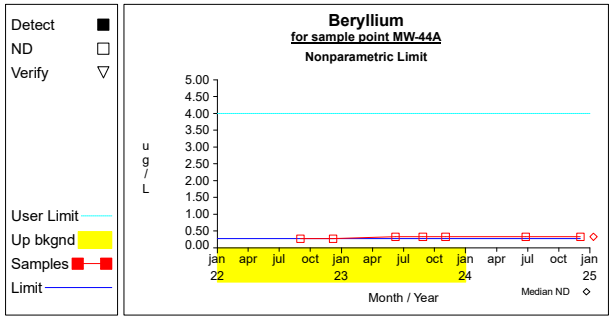


Graph 90

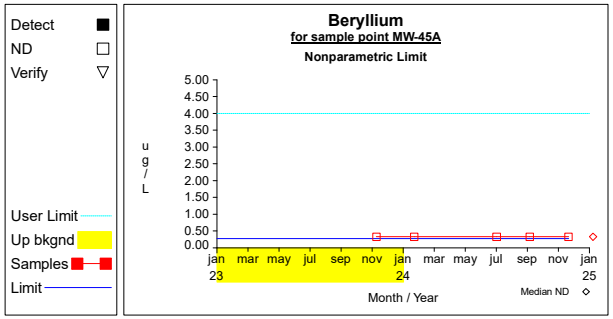
Up vs. Down Prediction Limits



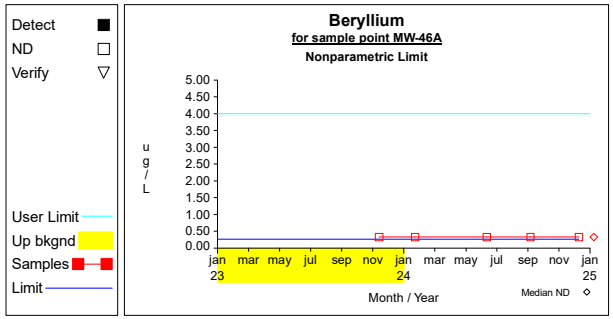
Graph 91



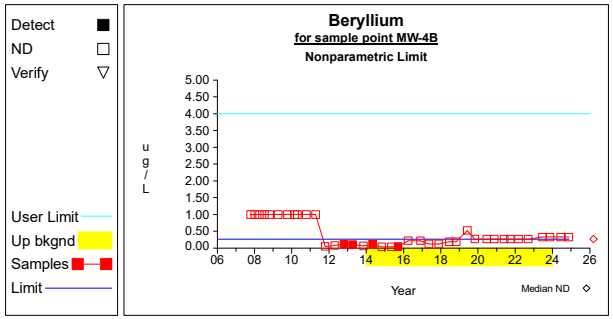
Graph 92



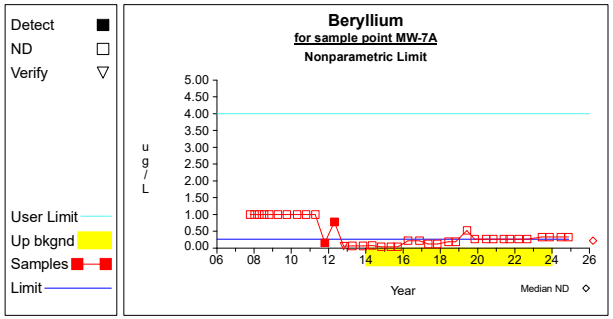
Graph 93



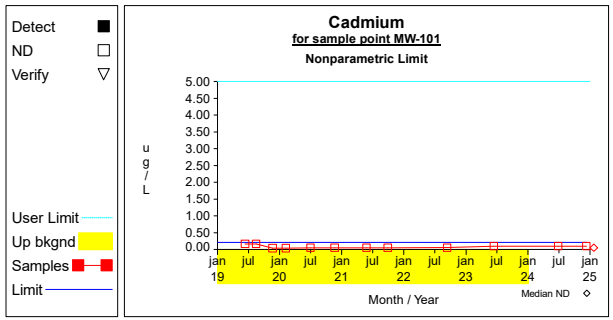
Graph 94



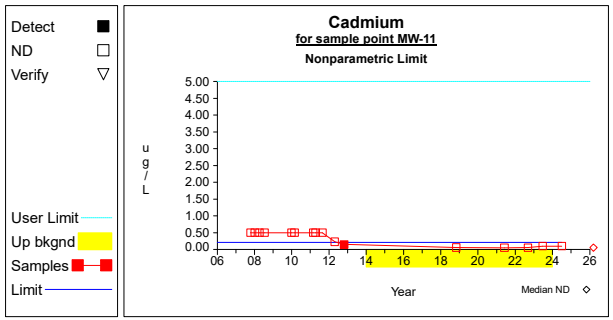
Graph 95



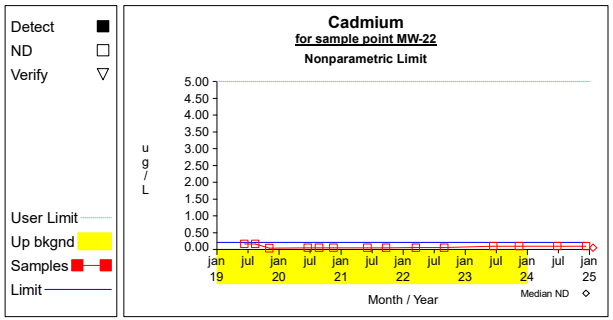
Graph 96



Graph 97

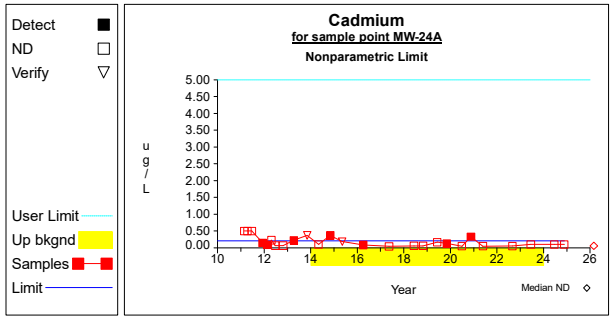


Graph 98

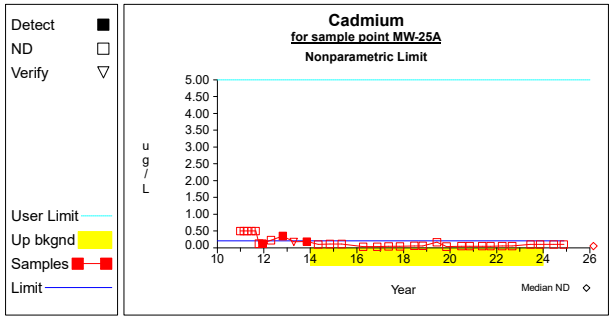


Graph 99

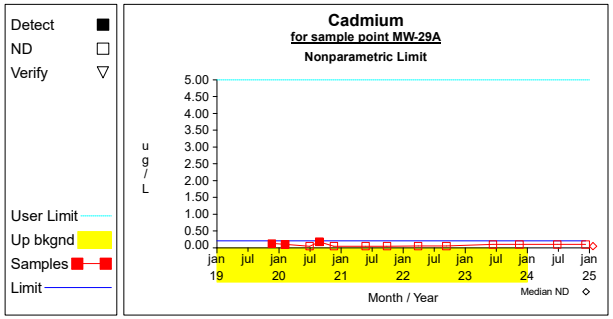
Up vs. Down Prediction Limits



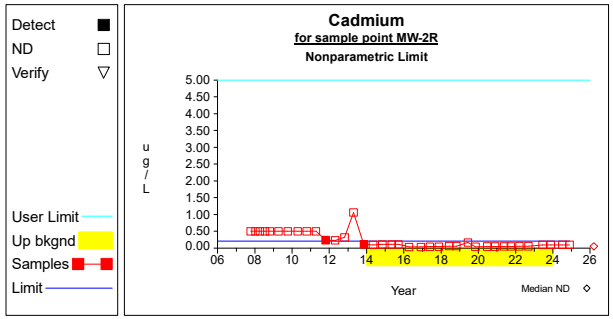
Graph 100



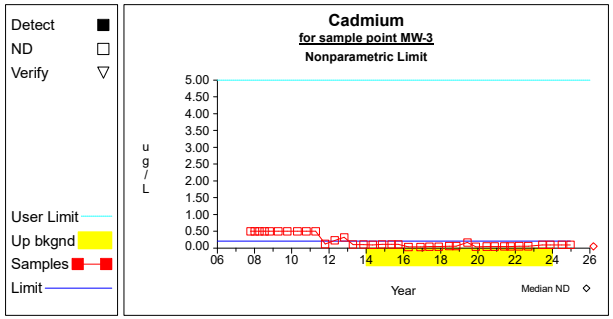
Graph 101



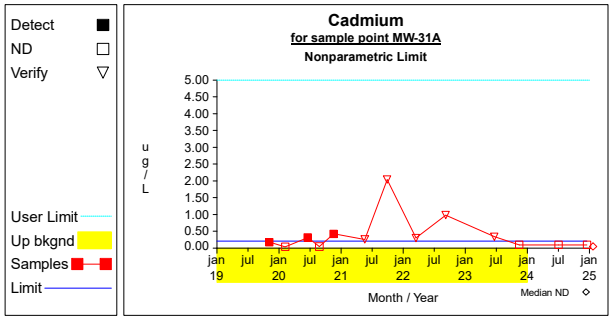
Graph 102



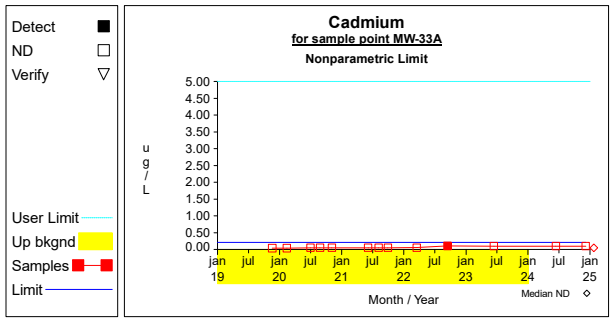
Graph 103



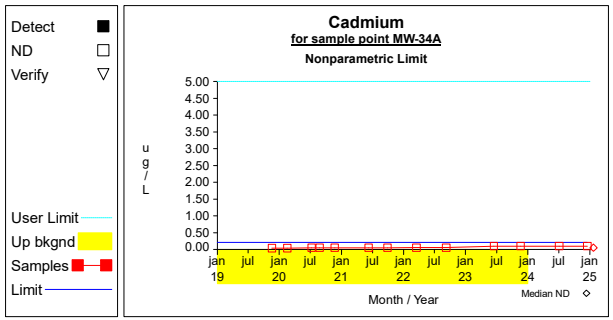
Graph 104



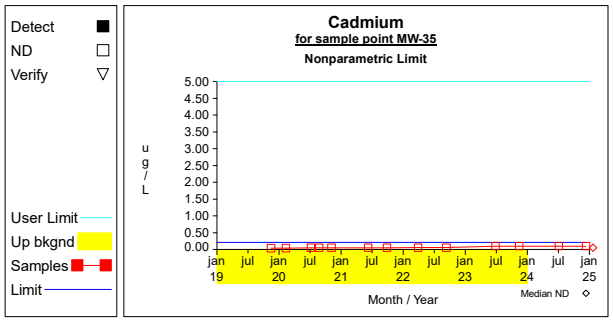
Graph 105



Graph 106

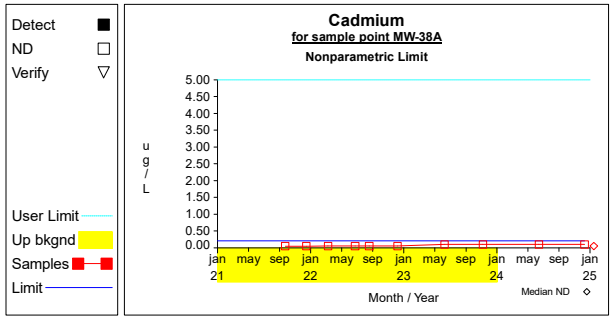


Graph 107

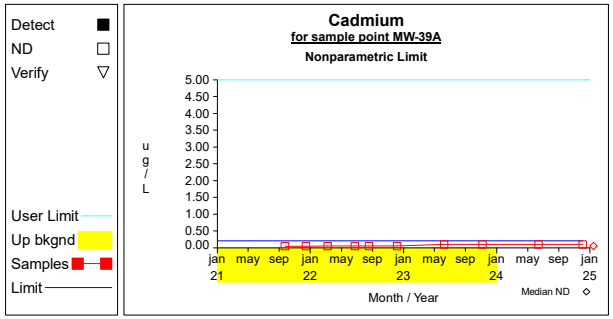


Graph 108

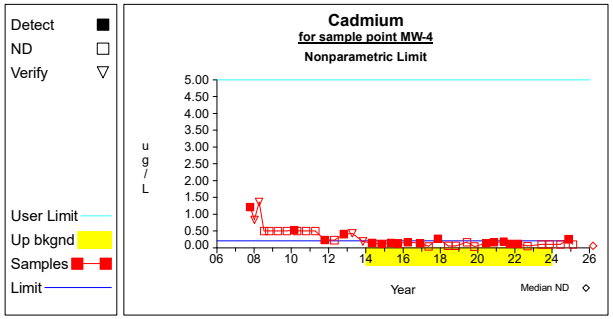
Up vs. Down Prediction Limits



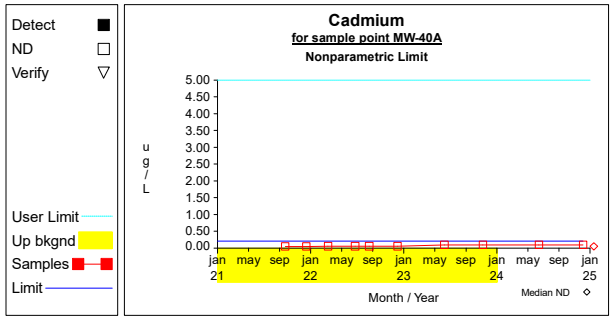
Graph 109



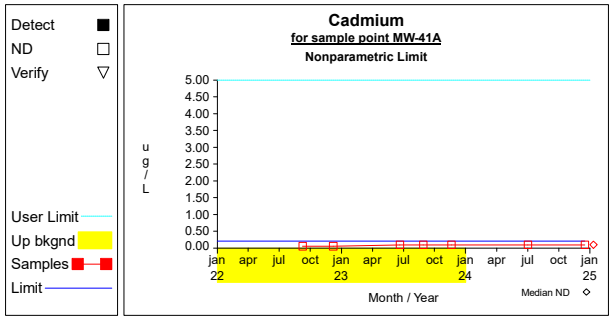
Graph 110



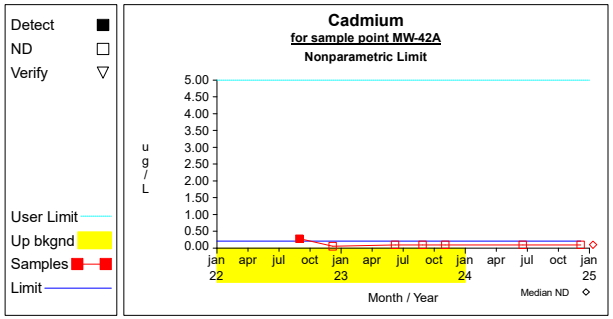
Graph 111



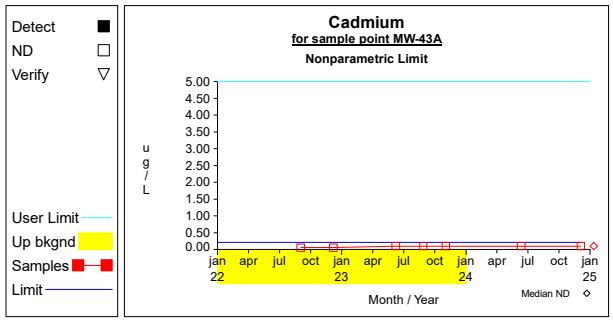
Graph 112



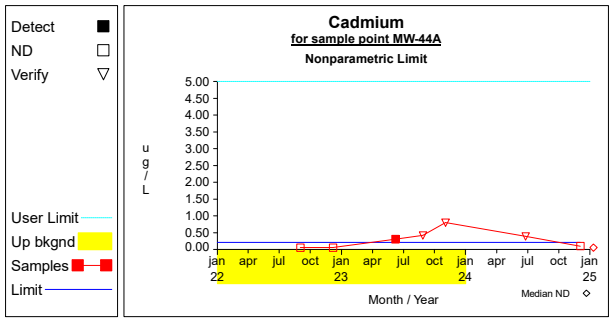
Graph 113



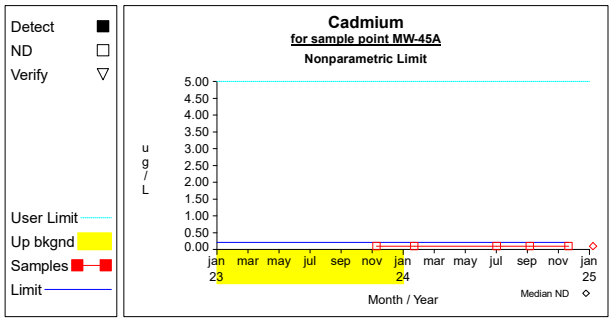
Graph 114



Graph 115

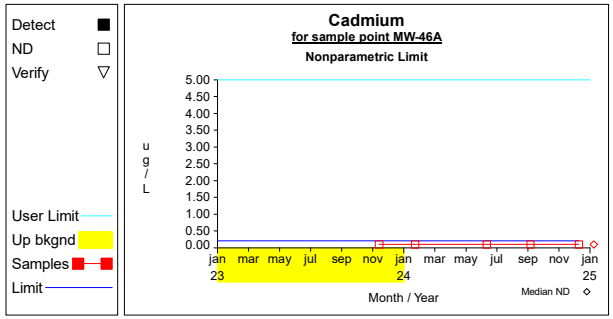


Graph 116

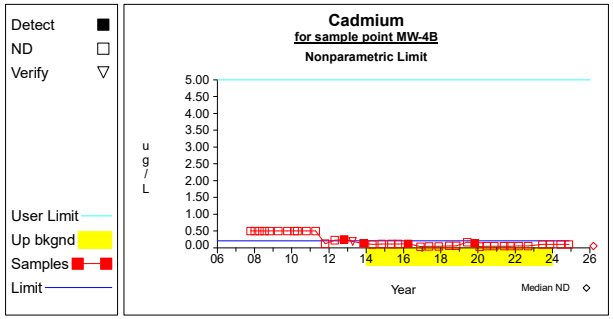


Graph 117

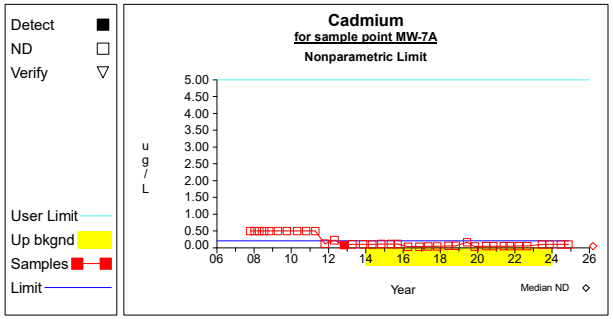
Up vs. Down Prediction Limits



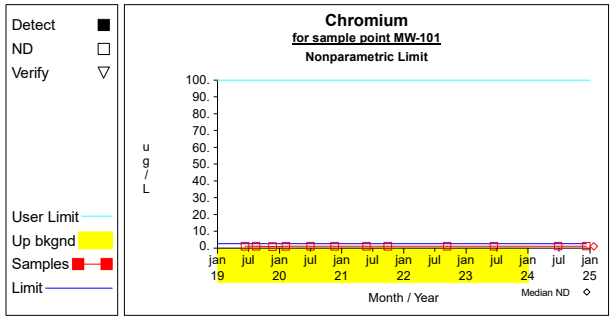
Graph 118



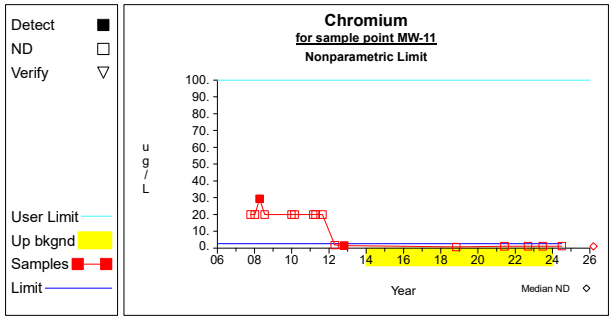
Graph 119



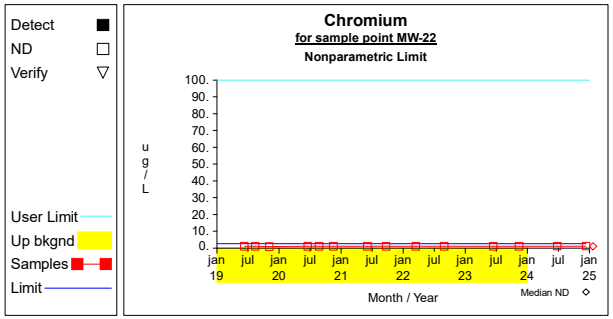
Graph 120



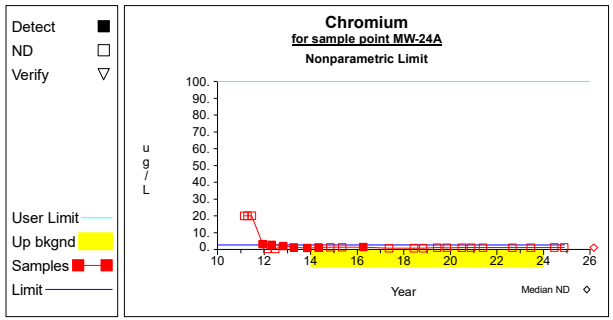
Graph 121



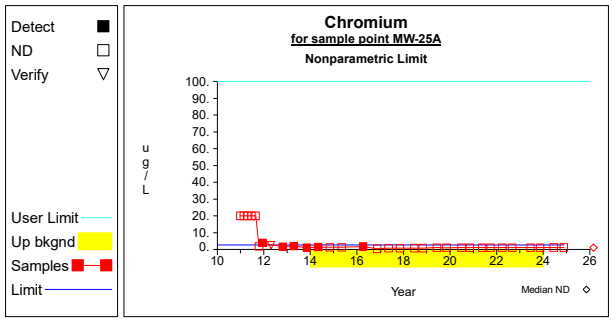
Graph 122



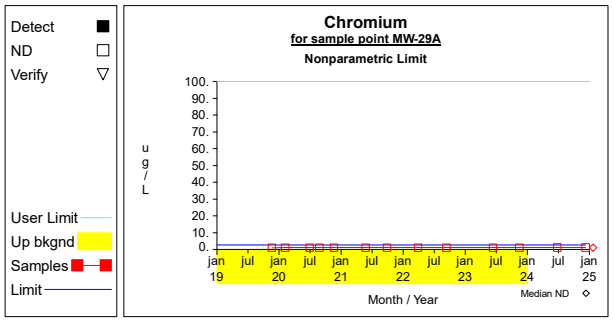
Graph 123



Graph 124

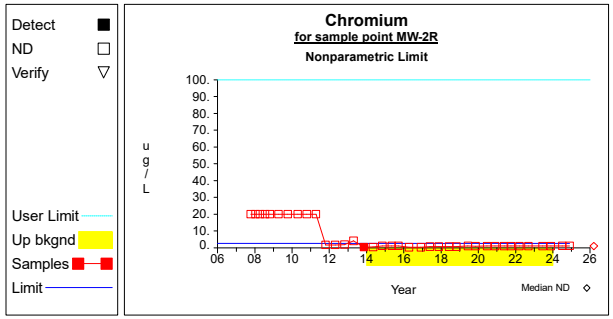


Graph 125

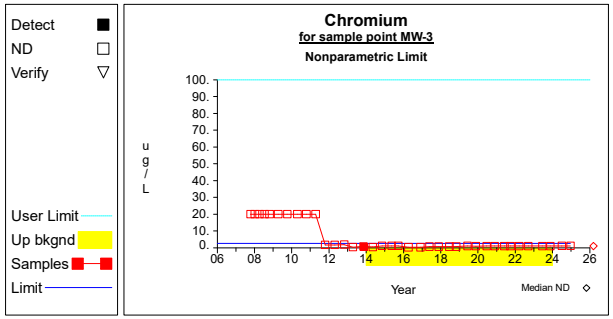


Graph 126

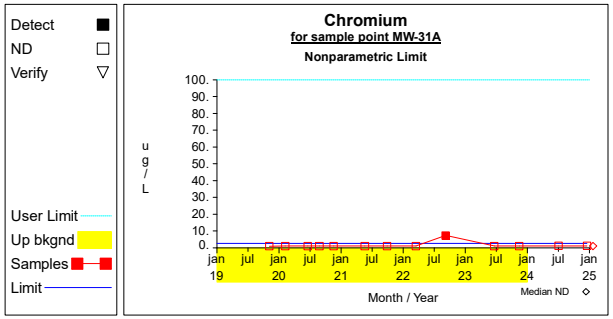
Up vs. Down Prediction Limits



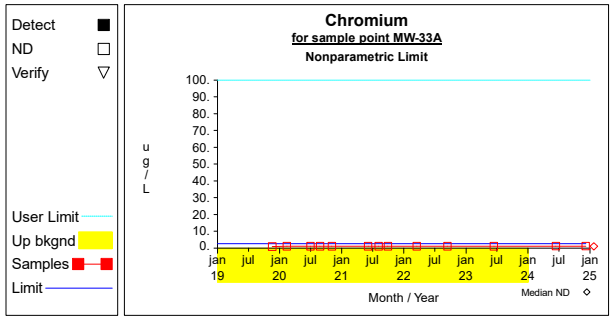
Graph 127



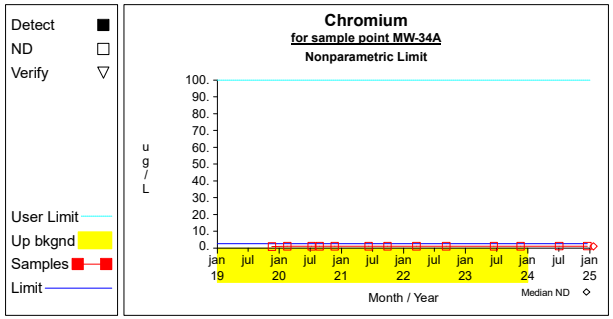
Graph 128



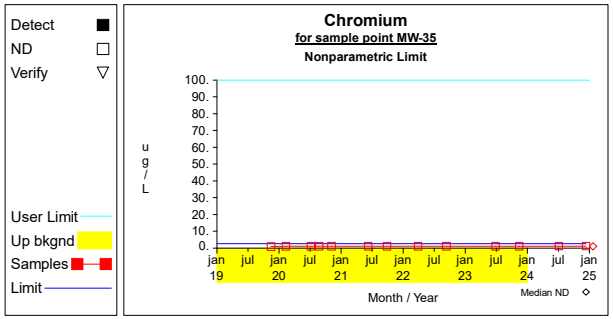
Graph 129



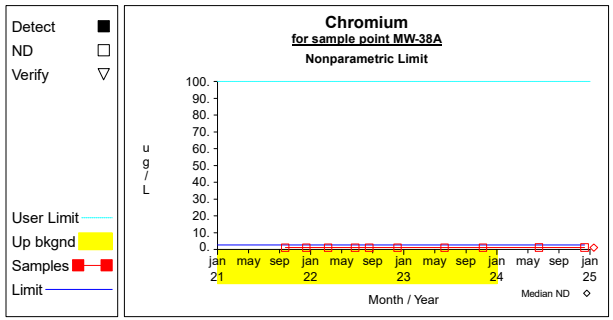
Graph 130



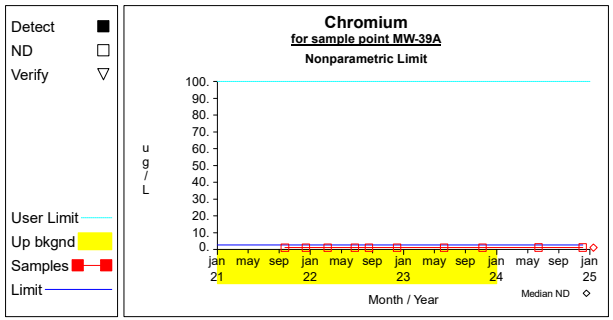
Graph 131



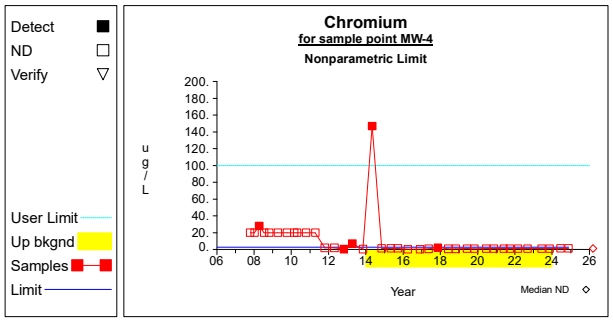
Graph 132



Graph 133

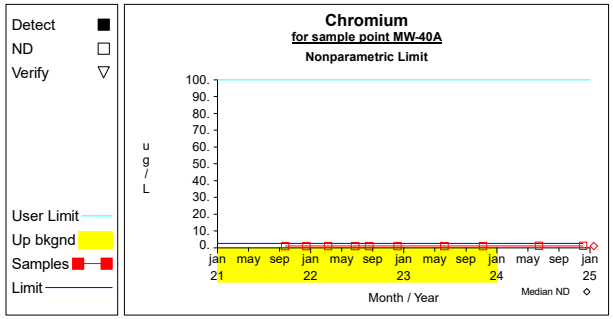


Graph 134

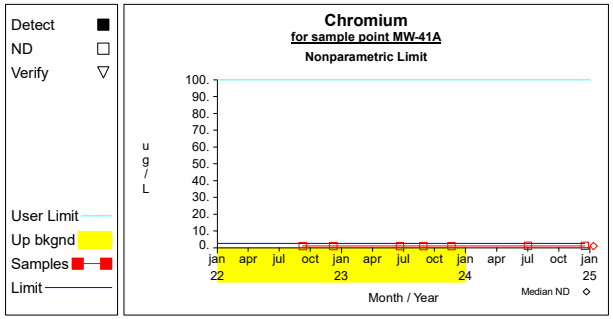


Graph 135

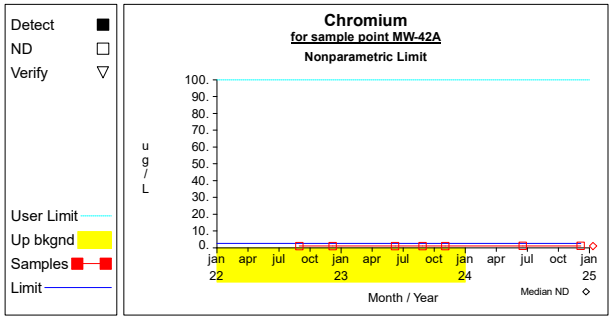
Up vs. Down Prediction Limits



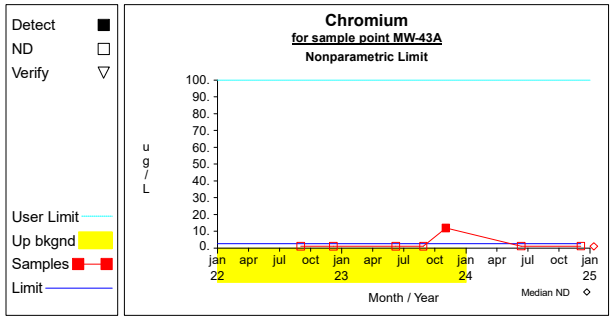
Graph 136



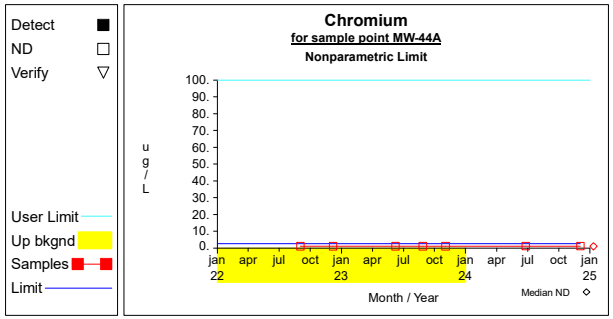
Graph 137



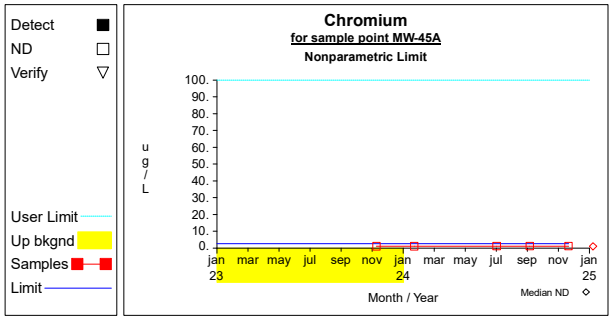
Graph 138



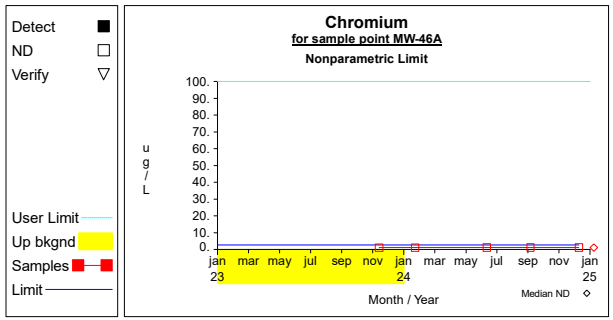
Graph 139



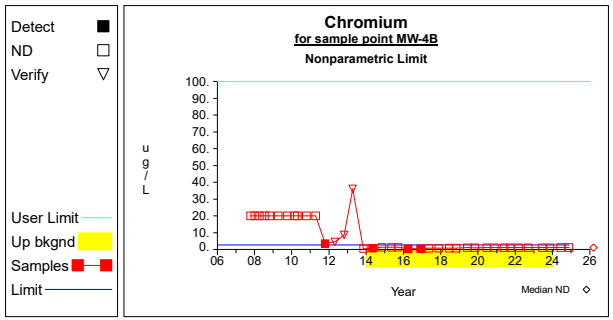
Graph 140



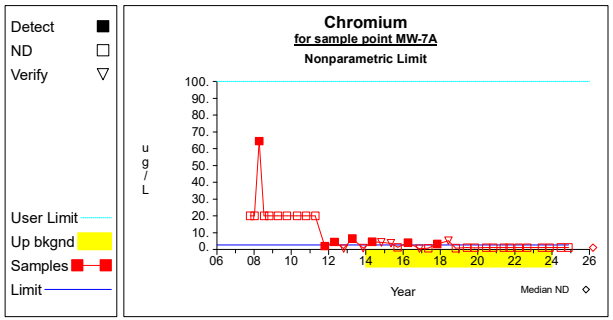
Graph 141



Graph 142

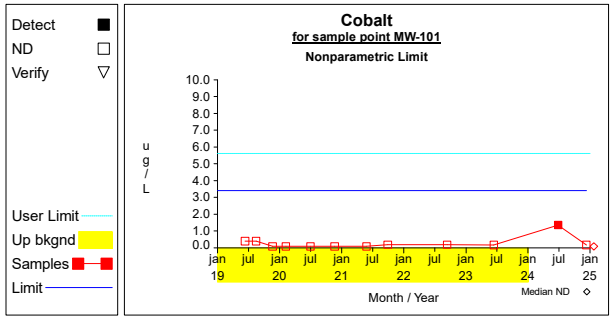


Graph 143

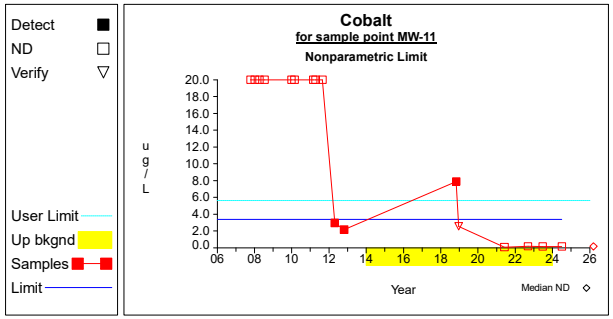


Graph 144

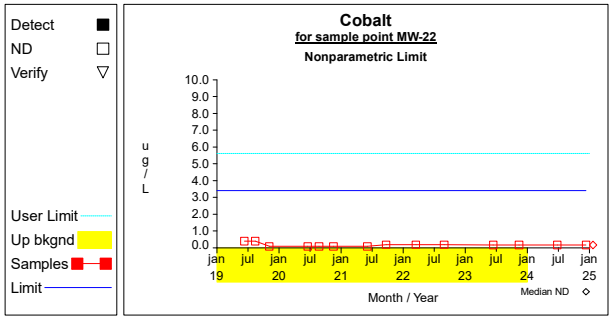
Up vs. Down Prediction Limits



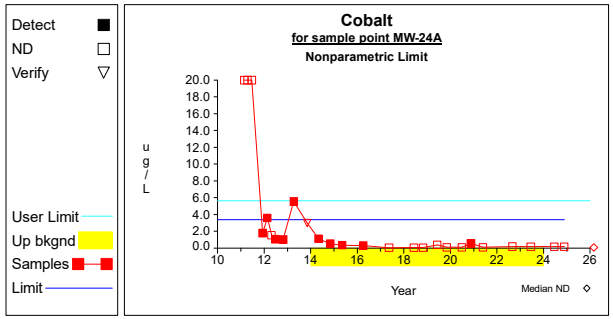
Graph 145



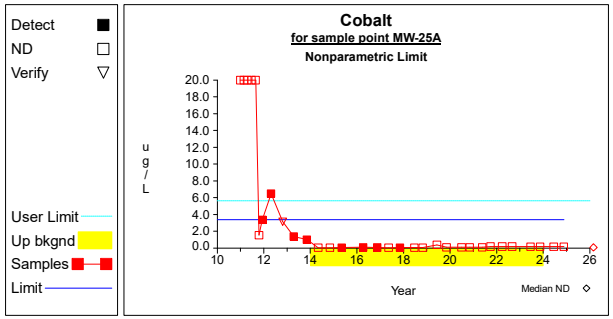
Graph 146



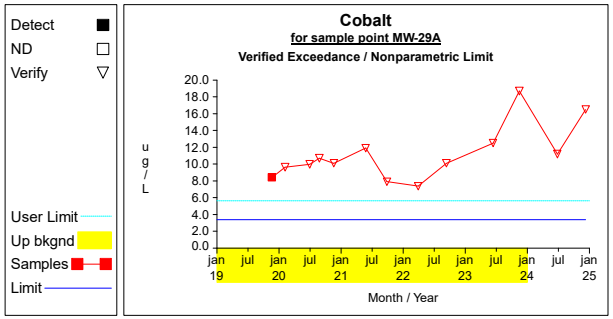
Graph 147



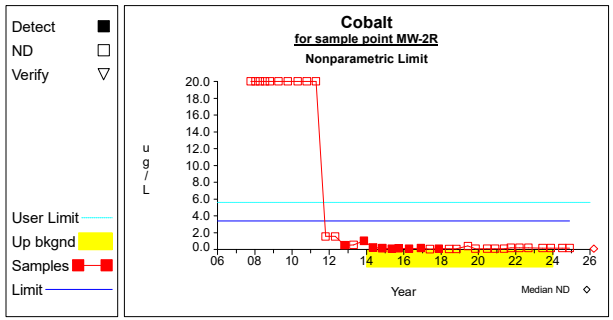
Graph 148



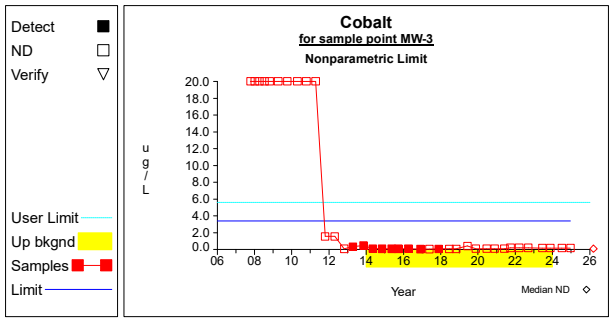
Graph 149



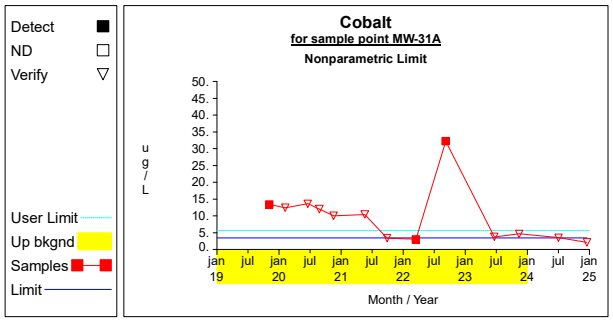
Graph 150



Graph 151

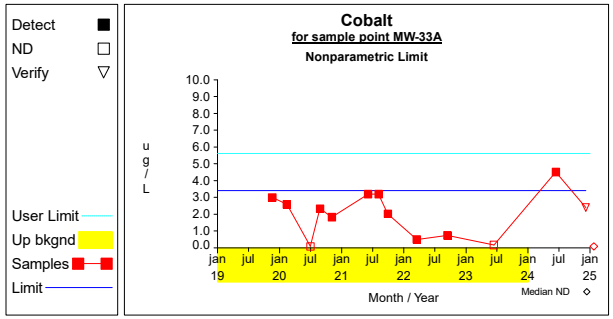


Graph 152

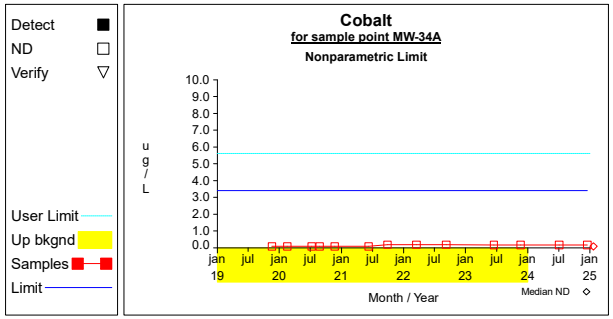


Graph 153

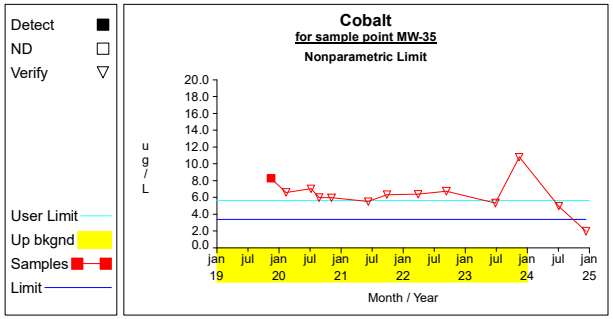
Up vs. Down Prediction Limits



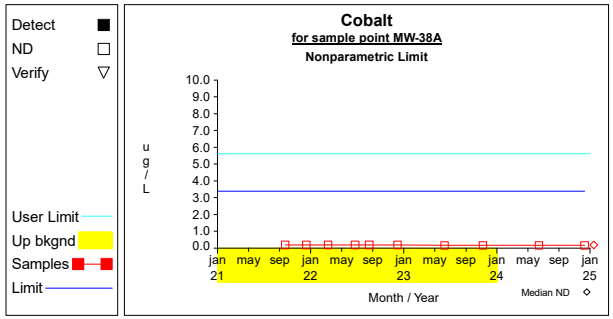
Graph 154



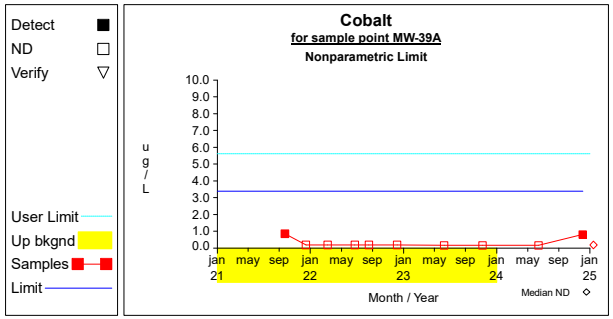
Graph 155



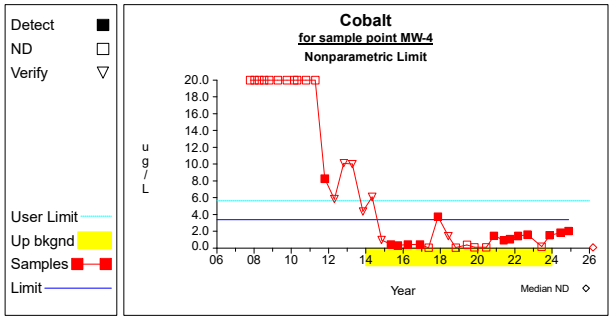
Graph 156



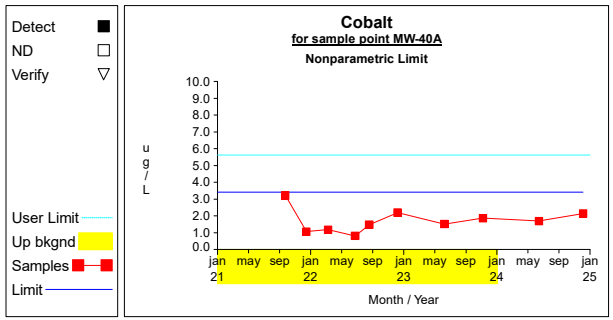
Graph 157



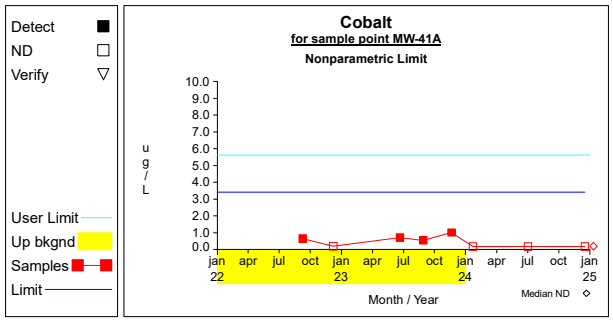
Graph 158



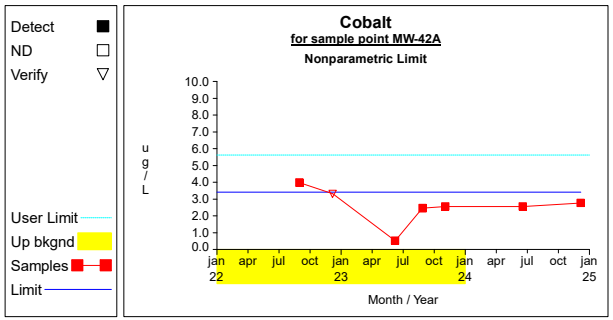
Graph 159



Graph 160

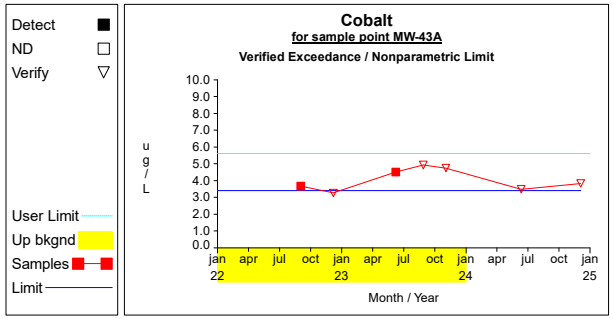


Graph 161

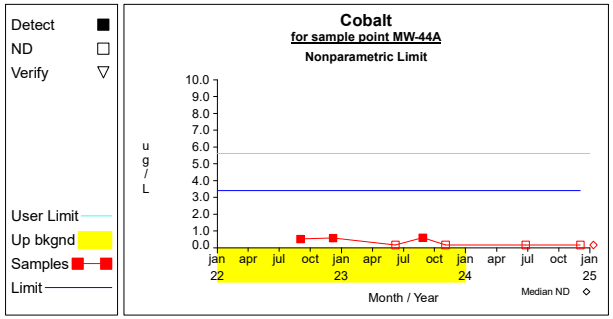


Graph 162

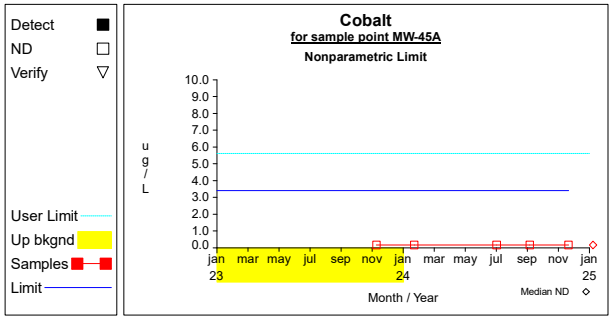
Up vs. Down Prediction Limits



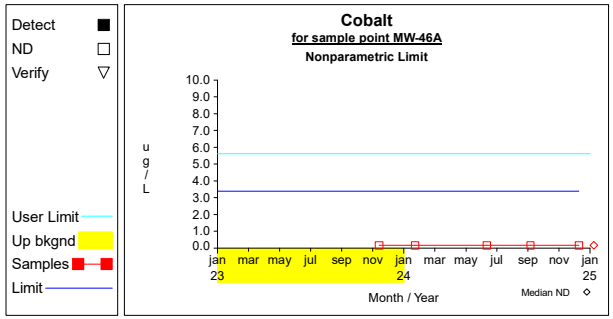
Graph 163



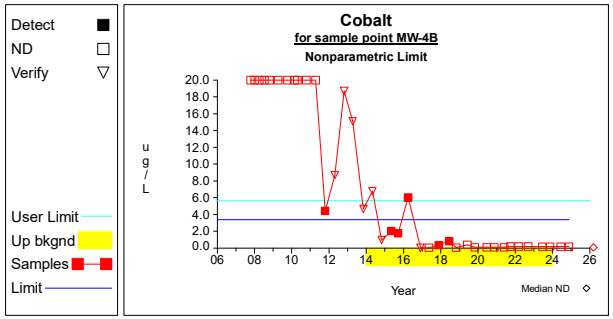
Graph 164



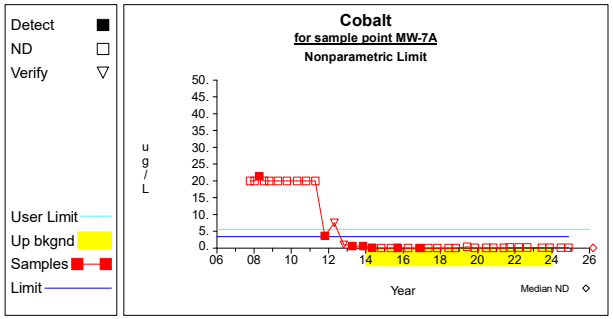
Graph 165



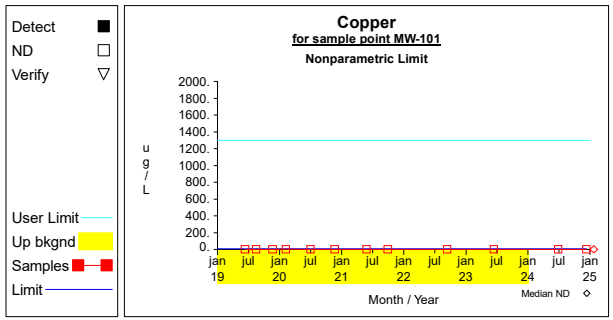
Graph 166



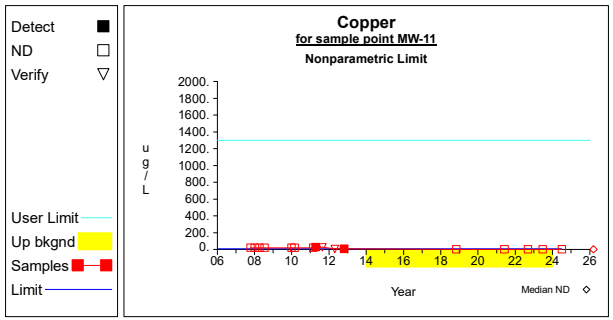
Graph 167



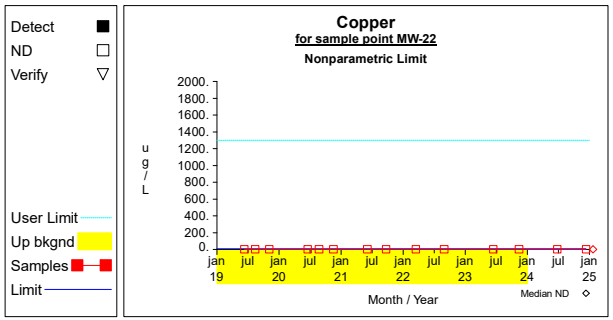
Graph 168



Graph 169

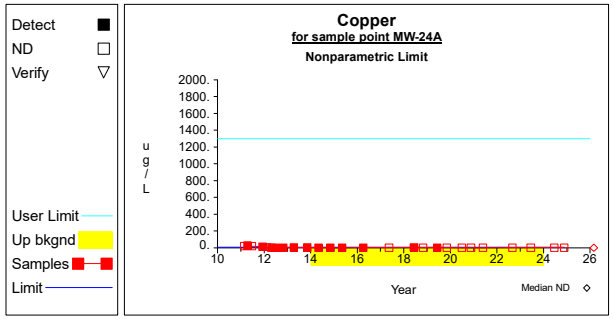


Graph 170

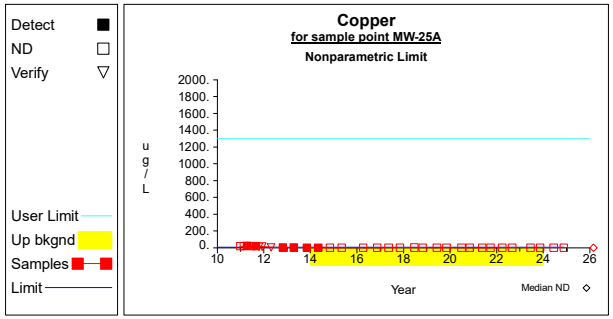


Graph 171

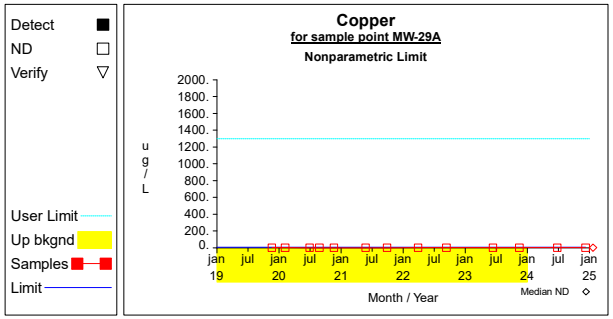
Up vs. Down Prediction Limits



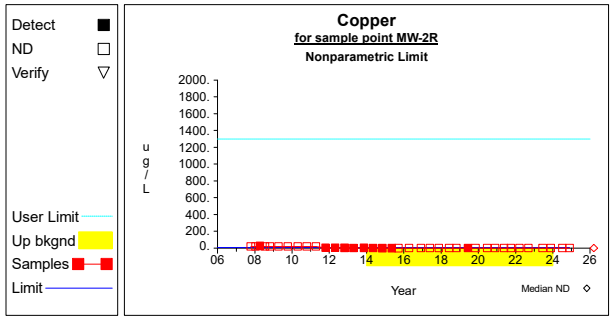
Graph 172



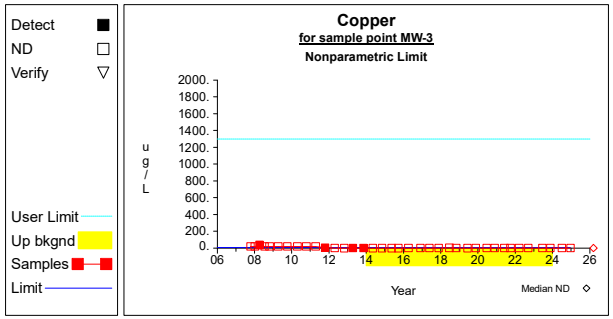
Graph 173



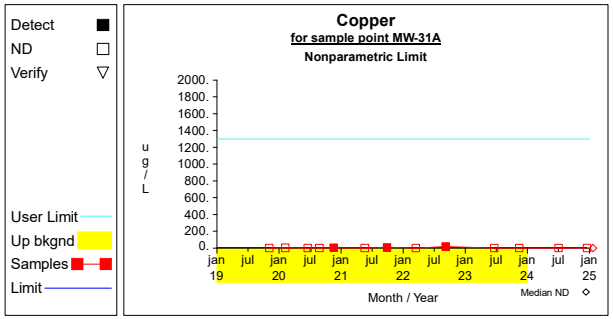
Graph 174



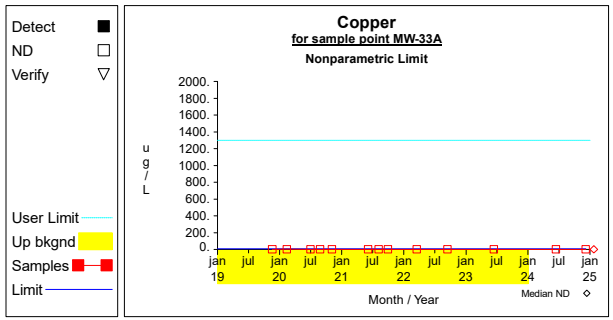
Graph 175



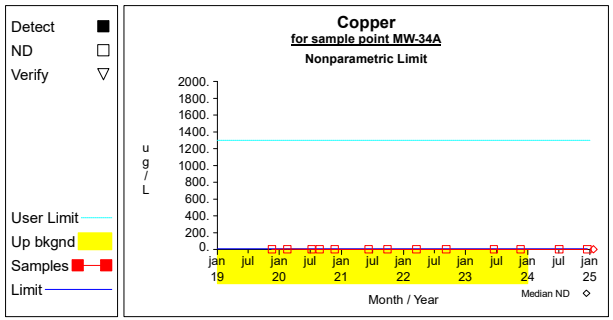
Graph 176



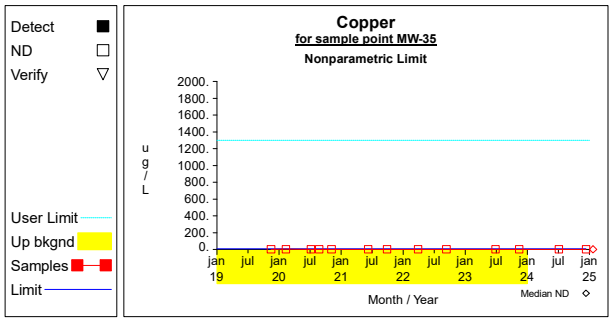
Graph 177



Graph 178

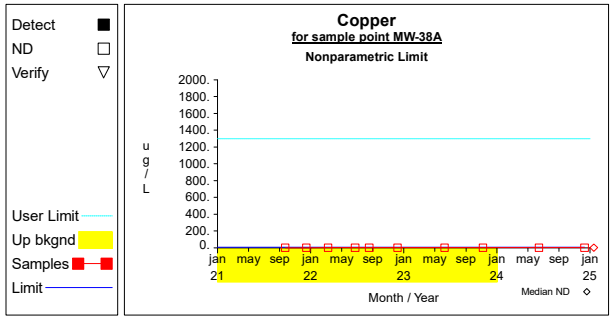


Graph 179

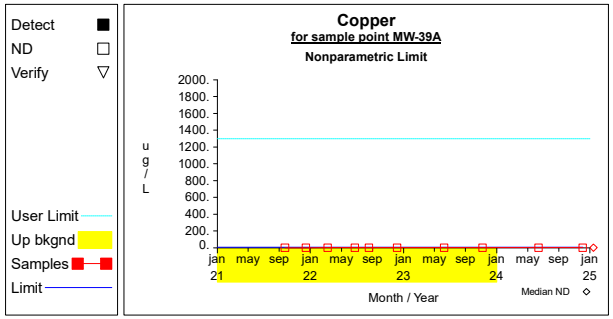


Graph 180

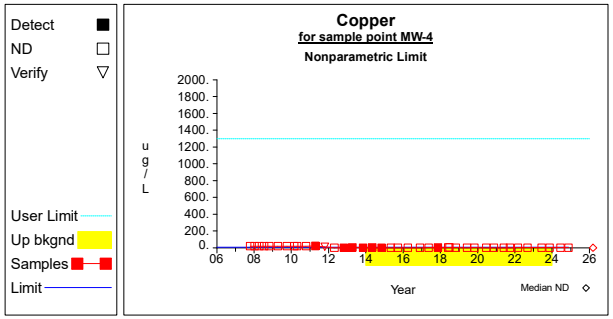
Up vs. Down Prediction Limits



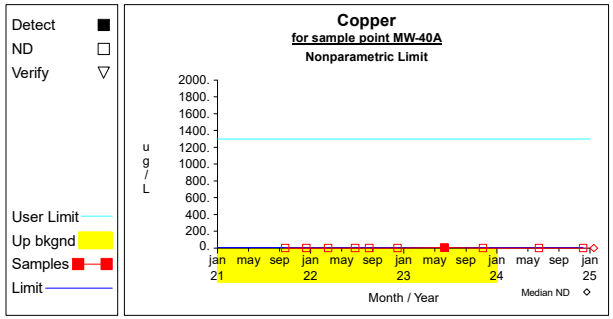
Graph 181



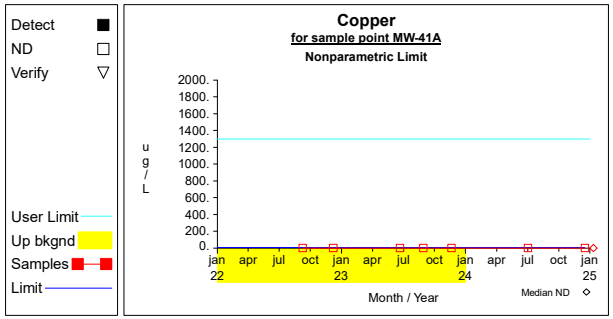
Graph 182



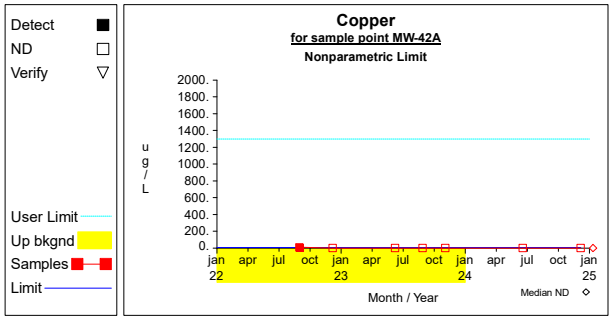
Graph 183



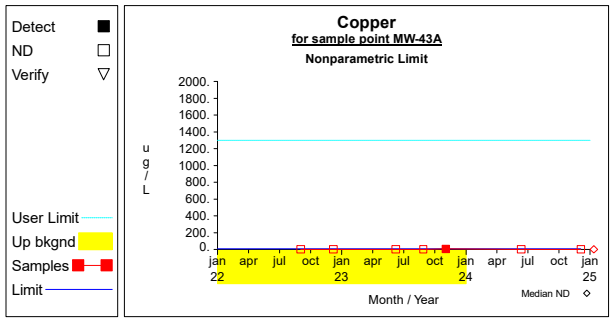
Graph 184



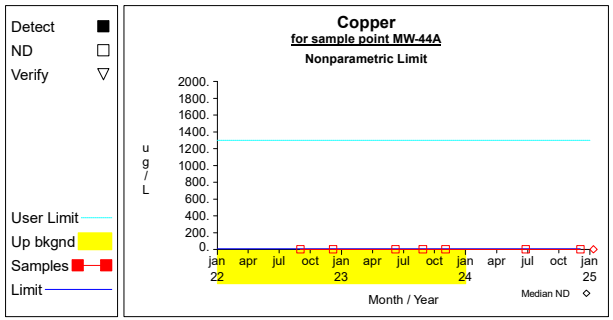
Graph 185



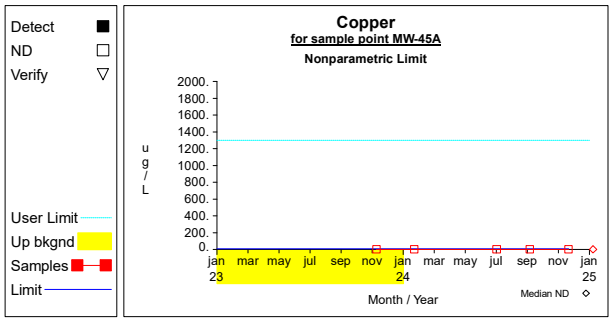
Graph 186



Graph 187

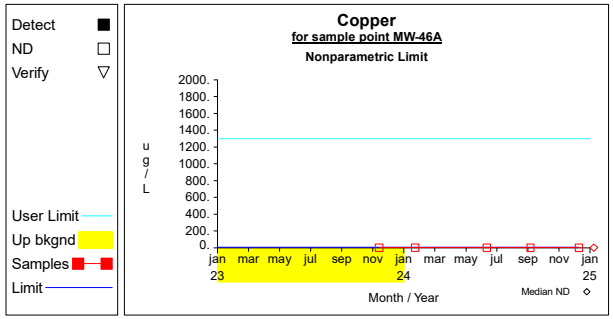


Graph 188

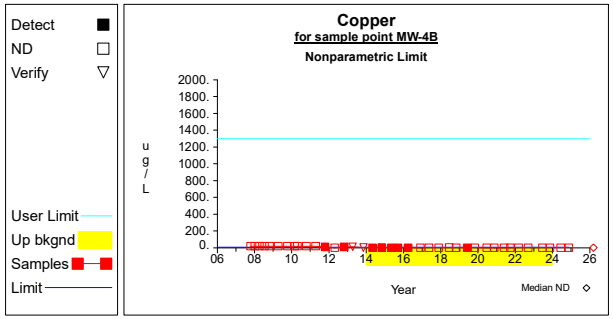


Graph 189

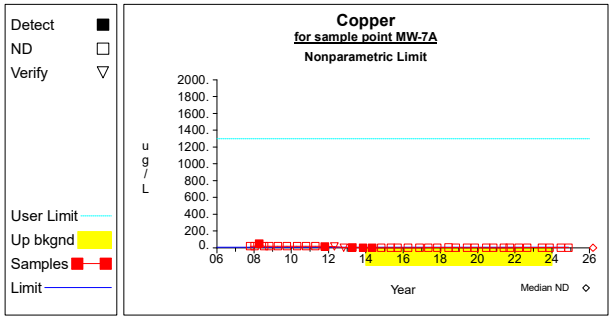
Up vs. Down Prediction Limits



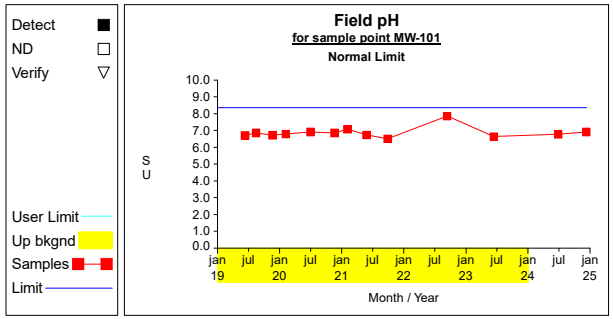
Graph 190



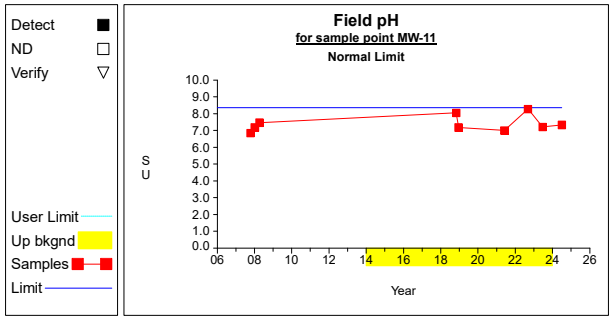
Graph 191



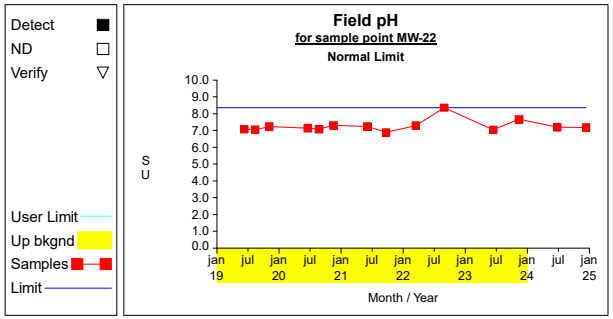
Graph 192



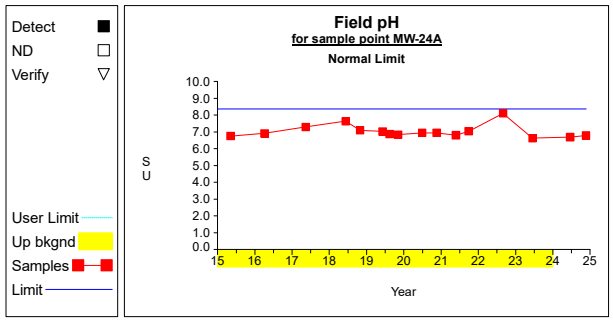
Graph 193



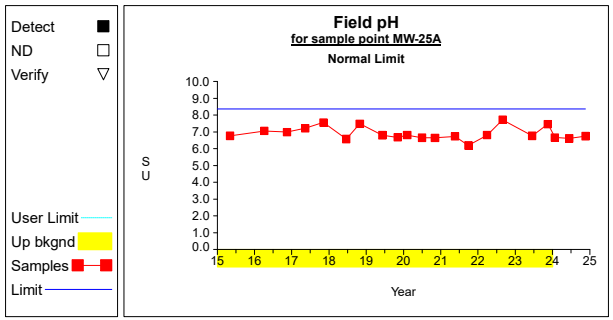
Graph 194



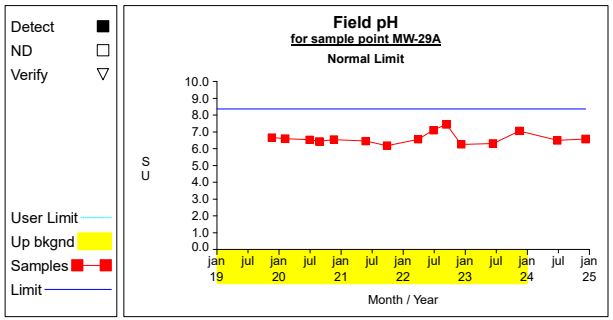
Graph 195



Graph 196

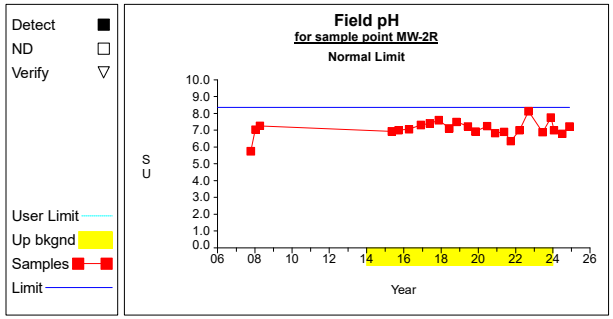


Graph 197

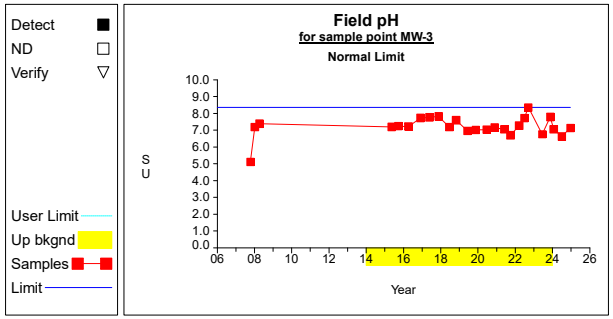


Graph 198

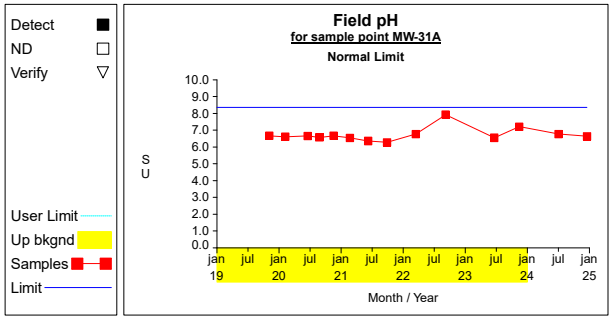
Up vs. Down Prediction Limits



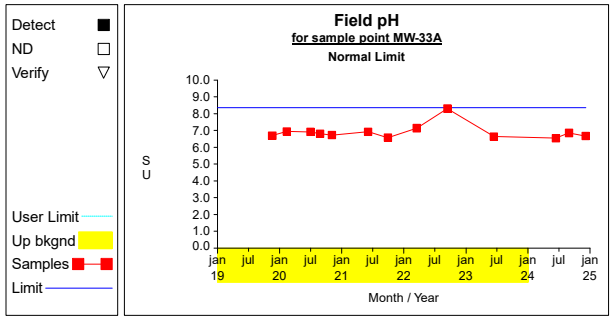
Graph 199



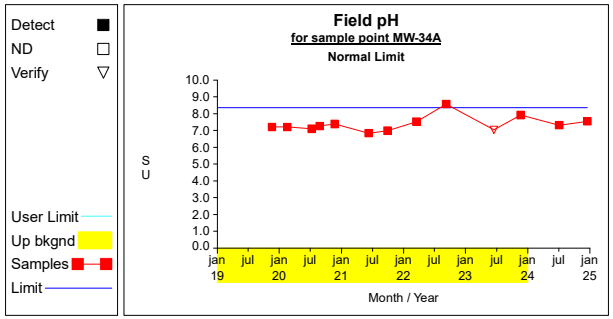
Graph 200



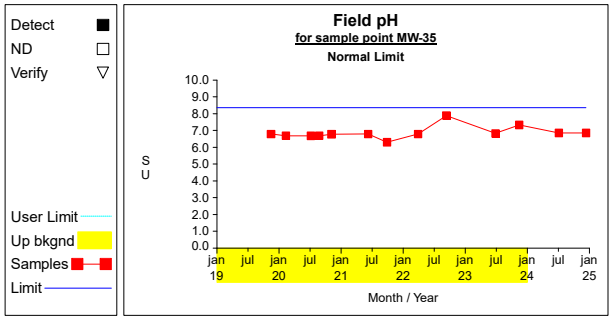
Graph 201



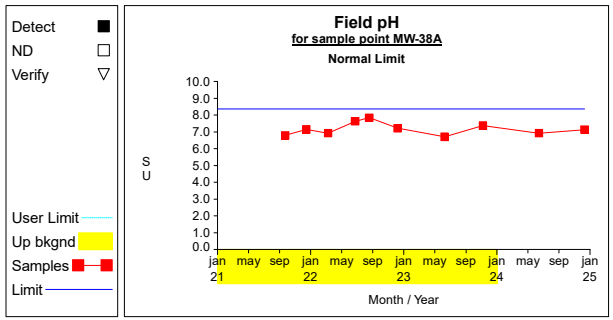
Graph 202



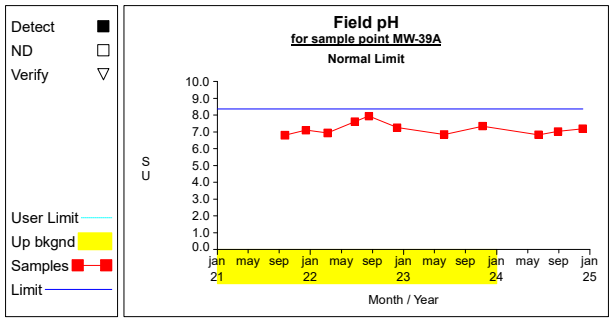
Graph 203



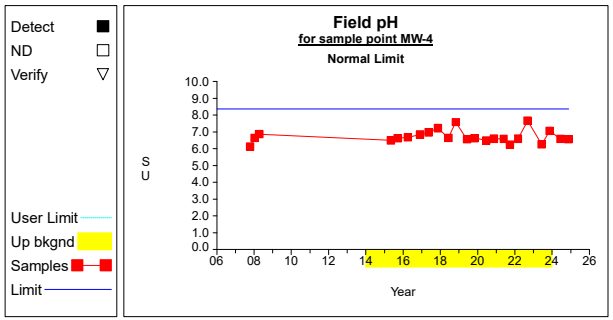
Graph 204



Graph 205

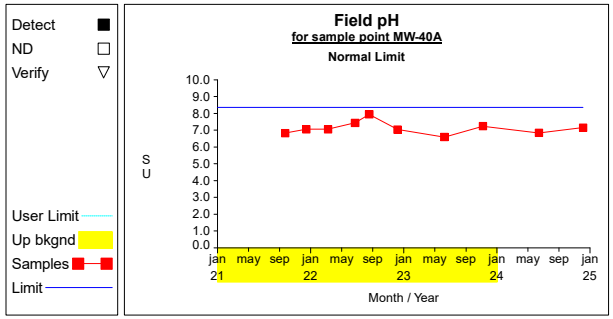


Graph 206

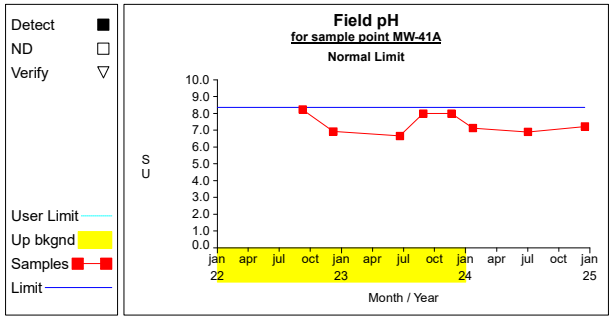


Graph 207

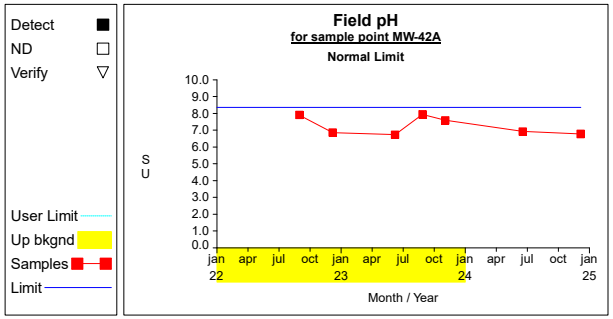
Up vs. Down Prediction Limits



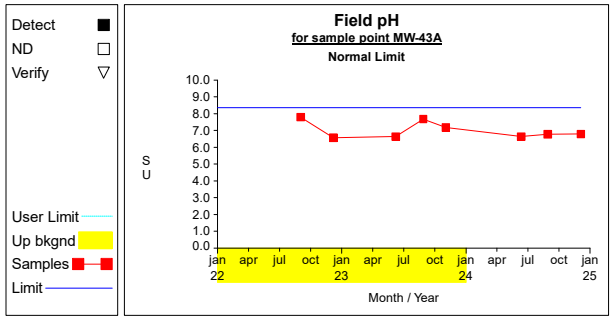
Graph 208



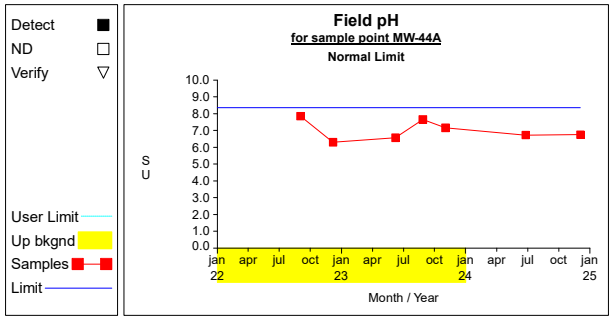
Graph 209



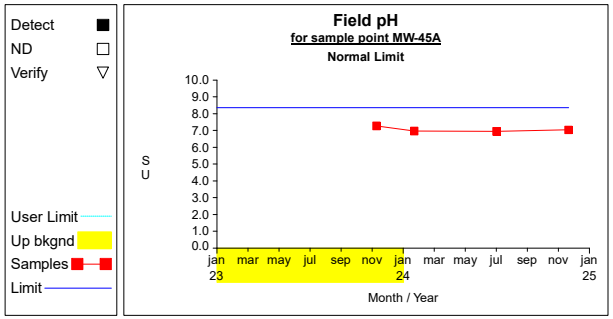
Graph 210



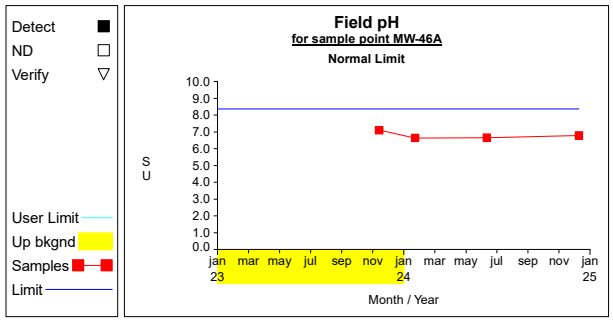
Graph 211



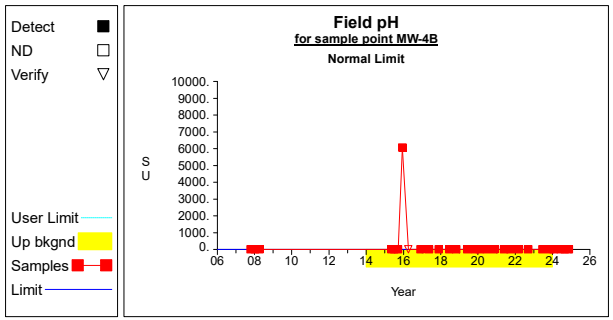
Graph 212



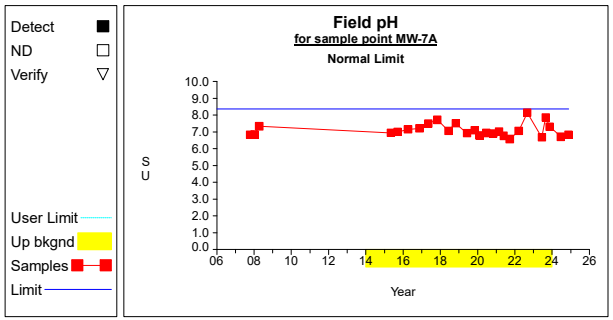
Graph 213



Graph 214

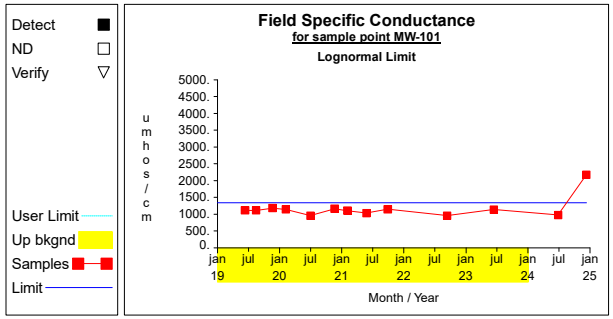


Graph 215

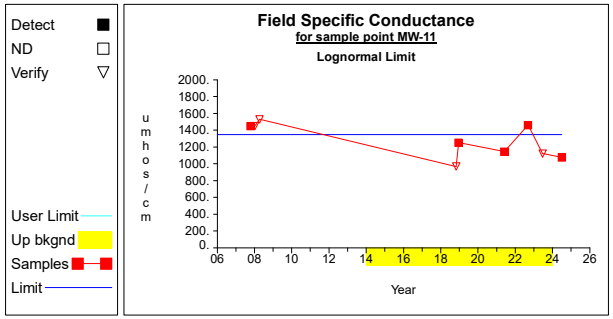


Graph 216

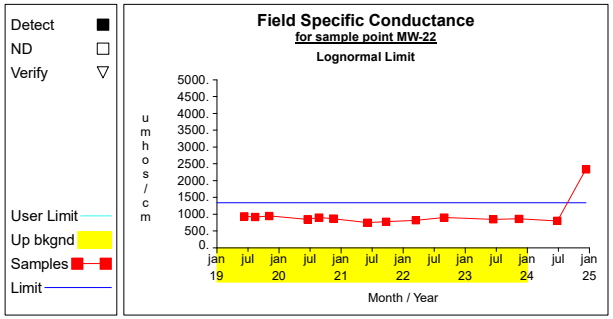
Up vs. Down Prediction Limits



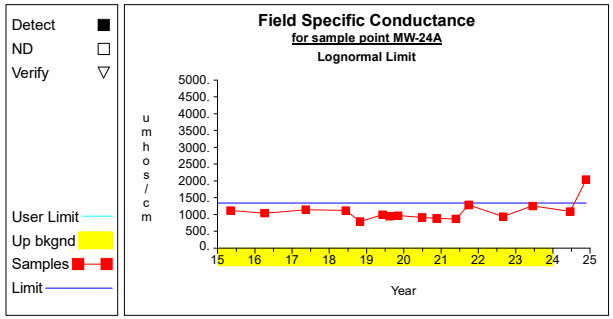
Graph 217



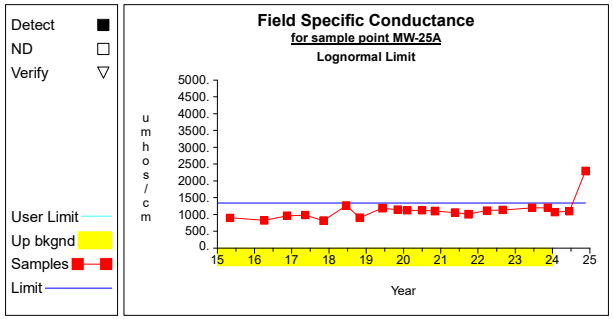
Graph 218



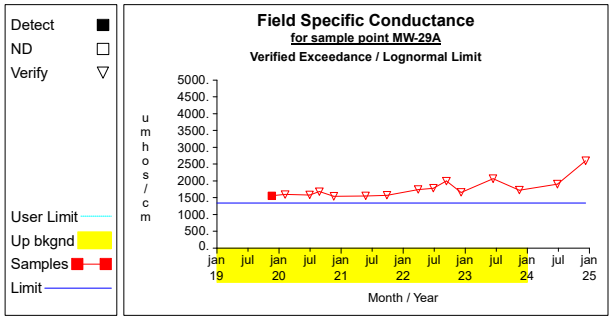
Graph 219



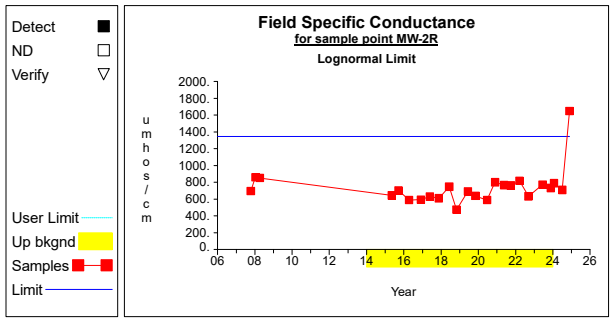
Graph 220



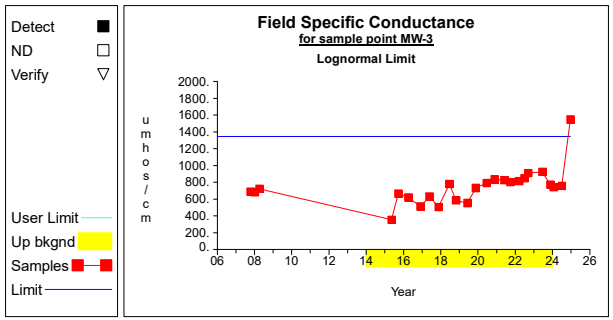
Graph 221



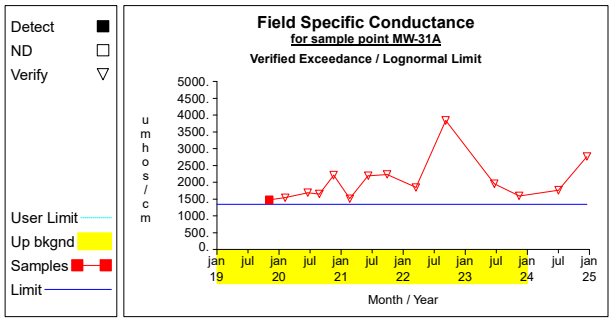
Graph 222



Graph 223

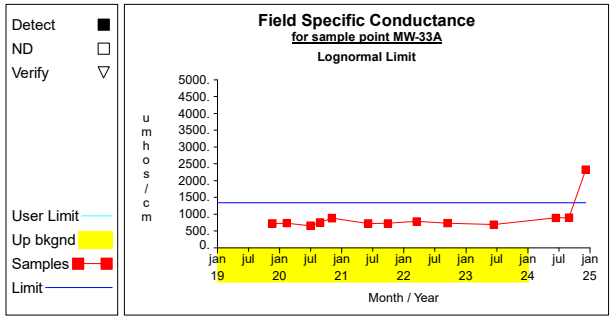


Graph 224

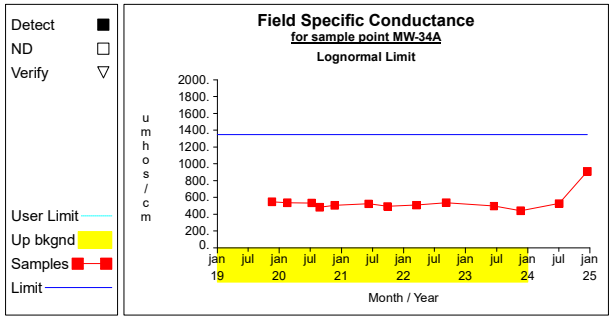


Graph 225

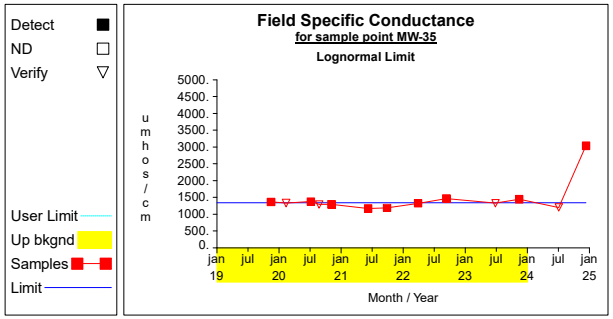
Up vs. Down Prediction Limits



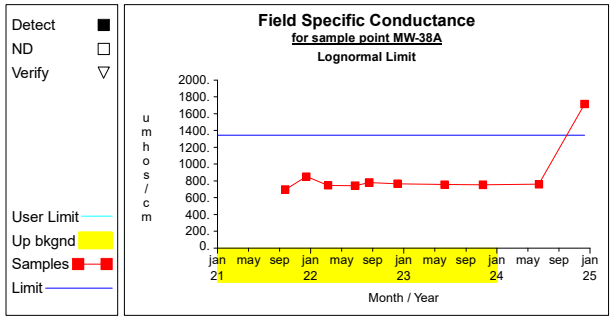
Graph 226



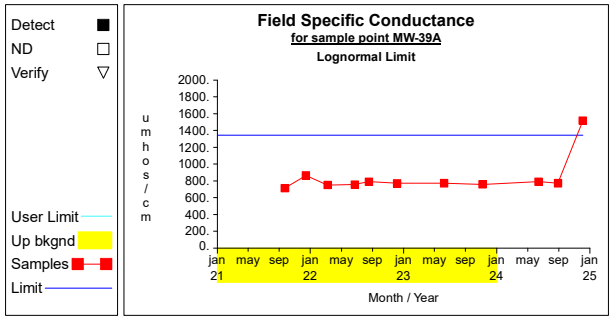
Graph 227



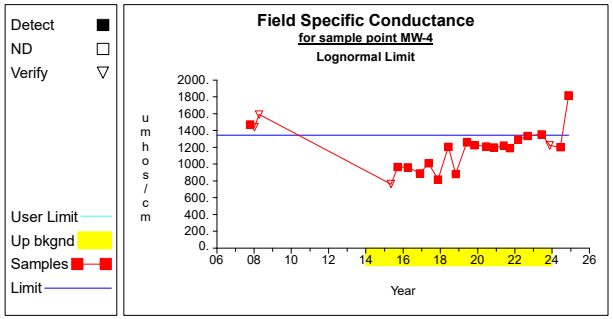
Graph 228



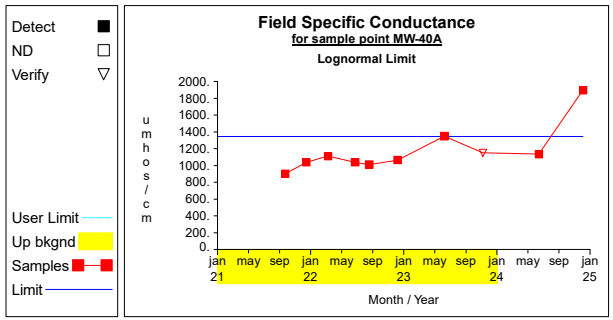
Graph 229



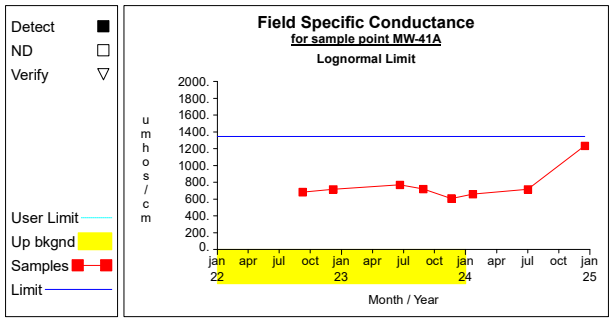
Graph 230



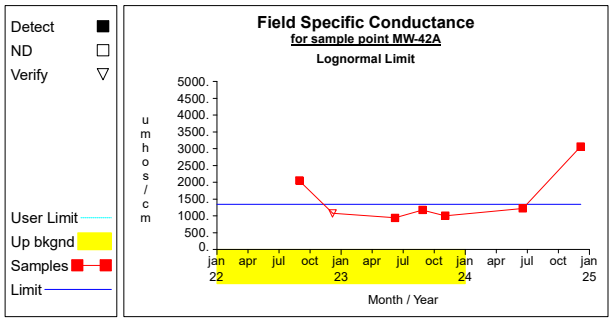
Graph 231



Graph 232

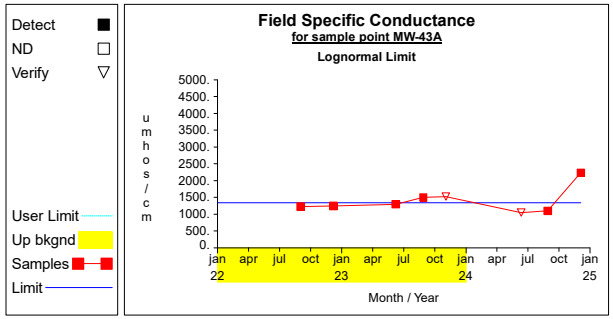


Graph 233

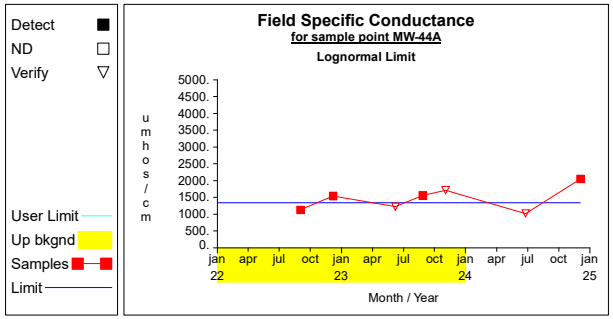


Graph 234

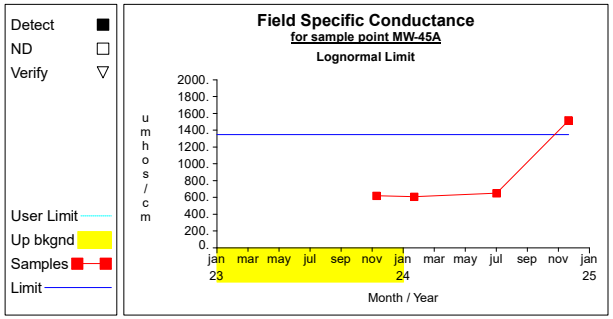
Up vs. Down Prediction Limits



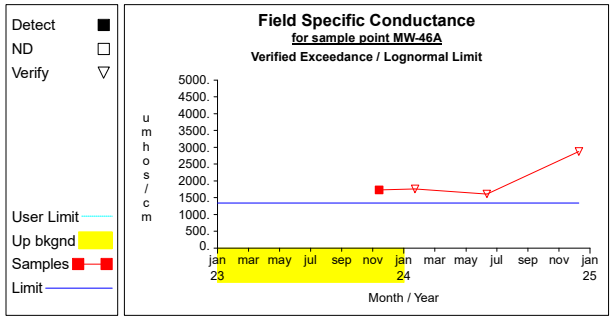
Graph 235



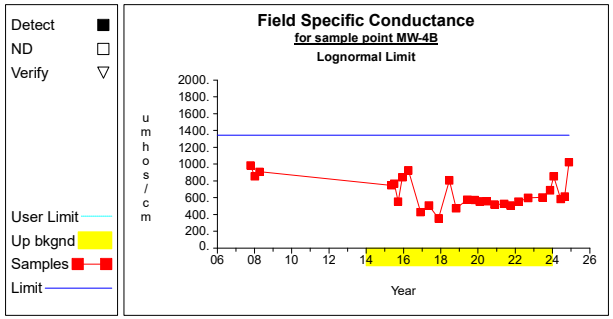
Graph 236



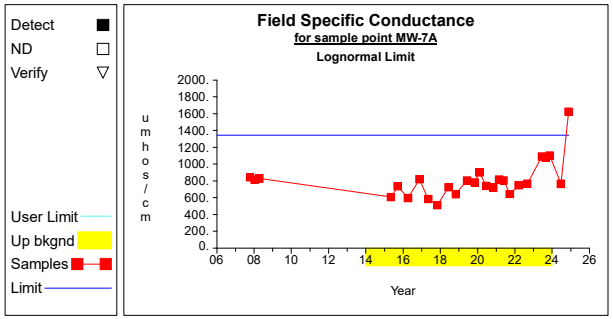
Graph 237



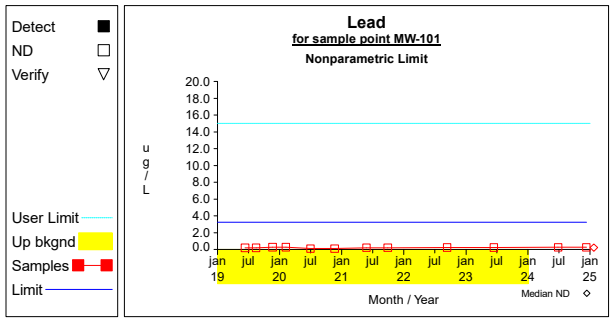
Graph 238



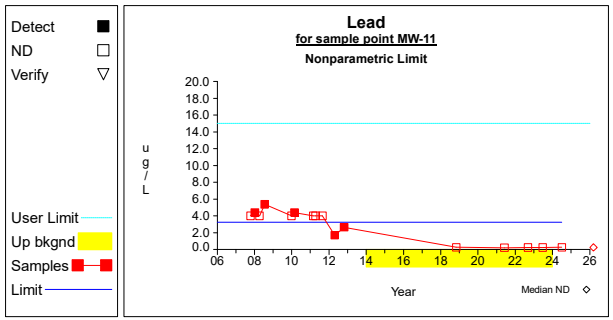
Graph 239



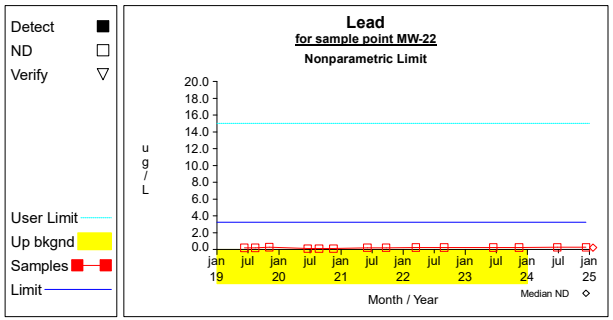
Graph 240



Graph 241

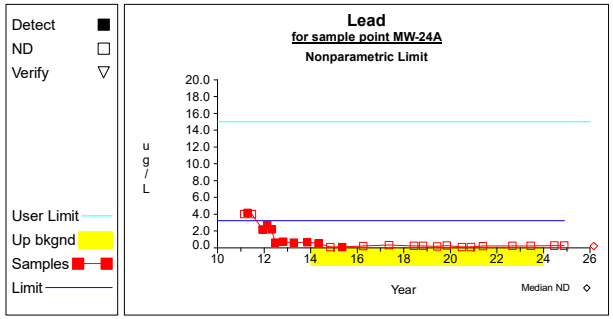


Graph 242

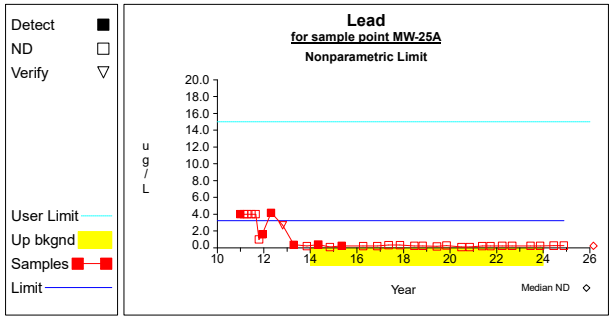


Graph 243

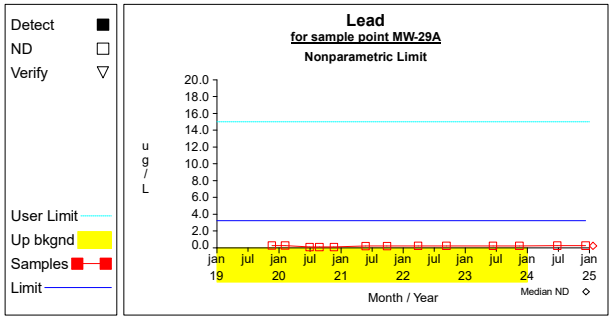
Up vs. Down Prediction Limits



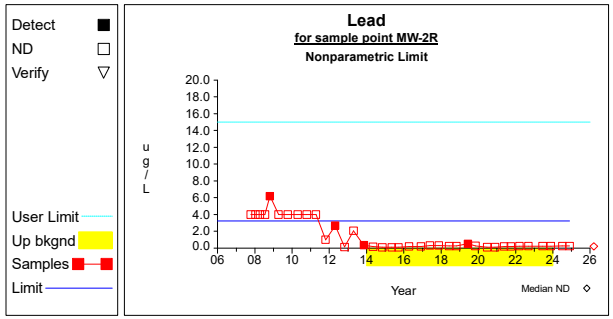
Graph 244



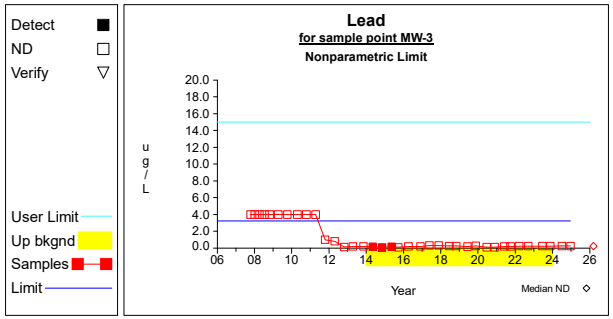
Graph 245



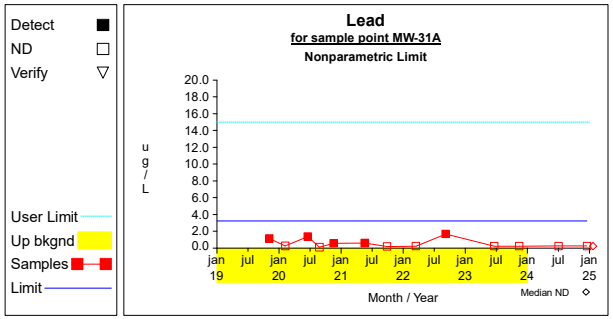
Graph 246



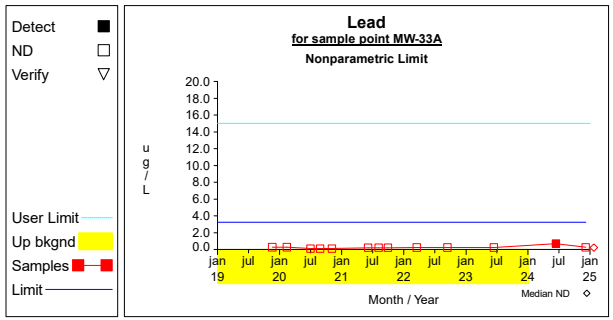
Graph 247



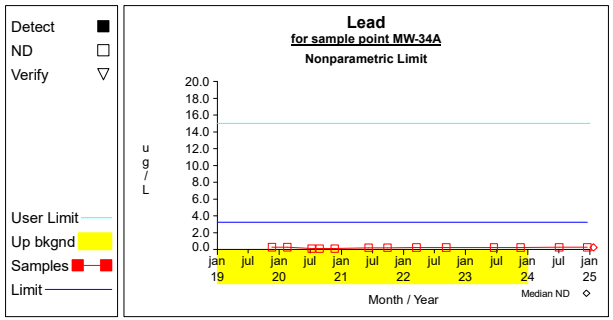
Graph 248



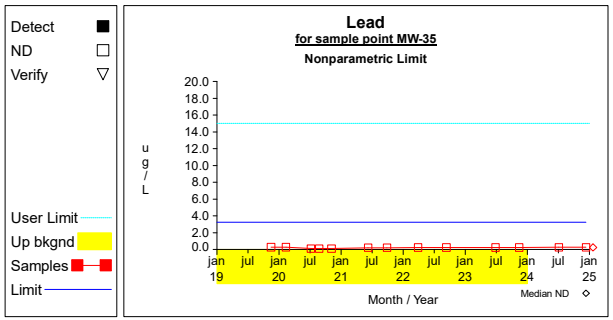
Graph 249



Graph 250

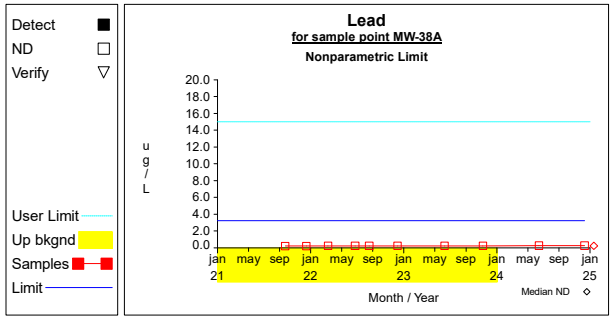


Graph 251

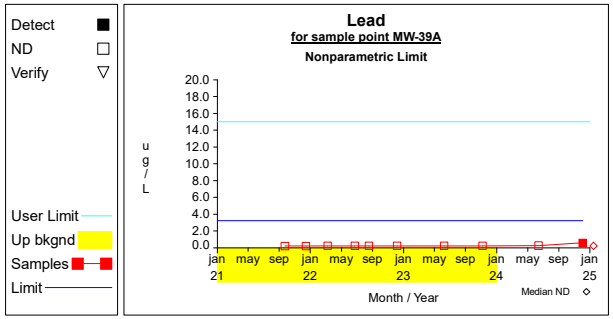


Graph 252

Up vs. Down Prediction Limits



Graph 253



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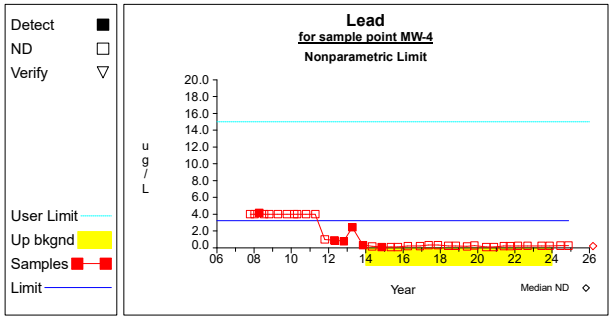

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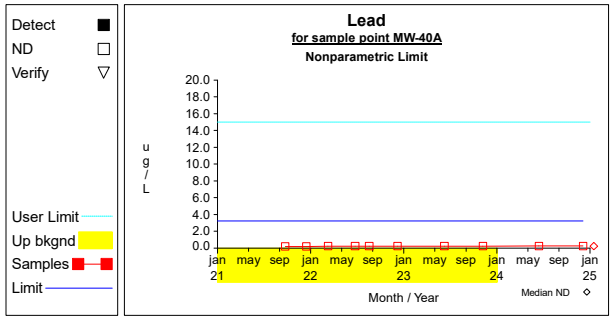

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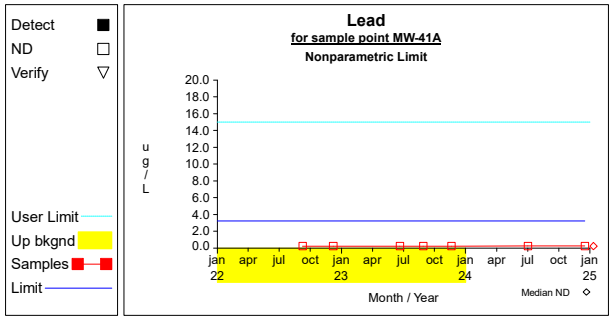
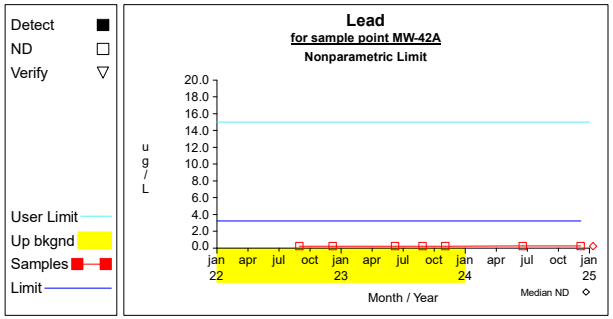
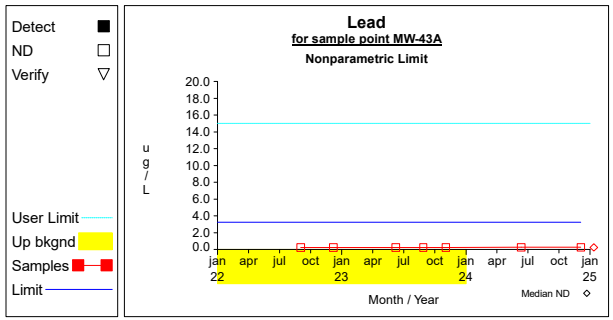


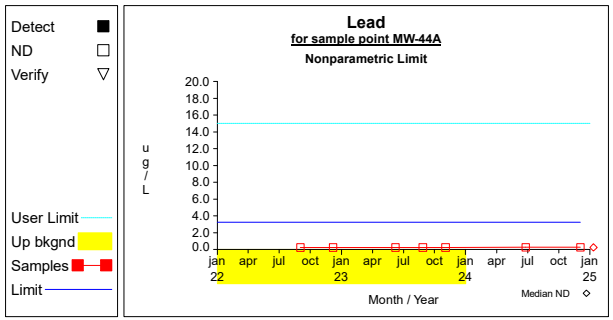
Graph 257



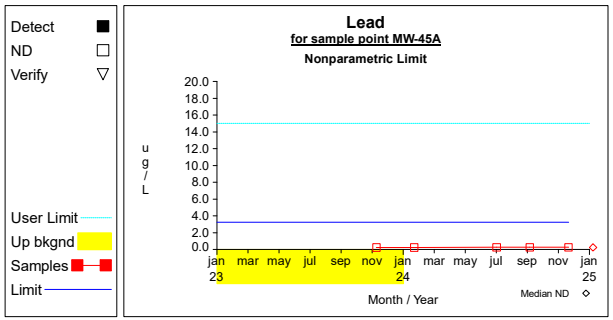
Graph 258



Graph 259

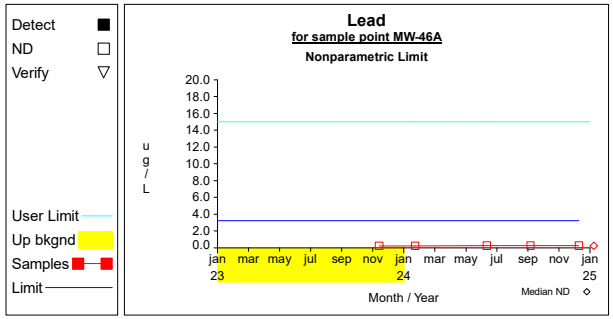


Graph 260

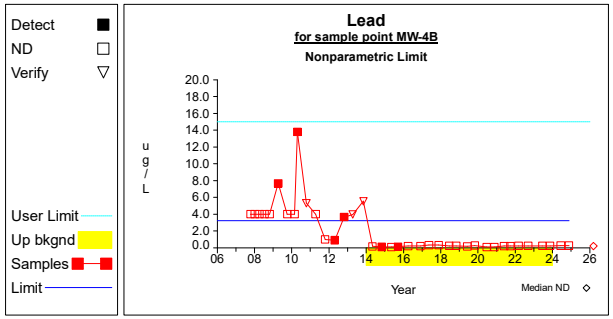


Graph 261

Up vs. Down Prediction Limits



Graph 262



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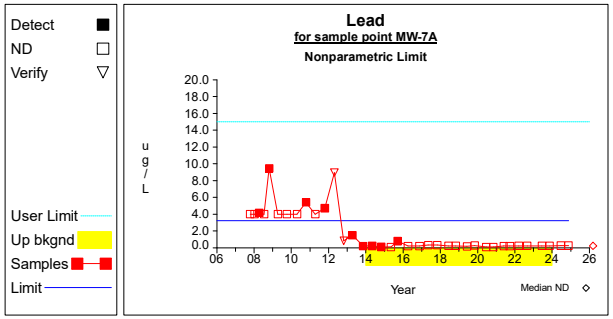
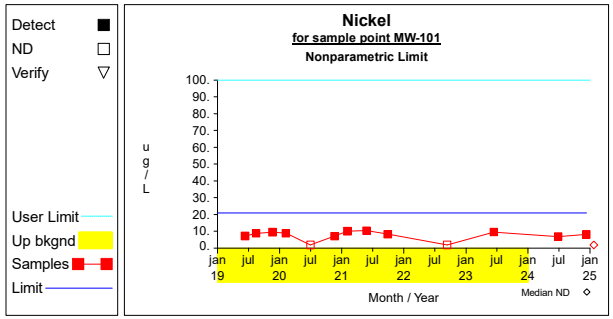
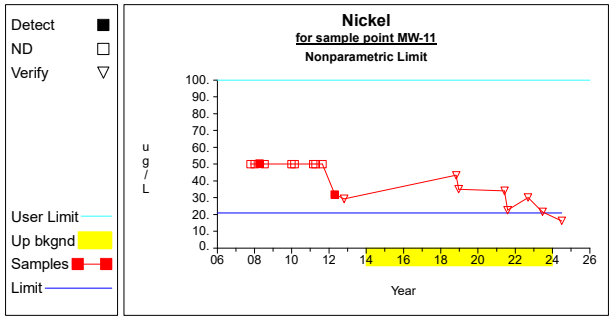


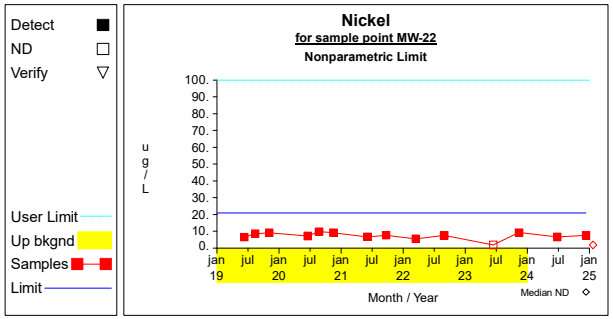
Graph 264



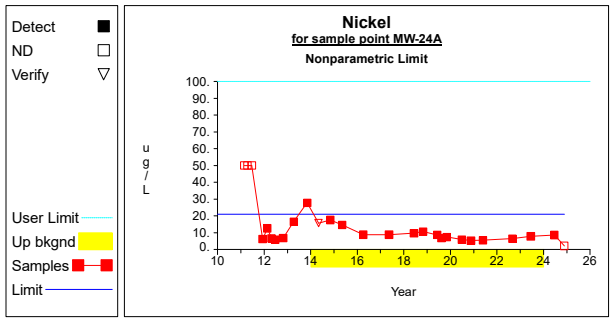
Graph 265



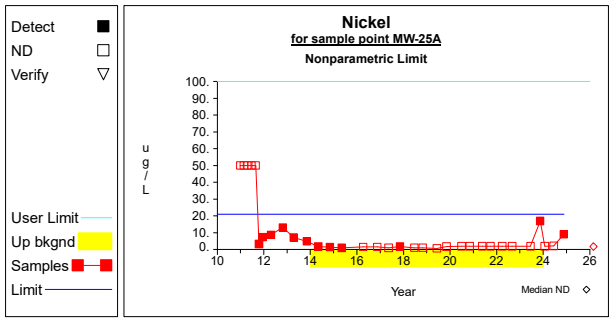
Graph 266



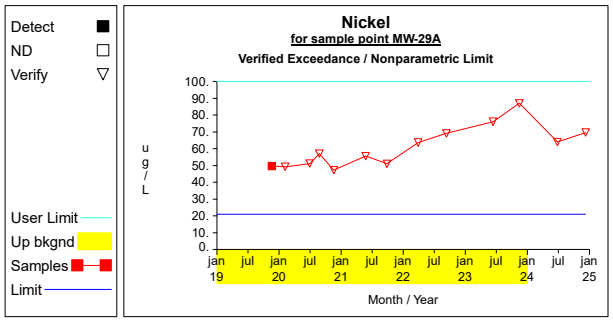
Graph 267



Graph 268

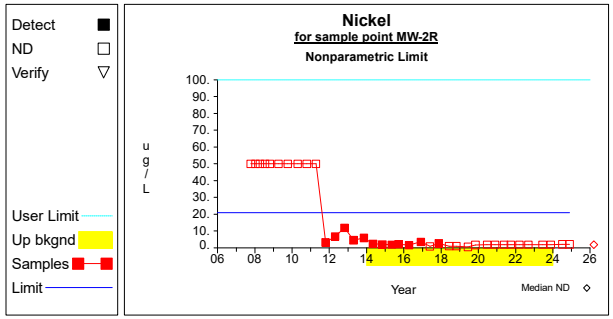


Graph 269



Graph 270

Up vs. Down Prediction Limits



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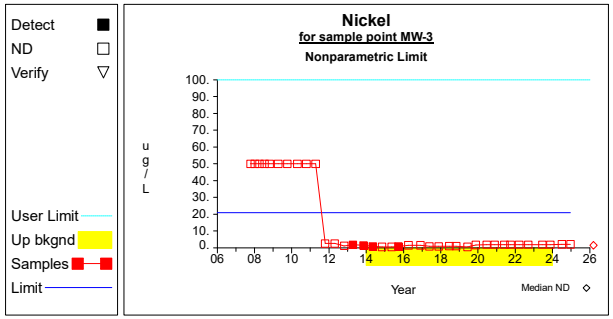
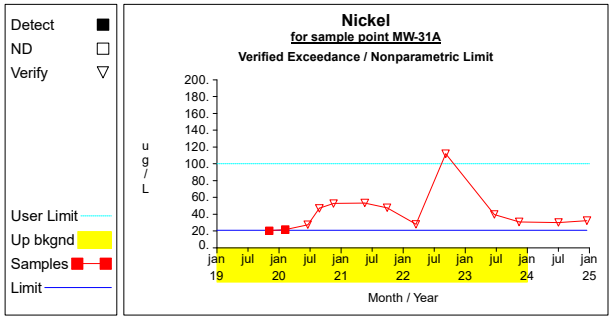
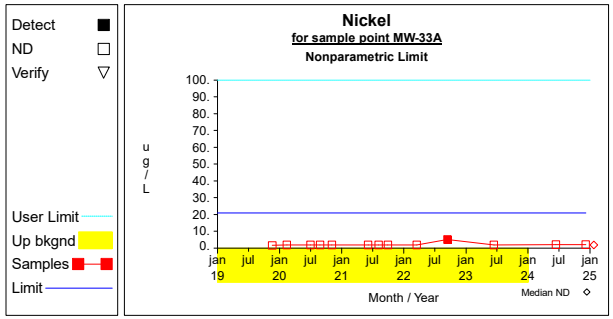


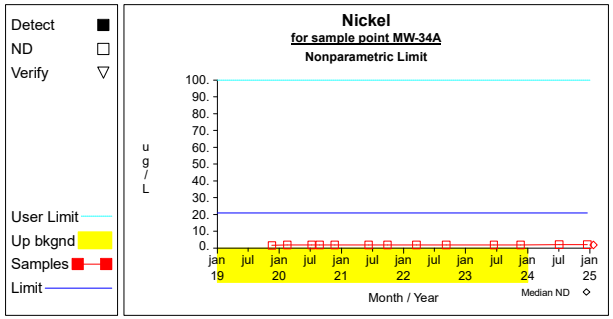
Graph 272



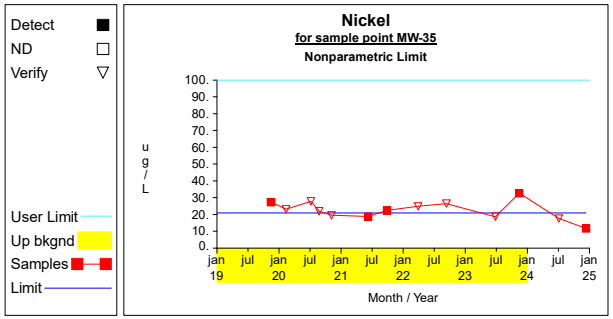
Graph 273



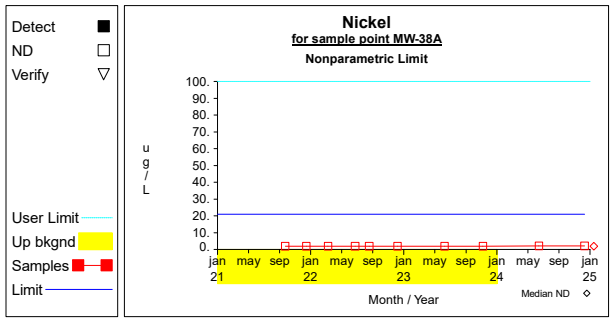
Graph 274



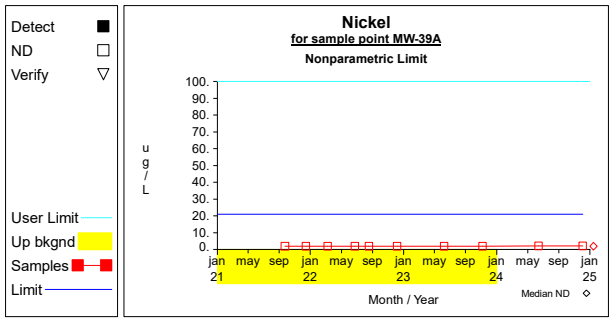
Graph 275



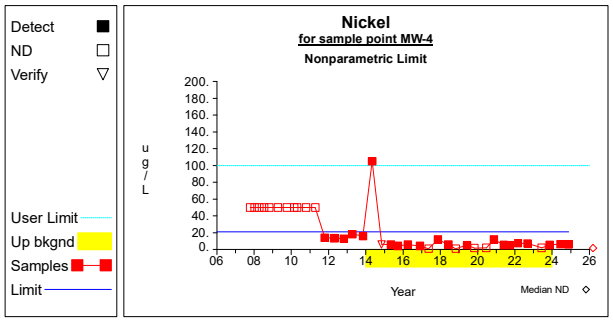
Graph 276



Graph 277

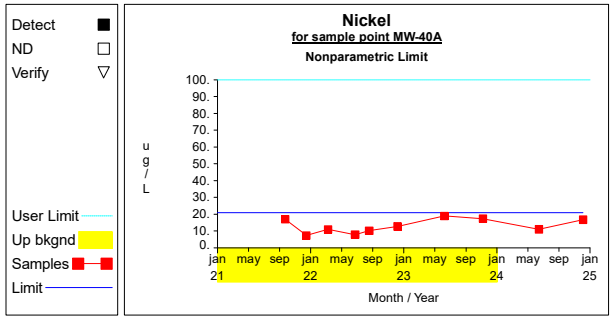


Graph 278

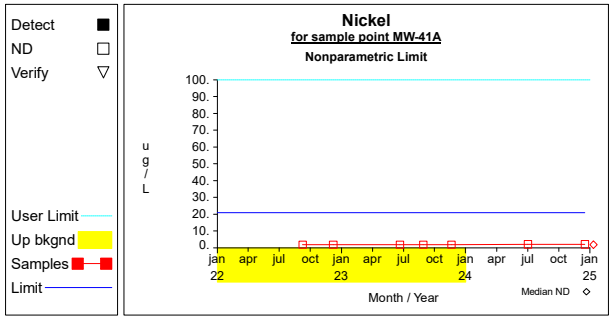


Graph 279

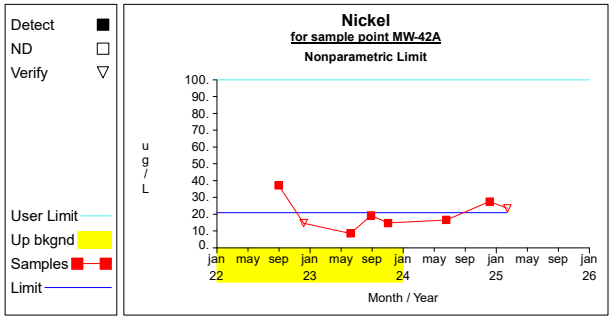
Up vs. Down Prediction Limits



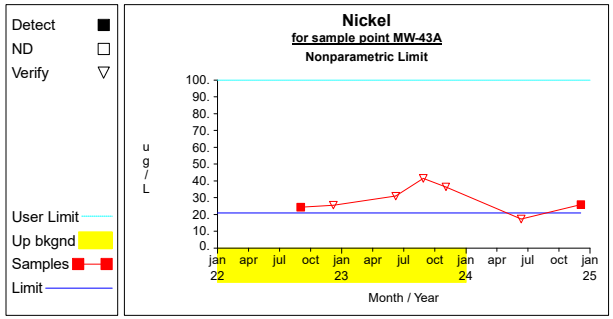
Graph 280



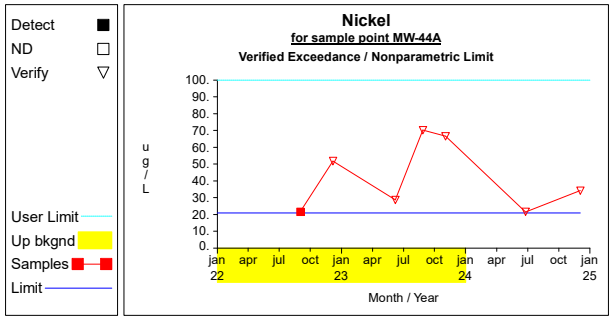
Graph 281



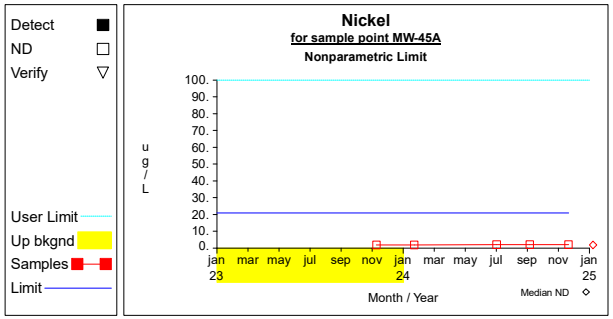
Graph 282



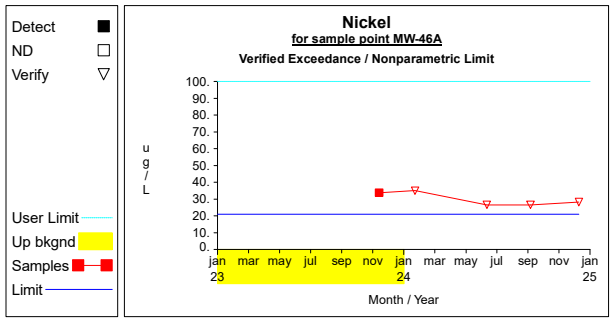
Graph 283



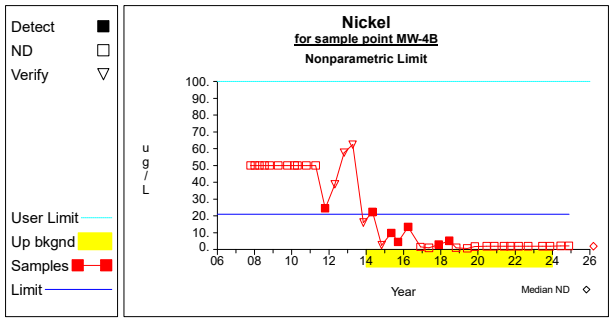
Graph 284



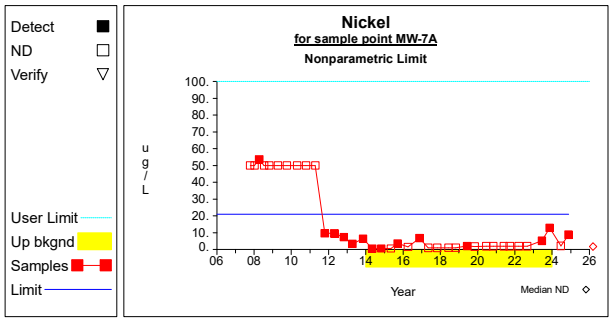
Graph 285



Graph 286

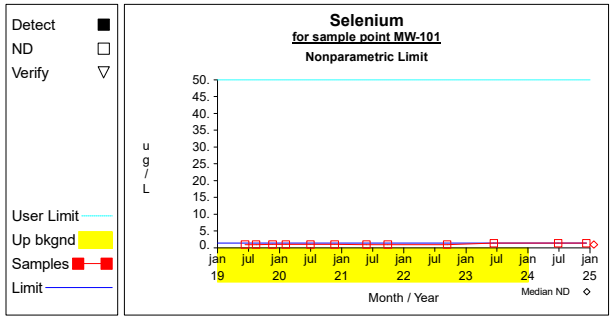


Graph 287

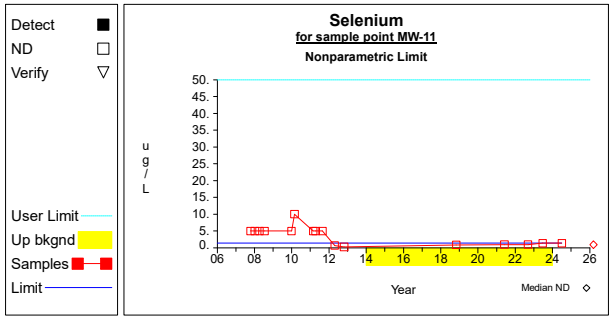


Graph 288

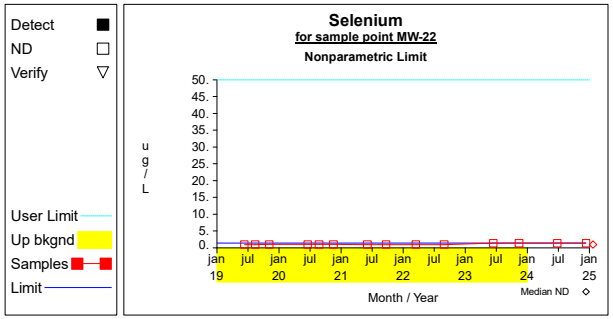
Up vs. Down Prediction Limits



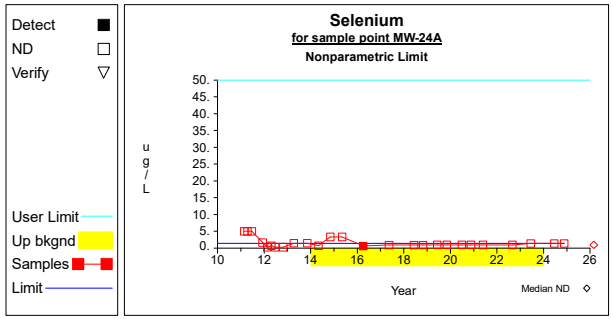
Graph 289



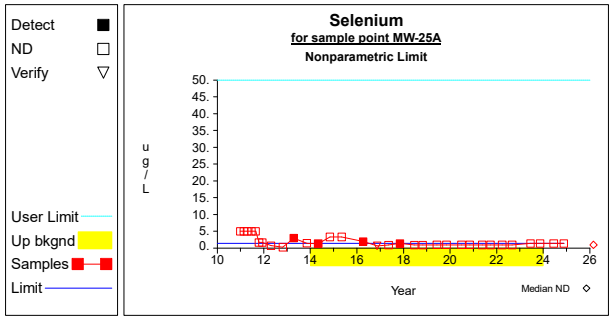
Graph 290



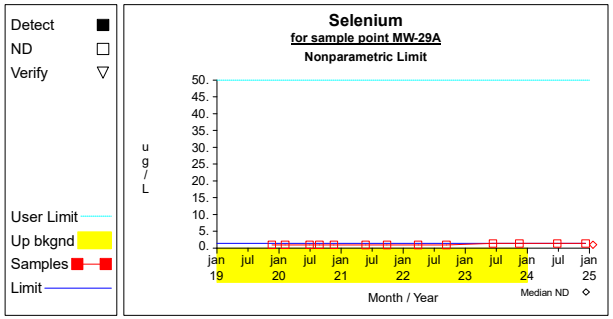
Graph 291



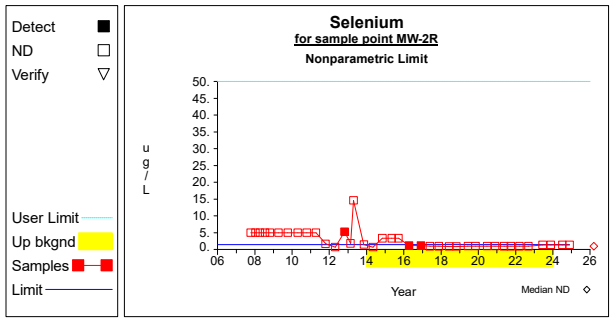
Graph 292



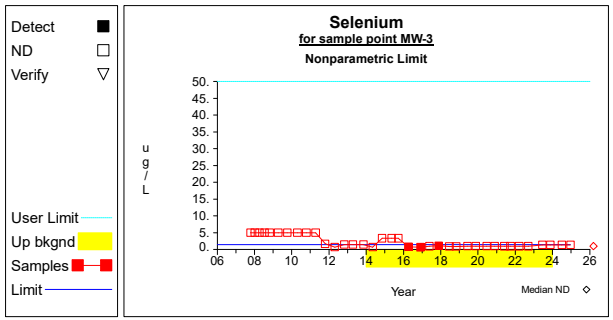
Graph 293



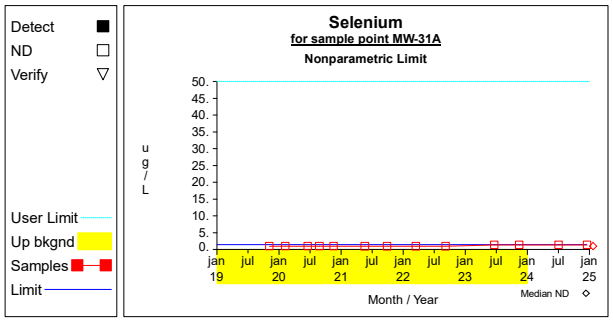
Graph 294



Graph 295

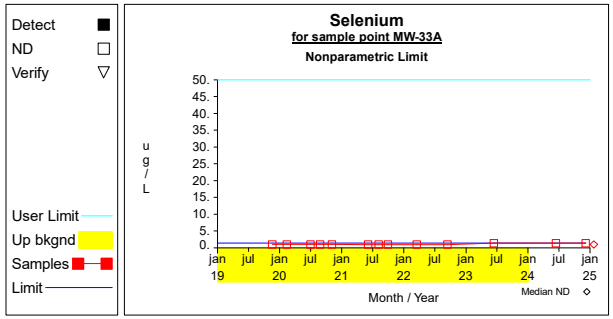


Graph 296

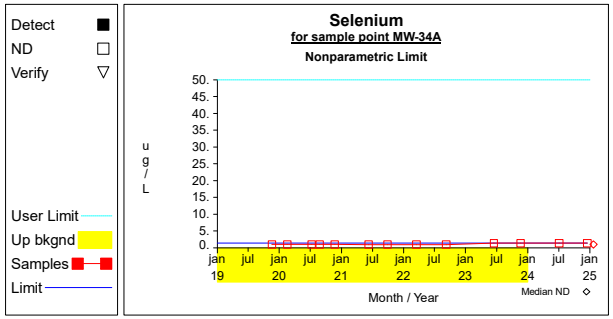


Graph 297

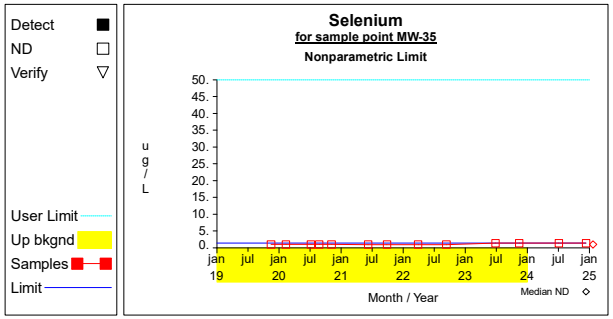
Up vs. Down Prediction Limits



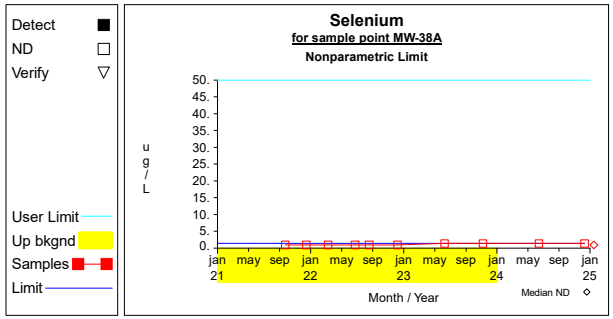
Graph 298



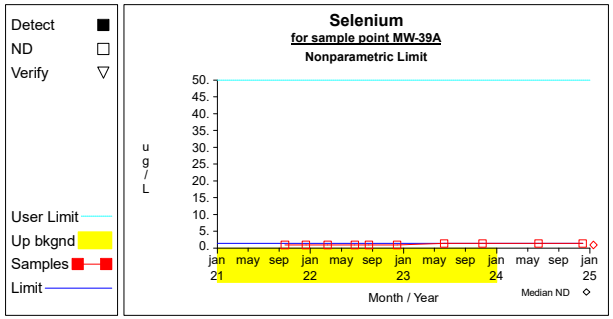
Graph 299



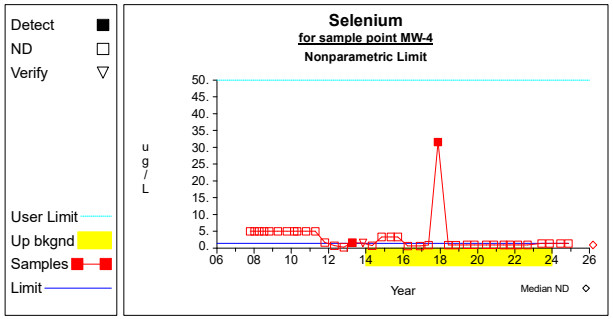
Graph 300



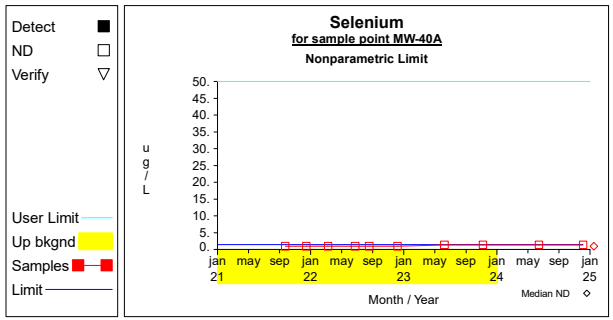
Graph 301



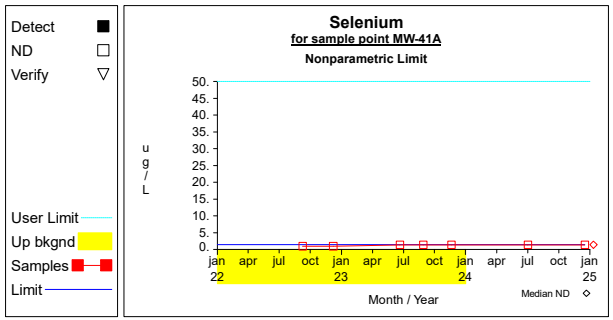
Graph 302



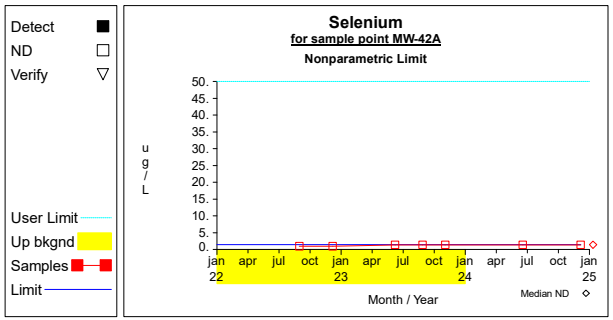
Graph 303



Graph 304

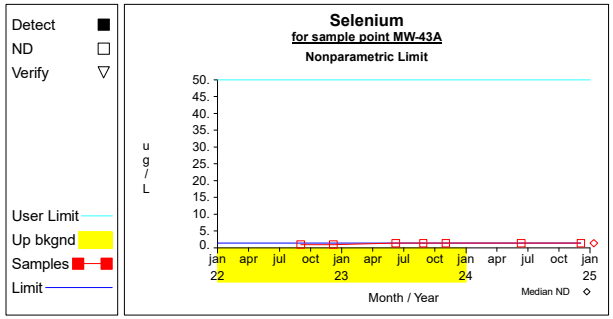


Graph 305

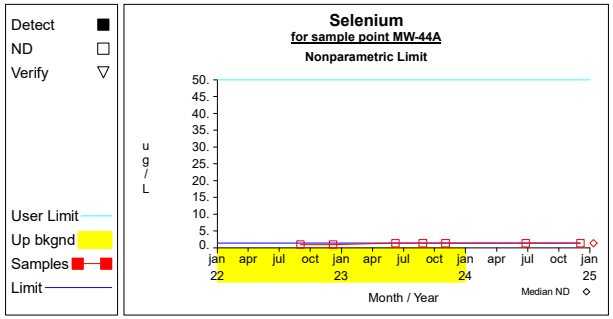


Graph 306

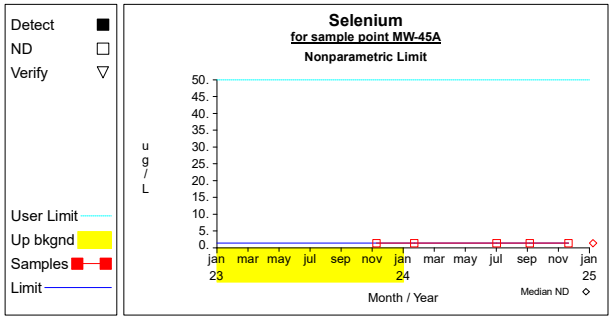
Up vs. Down Prediction Limits



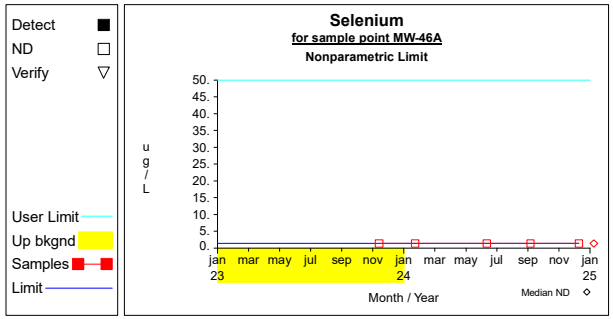
Graph 307



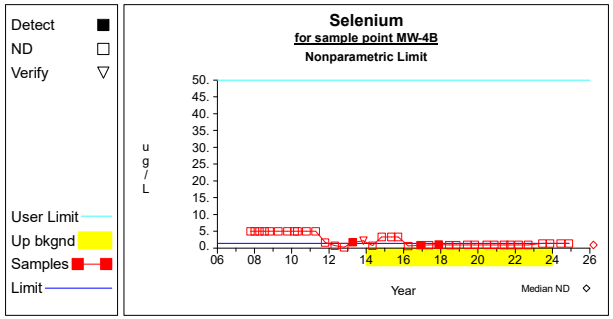
Graph 308



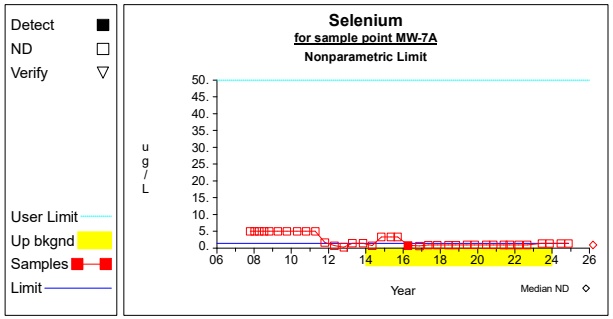
Graph 309



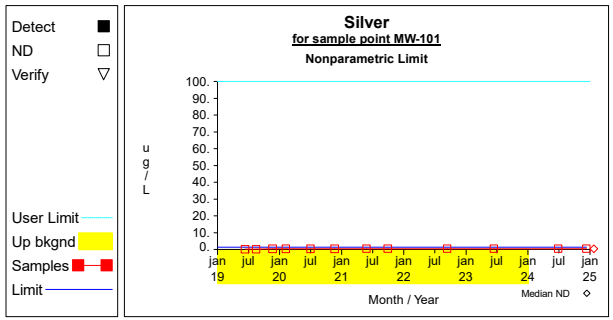
Graph 310



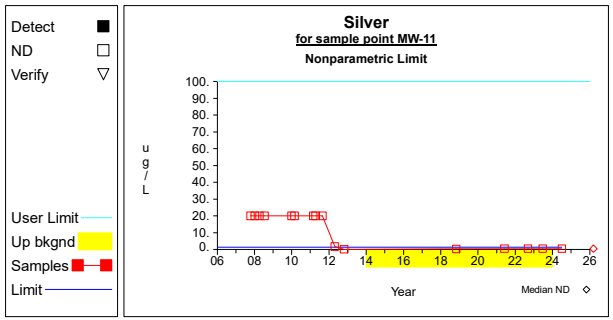
Graph 311



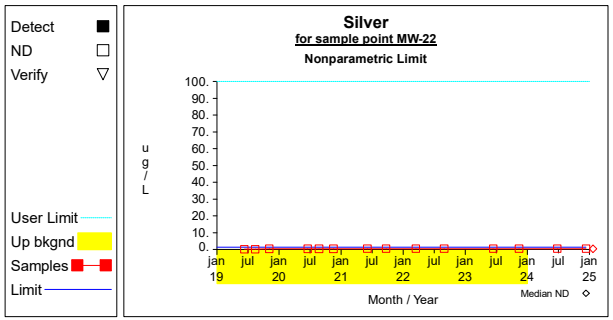
Graph 312



Graph 313

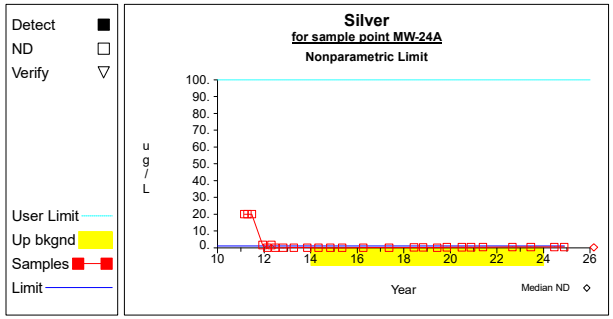


Graph 314

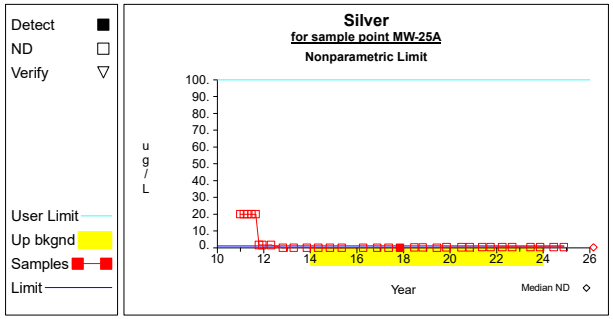


Graph 315

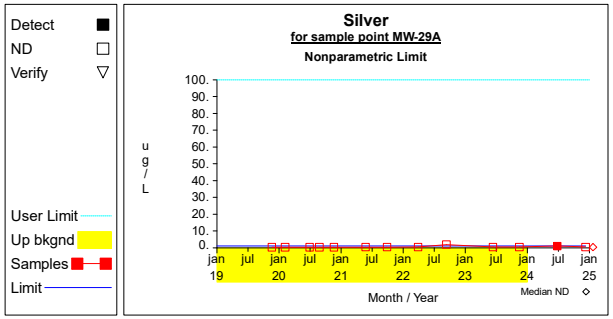
Up vs. Down Prediction Limits



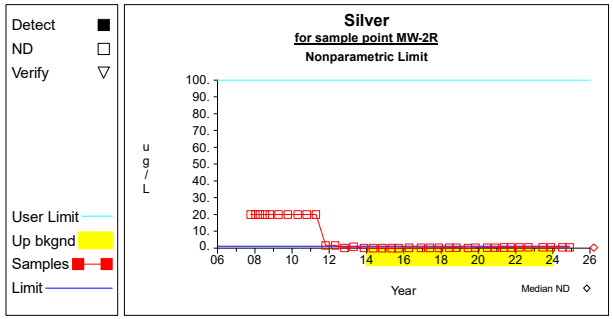
Graph 316



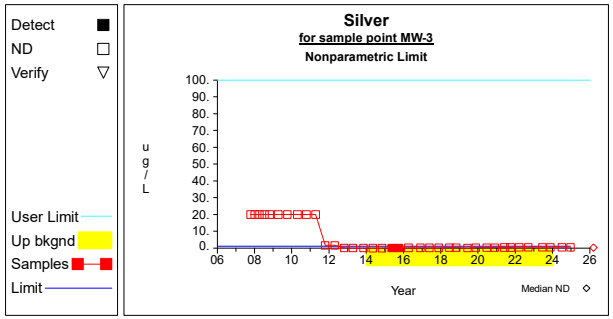
Graph 317



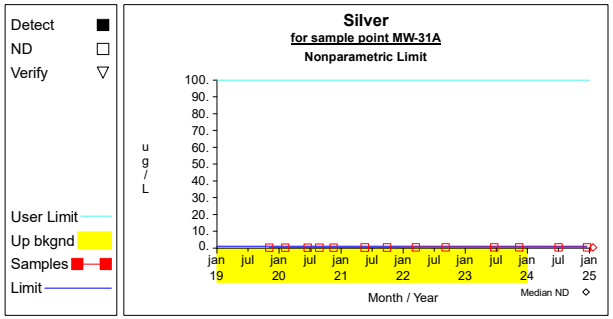
Graph 318



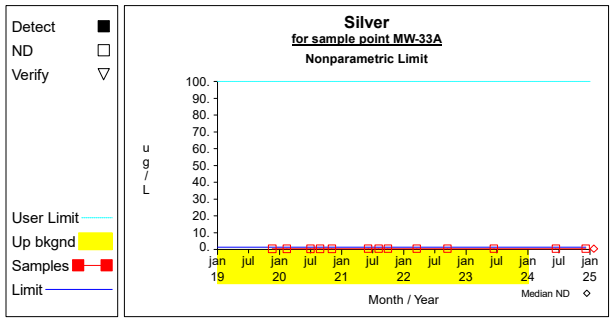
Graph 319



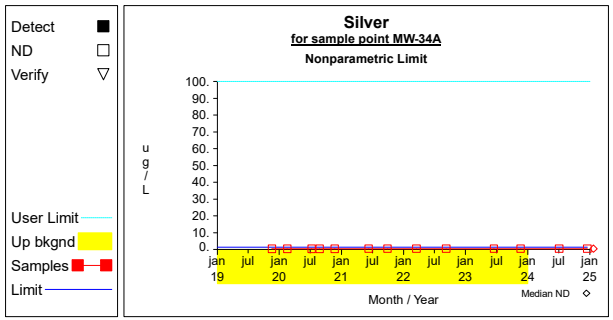
Graph 320



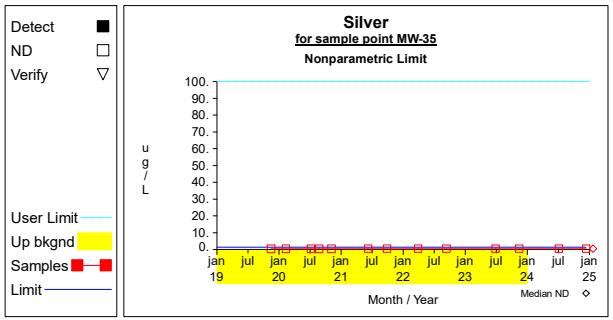
Graph 321



Graph 322

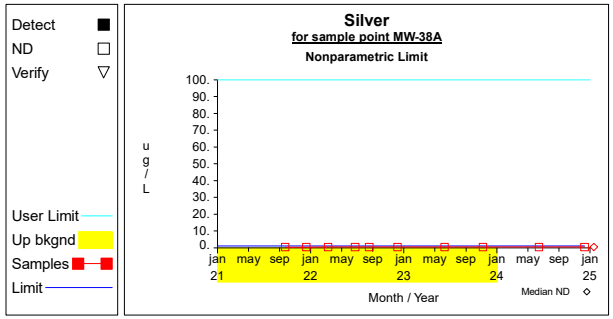


Graph 323

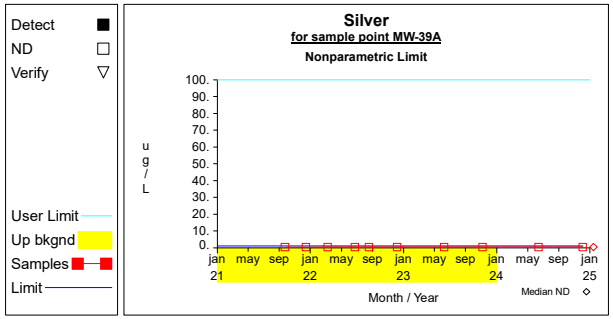


Graph 324

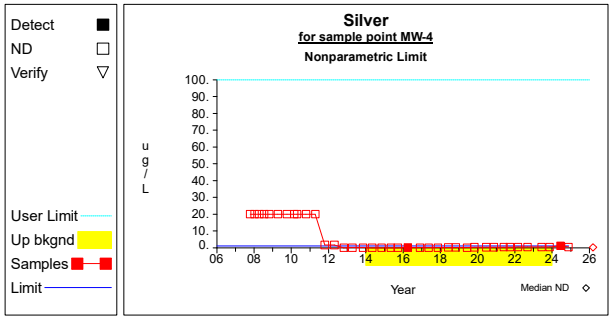
Up vs. Down Prediction Limits



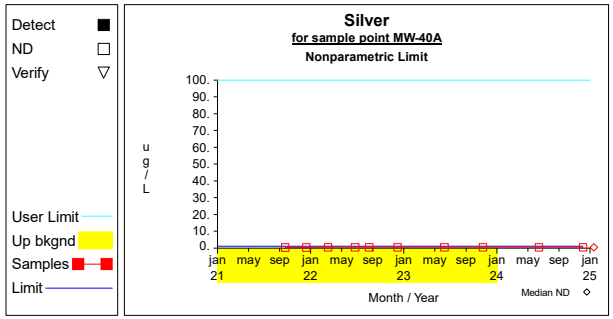
Graph 325



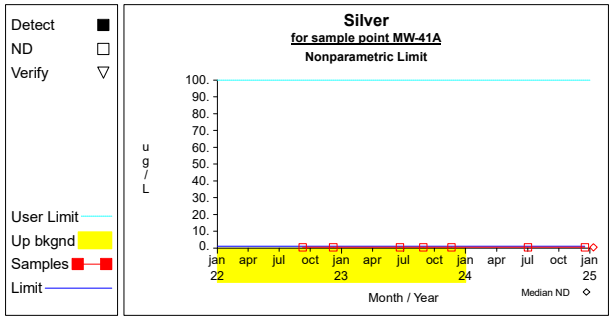
Graph 326



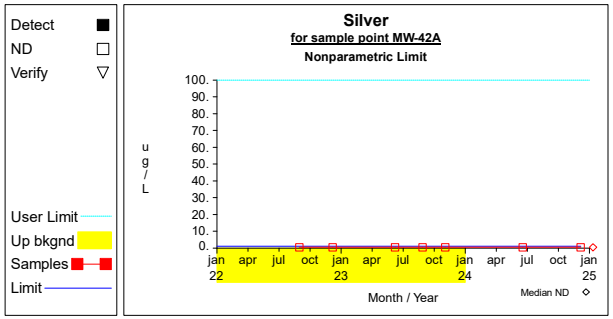
Graph 327



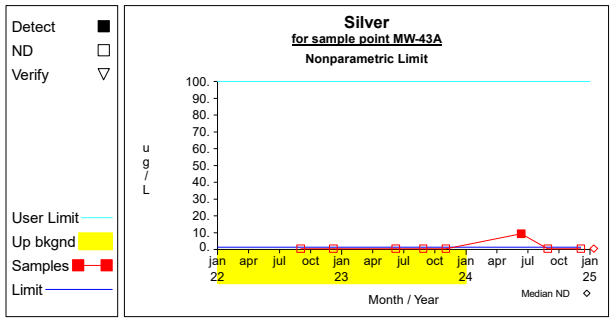
Graph 328



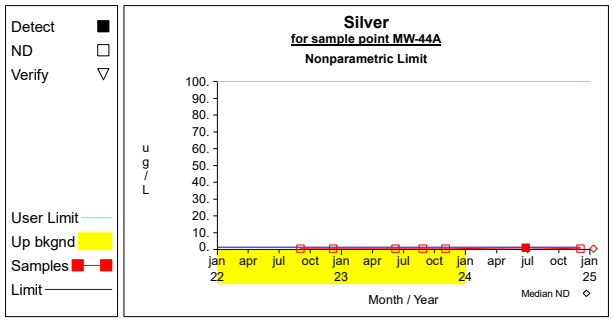
Graph 329



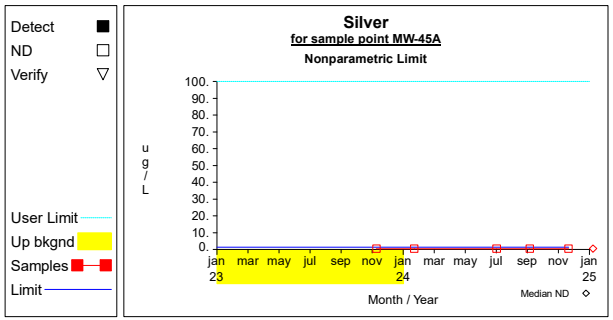
Graph 330



Graph 331

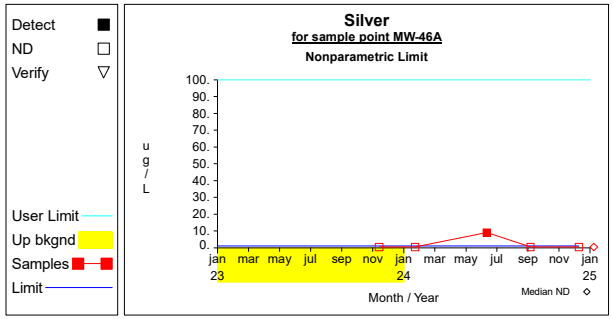


Graph 332

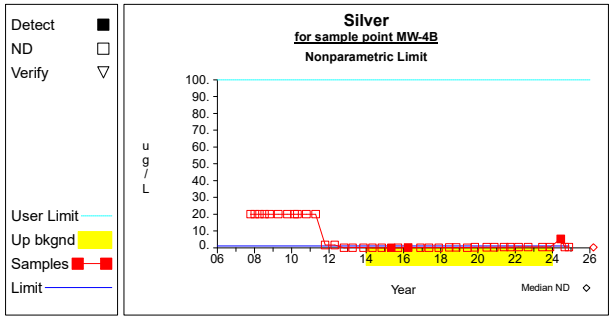


Graph 333

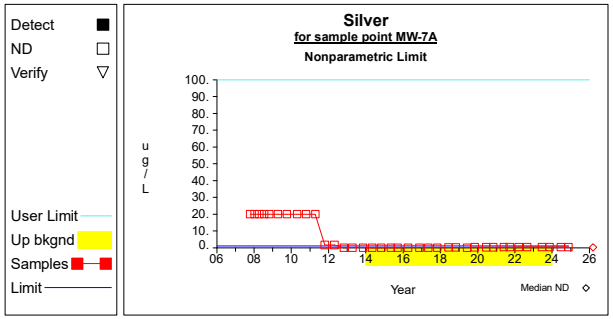
Up vs. Down Prediction Limits



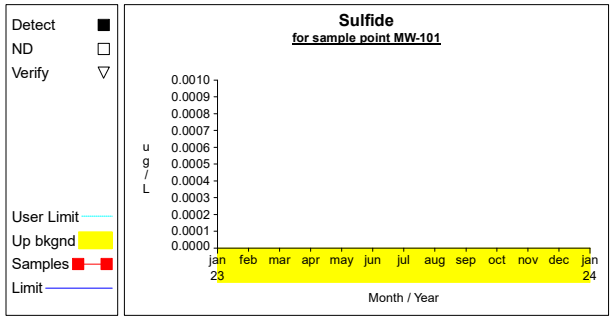
Graph 334



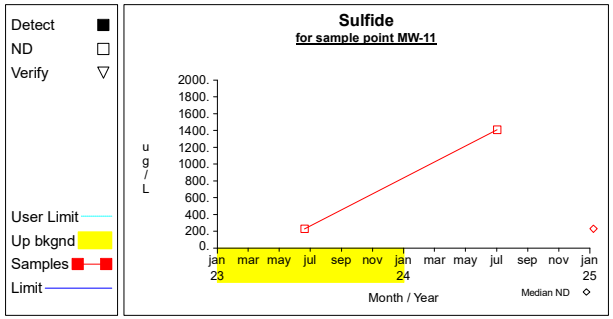
Graph 335



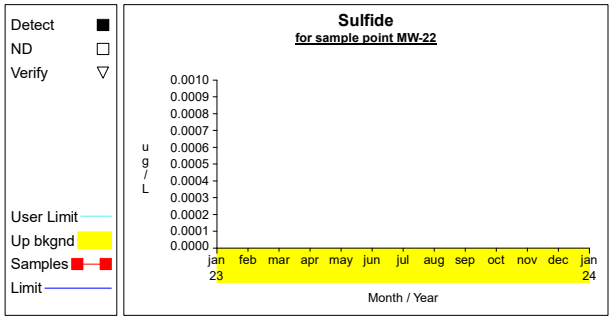
Graph 336



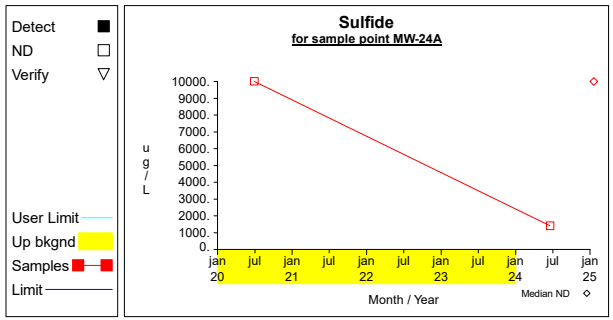
Graph 337



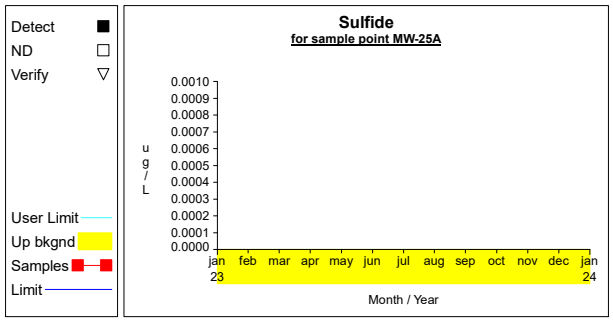
Graph 338



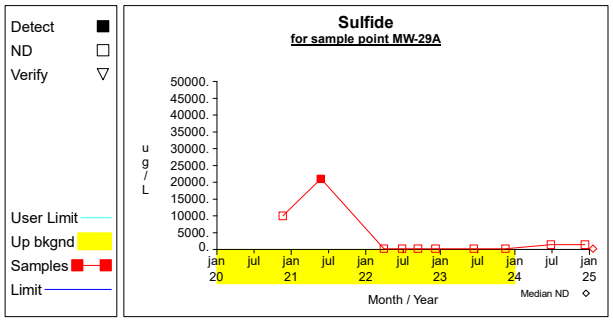
Graph 339



Graph 340

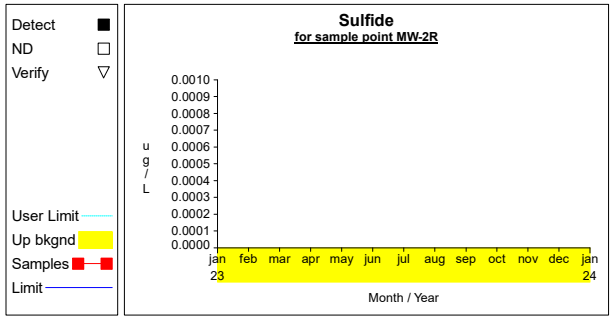


Graph 341

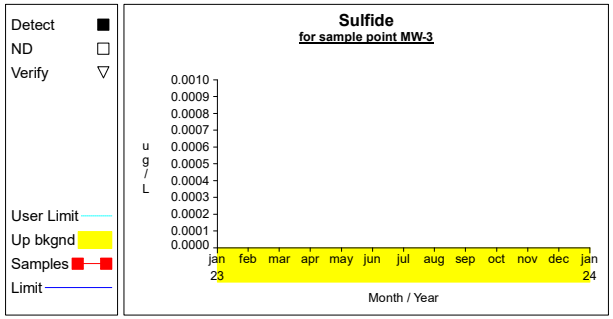


Graph 342

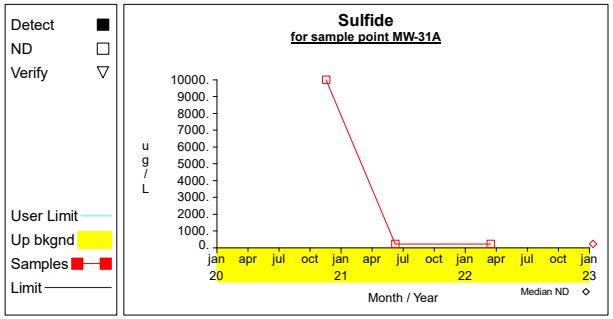
Up vs. Down Prediction Limits



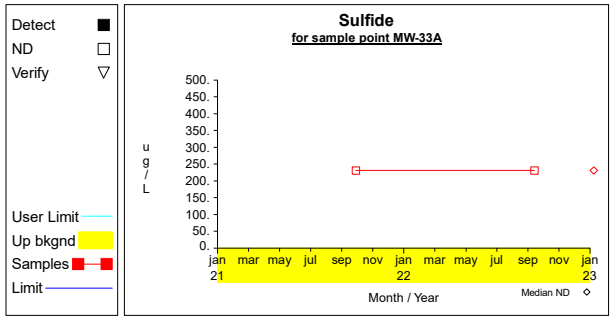
Graph 343



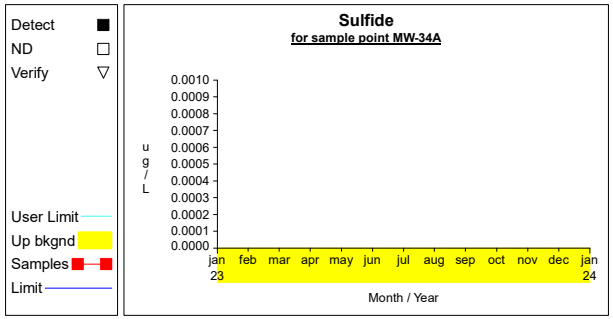
Graph 344



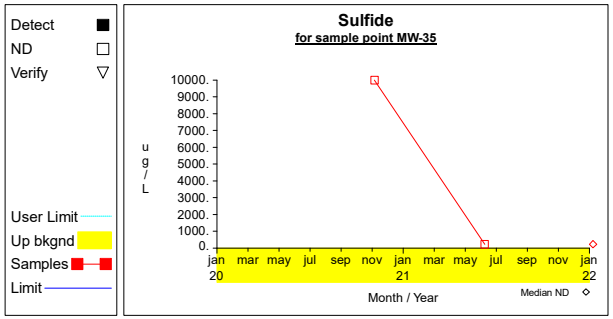
Graph 345



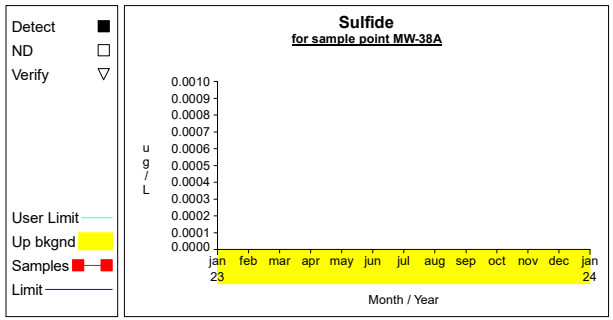
Graph 346



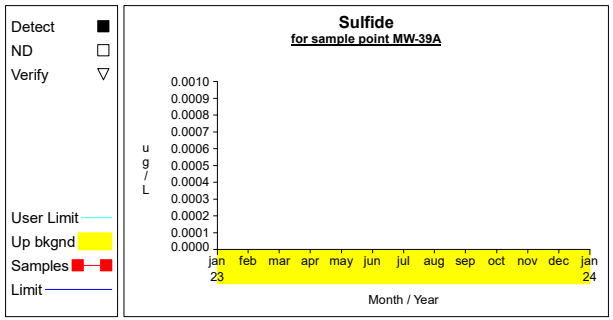
Graph 347



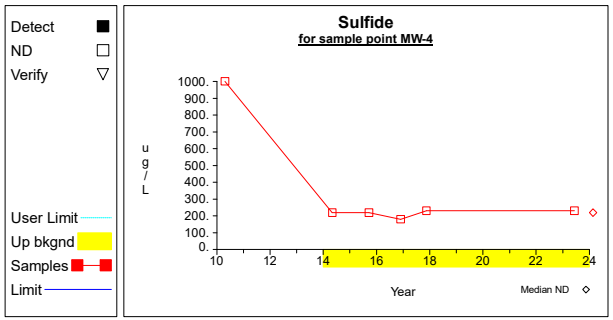
Graph 348



Graph 349

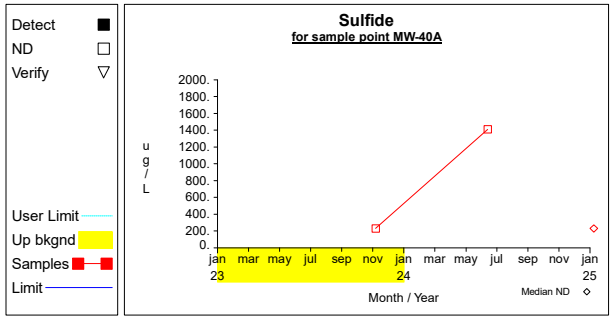


Graph 350

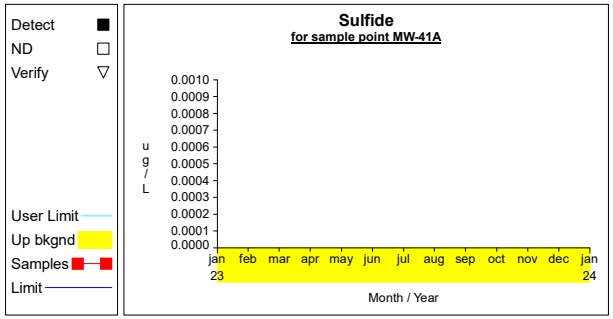


Graph 351

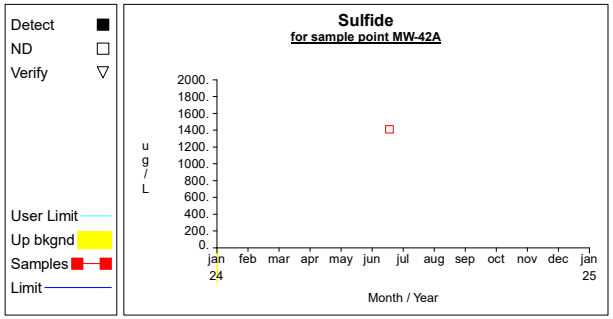
Up vs. Down Prediction Limits



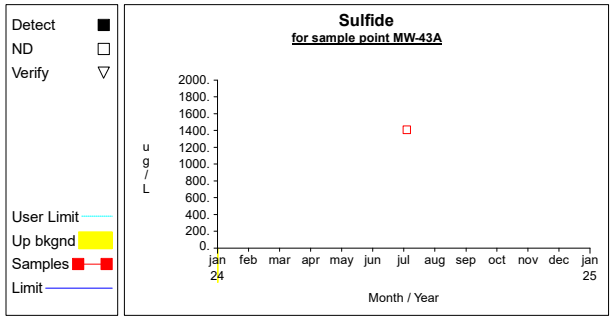
Graph 352



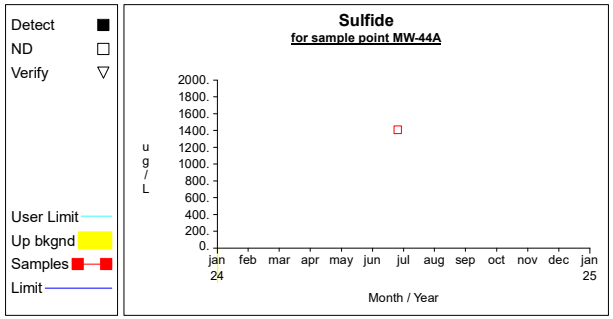
Graph 353



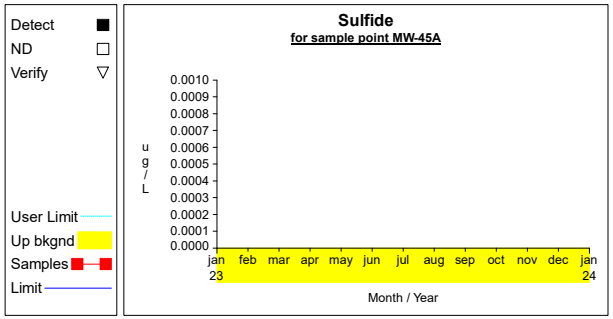
Graph 354



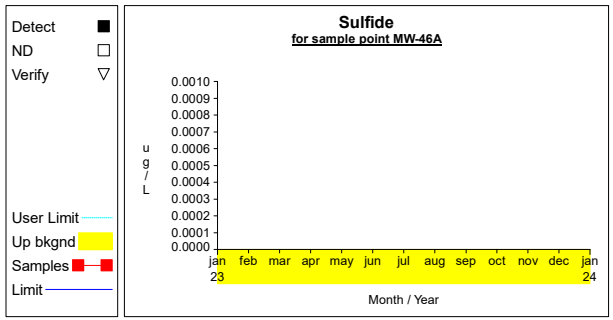
Graph 355



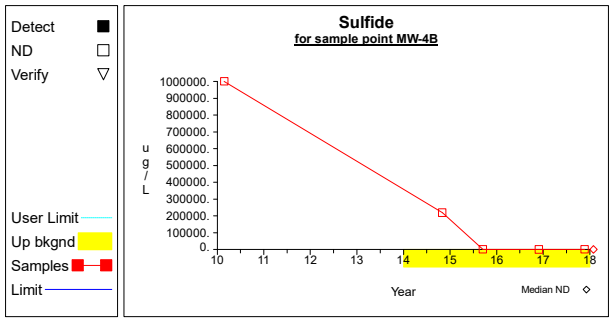
Graph 356



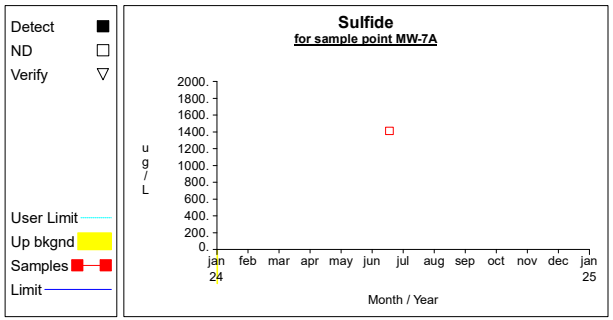
Graph 357



Graph 358

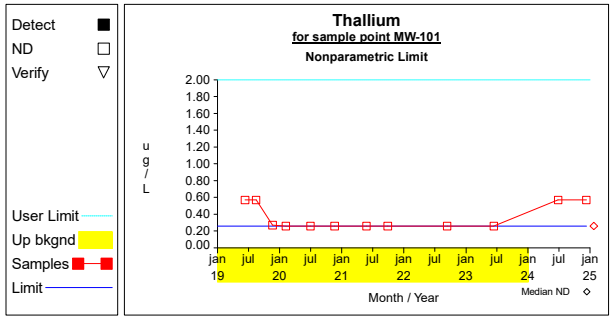


Graph 359

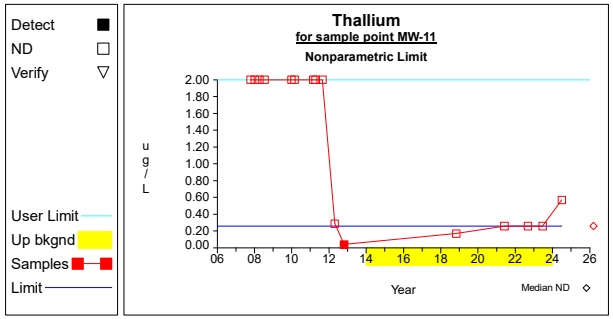


Graph 360

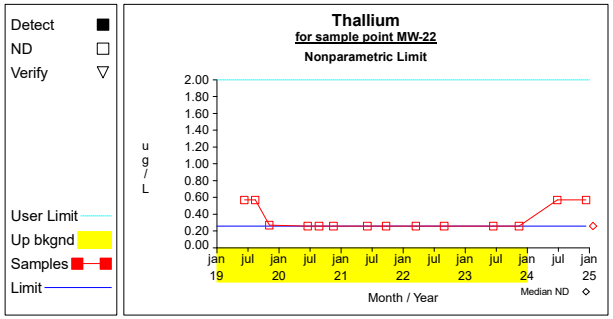
Up vs. Down Prediction Limits



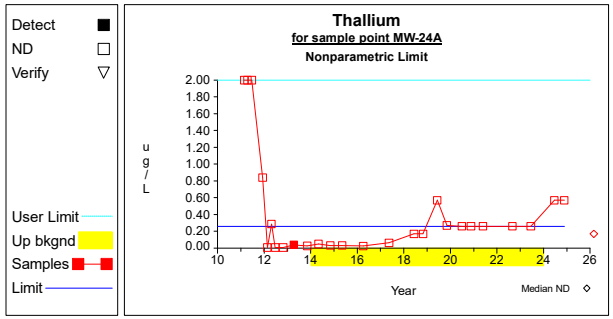
Graph 361



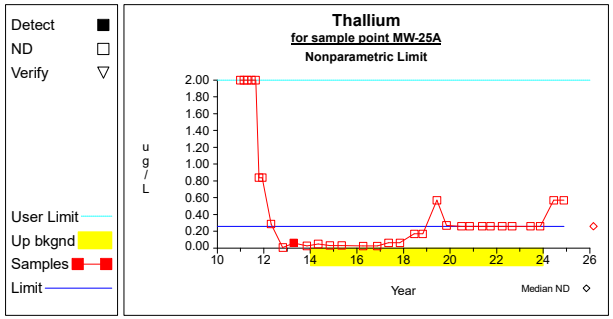
Graph 362



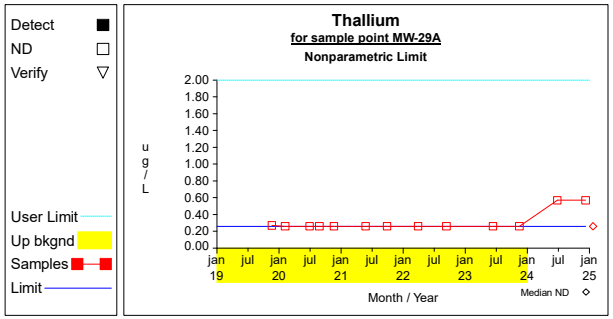
Graph 363



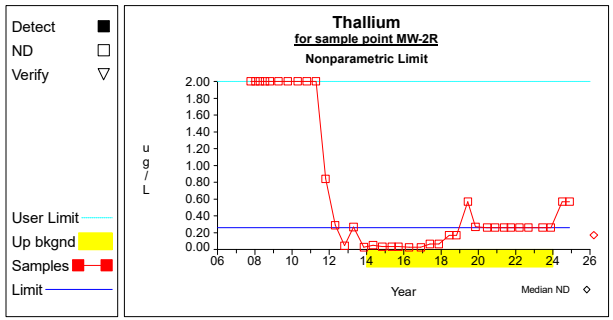
Graph 364



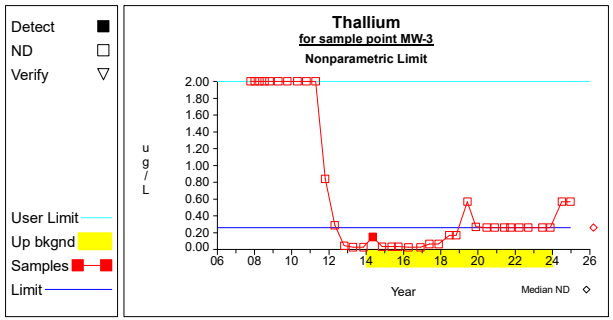
Graph 365



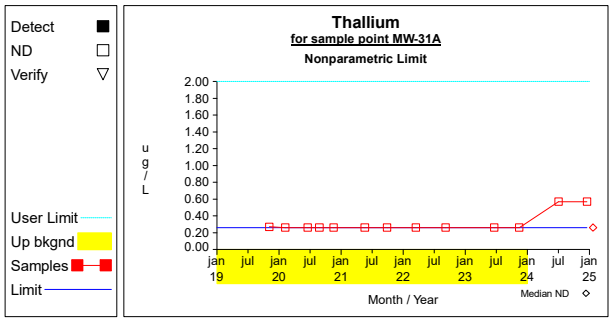
Graph 366



Graph 367

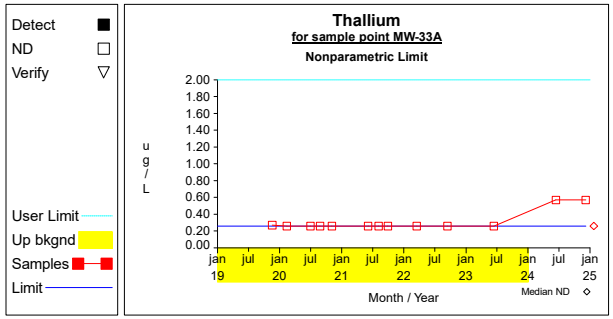


Graph 368

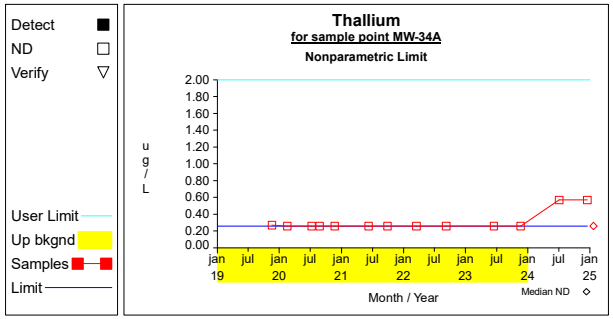


Graph 369

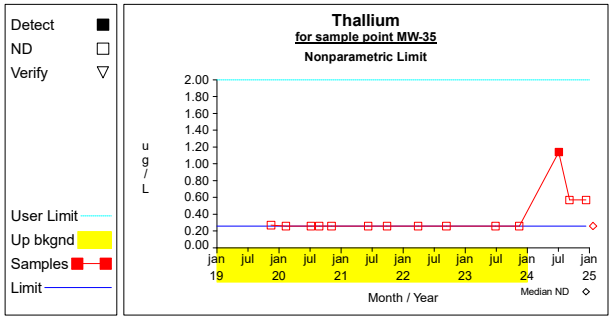
Up vs. Down Prediction Limits



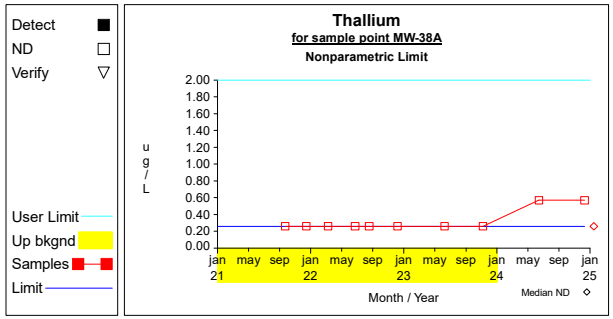
Graph 370



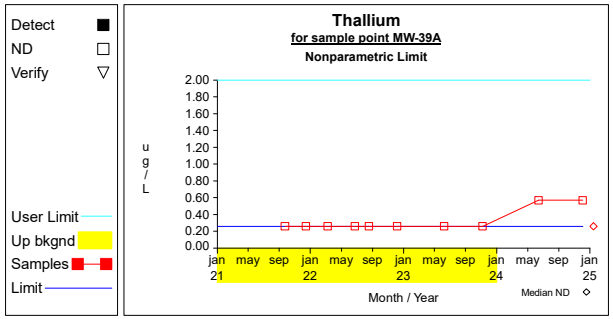
Graph 371



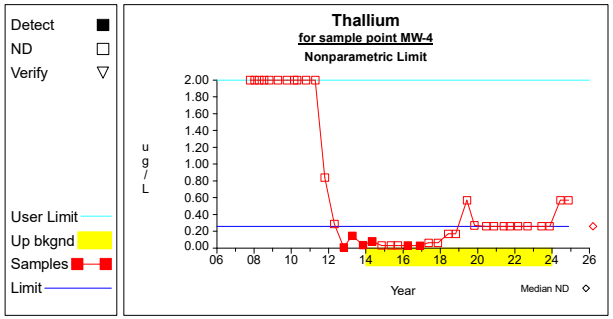
Graph 372



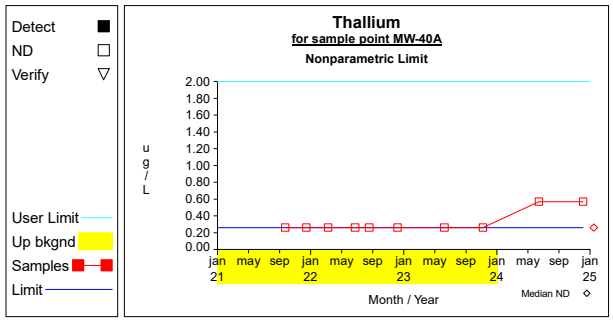
Graph 373



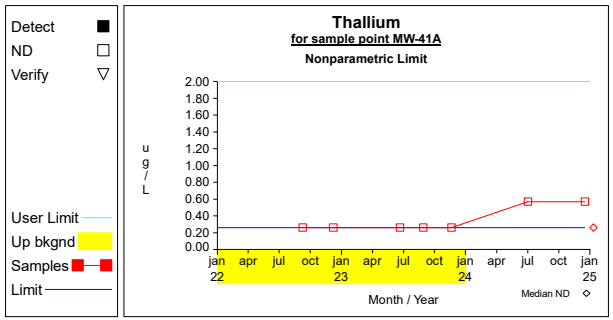
Graph 374



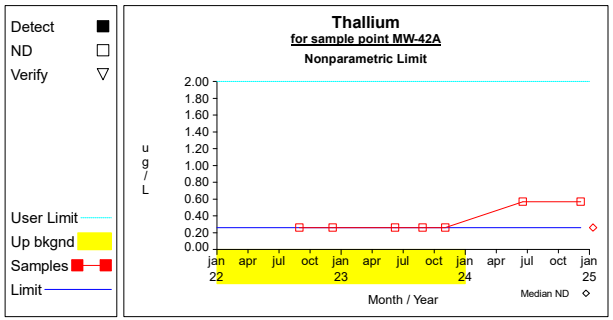
Graph 375



Graph 376

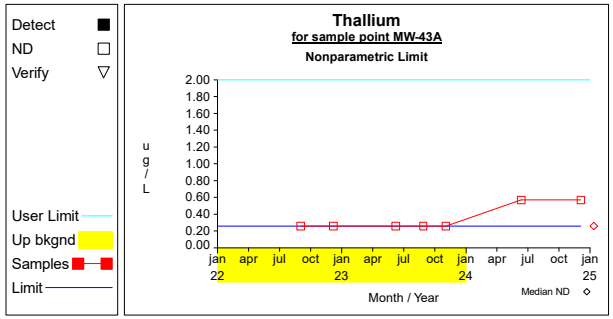


Graph 377

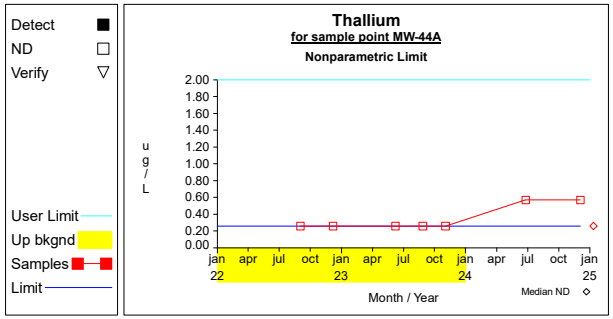


Graph 378

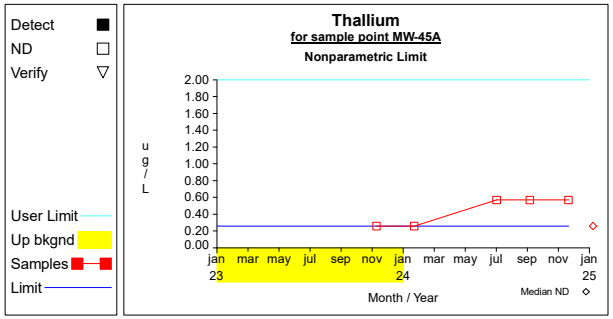
Up vs. Down Prediction Limits



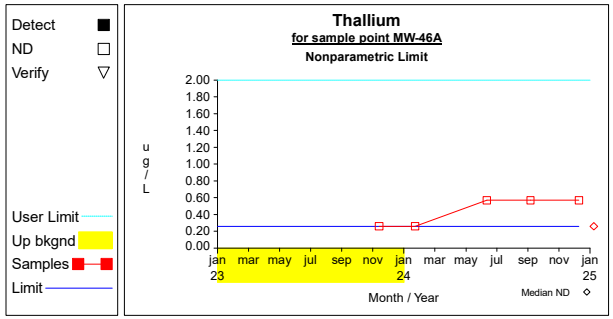
Graph 379



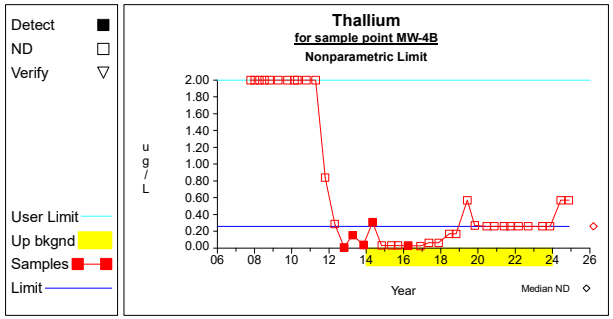
Graph 380



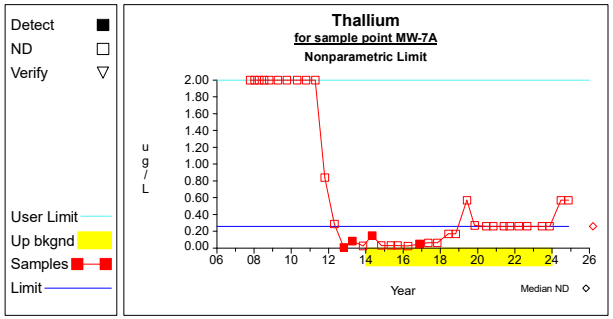
Graph 381



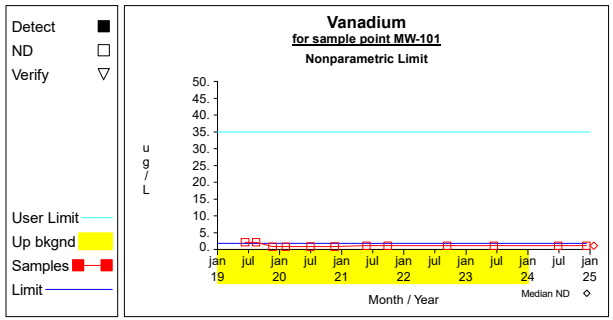
Graph 382



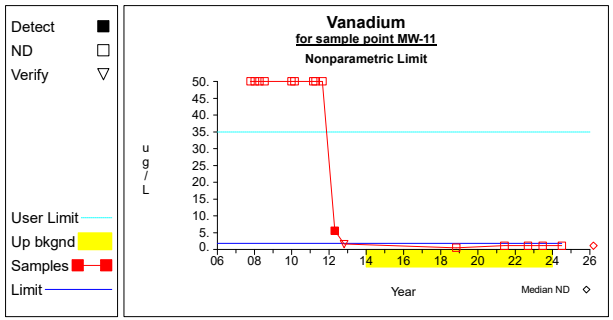
Graph 383



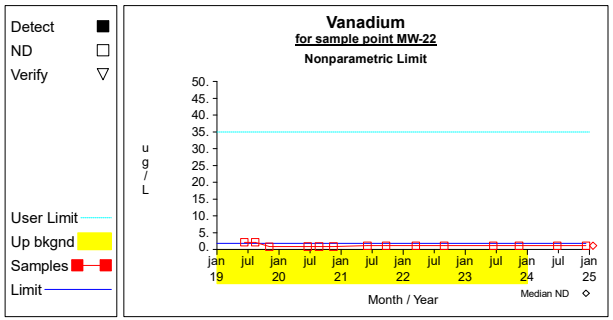
Graph 384



Graph 385

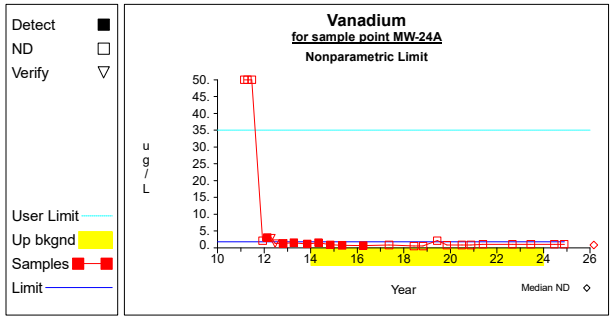


Graph 386

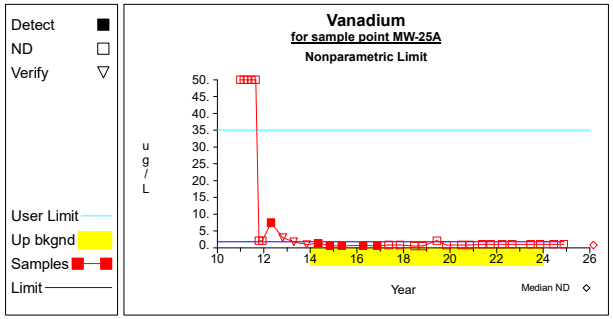


Graph 387

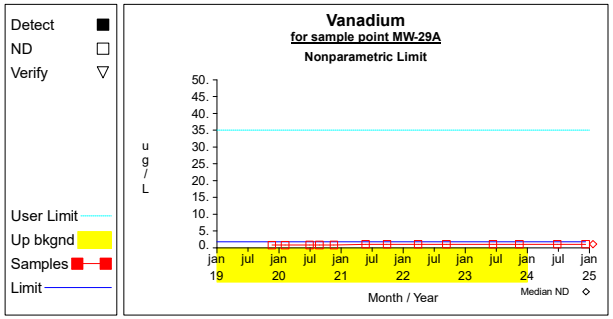
Up vs. Down Prediction Limits



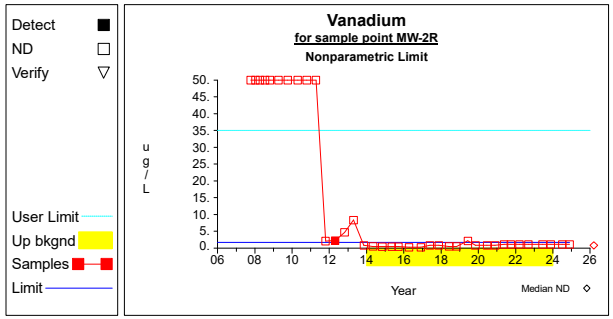
Graph 388



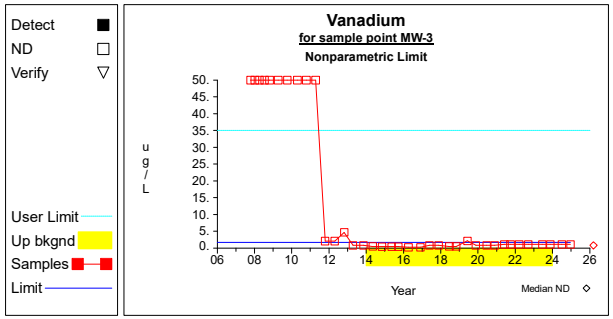
Graph 389



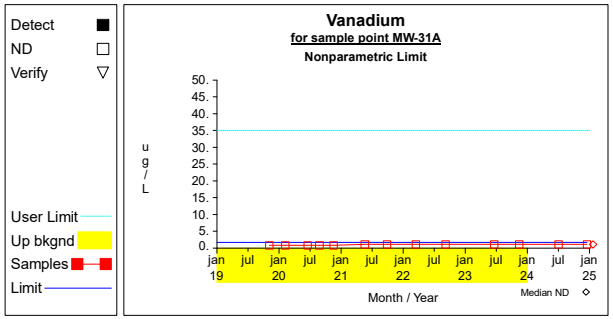
Graph 390



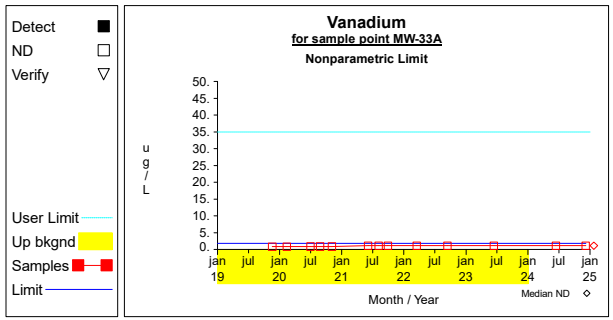
Graph 391



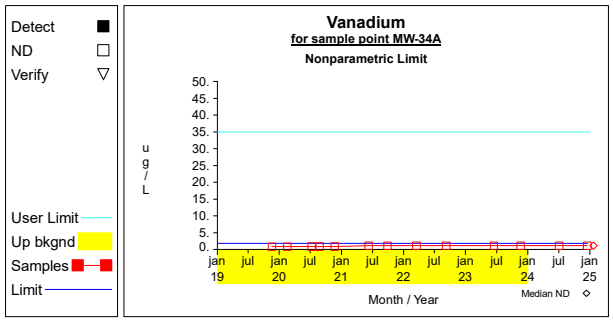
Graph 392



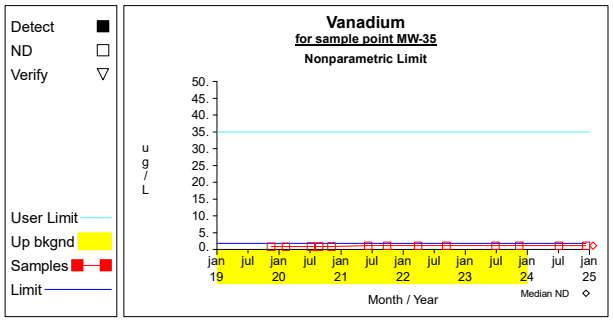
Graph 393



Graph 394

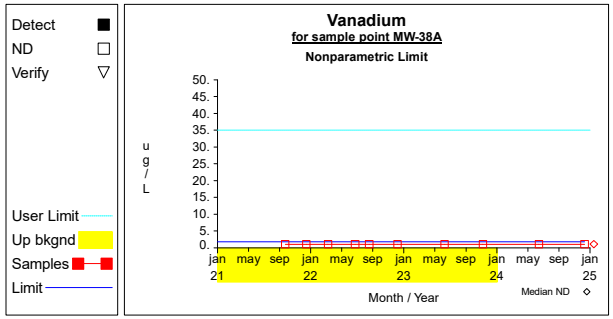


Graph 395

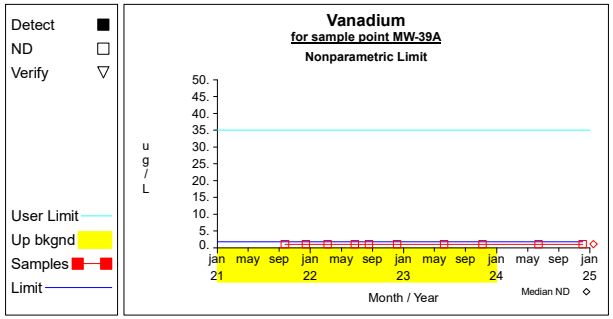


Graph 396

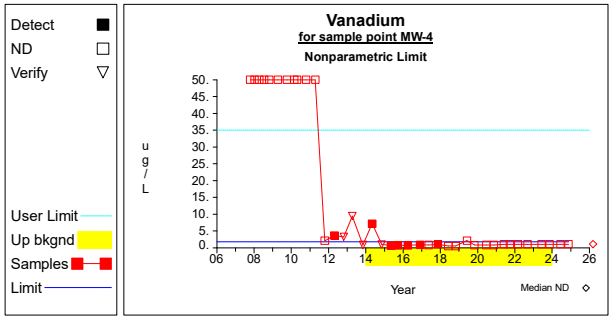
Up vs. Down Prediction Limits



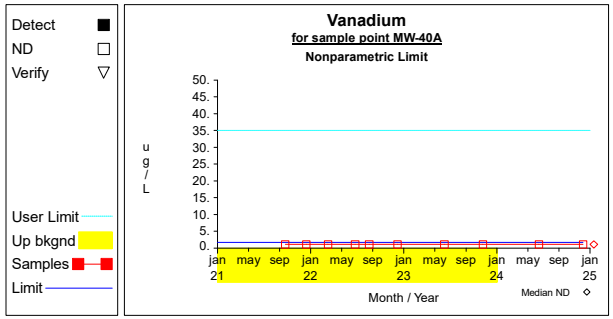
Graph 397



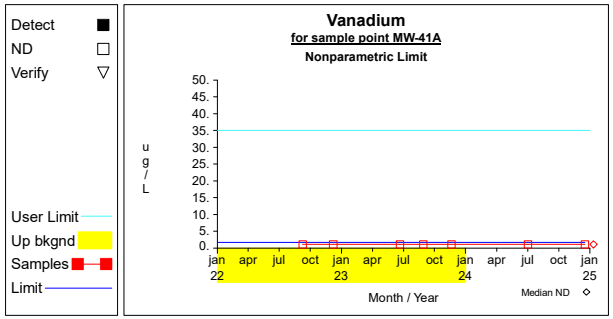
Graph 398



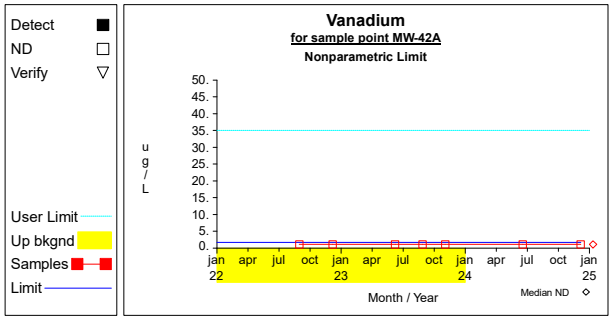
Graph 399



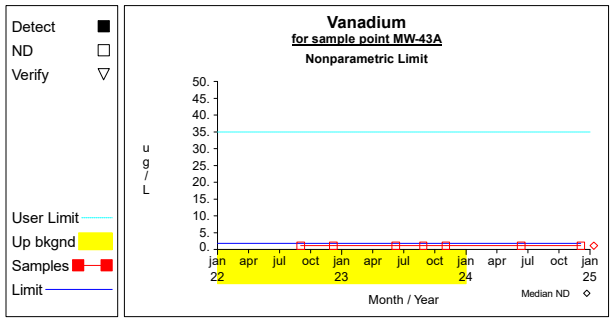
Graph 400



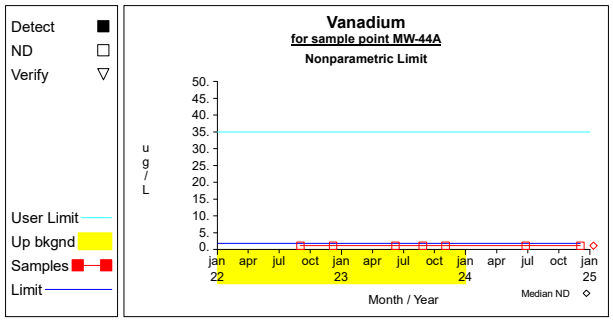
Graph 401



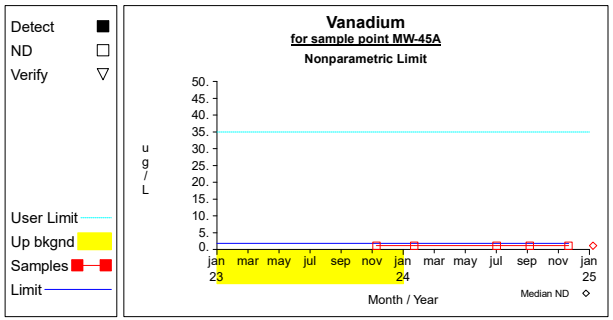
Graph 402



Graph 403

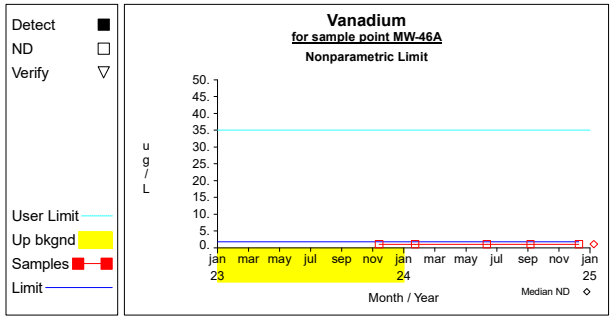


Graph 404

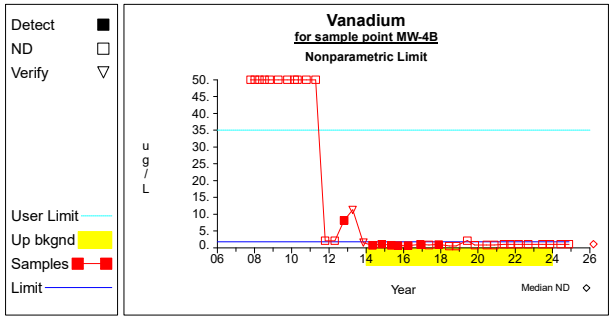


Graph 405

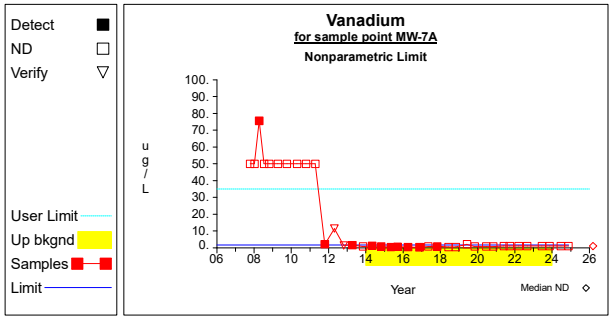
Up vs. Down Prediction Limits



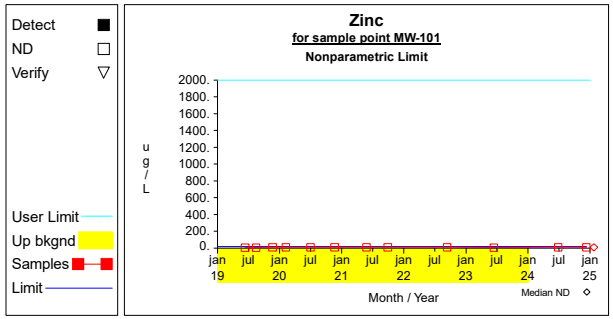
Graph 406



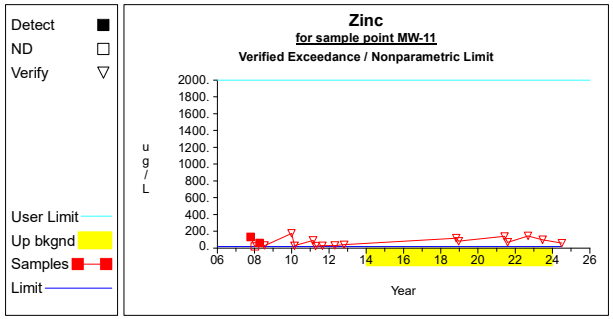
Graph 407



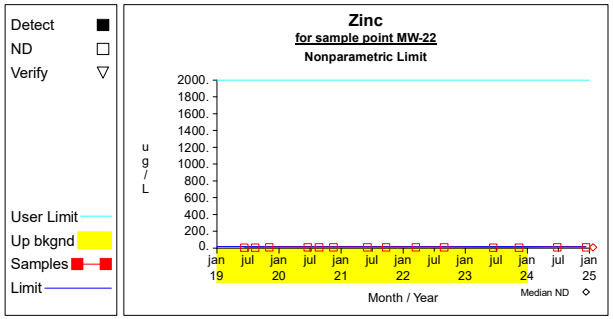
Graph 408



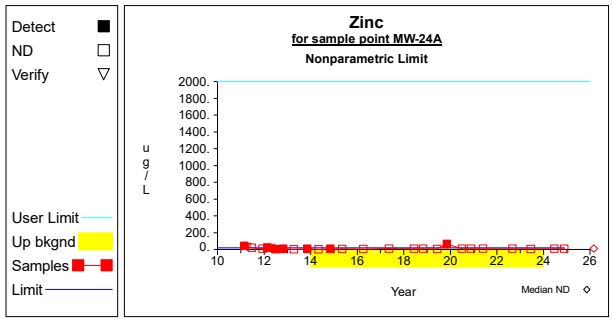
Graph 409



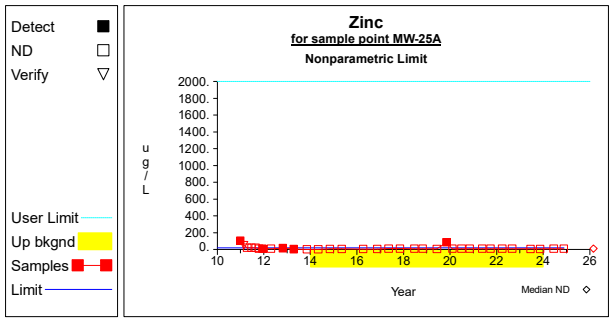
Graph 410



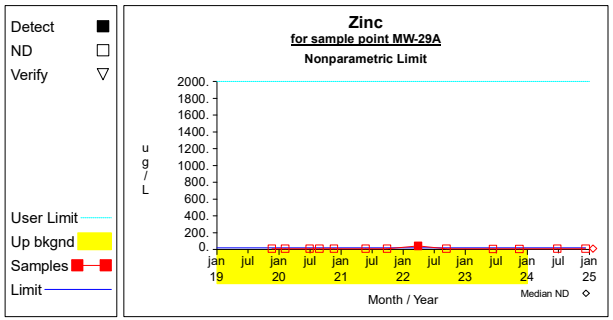
Graph 411



Graph 412

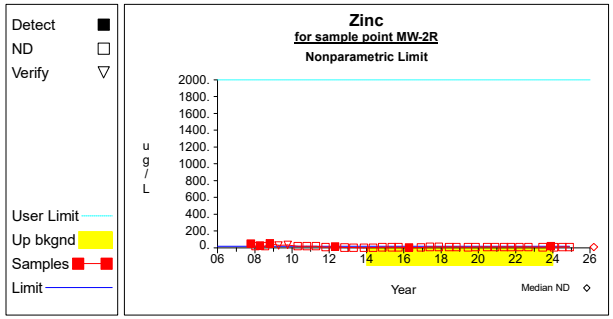


Graph 413

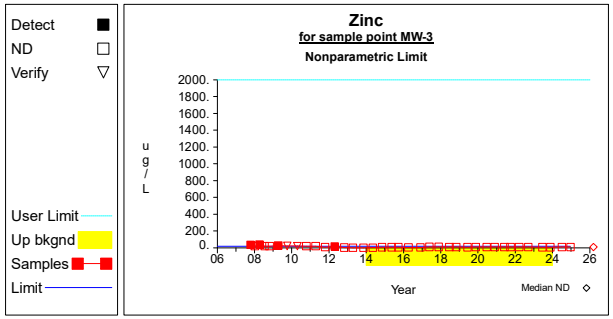


Graph 414

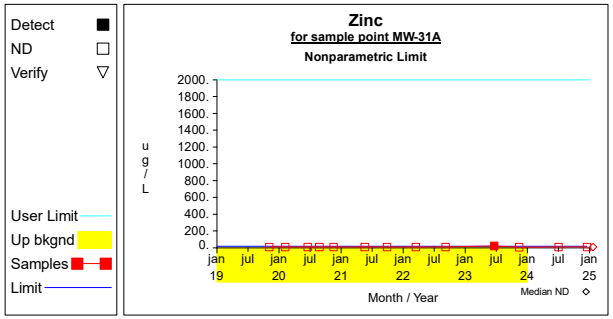
Up vs. Down Prediction Limits



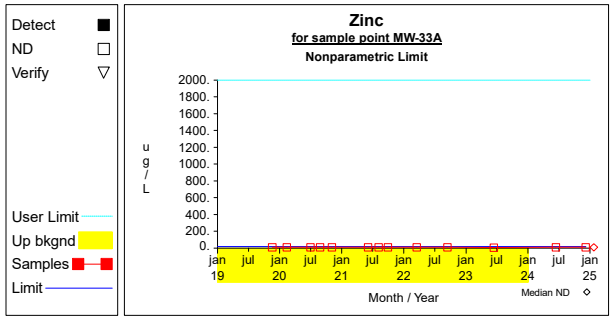
Graph 415



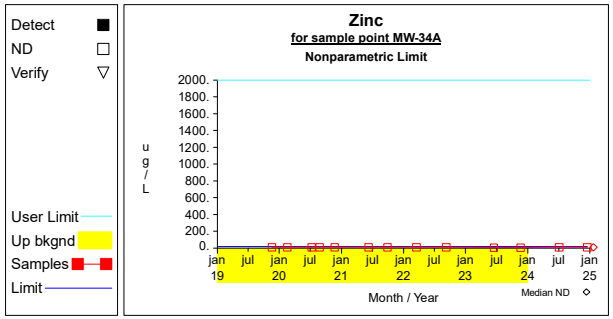
Graph 416



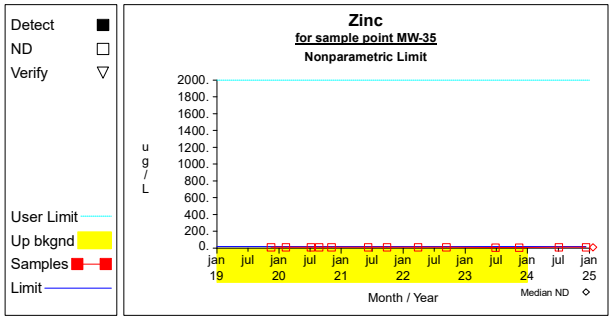
Graph 417



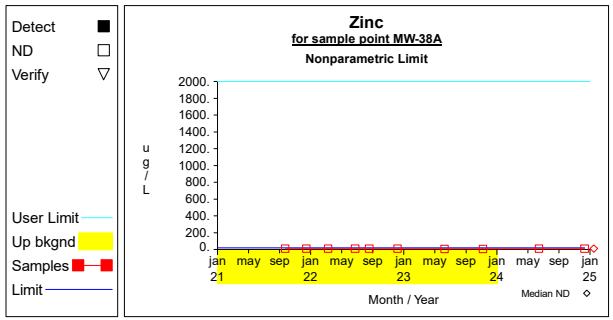
Graph 418



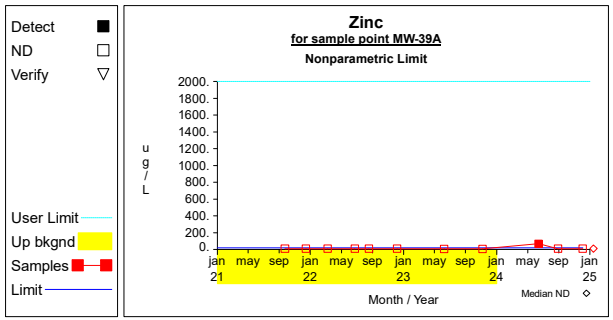
Graph 419



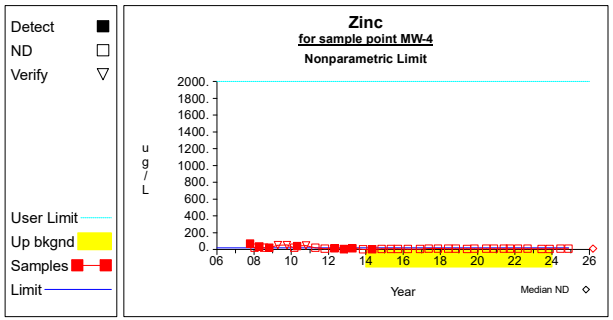
Graph 420



Graph 421

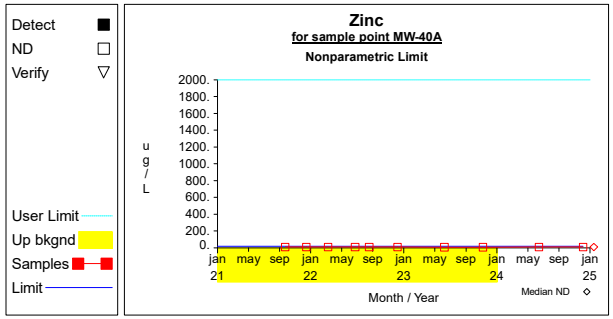


Graph 422

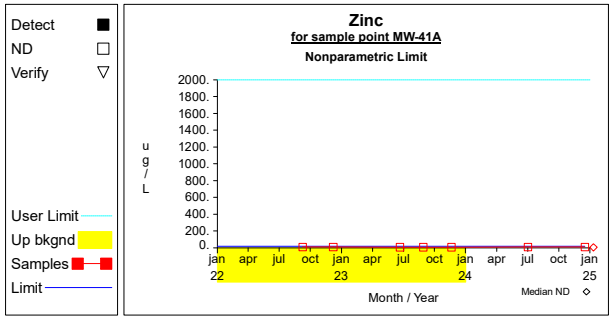


Graph 423

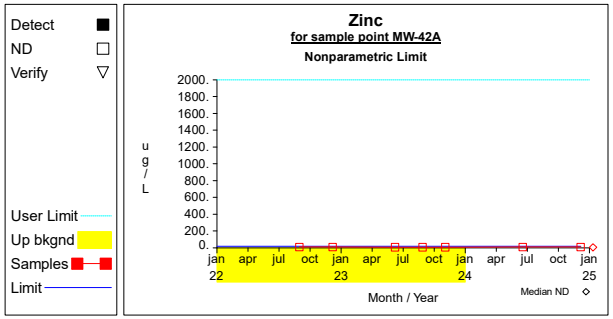
Up vs. Down Prediction Limits



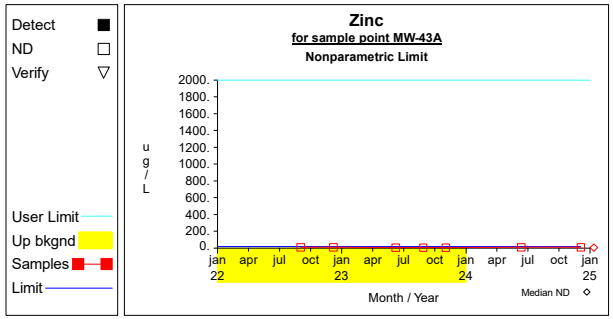
Graph 424



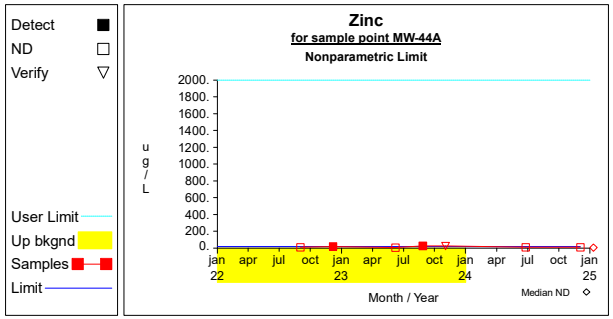
Graph 425



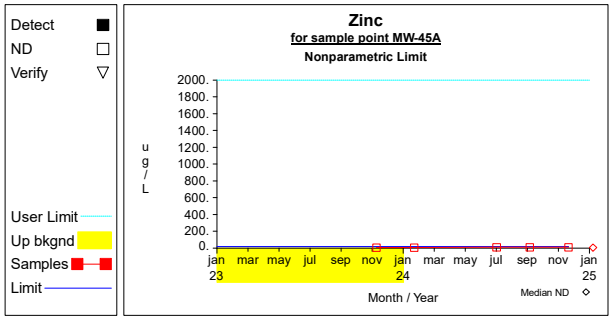
Graph 426



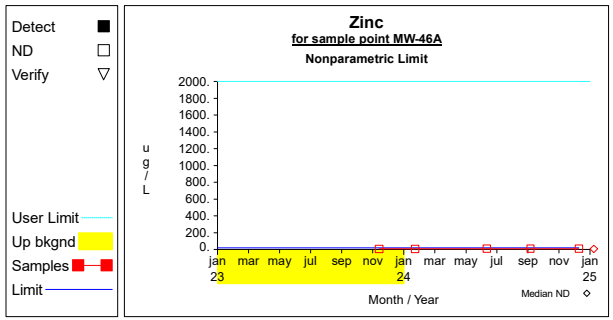
Graph 427



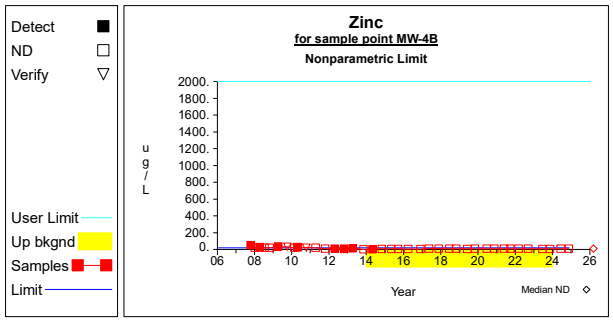
Graph 428



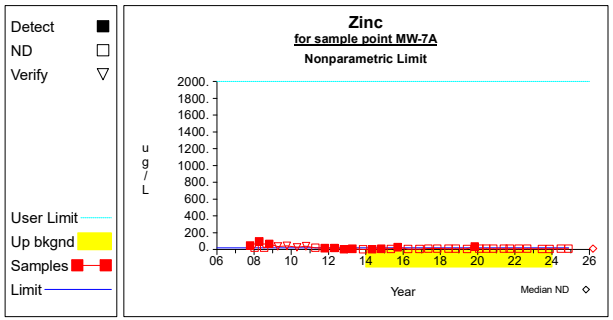
Graph 429



Graph 430



Graph 431



Graph 432

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

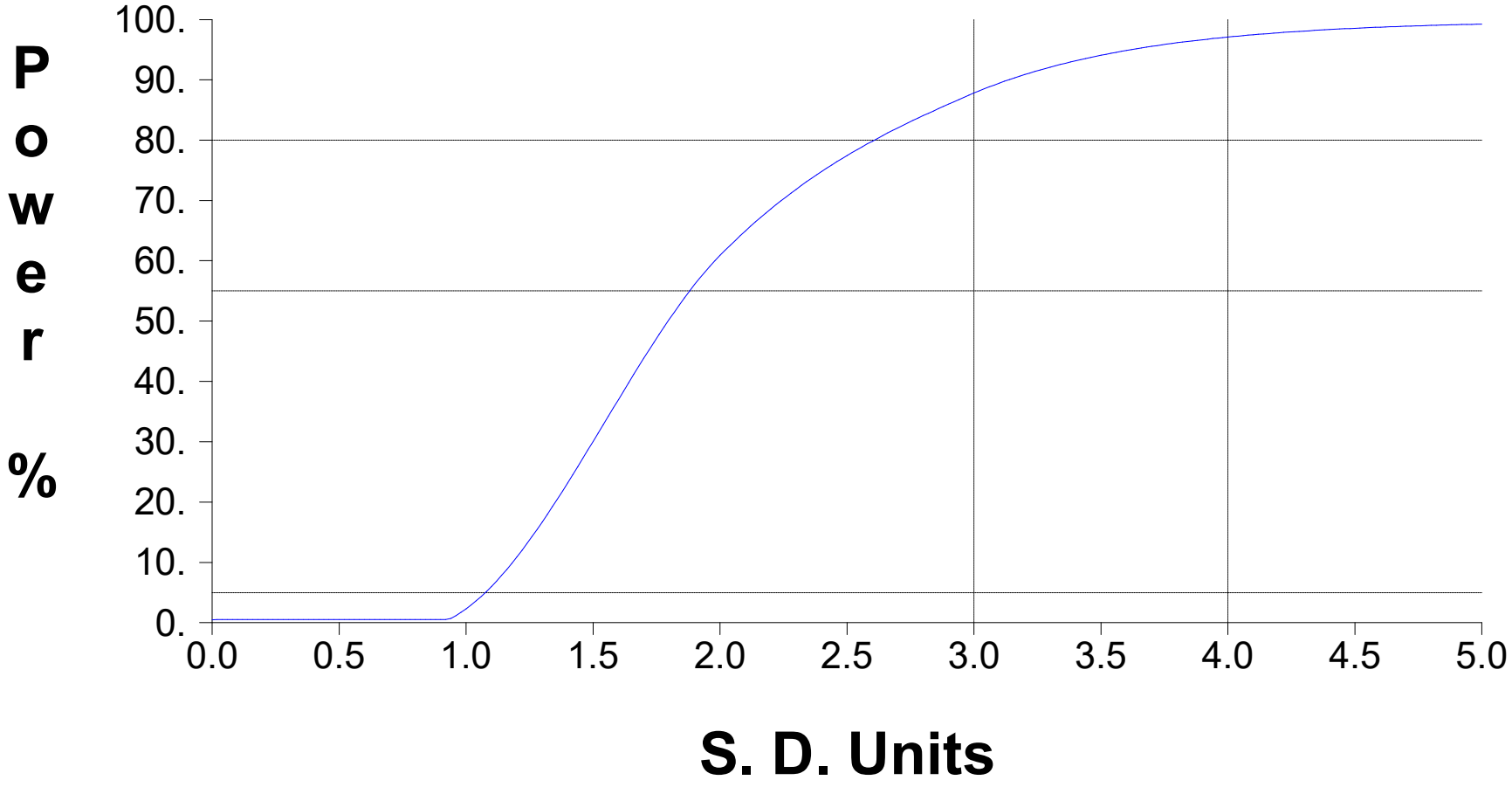


Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	MW-1	05/05/2014	ND	0.4000	0.6900	**
Antimony	ug/L	MW-1	11/07/2014	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1	05/01/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1	09/16/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1	04/11/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-1	11/11/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-1	05/08/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-1	11/16/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-1	06/06/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-1	10/28/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-1	06/04/2019	ND	1.3200	0.6900	**
Antimony	ug/L	MW-1	11/01/2019	ND	0.5300	0.6900	**
Antimony	ug/L	MW-1	06/17/2020	ND	0.5100	0.6900	**
Antimony	ug/L	MW-1	11/03/2020	ND	0.5100	0.6900	**
Antimony	ug/L	MW-1	05/17/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-1	09/22/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-1	03/16/2022	ND	0.6900		
Antimony	ug/L	MW-1	08/31/2022	ND	0.6900		
Antimony	ug/L	MW-1	06/14/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-1	11/09/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-19	09/22/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-19	12/14/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-19	03/16/2022	ND	0.6900		
Antimony	ug/L	MW-19	06/27/2022	ND	0.6900		
Antimony	ug/L	MW-19	08/31/2022	ND	0.6900		

* - 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	
Antimony	ug/L	MW-19	12/07/2022	ND	0.6900		
Antimony	ug/L	MW-19	06/14/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-19	11/09/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-1R	05/05/2014	ND	0.4000	0.6900	**
Antimony	ug/L	MW-1R	11/05/2014	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1R	05/01/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1R	04/11/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-1R	11/15/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-1R	05/08/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-1R	10/28/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-37A	09/22/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-37A	12/14/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-37A	03/07/2022	ND	0.6900		
Antimony	ug/L	MW-37A	06/27/2022	ND	0.6900		
Antimony	ug/L	MW-37A	08/17/2022	ND	0.6900		
Antimony	ug/L	MW-37A	12/06/2022	ND	0.6900		
Antimony	ug/L	MW-37A	06/08/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	MW-1	05/05/2014		0.3540		
Arsenic	ug/L	MW-1	11/07/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1	05/01/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1	09/16/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1	04/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-1	11/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-1	05/08/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-1	11/16/2017		0.6620		

* - 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	
Arsenic	ug/L	MW-1	06/06/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-1	10/28/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-1	06/04/2019	ND	0.2320	0.7500	**
Arsenic	ug/L	MW-1	11/01/2019	ND	0.7500		
Arsenic	ug/L	MW-1	06/17/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-1	11/03/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-1	05/17/2021	ND	0.7500		
Arsenic	ug/L	MW-1	09/22/2021	ND	0.7500		
Arsenic	ug/L	MW-1	03/16/2022	ND	0.7500		
Arsenic	ug/L	MW-1	08/31/2022	ND	0.7500		
Arsenic	ug/L	MW-1	06/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-1	11/09/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-19	09/22/2021	ND	0.7500		
Arsenic	ug/L	MW-19	12/14/2021	ND	0.7500		
Arsenic	ug/L	MW-19	03/16/2022	ND	0.7500		
Arsenic	ug/L	MW-19	06/27/2022	ND	0.7500		
Arsenic	ug/L	MW-19	08/31/2022	ND	0.7500		
Arsenic	ug/L	MW-19	12/07/2022	ND	0.7500		
Arsenic	ug/L	MW-19	06/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-19	11/09/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-1R	05/05/2014	ND	0.3300	0.7500	**
Arsenic	ug/L	MW-1R	11/05/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1R	05/01/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1R	04/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-1R	11/15/2016	ND	0.6720	0.7500	**

* - 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	
Arsenic	ug/L	MW-1R	05/08/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-1R	10/28/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-37A	09/22/2021	ND	0.7500		
Arsenic	ug/L	MW-37A	12/14/2021	ND	0.7500		
Arsenic	ug/L	MW-37A	03/07/2022		4.5700		
Arsenic	ug/L	MW-37A	06/27/2022	ND	0.7500		
Arsenic	ug/L	MW-37A	08/17/2022	ND	0.7500		
Arsenic	ug/L	MW-37A	12/06/2022	ND	0.7500		
Arsenic	ug/L	MW-37A	06/08/2023	ND	0.5300	0.7500	**
Barium	ug/L	MW-1	05/05/2014		124.0000		
Barium	ug/L	MW-1	11/07/2014		190.0000		
Barium	ug/L	MW-1	05/01/2015		104.0000		
Barium	ug/L	MW-1	09/16/2015		166.0000		
Barium	ug/L	MW-1	04/11/2016		93.8000		
Barium	ug/L	MW-1	11/11/2016		114.0000		
Barium	ug/L	MW-1	05/08/2017		95.1000		
Barium	ug/L	MW-1	11/16/2017		130.0000		
Barium	ug/L	MW-1	06/06/2018		119.0000		
Barium	ug/L	MW-1	10/28/2018		142.0000		
Barium	ug/L	MW-1	06/04/2019		93.8000		
Barium	ug/L	MW-1	11/01/2019		124.0000		
Barium	ug/L	MW-1	06/17/2020		94.9000		
Barium	ug/L	MW-1	11/03/2020		184.0000		
Barium	ug/L	MW-1	05/17/2021		146.0000		
Barium	ug/L	MW-1	09/22/2021		111.0000		

* - 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	
Barium	ug/L	MW-1	03/16/2022		112.0000		
Barium	ug/L	MW-1	08/31/2022		112.0000		
Barium	ug/L	MW-1	06/14/2023		106.0000		
Barium	ug/L	MW-1	11/09/2023		282.0000		
Barium	ug/L	MW-19	09/22/2021		190.0000		
Barium	ug/L	MW-19	12/14/2021		100.0000		
Barium	ug/L	MW-19	03/16/2022		139.0000		
Barium	ug/L	MW-19	06/27/2022		72.3000		
Barium	ug/L	MW-19	08/31/2022		168.0000		
Barium	ug/L	MW-19	12/07/2022		152.0000		
Barium	ug/L	MW-19	06/14/2023		82.4000		
Barium	ug/L	MW-19	11/09/2023		84.1000		
Barium	ug/L	MW-1R	05/05/2014		93.5000		
Barium	ug/L	MW-1R	11/05/2014		136.0000		
Barium	ug/L	MW-1R	05/01/2015		81.4000		
Barium	ug/L	MW-1R	04/11/2016		86.4000		
Barium	ug/L	MW-1R	11/15/2016		74.2000		
Barium	ug/L	MW-1R	05/08/2017		58.7000		
Barium	ug/L	MW-1R	10/28/2018		95.6000		
Barium	ug/L	MW-37A	09/22/2021		202.0000		
Barium	ug/L	MW-37A	12/14/2021		137.0000		
Barium	ug/L	MW-37A	03/07/2022		273.0000		
Barium	ug/L	MW-37A	06/27/2022		144.0000		
Barium	ug/L	MW-37A	08/17/2022		122.0000		
Barium	ug/L	MW-37A	12/06/2022		247.0000		

* - 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	
Barium	ug/L	MW-37A	06/08/2023		111.0000		
Beryllium	ug/L	MW-1	05/05/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	MW-1	11/07/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1	05/01/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1	09/16/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1	04/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-1	11/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-1	05/08/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-1	11/16/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-1	06/06/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-1	10/28/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-1	06/04/2019	ND	0.5300	0.2700	**
Beryllium	ug/L	MW-1	11/01/2019	ND	0.2700		
Beryllium	ug/L	MW-1	06/17/2020	ND	0.2700		
Beryllium	ug/L	MW-1	11/03/2020	ND	0.2700		
Beryllium	ug/L	MW-1	05/17/2021	ND	0.2700		
Beryllium	ug/L	MW-1	09/22/2021	ND	0.2700		
Beryllium	ug/L	MW-1	03/16/2022	ND	0.2700		
Beryllium	ug/L	MW-1	08/31/2022	ND	0.2700		
Beryllium	ug/L	MW-1	06/14/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-1	11/09/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-19	09/22/2021	ND	0.2700		
Beryllium	ug/L	MW-19	12/14/2021	ND	0.2700		
Beryllium	ug/L	MW-19	03/16/2022	ND	0.2700		
Beryllium	ug/L	MW-19	06/27/2022	ND	0.2700		

* - 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	ug/L	MW-19	08/31/2022	ND	0.2700		
Beryllium	ug/L	MW-19	12/07/2022	ND	0.2700		
Beryllium	ug/L	MW-19	06/14/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-19	11/09/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-1R	05/05/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	MW-1R	11/05/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1R	05/01/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1R	04/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-1R	11/15/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-1R	05/08/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-1R	10/28/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-37A	09/22/2021	ND	0.2700		
Beryllium	ug/L	MW-37A	12/14/2021	ND	0.2700		
Beryllium	ug/L	MW-37A	03/07/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	06/27/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	08/17/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	12/06/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	06/08/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	MW-1	05/05/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-1	11/07/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1	05/01/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1	09/16/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1	04/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-1	11/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-1	05/08/2017	ND	0.0441	0.0550	**

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium	ug/L	MW-1	11/16/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-1	06/06/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-1	10/28/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-1	06/04/2019	ND	0.1670	0.0550	**
Cadmium	ug/L	MW-1	11/01/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	MW-1	06/17/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-1	11/03/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-1	05/17/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-1	09/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-1	03/16/2022	ND	0.0550		
Cadmium	ug/L	MW-1	08/31/2022	ND	0.0550		
Cadmium	ug/L	MW-1	06/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-1	11/09/2023		0.2090		
Cadmium	ug/L	MW-19	09/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-19	12/14/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-19	03/16/2022		0.1200		
Cadmium	ug/L	MW-19	06/27/2022	ND	0.0550		
Cadmium	ug/L	MW-19	08/31/2022	ND	0.0550		
Cadmium	ug/L	MW-19	12/07/2022	ND	0.0550		
Cadmium	ug/L	MW-19	06/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-19	11/09/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-1R	05/05/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-1R	11/05/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1R	05/01/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1R	04/11/2016	ND	0.0351	0.0550	**

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium	ug/L	MW-1R	11/15/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-1R	05/08/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-1R	10/28/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-37A	09/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-37A	12/14/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-37A	03/07/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	06/27/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	08/17/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	12/06/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	06/08/2023	ND	0.1000	0.0550	**
Chromium	ug/L	MW-1	05/05/2014		0.8160		
Chromium	ug/L	MW-1	11/07/2014	ND	1.2400	1.1000	**
Chromium	ug/L	MW-1	05/01/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-1	09/16/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-1	04/11/2016		0.8520		
Chromium	ug/L	MW-1	11/11/2016		0.4230		
Chromium	ug/L	MW-1	05/08/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-1	11/16/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-1	06/06/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-1	10/28/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-1	06/04/2019	ND	1.1400	1.1000	**
Chromium	ug/L	MW-1	11/01/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-1	06/17/2020	ND	1.1000		
Chromium	ug/L	MW-1	11/03/2020	ND	1.1000		
Chromium	ug/L	MW-1	05/17/2021	ND	1.1000		

* - 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	
Chromium	ug/L	MW-1	09/22/2021	ND	1.1000		
Chromium	ug/L	MW-1	03/16/2022	ND	1.1000		
Chromium	ug/L	MW-1	08/31/2022	ND	1.1000		
Chromium	ug/L	MW-1	06/14/2023	ND	1.1000		
Chromium	ug/L	MW-1	11/09/2023	ND	1.1000		
Chromium	ug/L	MW-19	09/22/2021	ND	1.1000		
Chromium	ug/L	MW-19	12/14/2021	ND	1.1000		
Chromium	ug/L	MW-19	03/16/2022	ND	1.1000		
Chromium	ug/L	MW-19	06/27/2022	ND	1.1000		
Chromium	ug/L	MW-19	08/31/2022	ND	1.1000		
Chromium	ug/L	MW-19	12/07/2022	ND	1.1000		
Chromium	ug/L	MW-19	06/14/2023	ND	1.1000		
Chromium	ug/L	MW-19	11/09/2023	ND	1.1000		
Chromium	ug/L	MW-1R	05/05/2014		2.2800		
Chromium	ug/L	MW-1R	11/05/2014		2.6300		
Chromium	ug/L	MW-1R	05/01/2015		1.9800		
Chromium	ug/L	MW-1R	04/11/2016		2.2000		
Chromium	ug/L	MW-1R	11/15/2016		1.6200		
Chromium	ug/L	MW-1R	05/08/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-1R	10/28/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-37A	09/22/2021	ND	1.1000		
Chromium	ug/L	MW-37A	12/14/2021	ND	1.1000		
Chromium	ug/L	MW-37A	03/07/2022	ND	1.1000		
Chromium	ug/L	MW-37A	06/27/2022	ND	1.1000		
Chromium	ug/L	MW-37A	08/17/2022	ND	1.1000		

* - 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	
Chromium	ug/L	MW-37A	12/06/2022	ND	1.1000		
Chromium	ug/L	MW-37A	06/08/2023	ND	1.1000		
Cobalt	ug/L	MW-1	05/05/2014		0.2310		
Cobalt	ug/L	MW-1	11/07/2014		0.1680		
Cobalt	ug/L	MW-1	05/01/2015	ND	0.0528	0.1700	**
Cobalt	ug/L	MW-1	09/16/2015		0.1820		
Cobalt	ug/L	MW-1	04/11/2016		0.0520		
Cobalt	ug/L	MW-1	11/11/2016		0.0470		
Cobalt	ug/L	MW-1	05/08/2017	ND	0.0453	0.1700	**
Cobalt	ug/L	MW-1	11/16/2017		0.0830		
Cobalt	ug/L	MW-1	06/06/2018	ND	0.0610	0.1700	**
Cobalt	ug/L	MW-1	10/28/2018	ND	0.0610	0.1700	**
Cobalt	ug/L	MW-1	06/04/2019	ND	0.4020	0.1700	**
Cobalt	ug/L	MW-1	11/01/2019	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	06/17/2020	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	11/03/2020	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	05/17/2021	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	09/22/2021	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-1	03/16/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-1	08/31/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-1	06/14/2023	ND	0.1700		
Cobalt	ug/L	MW-1	11/09/2023	ND	0.1700		
Cobalt	ug/L	MW-19	09/22/2021		1.4300		
Cobalt	ug/L	MW-19	12/14/2021		0.6240		
Cobalt	ug/L	MW-19	03/16/2022		3.4000		

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt	ug/L	MW-19	06/27/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-19	08/31/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-19	12/07/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-19	06/14/2023	ND	0.1700		
Cobalt	ug/L	MW-19	11/09/2023	ND	0.1700		
Cobalt	ug/L	MW-1R	05/05/2014		0.1680		
Cobalt	ug/L	MW-1R	11/05/2014		0.0780		
Cobalt	ug/L	MW-1R	05/01/2015	ND	0.0528	0.1700	**
Cobalt	ug/L	MW-1R	04/11/2016		0.0280		
Cobalt	ug/L	MW-1R	11/15/2016		0.0970		
Cobalt	ug/L	MW-1R	05/08/2017	ND	0.0453	0.1700	**
Cobalt	ug/L	MW-1R	10/28/2018	ND	0.0610	0.1700	**
Cobalt	ug/L	MW-37A	09/22/2021		0.6810		
Cobalt	ug/L	MW-37A	12/14/2021	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	03/07/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	06/27/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	08/17/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	12/06/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	06/08/2023	ND	0.1700		
Copper	ug/L	MW-1	05/05/2014		1.0400		
Copper	ug/L	MW-1	11/07/2014		0.9060		
Copper	ug/L	MW-1	05/01/2015	ND	0.4850	1.6000	**
Copper	ug/L	MW-1	09/16/2015		0.5260		
Copper	ug/L	MW-1	04/11/2016	ND	1.2200	1.6000	**
Copper	ug/L	MW-1	11/11/2016	ND	1.2200	1.6000	**

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

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper	ug/L	MW-1	05/08/2017	ND	2.1900	1.6000	**
Copper	ug/L	MW-1	11/16/2017	ND	2.1900	1.6000	**
Copper	ug/L	MW-1	06/06/2018	ND	3.8000	1.6000	**
Copper	ug/L	MW-1	10/28/2018	ND	1.6000		
Copper	ug/L	MW-1	06/04/2019	ND	0.4970	1.6000	**
Copper	ug/L	MW-1	11/01/2019	ND	2.0000	1.6000	**
Copper	ug/L	MW-1	06/17/2020	ND	1.5000	1.6000	**
Copper	ug/L	MW-1	11/03/2020	ND	1.5000	1.6000	**
Copper	ug/L	MW-1	05/17/2021	ND	1.4000	1.6000	**
Copper	ug/L	MW-1	09/22/2021	ND	1.4000	1.6000	**
Copper	ug/L	MW-1	03/16/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-1	08/31/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-1	06/14/2023	ND	1.8000	1.6000	**
Copper	ug/L	MW-1	11/09/2023		5.2700		
Copper	ug/L	MW-19	09/22/2021	ND	1.4000	1.6000	**
Copper	ug/L	MW-19	12/14/2021	ND	1.4000	1.6000	**
Copper	ug/L	MW-19	03/16/2022		7.6400		
Copper	ug/L	MW-19	06/27/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-19	08/31/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-19	12/07/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-19	06/14/2023	ND	1.8000	1.6000	**
Copper	ug/L	MW-19	11/09/2023	ND	1.8000	1.6000	**
Copper	ug/L	MW-1R	05/05/2014	ND	0.5600	1.6000	**
Copper	ug/L	MW-1R	11/05/2014	ND	0.4850	1.6000	**
Copper	ug/L	MW-1R	05/01/2015	ND	0.4850	1.6000	**

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper	ug/L	MW-1R	04/11/2016	ND	1.2200	1.6000	**
Copper	ug/L	MW-1R	11/15/2016	ND	1.2200	1.6000	**
Copper	ug/L	MW-1R	05/08/2017	ND	2.1900	1.6000	**
Copper	ug/L	MW-1R	10/28/2018	ND	1.6000		
Copper	ug/L	MW-37A	09/22/2021	ND	1.4000	1.6000	**
Copper	ug/L	MW-37A	12/14/2021	ND	1.4000	1.6000	**
Copper	ug/L	MW-37A	03/07/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-37A	06/27/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-37A	08/17/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-37A	12/06/2022	ND	1.8000	1.6000	**
Copper	ug/L	MW-37A	06/08/2023	ND	1.8000	1.6000	**
Field pH	SU	MW-1	05/01/2015		6.9500		
Field pH	SU	MW-1	09/16/2015		6.8800		
Field pH	SU	MW-1	12/09/2015		6.7400		
Field pH	SU	MW-1	04/11/2016		7.2000		
Field pH	SU	MW-1	11/11/2016		7.1700		
Field pH	SU	MW-1	05/08/2017		7.4400		
Field pH	SU	MW-1	11/16/2017		7.5100		
Field pH	SU	MW-1	06/06/2018		6.9700		
Field pH	SU	MW-1	10/28/2018		7.3100		
Field pH	SU	MW-1	06/04/2019		6.9700		
Field pH	SU	MW-1	11/01/2019		6.9500		
Field pH	SU	MW-1	06/17/2020		6.6900		
Field pH	SU	MW-1	11/03/2020		6.7300		
Field pH	SU	MW-1	05/17/2021		6.6500		

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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Field pH	SU	MW-1	09/22/2021		6.1900		
Field pH	SU	MW-1	03/16/2022		7.1100		
Field pH	SU	MW-1	08/31/2022		8.0700		
Field pH	SU	MW-1	06/14/2023		6.5900		
Field pH	SU	MW-1	11/09/2023		6.9500		
Field pH	SU	MW-19	09/22/2021		6.8900		
Field pH	SU	MW-19	12/14/2021		7.2400		
Field pH	SU	MW-19	03/16/2022		7.7300		
Field pH	SU	MW-19	06/27/2022		7.9500		
Field pH	SU	MW-19	08/31/2022		8.2100		
Field pH	SU	MW-19	12/07/2022		7.4900		
Field pH	SU	MW-19	06/14/2023		7.2300		
Field pH	SU	MW-19	11/09/2023		7.5000		
Field pH	SU	MW-1R	05/01/2015		7.4200		
Field pH	SU	MW-1R	04/11/2016		7.4300		
Field pH	SU	MW-1R	11/15/2016		7.7000		
Field pH	SU	MW-1R	05/08/2017		7.9100		
Field pH	SU	MW-1R	10/28/2018		7.6600		
Field pH	SU	MW-37A	09/22/2021		6.3700		
Field pH	SU	MW-37A	12/14/2021		6.8000		
Field pH	SU	MW-37A	03/07/2022		6.8000		
Field pH	SU	MW-37A	06/27/2022		7.6100		
Field pH	SU	MW-37A	08/17/2022		7.7900		
Field pH	SU	MW-37A	12/06/2022		7.0100		
Field pH	SU	MW-37A	06/08/2023		6.8600		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Field Specific Conductance	umhos/cm	MW-1	05/01/2015		551.7000		
Field Specific Conductance	umhos/cm	MW-1	09/16/2015		1052.0000		
Field Specific Conductance	umhos/cm	MW-1	12/09/2015		1431.0000		
Field Specific Conductance	umhos/cm	MW-1	04/11/2016		508.0000		
Field Specific Conductance	umhos/cm	MW-1	11/11/2016		470.4000		
Field Specific Conductance	umhos/cm	MW-1	05/08/2017		463.2000		
Field Specific Conductance	umhos/cm	MW-1	11/16/2017		645.3000		
Field Specific Conductance	umhos/cm	MW-1	06/06/2018		649.9000		
Field Specific Conductance	umhos/cm	MW-1	10/28/2018		536.5000		
Field Specific Conductance	umhos/cm	MW-1	06/04/2019		558.4100		
Field Specific Conductance	umhos/cm	MW-1	11/01/2019		623.1200		
Field Specific Conductance	umhos/cm	MW-1	06/17/2020		559.3700		
Field Specific Conductance	umhos/cm	MW-1	11/03/2020		1056.6000		
Field Specific Conductance	umhos/cm	MW-1	05/17/2021		888.2900		
Field Specific Conductance	umhos/cm	MW-1	09/22/2021		504.9900		
Field Specific Conductance	umhos/cm	MW-1	03/16/2022		737.2900		
Field Specific Conductance	umhos/cm	MW-1	08/31/2022		563.2100		
Field Specific Conductance	umhos/cm	MW-1	06/14/2023		636.7100		
Field Specific Conductance	umhos/cm	MW-1	11/09/2023		1456.6000		
Field Specific Conductance	umhos/cm	MW-19	09/22/2021		567.4700		
Field Specific Conductance	umhos/cm	MW-19	12/14/2021		678.3300		
Field Specific Conductance	umhos/cm	MW-19	03/16/2022		591.6100		
Field Specific Conductance	umhos/cm	MW-19	06/27/2022		558.8100		
Field Specific Conductance	umhos/cm	MW-19	08/31/2022		632.5500		
Field Specific Conductance	umhos/cm	MW-19	12/07/2022		616.2300		

* - 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	
Field Specific Conductance	umhos/cm	MW-19	06/14/2023		665.7100		
Field Specific Conductance	umhos/cm	MW-19	11/09/2023		555.3300		
Field Specific Conductance	umhos/cm	MW-1R	05/01/2015		350.9000		
Field Specific Conductance	umhos/cm	MW-1R	04/11/2016		438.2000		
Field Specific Conductance	umhos/cm	MW-1R	11/15/2016		363.8000		
Field Specific Conductance	umhos/cm	MW-1R	05/08/2017		358.7000		
Field Specific Conductance	umhos/cm	MW-1R	10/28/2018		414.5000		
Field Specific Conductance	umhos/cm	MW-37A	09/22/2021		679.6700		
Field Specific Conductance	umhos/cm	MW-37A	12/14/2021		724.2600		
Field Specific Conductance	umhos/cm	MW-37A	03/07/2022		682.4500		
Field Specific Conductance	umhos/cm	MW-37A	06/27/2022		698.0400		
Field Specific Conductance	umhos/cm	MW-37A	08/17/2022		668.8600		
Field Specific Conductance	umhos/cm	MW-37A	12/06/2022		713.3200		
Field Specific Conductance	umhos/cm	MW-37A	06/08/2023		617.8900		
Lead	ug/L	MW-1	05/05/2014	ND	0.1800	0.2400	**
Lead	ug/L	MW-1	11/07/2014	ND	0.0967	0.2400	**
Lead	ug/L	MW-1	05/01/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-1	09/16/2015		0.3030		
Lead	ug/L	MW-1	04/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-1	11/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-1	05/08/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-1	11/16/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-1	06/06/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-1	10/28/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-1	06/04/2019	ND	0.1860	0.2400	**

* - 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	ug/L	MW-1	11/01/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-1	06/17/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-1	11/03/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-1	05/17/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-1	09/22/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-1	03/16/2022	ND	0.2400		
Lead	ug/L	MW-1	08/31/2022	ND	0.2400		
Lead	ug/L	MW-1	06/14/2023	ND	0.2400		
Lead	ug/L	MW-1	11/09/2023		0.9940		
Lead	ug/L	MW-19	09/22/2021		0.5810		
Lead	ug/L	MW-19	12/14/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-19	03/16/2022		3.2500		
Lead	ug/L	MW-19	06/27/2022	ND	0.2400		
Lead	ug/L	MW-19	08/31/2022	ND	0.2400		
Lead	ug/L	MW-19	12/07/2022	ND	0.2400		
Lead	ug/L	MW-19	06/14/2023	ND	0.2400		
Lead	ug/L	MW-19	11/09/2023	ND	0.2400		
Lead	ug/L	MW-1R	05/05/2014	ND	0.1800	0.2400	**
Lead	ug/L	MW-1R	11/05/2014		0.1360		
Lead	ug/L	MW-1R	05/01/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-1R	04/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-1R	11/15/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-1R	05/08/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-1R	10/28/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-37A	09/22/2021		1.0600		

* - 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	ug/L	MW-37A	12/14/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-37A	03/07/2022	ND	0.2400		
Lead	ug/L	MW-37A	06/27/2022	ND	0.2400		
Lead	ug/L	MW-37A	08/17/2022	ND	0.2400		
Lead	ug/L	MW-37A	12/06/2022	ND	0.2400		
Lead	ug/L	MW-37A	06/08/2023	ND	0.2400		
Nickel	ug/L	MW-1	05/05/2014		4.0100		
Nickel	ug/L	MW-1	11/07/2014		6.2000		
Nickel	ug/L	MW-1	05/01/2015		1.4900		
Nickel	ug/L	MW-1	09/16/2015		5.8700		
Nickel	ug/L	MW-1	04/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-1	11/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-1	05/08/2017	ND	0.9290	1.9000	**
Nickel	ug/L	MW-1	11/16/2017		1.5300		
Nickel	ug/L	MW-1	06/06/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-1	10/28/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-1	06/04/2019	ND	0.6250	1.9000	**
Nickel	ug/L	MW-1	11/01/2019	ND	1.7000	1.9000	**
Nickel	ug/L	MW-1	06/17/2020	ND	1.9000		
Nickel	ug/L	MW-1	11/03/2020	ND	1.9000		
Nickel	ug/L	MW-1	05/17/2021	ND	1.9000		
Nickel	ug/L	MW-1	09/22/2021	ND	1.9000		
Nickel	ug/L	MW-1	03/16/2022	ND	1.9000		
Nickel	ug/L	MW-1	08/31/2022	ND	1.9000		
Nickel	ug/L	MW-1	06/14/2023	ND	1.9000		

* - 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	
Nickel	ug/L	MW-1	11/09/2023		20.9000		
Nickel	ug/L	MW-19	09/22/2021	ND	1.9000		
Nickel	ug/L	MW-19	12/14/2021	ND	1.9000		
Nickel	ug/L	MW-19	03/16/2022		6.5200		
Nickel	ug/L	MW-19	06/27/2022	ND	1.9000		
Nickel	ug/L	MW-19	08/31/2022	ND	1.9000		
Nickel	ug/L	MW-19	12/07/2022	ND	1.9000		
Nickel	ug/L	MW-19	06/14/2023	ND	1.9000		
Nickel	ug/L	MW-19	11/09/2023	ND	1.9000		
Nickel	ug/L	MW-1R	05/05/2014		0.4240		
Nickel	ug/L	MW-1R	11/05/2014	ND	0.5810	1.9000	**
Nickel	ug/L	MW-1R	05/01/2015	ND	0.5810	1.9000	**
Nickel	ug/L	MW-1R	04/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-1R	11/15/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-1R	05/08/2017	ND	0.9290	1.9000	**
Nickel	ug/L	MW-1R	10/28/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-37A	09/22/2021	ND	1.9000		
Nickel	ug/L	MW-37A	12/14/2021	ND	1.9000		
Nickel	ug/L	MW-37A	03/07/2022	ND	1.9000		
Nickel	ug/L	MW-37A	06/27/2022	ND	1.9000		
Nickel	ug/L	MW-37A	08/17/2022	ND	1.9000		
Nickel	ug/L	MW-37A	12/06/2022	ND	1.9000		
Nickel	ug/L	MW-37A	06/08/2023	ND	1.9000		
Selenium	ug/L	MW-1	05/05/2014		1.1500		
Selenium	ug/L	MW-1	11/07/2014	ND	3.3400	0.9600	**

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** - 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	
Selenium	ug/L	MW-1	05/01/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-1	09/16/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-1	04/11/2016		1.4100		
Selenium	ug/L	MW-1	11/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-1	05/08/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-1	11/16/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-1	06/06/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-1	10/28/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-1	06/04/2019	ND	0.9820	0.9600	**
Selenium	ug/L	MW-1	11/01/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-1	06/17/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-1	11/03/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-1	05/17/2021	ND	0.9600		
Selenium	ug/L	MW-1	09/22/2021	ND	0.9600		
Selenium	ug/L	MW-1	03/16/2022	ND	0.9600		
Selenium	ug/L	MW-1	08/31/2022	ND	0.9600		
Selenium	ug/L	MW-1	06/14/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-1	11/09/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-19	09/22/2021	ND	0.9600		
Selenium	ug/L	MW-19	12/14/2021	ND	0.9600		
Selenium	ug/L	MW-19	03/16/2022	ND	0.9600		
Selenium	ug/L	MW-19	06/27/2022	ND	0.9600		
Selenium	ug/L	MW-19	08/31/2022	ND	0.9600		
Selenium	ug/L	MW-19	12/07/2022	ND	0.9600		
Selenium	ug/L	MW-19	06/14/2023	ND	1.4000	0.9600	**

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Selenium	ug/L	MW-19	11/09/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-1R	05/05/2014		0.7310		
Selenium	ug/L	MW-1R	11/05/2014	ND	3.3400	0.9600	**
Selenium	ug/L	MW-1R	05/01/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-1R	04/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-1R	11/15/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-1R	05/08/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-1R	10/28/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-37A	09/22/2021	ND	0.9600		
Selenium	ug/L	MW-37A	12/14/2021	ND	0.9600		
Selenium	ug/L	MW-37A	03/07/2022	ND	0.9600		
Selenium	ug/L	MW-37A	06/27/2022	ND	0.9600		
Selenium	ug/L	MW-37A	08/17/2022	ND	0.9600		
Selenium	ug/L	MW-37A	12/06/2022	ND	0.9600		
Selenium	ug/L	MW-37A	06/08/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-1	05/05/2014	ND	0.0330	0.3700	**
Silver	ug/L	MW-1	11/07/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-1	05/01/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-1	09/16/2015		0.1170		
Silver	ug/L	MW-1	04/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-1	11/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-1	05/08/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-1	11/16/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-1	06/06/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-1	10/28/2018	ND	0.3000	0.3700	**

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

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver	ug/L	MW-1	06/04/2019	ND	0.1150	0.3700	**
Silver	ug/L	MW-1	11/01/2019	ND	0.3700		
Silver	ug/L	MW-1	06/17/2020	ND	0.3700		
Silver	ug/L	MW-1	11/03/2020	ND	0.3700		
Silver	ug/L	MW-1	05/17/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-1	09/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-1	03/16/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-1	08/31/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-1	06/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-1	11/09/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-19	09/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-19	12/14/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-19	03/16/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-19	06/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-19	08/31/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-19	12/07/2022		1.2400		
Silver	ug/L	MW-19	06/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-19	11/09/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-1R	05/05/2014	ND	0.0330	0.3700	**
Silver	ug/L	MW-1R	11/05/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-1R	05/01/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-1R	04/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-1R	11/15/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-1R	05/08/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-1R	10/28/2018	ND	0.3000	0.3700	**

* - 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	ug/L	MW-37A	09/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-37A	12/14/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-37A	03/07/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	06/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	08/17/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	12/06/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	06/08/2023	ND	0.5000	0.3700	**
Sulfide	ug/L	MW-1	05/05/2014	ND	219.0000		
Sulfide	ug/L	MW-1	09/16/2015	ND	219.0000		
Sulfide	ug/L	MW-1	11/11/2016	ND	180.0000	219.0000	**
Sulfide	ug/L	MW-19	12/14/2021	ND	231.0000	219.0000	**
Thallium	ug/L	MW-1	05/05/2014	ND	0.0500	0.2600	**
Thallium	ug/L	MW-1	11/07/2014	ND	0.0325	0.2600	**
Thallium	ug/L	MW-1	05/01/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-1	09/16/2015		0.0380		
Thallium	ug/L	MW-1	04/11/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-1	11/11/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-1	05/08/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-1	11/16/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-1	06/06/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-1	10/28/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-1	06/04/2019	ND	0.5700	0.2600	**
Thallium	ug/L	MW-1	11/01/2019	ND	0.2700	0.2600	**
Thallium	ug/L	MW-1	06/17/2020	ND	0.2600		
Thallium	ug/L	MW-1	11/03/2020	ND	0.2600		

* - 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	ug/L	MW-1	05/17/2021	ND	0.2600		
Thallium	ug/L	MW-1	09/22/2021	ND	0.2600		
Thallium	ug/L	MW-1	03/16/2022	ND	0.2600		
Thallium	ug/L	MW-1	08/31/2022	ND	0.2600		
Thallium	ug/L	MW-1	06/14/2023	ND	0.2600		
Thallium	ug/L	MW-1	11/09/2023	ND	0.2600		
Thallium	ug/L	MW-19	09/22/2021	ND	0.2600		
Thallium	ug/L	MW-19	12/14/2021	ND	0.2600		
Thallium	ug/L	MW-19	03/16/2022	ND	0.2600		
Thallium	ug/L	MW-19	06/27/2022	ND	0.2600		
Thallium	ug/L	MW-19	08/31/2022	ND	0.2600		
Thallium	ug/L	MW-19	12/07/2022	ND	0.2600		
Thallium	ug/L	MW-19	06/14/2023	ND	0.2600		
Thallium	ug/L	MW-19	11/09/2023	ND	0.2600		
Thallium	ug/L	MW-1R	05/05/2014	ND	0.0500	0.2600	**
Thallium	ug/L	MW-1R	11/05/2014	ND	0.0325	0.2600	**
Thallium	ug/L	MW-1R	05/01/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-1R	04/11/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-1R	11/15/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-1R	05/08/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-1R	10/28/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-37A	09/22/2021	ND	0.2600		
Thallium	ug/L	MW-37A	12/14/2021	ND	0.2600		
Thallium	ug/L	MW-37A	03/07/2022	ND	0.2600		
Thallium	ug/L	MW-37A	06/27/2022	ND	0.2600		

* - 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	ug/L	MW-37A	08/17/2022	ND	0.2600		
Thallium	ug/L	MW-37A	12/06/2022	ND	0.2600		
Thallium	ug/L	MW-37A	06/08/2023	ND	0.2600		
Vanadium	ug/L	MW-1	05/05/2014		0.6760		
Vanadium	ug/L	MW-1	11/07/2014		0.5100		
Vanadium	ug/L	MW-1	05/01/2015	ND	0.4490	1.1000	**
Vanadium	ug/L	MW-1	09/16/2015		0.5420		
Vanadium	ug/L	MW-1	04/11/2016		0.4660		
Vanadium	ug/L	MW-1	11/11/2016		0.3940		
Vanadium	ug/L	MW-1	05/08/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-1	11/16/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-1	06/06/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	MW-1	10/28/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	MW-1	06/04/2019	ND	2.1500	1.1000	**
Vanadium	ug/L	MW-1	11/01/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	MW-1	06/17/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	MW-1	11/03/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	MW-1	05/17/2021	ND	1.1000		
Vanadium	ug/L	MW-1	09/22/2021	ND	1.1000		
Vanadium	ug/L	MW-1	03/16/2022	ND	1.1000		
Vanadium	ug/L	MW-1	08/31/2022	ND	1.1000		
Vanadium	ug/L	MW-1	06/14/2023	ND	1.1000		
Vanadium	ug/L	MW-1	11/09/2023	ND	1.1000		
Vanadium	ug/L	MW-19	09/22/2021	ND	1.1000		
Vanadium	ug/L	MW-19	12/14/2021	ND	1.1000		

* - 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	
Vanadium	ug/L	MW-19	03/16/2022	ND	1.1000		
Vanadium	ug/L	MW-19	06/27/2022	ND	1.1000		
Vanadium	ug/L	MW-19	08/31/2022	ND	1.1000		
Vanadium	ug/L	MW-19	12/07/2022	ND	1.1000		
Vanadium	ug/L	MW-19	06/14/2023	ND	1.1000		
Vanadium	ug/L	MW-19	11/09/2023	ND	1.1000		
Vanadium	ug/L	MW-1R	05/05/2014		1.0200		
Vanadium	ug/L	MW-1R	11/05/2014		1.1900		
Vanadium	ug/L	MW-1R	05/01/2015		1.0700		
Vanadium	ug/L	MW-1R	04/11/2016		1.3100		
Vanadium	ug/L	MW-1R	11/15/2016		1.7700		
Vanadium	ug/L	MW-1R	05/08/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-1R	10/28/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	MW-37A	09/22/2021	ND	1.1000		
Vanadium	ug/L	MW-37A	12/14/2021	ND	1.1000		
Vanadium	ug/L	MW-37A	03/07/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	06/27/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	08/17/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	12/06/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	06/08/2023	ND	1.1000		
Zinc	ug/L	MW-1	05/05/2014	ND	2.0000	10.0000	**
Zinc	ug/L	MW-1	11/07/2014	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1	05/01/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1	09/16/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1	04/11/2016	ND	5.2100	10.0000	**

* - 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	
Zinc	ug/L	MW-1	11/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-1	05/08/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-1	11/16/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-1	06/06/2018	ND	10.0000		
Zinc	ug/L	MW-1	10/28/2018	ND	10.0000		
Zinc	ug/L	MW-1	06/04/2019	ND	6.9200	10.0000	**
Zinc	ug/L	MW-1	11/01/2019	ND	10.0000		
Zinc	ug/L	MW-1	06/17/2020	ND	10.0000		
Zinc	ug/L	MW-1	11/03/2020	ND	10.0000		
Zinc	ug/L	MW-1	05/17/2021	ND	10.0000		
Zinc	ug/L	MW-1	09/22/2021	ND	10.0000		
Zinc	ug/L	MW-1	03/16/2022	ND	10.0000		
Zinc	ug/L	MW-1	08/31/2022	ND	10.0000		
Zinc	ug/L	MW-1	06/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-1	11/09/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-19	09/22/2021	ND	10.0000		
Zinc	ug/L	MW-19	12/14/2021	ND	10.0000		
Zinc	ug/L	MW-19	03/16/2022	ND	10.0000		
Zinc	ug/L	MW-19	06/27/2022	ND	10.0000		
Zinc	ug/L	MW-19	08/31/2022	ND	10.0000		
Zinc	ug/L	MW-19	12/07/2022	ND	10.0000		
Zinc	ug/L	MW-19	06/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-19	11/09/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-1R	05/05/2014	ND	2.0000	10.0000	**
Zinc	ug/L	MW-1R	11/05/2014	ND	6.9500	10.0000	**

* - 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	
Zinc	ug/L	MW-1R	05/01/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1R	04/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-1R	11/15/2016		18.6000		
Zinc	ug/L	MW-1R	05/08/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-1R	10/28/2018	ND	10.0000		
Zinc	ug/L	MW-37A	09/22/2021	ND	10.0000		
Zinc	ug/L	MW-37A	12/14/2021	ND	10.0000		
Zinc	ug/L	MW-37A	03/07/2022	ND	10.0000		
Zinc	ug/L	MW-37A	06/27/2022	ND	10.0000		
Zinc	ug/L	MW-37A	08/17/2022	ND	10.0000		
Zinc	ug/L	MW-37A	12/06/2022	ND	10.0000		
Zinc	ug/L	MW-37A	06/08/2023	ND	6.4000	10.0000	**

* - 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	ug/L	MW-101	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-11	07/01/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-22	12/11/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-24A	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-25A	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-29A	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-2R	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-3	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-31A	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-33A	12/05/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-34A	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-35	12/11/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-38A	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-39A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-4	11/19/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-40A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-41A	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-42A	12/05/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-43A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-44A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-45A	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-46A	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-4B	11/19/2024	ND	1.0000		0.6900

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**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony	ug/L	MW-7A	11/19/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-101	12/09/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-11	07/01/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-22	12/11/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-24A	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-25A	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-29A	12/09/2024		6.7500	*	4.5700
Arsenic	ug/L	MW-2R	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-3	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-31A	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-33A	12/05/2024		112.0000	***	4.5700
Arsenic	ug/L	MW-34A	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-35	12/11/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-38A	12/09/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-39A	12/03/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-4	11/19/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-40A	12/03/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-41A	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-42A	12/05/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-43A	12/03/2024		6.3200	***	4.5700
Arsenic	ug/L	MW-44A	12/03/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-45A	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-46A	12/09/2024	ND	0.5300		4.5700

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Arsenic	ug/L	MW-4B	11/19/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-7A	11/19/2024	ND	0.5300		4.5700
Barium	ug/L	MW-101	12/09/2024		221.0000		292.8570
Barium	ug/L	MW-11	07/01/2024		14.3000		292.8570
Barium	ug/L	MW-22	12/11/2024		146.0000		292.8570
Barium	ug/L	MW-24A	11/21/2024		117.0000		292.8570
Barium	ug/L	MW-25A	11/21/2024		229.0000		292.8570
Barium	ug/L	MW-29A	12/09/2024		161.0000		292.8570
Barium	ug/L	MW-2R	11/21/2024		129.0000		292.8570
Barium	ug/L	MW-3	12/17/2024		205.0000		292.8570
Barium	ug/L	MW-31A	12/17/2024		279.0000		292.8570
Barium	ug/L	MW-33A	12/05/2024		199.0000		292.8570
Barium	ug/L	MW-34A	12/17/2024		67.5000		292.8570
Barium	ug/L	MW-35	12/11/2024		186.0000		292.8570
Barium	ug/L	MW-38A	12/09/2024		153.0000		292.8570
Barium	ug/L	MW-39A	12/03/2024		156.0000		292.8570
Barium	ug/L	MW-4	11/19/2024		518.0000	***	292.8570
Barium	ug/L	MW-40A	12/03/2024		215.0000		292.8570
Barium	ug/L	MW-41A	12/17/2024		159.0000		292.8570
Barium	ug/L	MW-42A	12/05/2024		177.0000		292.8570
Barium	ug/L	MW-43A	12/03/2024		214.0000		292.8570
Barium	ug/L	MW-44A	12/03/2024		159.0000		292.8570
Barium	ug/L	MW-45A	11/21/2024		128.0000		292.8570

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ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Barium	ug/L	MW-46A	12/09/2024		262.0000		292.8570
Barium	ug/L	MW-4B	11/19/2024		225.0000		292.8570
Barium	ug/L	MW-7A	02/14/2025		196.0000	**	292.8570
Beryllium	ug/L	MW-101	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-11	07/01/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-22	12/11/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-24A	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-25A	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-29A	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-2R	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-3	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-31A	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-33A	12/05/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-34A	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-35	12/11/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-38A	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-39A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-4	11/19/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-40A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-41A	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-42A	12/05/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-43A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-44A	12/03/2024	ND	0.3300		0.2700

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** - 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
Beryllium	ug/L	MW-45A	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-46A	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-4B	11/19/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-7A	11/19/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-101	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-11	07/01/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-22	12/11/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-24A	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-25A	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-29A	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-2R	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-3	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-31A	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-33A	12/05/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-34A	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-35	12/11/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-38A	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-39A	12/03/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	02/14/2025	ND	0.1000	**	0.2090
Cadmium	ug/L	MW-40A	12/03/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-41A	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-42A	12/05/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-43A	12/03/2024	ND	0.1000		0.2090

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** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
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ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Cadmium	ug/L	MW-44A	12/03/2024	ND	0.1000	**	0.2090
Cadmium	ug/L	MW-45A	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-46A	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-4B	11/19/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-7A	11/19/2024	ND	0.1000		0.2090
Chromium	ug/L	MW-101	12/09/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-11	07/01/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-22	12/11/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-24A	11/21/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-25A	11/21/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-29A	12/09/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-2R	11/21/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-3	12/17/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-31A	12/17/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-33A	12/05/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-34A	12/17/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-35	12/11/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-38A	12/09/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-39A	12/03/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-4	11/19/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-40A	12/03/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-41A	12/17/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-42A	12/05/2024	ND	1.2000		2.6300

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*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Chromium	ug/L	MW-43A	12/03/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-44A	12/03/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-45A	11/21/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-46A	12/09/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-4B	11/19/2024	ND	1.2000		2.6300
Chromium	ug/L	MW-7A	11/19/2024	ND	1.2000		2.6300
Cobalt	ug/L	MW-101	12/09/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-11	07/01/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-22	12/11/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-24A	11/21/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-25A	11/21/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-29A	12/09/2024		16.5000	***	3.4000
Cobalt	ug/L	MW-2R	11/21/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-3	12/17/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-31A	12/17/2024		2.0900	**	3.4000
Cobalt	ug/L	MW-33A	12/05/2024		2.4000	**	3.4000
Cobalt	ug/L	MW-34A	12/17/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-35	12/11/2024		1.9800	**	3.4000
Cobalt	ug/L	MW-38A	12/09/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-39A	12/03/2024		0.8120		3.4000
Cobalt	ug/L	MW-4	11/19/2024		2.0400		3.4000
Cobalt	ug/L	MW-40A	12/03/2024		2.1400		3.4000
Cobalt	ug/L	MW-41A	12/17/2024	ND	0.1700		3.4000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt	ug/L	MW-42A	12/05/2024		2.7700		3.4000
Cobalt	ug/L	MW-43A	12/03/2024		3.8300	***	3.4000
Cobalt	ug/L	MW-44A	12/03/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-45A	11/21/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-46A	12/09/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-4B	11/19/2024	ND	0.1700		3.4000
Cobalt	ug/L	MW-7A	11/19/2024	ND	0.1700		3.4000
Copper	ug/L	MW-101	12/09/2024	ND	1.8000		7.6400
Copper	ug/L	MW-11	07/01/2024	ND	1.8000		7.6400
Copper	ug/L	MW-22	12/11/2024	ND	1.8000		7.6400
Copper	ug/L	MW-24A	11/21/2024	ND	1.8000		7.6400
Copper	ug/L	MW-25A	11/21/2024	ND	1.8000		7.6400
Copper	ug/L	MW-29A	12/09/2024	ND	1.8000		7.6400
Copper	ug/L	MW-2R	11/21/2024	ND	1.8000		7.6400
Copper	ug/L	MW-3	12/17/2024	ND	1.8000		7.6400
Copper	ug/L	MW-31A	12/17/2024	ND	1.8000		7.6400
Copper	ug/L	MW-33A	12/05/2024	ND	1.8000		7.6400
Copper	ug/L	MW-34A	12/17/2024	ND	1.8000		7.6400
Copper	ug/L	MW-35	12/11/2024	ND	1.8000		7.6400
Copper	ug/L	MW-38A	12/09/2024	ND	1.8000		7.6400
Copper	ug/L	MW-39A	12/03/2024	ND	1.8000		7.6400
Copper	ug/L	MW-4	11/19/2024	ND	1.8000		7.6400
Copper	ug/L	MW-40A	12/03/2024	ND	1.8000		7.6400

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Copper	ug/L	MW-41A	12/17/2024	ND	1.8000		7.6400
Copper	ug/L	MW-42A	12/05/2024	ND	1.8000		7.6400
Copper	ug/L	MW-43A	12/03/2024	ND	1.8000		7.6400
Copper	ug/L	MW-44A	12/03/2024	ND	1.8000		7.6400
Copper	ug/L	MW-45A	11/21/2024	ND	1.8000		7.6400
Copper	ug/L	MW-46A	12/09/2024	ND	1.8000		7.6400
Copper	ug/L	MW-4B	11/19/2024	ND	1.8000		7.6400
Copper	ug/L	MW-7A	11/19/2024	ND	1.8000		7.6400
Field pH	SU	MW-101	12/09/2024		6.9100		8.3663
Field pH	SU	MW-11	07/01/2024		7.3300		8.3663
Field pH	SU	MW-22	12/11/2024		7.1800		8.3663
Field pH	SU	MW-24A	11/21/2024		6.7800		8.3663
Field pH	SU	MW-25A	11/21/2024		6.7400		8.3663
Field pH	SU	MW-29A	12/09/2024		6.5700		8.3663
Field pH	SU	MW-2R	11/21/2024		7.2300		8.3663
Field pH	SU	MW-3	12/17/2024		7.1400		8.3663
Field pH	SU	MW-31A	12/17/2024		6.6400		8.3663
Field pH	SU	MW-33A	12/05/2024		6.6700		8.3663
Field pH	SU	MW-34A	12/17/2024		7.5500		8.3663
Field pH	SU	MW-35	12/11/2024		6.8600		8.3663
Field pH	SU	MW-38A	12/09/2024		7.1300		8.3663
Field pH	SU	MW-39A	12/03/2024		7.1900		8.3663
Field pH	SU	MW-4	11/19/2024		6.5600		8.3663

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Field pH	SU	MW-40A	12/03/2024		7.1500		8.3663
Field pH	SU	MW-41A	12/17/2024		7.2200		8.3663
Field pH	SU	MW-42A	12/05/2024		6.7800		8.3663
Field pH	SU	MW-43A	12/03/2024		6.7900		8.3663
Field pH	SU	MW-44A	12/03/2024		6.7500		8.3663
Field pH	SU	MW-45A	11/21/2024		7.0400		8.3663
Field pH	SU	MW-46A	12/09/2024		6.7800		8.3663
Field pH	SU	MW-4B	11/19/2024		6.7800		8.3663
Field pH	SU	MW-7A	11/19/2024		6.8300		8.3663
Field Specific Conductance	umhos/cm	MW-101	12/09/2024		2176.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-11	07/01/2024		1077.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-22	12/11/2024		2340.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-24A	11/21/2024		2038.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-25A	11/21/2024		2293.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	12/09/2024		2598.1000	***	1345.9956
Field Specific Conductance	umhos/cm	MW-2R	11/21/2024		1647.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-3	12/17/2024		1547.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	12/17/2024		2765.5000	***	1345.9956
Field Specific Conductance	umhos/cm	MW-33A	12/05/2024		2328.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-34A	12/17/2024		909.9400		1345.9956
Field Specific Conductance	umhos/cm	MW-35	12/11/2024		3035.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-38A	12/09/2024		1714.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-39A	12/03/2024		1517.5000	*	1345.9956

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Field Specific Conductance	umhos/cm	MW-4	11/19/2024		1817.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-40A	12/03/2024		1896.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-41A	12/17/2024		1232.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-42A	12/05/2024		3061.3000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-43A	12/03/2024		2233.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-44A	12/03/2024		2050.2000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-45A	11/21/2024		1515.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-46A	12/09/2024		2875.5000	***	1345.9956
Field Specific Conductance	umhos/cm	MW-4B	11/19/2024		1024.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	11/19/2024		1625.4000	*	1345.9956
Lead	ug/L	MW-101	12/09/2024	ND	0.2600		3.2500
Lead	ug/L	MW-11	07/01/2024	ND	0.2600		3.2500
Lead	ug/L	MW-22	12/11/2024	ND	0.2600		3.2500
Lead	ug/L	MW-24A	11/21/2024	ND	0.2600		3.2500
Lead	ug/L	MW-25A	11/21/2024	ND	0.2600		3.2500
Lead	ug/L	MW-29A	12/09/2024	ND	0.2600		3.2500
Lead	ug/L	MW-2R	11/21/2024	ND	0.2600		3.2500
Lead	ug/L	MW-3	12/17/2024	ND	0.2600		3.2500
Lead	ug/L	MW-31A	12/17/2024	ND	0.2600		3.2500
Lead	ug/L	MW-33A	12/05/2024	ND	0.2600		3.2500
Lead	ug/L	MW-34A	12/17/2024	ND	0.2600		3.2500
Lead	ug/L	MW-35	12/11/2024	ND	0.2600		3.2500
Lead	ug/L	MW-38A	12/09/2024	ND	0.2600		3.2500

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Lead	ug/L	MW-39A	12/03/2024		0.5890		3.2500
Lead	ug/L	MW-4	11/19/2024	ND	0.2600		3.2500
Lead	ug/L	MW-40A	12/03/2024	ND	0.2600		3.2500
Lead	ug/L	MW-41A	12/17/2024	ND	0.2600		3.2500
Lead	ug/L	MW-42A	12/05/2024	ND	0.2600		3.2500
Lead	ug/L	MW-43A	12/03/2024	ND	0.2600		3.2500
Lead	ug/L	MW-44A	12/03/2024	ND	0.2600		3.2500
Lead	ug/L	MW-45A	11/21/2024	ND	0.2600		3.2500
Lead	ug/L	MW-46A	12/09/2024	ND	0.2600		3.2500
Lead	ug/L	MW-4B	11/19/2024	ND	0.2600		3.2500
Lead	ug/L	MW-7A	11/19/2024	ND	0.2600		3.2500
Nickel	ug/L	MW-101	12/09/2024		8.1900		20.9000
Nickel	ug/L	MW-11	07/01/2024		16.3000	**	20.9000
Nickel	ug/L	MW-22	12/11/2024		7.6300		20.9000
Nickel	ug/L	MW-24A	11/21/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-25A	11/21/2024		9.1200		20.9000
Nickel	ug/L	MW-29A	12/09/2024		69.6000	***	20.9000
Nickel	ug/L	MW-2R	11/21/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-3	12/17/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-31A	12/17/2024		32.3000	***	20.9000
Nickel	ug/L	MW-33A	12/05/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-34A	12/17/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-35	12/11/2024		11.8000		20.9000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Nickel	ug/L	MW-38A	12/09/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-39A	12/03/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-4	11/19/2024		6.1700		20.9000
Nickel	ug/L	MW-40A	12/03/2024		16.8000		20.9000
Nickel	ug/L	MW-41A	12/17/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-42A	02/14/2025		23.5000	*	20.9000
Nickel	ug/L	MW-43A	12/03/2024		25.9000	*	20.9000
Nickel	ug/L	MW-44A	12/03/2024		34.2000	***	20.9000
Nickel	ug/L	MW-45A	11/21/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-46A	12/09/2024		28.2000	***	20.9000
Nickel	ug/L	MW-4B	11/19/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-7A	11/19/2024		8.8100		20.9000
Selenium	ug/L	MW-101	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-11	07/01/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-22	12/11/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-24A	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-25A	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-29A	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-2R	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-3	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-31A	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-33A	12/05/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-34A	12/17/2024	ND	1.4000		1.4100

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Selenium	ug/L	MW-35	12/11/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-38A	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-39A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-4	11/19/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-40A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-41A	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-42A	12/05/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-43A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-44A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-45A	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-46A	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-4B	11/19/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-7A	11/19/2024	ND	1.4000		1.4100
Silver	ug/L	MW-101	12/09/2024	ND	0.5000		1.2400
Silver	ug/L	MW-11	07/01/2024	ND	0.5000		1.2400
Silver	ug/L	MW-22	12/11/2024	ND	0.5000		1.2400
Silver	ug/L	MW-24A	11/21/2024	ND	0.5000		1.2400
Silver	ug/L	MW-25A	11/21/2024	ND	0.5000		1.2400
Silver	ug/L	MW-29A	12/09/2024	ND	0.5000		1.2400
Silver	ug/L	MW-2R	11/21/2024	ND	0.5000		1.2400
Silver	ug/L	MW-3	12/17/2024	ND	0.5000		1.2400
Silver	ug/L	MW-31A	12/17/2024	ND	0.5000		1.2400
Silver	ug/L	MW-33A	12/05/2024	ND	0.5000		1.2400

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Silver	ug/L	MW-34A	12/17/2024	ND	0.5000		1.2400
Silver	ug/L	MW-35	12/11/2024	ND	0.5000		1.2400
Silver	ug/L	MW-38A	12/09/2024	ND	0.5000		1.2400
Silver	ug/L	MW-39A	12/03/2024	ND	0.5000		1.2400
Silver	ug/L	MW-4	11/19/2024	ND	0.5000		1.2400
Silver	ug/L	MW-40A	12/03/2024	ND	0.5000		1.2400
Silver	ug/L	MW-41A	12/17/2024	ND	0.5000		1.2400
Silver	ug/L	MW-42A	12/05/2024	ND	0.5000		1.2400
Silver	ug/L	MW-43A	12/03/2024	ND	0.5000		1.2400
Silver	ug/L	MW-44A	12/03/2024	ND	0.5000		1.2400
Silver	ug/L	MW-45A	11/21/2024	ND	0.5000		1.2400
Silver	ug/L	MW-46A	12/09/2024	ND	0.5000		1.2400
Silver	ug/L	MW-4B	11/19/2024	ND	0.5000		1.2400
Silver	ug/L	MW-7A	11/19/2024	ND	0.5000		1.2400
Sulfide	ug/L	MW-11	07/01/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-24A	06/18/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-29A	12/09/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-31A	03/15/2022	ND	231.0000		*****
Sulfide	ug/L	MW-33A	09/13/2022	ND	231.0000		*****
Sulfide	ug/L	MW-35	06/08/2021	ND	231.0000		*****
Sulfide	ug/L	MW-4	06/08/2023	ND	231.0000		*****
Sulfide	ug/L	MW-40A	06/13/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-42A	06/18/2024	ND	1410.0000		*****

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Sulfide	ug/L	MW-43A	07/03/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-44A	06/26/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-4B	11/21/2017	ND	231.0000		*****
Sulfide	ug/L	MW-7A	06/18/2024	ND	1410.0000		*****
Thallium	ug/L	MW-101	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-11	07/01/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-22	12/11/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-24A	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-25A	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-29A	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-2R	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-3	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-31A	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-33A	12/05/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-34A	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-35	12/11/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-38A	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-39A	12/03/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-4	11/19/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-40A	12/03/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-41A	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-42A	12/05/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-43A	12/03/2024	ND	0.5700		0.2600

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Thallium	ug/L	MW-44A	12/03/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-45A	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-46A	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-4B	11/19/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-7A	11/19/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-101	12/09/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-11	07/01/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-22	12/11/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-24A	11/21/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-25A	11/21/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-29A	12/09/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-2R	11/21/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-3	12/17/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-31A	12/17/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-33A	12/05/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-34A	12/17/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-35	12/11/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-38A	12/09/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-39A	12/03/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-4	11/19/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-40A	12/03/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-41A	12/17/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-42A	12/05/2024	ND	1.1000		1.7700

* - 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
Vanadium	ug/L	MW-43A	12/03/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-44A	12/03/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-45A	11/21/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-46A	12/09/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-4B	11/19/2024	ND	1.1000		1.7700
Vanadium	ug/L	MW-7A	11/19/2024	ND	1.1000		1.7700
Zinc	ug/L	MW-101	12/09/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-11	07/01/2024		60.0000	***	18.6000
Zinc	ug/L	MW-22	12/11/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-24A	11/21/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-25A	11/21/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-29A	12/09/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-2R	11/21/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-3	12/17/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-31A	12/17/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-33A	12/05/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-34A	12/17/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-35	12/11/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-38A	12/09/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-39A	12/03/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-4	11/19/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-40A	12/03/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-41A	12/17/2024	ND	9.7000		18.6000

* - 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
Zinc	ug/L	MW-42A	12/05/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-43A	12/03/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-44A	12/03/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-45A	11/21/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-46A	12/09/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-4B	11/19/2024	ND	9.7000		18.6000
Zinc	ug/L	MW-7A	11/19/2024	ND	9.7000		18.6000

* - 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	0	42	0.000	32	421	0.076
Arsenic	3	42	0.071	109	422	0.258
Barium	42	42	1.000	428	428	1.000
Beryllium	0	42	0.000	18	420	0.043
Cadmium	2	42	0.048	60	422	0.142
Chromium	8	42	0.190	45	420	0.107
Cobalt	14	42	0.333	169	422	0.400
Copper	5	42	0.119	72	421	0.171
Field pH	39	39	1.000	336	336	1.000
Field Specific Conductance	39	39	1.000	336	336	1.000
Lead	6	42	0.143	62	420	0.148
Nickel	8	42	0.190	210	426	0.493
Selenium	3	42	0.071	20	421	0.048
Silver	2	42	0.048	12	422	0.028
Sulfide	0	4	0.000	1	38	0.026
Thallium	1	42	0.024	20	421	0.048
Vanadium	10	42	0.238	55	420	0.131
Zinc	1	42	0.024	88	426	0.207

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
Antimony	0	42	0.000	6.281	6.281					2.326	non-norm
Arsenic	3	42	0.071	8.368	8.615					2.326	non-norm
Barium	42	42	1.000	2.556	0.998					2.326	lognor
Beryllium	0	42	0.000	6.281	6.281					2.326	non-norm
Cadmium	2	42	0.048	17.593	17.593					2.326	non-norm
Chromium	8	42	0.190	6.174	6.697					2.326	non-norm
Cobalt	14	42	0.333	6.291	6.371					2.326	non-norm
Copper	5	42	0.119	7.159	6.304					2.326	non-norm
Field pH	39	39	1.000	0.502	0.863					2.326	normal
Field Specific Conductance	39	39	1.000	2.386	1.927					2.326	lognor
Lead	6	42	0.143	10.663	9.323					2.326	non-norm
Nickel	8	42	0.190	7.375	6.427					2.326	non-norm
Selenium	3	42	0.071	7.902	7.846					2.326	non-norm
Silver	2	42	0.048	17.593	17.593					2.326	non-norm
Sulfide	0	4	0.000	0.495	0.495					2.326	normal
Thallium	1	42	0.024	17.593	17.593					2.326	non-norm
Vanadium	10	42	0.238	6.291	6.002					2.326	non-norm
Zinc	1	42	0.024	6.281	6.281					2.326	non-norm

* - 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 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Model Type
Antimony	nonpar
Arsenic	nonpar
Barium	lognor
Beryllium	nonpar
Cadmium	nonpar
Chromium	nonpar
Cobalt	nonpar
Copper	nonpar
Field pH	normal
Field Specific Conductance	lognor
Lead	nonpar
Nickel	nonpar
Selenium	nonpar
Silver	nonpar
Sulfide	too few
Thallium	nonpar
Vanadium	nonpar
Zinc	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	ug/L	0	42					0.6900	nonpar	***	0.99
Arsenic	ug/L	3	42					4.5700	nonpar		0.99
Barium	ug/L	42	42	4.8086	0.3556	0.0100	2.4494	292.8570	lognor		
Beryllium	ug/L	0	42					0.2700	nonpar	***	0.99
Cadmium	ug/L	2	42					0.2090	nonpar		0.99
Chromium	ug/L	8	42					2.6300	nonpar		0.99
Cobalt	ug/L	14	42					3.4000	nonpar		0.99
Copper	ug/L	5	42					7.6400	nonpar		0.99
Field pH	SU	39	39	7.1967	0.4756	0.0100	2.4594	8.3663	normal		
Field Specific Conductance	umhos/cm	39	39	6.4289	0.3155	0.0100	2.4594	1345.9956	lognor		
Lead	ug/L	6	42					3.2500	nonpar		0.99
Nickel	ug/L	8	42					20.9000	nonpar		0.99
Selenium	ug/L	3	42					1.4100	nonpar		0.99
Silver	ug/L	2	42					1.2400	nonpar		0.99
Sulfide	ug/L	0	4							*	
Thallium	ug/L	1	42					0.2600	nonpar	***	0.99
Vanadium	ug/L	10	42					1.7700	nonpar		0.99
Zinc	ug/L	1	42					18.6000	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples 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 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	Units	Well	Date	Result	Detects	N	% >= PQL	% >= MDL	Manual RL	Median	>= Med	>= 2x	>= 3x
Arsenic	ug/L	MW-1	05/05/2014	0.3540	2	20	10	20	no	0.7500		no	
Arsenic	ug/L	MW-1	11/16/2017	0.6620	2	20	10	20	no	0.7500		no	
Arsenic	ug/L	MW-37A	03/07/2022	4.5700	1	7	14	43	no	0.7500	yes		
Cadmium	ug/L	MW-1	11/09/2023	0.2090	1	20	5	5	no	0.0550	yes		
Cadmium	ug/L	MW-19	03/16/2022	0.1200	1	8	13	13	no	0.0550	yes		
Chromium	ug/L	MW-1	05/05/2014	0.8160	3	20	15	30	no	1.1000		no	
Chromium	ug/L	MW-1	04/11/2016	0.8520	3	20	15	30	no	1.1000		no	
Chromium	ug/L	MW-1	11/11/2016	0.4230	3	20	15	30	no	1.1000		no	
Cobalt	ug/L	MW-37A	09/22/2021	0.6810	1	7	14	57	no	0.1900		yes	
Copper	ug/L	MW-1	05/05/2014	1.0400	4	20	20	25	no	1.5000		no	
Copper	ug/L	MW-1	11/07/2014	0.9060	4	20	20	25	no	1.5000		no	
Copper	ug/L	MW-1	09/16/2015	0.5260	4	20	20	25	no	1.5000		no	
Copper	ug/L	MW-1	11/09/2023	5.2700	4	20	20	25	no	1.5000		yes	
Copper	ug/L	MW-19	03/16/2022	7.6400	1	8	13	25	no	1.8000	yes		
Lead	ug/L	MW-1	09/16/2015	0.3030	2	20	10	15	no	0.2110		no	
Lead	ug/L	MW-1	11/09/2023	0.9940	2	20	10	15	no	0.2110		yes	
Lead	ug/L	MW-19	09/22/2021	0.5810	2	8	25	38	no	0.2400		yes	
Lead	ug/L	MW-19	03/16/2022	3.2500	2	8	25	38	no	0.2400		yes	
Lead	ug/L	MW-1R	11/05/2014	0.1360	1	7	14	14	no	0.2110	no		
Lead	ug/L	MW-37A	09/22/2021	1.0600	1	7	14	43	no	0.2400	yes		
Nickel	ug/L	MW-19	03/16/2022	6.5200	1	8	13	38	no	1.9000	yes		
Nickel	ug/L	MW-1R	05/05/2014	0.4240	1	7	14	14	no	0.9290	no		
Selenium	ug/L	MW-1	05/05/2014	1.1500	2	20	10	10	no	0.9600		no	

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	
Arsenic	
Arsenic	
Arsenic	*
Cadmium	*
Cadmium	*
Chromium	
Chromium	
Chromium	
Cobalt	*
Copper	
Copper	
Copper	
Copper	*
Copper	*
Lead	
Lead	*
Lead	*
Lead	*
Lead	
Lead	*
Nickel	*
Nickel	
Selenium	

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	Units	Well	Date	Result	Detects	N	% >= PQL	% >= MDL	Manual RL	Median	>= Med	>= 2x	>= 3x
Selenium	ug/L	MW-1	04/11/2016	1.4100	2	20	10	10	no	0.9600		no	
Selenium	ug/L	MW-1R	05/05/2014	0.7310	1	7	14	29	no	0.9000	no		
Silver	ug/L	MW-1	09/16/2015	0.1170	1	20	5	10	no	0.3000	no		
Silver	ug/L	MW-19	12/07/2022	1.2400	1	8	13	13	no	0.4900	yes		
Thallium	ug/L	MW-1	09/16/2015	0.0380	1	20	5	5	no	0.2600	no		
Vanadium	ug/L	MW-1	05/05/2014	0.6760	5	20	25	40	no	0.8500		no	
Vanadium	ug/L	MW-1	11/07/2014	0.5100	5	20	25	40	no	0.8500		no	
Vanadium	ug/L	MW-1	09/16/2015	0.5420	5	20	25	40	no	0.8500		no	
Vanadium	ug/L	MW-1	04/11/2016	0.4660	5	20	25	40	no	0.8500		no	
Vanadium	ug/L	MW-1	11/11/2016	0.3940	5	20	25	40	no	0.8500		no	
Zinc	ug/L	MW-1R	11/15/2016	18.6000	1	7	14	14	no	6.9500	yes		

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	
Selenium	
Selenium	
Silver	
Silver	*
Thallium	
Vanadium	
Vanadium	
Vanadium	
Vanadium	
Vanadium	
Zinc	*

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL 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	ug/L	MW-29A	11/20/2019	ND	0.7500		4.5700
Arsenic	ug/L	MW-29A	02/06/2020		2.2800		4.5700
Arsenic	ug/L	MW-29A	06/30/2020		3.4000		4.5700
Arsenic	ug/L	MW-29A	08/26/2020		6.8400	*	4.5700
Arsenic	ug/L	MW-29A	11/20/2020		4.5900	*	4.5700
Arsenic	ug/L	MW-29A	05/24/2021		4.0900		4.5700
Arsenic	ug/L	MW-29A	09/28/2021		6.0900	*	4.5700
Arsenic	ug/L	MW-29A	03/29/2022		5.5700	*	4.5700
Arsenic	ug/L	MW-29A	09/12/2022		10.2000	*	4.5700
Arsenic	ug/L	MW-29A	06/12/2023		4.3700		4.5700
Arsenic	ug/L	MW-29A	11/15/2023		6.4900	*	4.5700
Arsenic	ug/L	MW-29A	06/26/2024		4.5400		4.5700
Arsenic	ug/L	MW-29A	12/09/2024		6.7500	*	4.5700
Arsenic	ug/L	MW-33A	11/18/2019		42.4000	*	4.5700
Arsenic	ug/L	MW-33A	02/12/2020		80.9000	*	4.5700
Arsenic	ug/L	MW-33A	06/30/2020		5.2300	*	4.5700
Arsenic	ug/L	MW-33A	08/25/2020		65.8000	*	4.5700
Arsenic	ug/L	MW-33A	11/03/2020		17.9000	*	4.5700
Arsenic	ug/L	MW-33A	06/03/2021		35.3000	*	4.5700
Arsenic	ug/L	MW-33A	08/03/2021		52.7000	*	4.5700
Arsenic	ug/L	MW-33A	09/29/2021		18.4000	*	4.5700
Arsenic	ug/L	MW-33A	03/16/2022		11.3000	*	4.5700

* - 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
Arsenic	ug/L	MW-33A	09/13/2022		13.8000	*	4.5700
Arsenic	ug/L	MW-33A	06/13/2023	ND	0.5300		4.5700
Arsenic	ug/L	MW-33A	06/12/2024		24.3000	*	4.5700
Arsenic	ug/L	MW-33A	08/29/2024		51.8000	*	4.5700
Arsenic	ug/L	MW-33A	12/05/2024		112.0000	*	4.5700
Arsenic	ug/L	MW-43A	09/01/2022		8.0600	*	4.5700
Arsenic	ug/L	MW-43A	12/06/2022		7.3400	*	4.5700
Arsenic	ug/L	MW-43A	06/07/2023		8.2800	*	4.5700
Arsenic	ug/L	MW-43A	08/28/2023		8.8500	*	4.5700
Arsenic	ug/L	MW-43A	11/02/2023		9.8100	*	4.5700
Arsenic	ug/L	MW-43A	06/11/2024		6.2800	*	4.5700
Arsenic	ug/L	MW-43A	12/03/2024		6.3200	*	4.5700
Barium	ug/L	MW-4	10/13/2007		742.0000	*	292.8570
Barium	ug/L	MW-4	01/09/2008		603.0000	*	292.8570
Barium	ug/L	MW-4	04/08/2008		793.0000	*	292.8570
Barium	ug/L	MW-4	07/16/2008		544.0000	*	292.8570
Barium	ug/L	MW-4	10/23/2008		514.0000	*	292.8570
Barium	ug/L	MW-4	04/09/2009		549.0000	*	292.8570
Barium	ug/L	MW-4	10/05/2009		623.0000	*	292.8570
Barium	ug/L	MW-4	02/25/2010		564.0000	*	292.8570
Barium	ug/L	MW-4	04/21/2010		580.0000	*	292.8570
Barium	ug/L	MW-4	10/14/2010		529.0000	*	292.8570

* - 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	ug/L	MW-4	04/13/2011		542.0000	*	292.8570
Barium	ug/L	MW-4	10/18/2011		513.0000	*	292.8570
Barium	ug/L	MW-4	04/24/2012		533.0000	*	292.8570
Barium	ug/L	MW-4	10/24/2012		710.0000	*	292.8570
Barium	ug/L	MW-4	04/08/2013		774.0000	*	292.8570
Barium	ug/L	MW-4	11/05/2013		514.0000	*	292.8570
Barium	ug/L	MW-4	05/02/2014		513.0000	*	292.8570
Barium	ug/L	MW-4	11/04/2014		469.0000	*	292.8570
Barium	ug/L	MW-4	05/06/2015		463.0000	*	292.8570
Barium	ug/L	MW-4	09/18/2015		479.0000	*	292.8570
Barium	ug/L	MW-4	03/31/2016		484.0000	*	292.8570
Barium	ug/L	MW-4	11/28/2016		539.0000	*	292.8570
Barium	ug/L	MW-4	05/11/2017		482.0000	*	292.8570
Barium	ug/L	MW-4	11/16/2017		40.6000		292.8570
Barium	ug/L	MW-4	06/04/2018		530.0000	*	292.8570
Barium	ug/L	MW-4	10/29/2018		464.0000	*	292.8570
Barium	ug/L	MW-4	06/04/2019		451.0000	*	292.8570
Barium	ug/L	MW-4	10/30/2019		191.0000		292.8570
Barium	ug/L	MW-4	06/17/2020		421.0000	*	292.8570
Barium	ug/L	MW-4	11/17/2020		409.0000	*	292.8570
Barium	ug/L	MW-4	05/25/2021		475.0000	*	292.8570
Barium	ug/L	MW-4	09/28/2021		482.0000	*	292.8570

* - 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	ug/L	MW-4	03/02/2022		503.0000	*	292.8570
Barium	ug/L	MW-4	09/07/2022		536.0000	*	292.8570
Barium	ug/L	MW-4	06/08/2023		134.0000		292.8570
Barium	ug/L	MW-4	11/13/2023		514.0000	*	292.8570
Barium	ug/L	MW-4	06/11/2024		485.0000	*	292.8570
Barium	ug/L	MW-4	11/19/2024		518.0000	*	292.8570
Barium	ug/L	MW-7A	10/13/2007		191.0000		292.8570
Barium	ug/L	MW-7A	01/09/2008		202.0000		292.8570
Barium	ug/L	MW-7A	04/08/2008		301.0000	*	292.8570
Barium	ug/L	MW-7A	07/16/2008		185.0000		292.8570
Barium	ug/L	MW-7A	10/23/2008		381.0000	*	292.8570
Barium	ug/L	MW-7A	04/09/2009		195.0000		292.8570
Barium	ug/L	MW-7A	10/05/2009		220.0000		292.8570
Barium	ug/L	MW-7A	04/21/2010		181.0000		292.8570
Barium	ug/L	MW-7A	10/14/2010		263.0000		292.8570
Barium	ug/L	MW-7A	04/13/2011		197.0000		292.8570
Barium	ug/L	MW-7A	10/18/2011		319.0000	*	292.8570
Barium	ug/L	MW-7A	04/24/2012		307.0000	*	292.8570
Barium	ug/L	MW-7A	10/24/2012		316.0000	*	292.8570
Barium	ug/L	MW-7A	04/08/2013		155.0000		292.8570
Barium	ug/L	MW-7A	11/06/2013		326.0000	*	292.8570
Barium	ug/L	MW-7A	05/02/2014		149.0000		292.8570

* - 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	ug/L	MW-7A	10/31/2014		184.0000		292.8570
Barium	ug/L	MW-7A	05/04/2015		152.0000		292.8570
Barium	ug/L	MW-7A	09/14/2015		240.0000		292.8570
Barium	ug/L	MW-7A	04/04/2016		165.0000		292.8570
Barium	ug/L	MW-7A	11/16/2016		315.0000	*	292.8570
Barium	ug/L	MW-7A	05/08/2017		150.0000		292.8570
Barium	ug/L	MW-7A	11/01/2017		172.0000		292.8570
Barium	ug/L	MW-7A	06/06/2018		166.0000		292.8570
Barium	ug/L	MW-7A	10/30/2018		171.0000		292.8570
Barium	ug/L	MW-7A	06/04/2019		160.0000		292.8570
Barium	ug/L	MW-7A	11/04/2019		185.0000		292.8570
Barium	ug/L	MW-7A	02/03/2020		174.0000		292.8570
Barium	ug/L	MW-7A	06/17/2020		139.0000		292.8570
Barium	ug/L	MW-7A	11/05/2020		160.0000		292.8570
Barium	ug/L	MW-7A	05/25/2021		166.0000		292.8570
Barium	ug/L	MW-7A	09/23/2021		156.0000		292.8570
Barium	ug/L	MW-7A	03/15/2022		143.0000		292.8570
Barium	ug/L	MW-7A	08/31/2022		71.9000		292.8570
Barium	ug/L	MW-7A	06/13/2023		323.0000	*	292.8570
Barium	ug/L	MW-7A	08/29/2023		366.0000	*	292.8570
Barium	ug/L	MW-7A	11/13/2023		451.0000	*	292.8570
Barium	ug/L	MW-7A	06/18/2024		190.0000		292.8570

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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	ug/L	MW-7A	11/19/2024		425.0000	*	292.8570
Barium	ug/L	MW-7A	02/14/2025		196.0000		292.8570
Cadmium	ug/L	MW-4	10/13/2007		1.2100	*	0.2090
Cadmium	ug/L	MW-4	01/09/2008		0.8340	*	0.2090
Cadmium	ug/L	MW-4	04/08/2008		1.3600	*	0.2090
Cadmium	ug/L	MW-4	07/16/2008	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/23/2008	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	04/09/2009	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/05/2009	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	02/25/2010		0.5300	*	0.2090
Cadmium	ug/L	MW-4	04/21/2010	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/14/2010	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	04/13/2011	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/18/2011		0.2360	*	0.2090
Cadmium	ug/L	MW-4	04/24/2012	ND	0.2290		0.2090
Cadmium	ug/L	MW-4	10/24/2012		0.4100	*	0.2090
Cadmium	ug/L	MW-4	04/08/2013		0.4300	*	0.2090
Cadmium	ug/L	MW-4	11/05/2013		0.1910		0.2090
Cadmium	ug/L	MW-4	05/02/2014		0.1440		0.2090
Cadmium	ug/L	MW-4	11/04/2014		0.1170		0.2090
Cadmium	ug/L	MW-4	05/06/2015		0.1490		0.2090
Cadmium	ug/L	MW-4	09/18/2015		0.1330		0.2090

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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
Cadmium	ug/L	MW-4	03/31/2016		0.1700		0.2090
Cadmium	ug/L	MW-4	11/28/2016		0.1420		0.2090
Cadmium	ug/L	MW-4	05/11/2017	ND	0.0441		0.2090
Cadmium	ug/L	MW-4	11/16/2017		0.2730	*	0.2090
Cadmium	ug/L	MW-4	06/04/2018	ND	0.0600		0.2090
Cadmium	ug/L	MW-4	10/29/2018	ND	0.0600		0.2090
Cadmium	ug/L	MW-4	06/04/2019	ND	0.1670		0.2090
Cadmium	ug/L	MW-4	10/30/2019	ND	0.0390		0.2090
Cadmium	ug/L	MW-4	06/17/2020		0.1390		0.2090
Cadmium	ug/L	MW-4	11/17/2020		0.1630		0.2090
Cadmium	ug/L	MW-4	05/25/2021		0.1840		0.2090
Cadmium	ug/L	MW-4	09/28/2021		0.1220		0.2090
Cadmium	ug/L	MW-4	03/02/2022		0.1180		0.2090
Cadmium	ug/L	MW-4	09/07/2022	ND	0.0550		0.2090
Cadmium	ug/L	MW-4	06/08/2023	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	11/13/2023	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	06/11/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	11/19/2024		0.2540	*	0.2090
Cadmium	ug/L	MW-4	02/14/2025	ND	0.1000		0.2090
Cadmium	ug/L	MW-44A	09/01/2022	ND	0.0550		0.2090
Cadmium	ug/L	MW-44A	12/06/2022	ND	0.0550		0.2090
Cadmium	ug/L	MW-44A	06/07/2023		0.3060	*	0.2090

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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
Cadmium	ug/L	MW-44A	08/28/2023		0.4160	*	0.2090
Cadmium	ug/L	MW-44A	11/02/2023		0.7950	*	0.2090
Cadmium	ug/L	MW-44A	06/26/2024		0.3890	*	0.2090
Cadmium	ug/L	MW-44A	12/03/2024	ND	0.1000		0.2090
Cobalt	ug/L	MW-29A	11/20/2019		8.4300	*	3.4000
Cobalt	ug/L	MW-29A	02/06/2020		9.6400	*	3.4000
Cobalt	ug/L	MW-29A	06/30/2020		9.9800	*	3.4000
Cobalt	ug/L	MW-29A	08/26/2020		10.7000	*	3.4000
Cobalt	ug/L	MW-29A	11/20/2020		10.1000	*	3.4000
Cobalt	ug/L	MW-29A	05/24/2021		11.9000	*	3.4000
Cobalt	ug/L	MW-29A	09/28/2021		7.9000	*	3.4000
Cobalt	ug/L	MW-29A	03/29/2022		7.3800	*	3.4000
Cobalt	ug/L	MW-29A	09/12/2022		10.1000	*	3.4000
Cobalt	ug/L	MW-29A	06/12/2023		12.5000	*	3.4000
Cobalt	ug/L	MW-29A	11/15/2023		18.7000	*	3.4000
Cobalt	ug/L	MW-29A	06/26/2024		11.2000	*	3.4000
Cobalt	ug/L	MW-29A	12/09/2024		16.5000	*	3.4000
Cobalt	ug/L	MW-31A	11/05/2019		13.4000	*	3.4000
Cobalt	ug/L	MW-31A	02/07/2020		12.4000	*	3.4000
Cobalt	ug/L	MW-31A	06/18/2020		13.6000	*	3.4000
Cobalt	ug/L	MW-31A	08/26/2020		12.0000	*	3.4000
Cobalt	ug/L	MW-31A	11/18/2020		10.0000	*	3.4000

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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	ug/L	MW-31A	05/19/2021		10.4000	*	3.4000
Cobalt	ug/L	MW-31A	09/29/2021		3.3700		3.4000
Cobalt	ug/L	MW-31A	03/15/2022		3.0100		3.4000
Cobalt	ug/L	MW-31A	09/07/2022		32.2000	*	3.4000
Cobalt	ug/L	MW-31A	06/20/2023		3.7500	*	3.4000
Cobalt	ug/L	MW-31A	11/14/2023		4.6200	*	3.4000
Cobalt	ug/L	MW-31A	07/01/2024		3.4800	*	3.4000
Cobalt	ug/L	MW-31A	12/17/2024		2.0900		3.4000
Cobalt	ug/L	MW-33A	11/18/2019		3.0000		3.4000
Cobalt	ug/L	MW-33A	02/12/2020		2.5900		3.4000
Cobalt	ug/L	MW-33A	06/30/2020	ND	0.0910		3.4000
Cobalt	ug/L	MW-33A	08/25/2020		2.3400		3.4000
Cobalt	ug/L	MW-33A	11/03/2020		1.8300		3.4000
Cobalt	ug/L	MW-33A	06/03/2021		3.2000		3.4000
Cobalt	ug/L	MW-33A	08/03/2021		3.2000		3.4000
Cobalt	ug/L	MW-33A	09/29/2021		2.0300		3.4000
Cobalt	ug/L	MW-33A	03/16/2022		0.5030		3.4000
Cobalt	ug/L	MW-33A	09/13/2022		0.7430		3.4000
Cobalt	ug/L	MW-33A	06/13/2023	ND	0.1700		3.4000
Cobalt	ug/L	MW-33A	06/12/2024		4.5100	*	3.4000
Cobalt	ug/L	MW-33A	12/05/2024		2.4000		3.4000
Cobalt	ug/L	MW-35	11/15/2019		8.2700	*	3.4000

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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	ug/L	MW-35	02/12/2020		6.6000	*	3.4000
Cobalt	ug/L	MW-35	07/06/2020		7.0300	*	3.4000
Cobalt	ug/L	MW-35	08/25/2020		5.9800	*	3.4000
Cobalt	ug/L	MW-35	11/05/2020		5.9700	*	3.4000
Cobalt	ug/L	MW-35	06/08/2021		5.5100	*	3.4000
Cobalt	ug/L	MW-35	09/28/2021		6.3300	*	3.4000
Cobalt	ug/L	MW-35	03/29/2022		6.3900	*	3.4000
Cobalt	ug/L	MW-35	09/12/2022		6.7400	*	3.4000
Cobalt	ug/L	MW-35	06/27/2023		5.3300	*	3.4000
Cobalt	ug/L	MW-35	11/14/2023		10.8000	*	3.4000
Cobalt	ug/L	MW-35	07/03/2024		4.9600	*	3.4000
Cobalt	ug/L	MW-35	12/11/2024		1.9800		3.4000
Cobalt	ug/L	MW-43A	09/01/2022		3.6800	*	3.4000
Cobalt	ug/L	MW-43A	12/06/2022		3.2700		3.4000
Cobalt	ug/L	MW-43A	06/07/2023		4.5100	*	3.4000
Cobalt	ug/L	MW-43A	08/28/2023		4.9300	*	3.4000
Cobalt	ug/L	MW-43A	11/02/2023		4.7500	*	3.4000
Cobalt	ug/L	MW-43A	06/11/2024		3.4900	*	3.4000
Cobalt	ug/L	MW-43A	12/03/2024		3.8300	*	3.4000
Field Specific Conductance	umhos/cm	MW-101	06/10/2019		1115.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	08/14/2019		1114.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	11/20/2019		1183.0000		1345.9956

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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
Field Specific Conductance	umhos/cm	MW-101	02/06/2020		1145.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	06/30/2020		956.0100		1345.9956
Field Specific Conductance	umhos/cm	MW-101	11/20/2020		1162.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	02/03/2021		1109.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	05/24/2021		1034.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	09/28/2021		1147.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	09/12/2022		957.1300		1345.9956
Field Specific Conductance	umhos/cm	MW-101	06/12/2023		1139.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-101	06/26/2024		975.9900		1345.9956
Field Specific Conductance	umhos/cm	MW-101	12/09/2024		2176.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-22	06/10/2019		938.0400		1345.9956
Field Specific Conductance	umhos/cm	MW-22	08/13/2019		920.1200		1345.9956
Field Specific Conductance	umhos/cm	MW-22	11/05/2019		949.4100		1345.9956
Field Specific Conductance	umhos/cm	MW-22	06/17/2020		848.0400		1345.9956
Field Specific Conductance	umhos/cm	MW-22	08/24/2020		901.3100		1345.9956
Field Specific Conductance	umhos/cm	MW-22	11/17/2020		870.6900		1345.9956
Field Specific Conductance	umhos/cm	MW-22	06/03/2021		749.2300		1345.9956
Field Specific Conductance	umhos/cm	MW-22	09/23/2021		777.6300		1345.9956
Field Specific Conductance	umhos/cm	MW-22	03/15/2022		821.2400		1345.9956
Field Specific Conductance	umhos/cm	MW-22	08/30/2022		901.9200		1345.9956
Field Specific Conductance	umhos/cm	MW-22	06/13/2023		850.6700		1345.9956
Field Specific Conductance	umhos/cm	MW-22	11/13/2023		862.5100		1345.9956

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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
Field Specific Conductance	umhos/cm	MW-22	06/26/2024		803.4800		1345.9956
Field Specific Conductance	umhos/cm	MW-22	12/11/2024		2340.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-24A	05/07/2015		1120.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	04/04/2016		1040.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	05/12/2017		1147.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	06/07/2018		1120.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	10/29/2018		793.3200		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	06/05/2019		996.2500		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	08/13/2019		944.6600		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	11/04/2019		969.1300		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	06/29/2020		911.6900		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	11/18/2020		886.0500		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	05/24/2021		870.5900		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	09/28/2021		1287.3900		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	08/30/2022		938.8400		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	06/14/2023		1253.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	06/18/2024		1092.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-24A	11/21/2024		2038.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-25A	05/04/2015		900.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	04/06/2016		829.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	11/15/2016		963.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	05/11/2017		986.0000		1345.9956

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Constituent	Units	Well	Date		Result		Pred. Limit
Field Specific Conductance	umhos/cm	MW-25A	11/06/2017		817.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	06/18/2018		1265.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	10/30/2018		905.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	06/06/2019		1191.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	11/04/2019		1146.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	02/06/2020		1125.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	06/30/2020		1126.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	11/05/2020		1105.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	05/19/2021		1060.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	09/28/2021		1007.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	03/29/2022		1120.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	08/30/2022		1133.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	06/15/2023		1203.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	11/15/2023		1203.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	01/25/2024		1072.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	06/13/2024		1099.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-25A	11/21/2024		2293.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	11/20/2019		1559.2000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	02/06/2020		1595.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	06/30/2020		1584.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	08/26/2020		1681.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	11/20/2020		1541.8000	*	1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-29A	05/24/2021		1556.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	09/28/2021		1573.5000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	03/29/2022		1748.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	06/27/2022		1781.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	09/12/2022		1996.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	12/07/2022		1660.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	06/12/2023		2066.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	11/15/2023		1728.3000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	06/26/2024		1905.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-29A	12/09/2024		2598.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-2R	10/12/2007		694.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	01/09/2008		859.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	04/08/2008		850.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	05/07/2015		644.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	09/18/2015		702.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	04/12/2016		588.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	11/30/2016		594.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	05/24/2017		628.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	11/17/2017		609.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	06/07/2018		747.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	10/28/2018		475.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	06/07/2019		690.7800		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-2R	11/04/2019		638.0800		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	06/18/2020		588.3100		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	11/23/2020		798.8700		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	05/19/2021		766.1400		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	09/29/2021		760.7900		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	03/16/2022		816.5200		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	09/07/2022		632.9700		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	06/14/2023		772.9800		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	11/20/2023		730.9300		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	01/23/2024		787.9500		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	07/01/2024		708.7200		1345.9956
Field Specific Conductance	umhos/cm	MW-2R	11/21/2024		1647.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-3	10/12/2007		688.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	01/09/2008		682.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	04/08/2008		721.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	05/11/2015		353.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	09/22/2015		664.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	04/07/2016		618.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	11/30/2016		512.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	05/22/2017		629.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	11/21/2017		506.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	06/18/2018		778.7000		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-3	10/28/2018		583.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	06/07/2019		552.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	11/18/2019		730.9800		1345.9956
Field Specific Conductance	umhos/cm	MW-3	06/18/2020		791.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	11/23/2020		834.6500		1345.9956
Field Specific Conductance	umhos/cm	MW-3	06/03/2021		825.5800		1345.9956
Field Specific Conductance	umhos/cm	MW-3	09/29/2021		802.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-3	03/16/2022		812.1700		1345.9956
Field Specific Conductance	umhos/cm	MW-3	06/27/2022		847.5600		1345.9956
Field Specific Conductance	umhos/cm	MW-3	09/13/2022		908.9500		1345.9956
Field Specific Conductance	umhos/cm	MW-3	06/13/2023		922.7700		1345.9956
Field Specific Conductance	umhos/cm	MW-3	11/20/2023		772.8300		1345.9956
Field Specific Conductance	umhos/cm	MW-3	01/25/2024		739.9600		1345.9956
Field Specific Conductance	umhos/cm	MW-3	07/01/2024		756.2200		1345.9956
Field Specific Conductance	umhos/cm	MW-3	12/17/2024		1547.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	11/05/2019		1475.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	02/07/2020		1537.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	06/18/2020		1689.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	08/26/2020		1650.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	11/18/2020		2207.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	02/23/2021		1512.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	06/08/2021		2191.5000	*	1345.9956

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*** - 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
Field Specific Conductance	umhos/cm	MW-31A	09/29/2021		2232.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	03/15/2022		1842.6000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	09/07/2022		3837.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	06/20/2023		1952.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	11/14/2023		1591.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	07/01/2024		1760.6000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-31A	12/17/2024		2765.5000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-33A	11/18/2019		728.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	02/12/2020		736.3900		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	06/30/2020		662.3600		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	08/25/2020		754.5600		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	11/03/2020		886.7800		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	06/03/2021		727.3400		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	09/29/2021		730.0200		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	03/16/2022		787.1300		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	09/13/2022		736.4700		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	06/13/2023		691.8400		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	06/12/2024		890.3400		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	08/29/2024		897.0400		1345.9956
Field Specific Conductance	umhos/cm	MW-33A	12/05/2024		2328.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-35	11/15/2019		1368.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-35	02/12/2020		1332.5000		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-35	07/06/2020		1379.2000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-35	08/25/2020		1292.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	11/05/2020		1294.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	06/08/2021		1171.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	09/28/2021		1189.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	03/29/2022		1328.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	09/12/2022		1469.3000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-35	06/27/2023		1330.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	11/14/2023		1446.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-35	07/03/2024		1201.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-35	12/11/2024		3035.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-38A	09/23/2021		698.2900		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	12/14/2021		852.2700		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	03/07/2022		747.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	06/23/2022		745.0200		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	08/17/2022		780.3600		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	12/06/2022		767.3800		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	06/08/2023		757.8700		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	11/06/2023		754.4400		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	06/13/2024		760.9400		1345.9956
Field Specific Conductance	umhos/cm	MW-38A	12/09/2024		1714.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-39A	09/23/2021		714.7400		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-39A	12/14/2021		864.6900		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	03/07/2022		751.5800		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	06/23/2022		757.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	08/17/2022		791.2100		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	12/06/2022		772.3200		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	06/08/2023		773.6700		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	11/06/2023		758.9200		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	06/13/2024		790.3700		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	08/29/2024		773.4100		1345.9956
Field Specific Conductance	umhos/cm	MW-39A	12/03/2024		1517.5000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-4	10/13/2007		1470.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-4	01/09/2008		1440.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-4	04/08/2008		1590.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-4	05/06/2015		763.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	09/18/2015		965.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	03/31/2016		961.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	11/28/2016		890.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	05/11/2017		1011.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	11/16/2017		818.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	06/04/2018		1206.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	10/29/2018		882.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	06/04/2019		1260.5000		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-4	10/30/2019		1225.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	06/17/2020		1208.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	11/17/2020		1196.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	05/25/2021		1220.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	09/28/2021		1190.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	03/02/2022		1292.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	09/07/2022		1334.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	06/08/2023		1354.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-4	11/13/2023		1222.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	06/11/2024		1201.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-4	11/19/2024		1817.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-40A	09/23/2021		900.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	12/14/2021		1037.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	03/07/2022		1110.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	06/23/2022		1036.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	08/17/2022		1010.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	12/06/2022		1065.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	06/07/2023		1347.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-40A	11/06/2023		1148.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	06/13/2024		1134.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-40A	12/03/2024		1896.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-42A	08/31/2022		2048.5000	*	1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-42A	12/06/2022		1073.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-42A	06/07/2023		940.2100		1345.9956
Field Specific Conductance	umhos/cm	MW-42A	08/28/2023		1173.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-42A	11/02/2023		1001.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-42A	06/18/2024		1221.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-42A	12/05/2024		3061.3000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-43A	09/01/2022		1227.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-43A	12/06/2022		1248.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-43A	06/07/2023		1300.8000		1345.9956
Field Specific Conductance	umhos/cm	MW-43A	08/28/2023		1499.6000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-43A	11/02/2023		1525.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-43A	06/11/2024		1050.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-43A	08/29/2024		1099.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-43A	12/03/2024		2233.7000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-44A	09/01/2022		1128.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-44A	12/06/2022		1540.8000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-44A	06/07/2023		1224.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-44A	08/28/2023		1562.2000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-44A	11/02/2023		1717.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-44A	06/26/2024		1021.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-44A	12/03/2024		2050.2000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-45A	11/09/2023		619.0700		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-45A	01/23/2024		608.9800		1345.9956
Field Specific Conductance	umhos/cm	MW-45A	07/01/2024		649.0800		1345.9956
Field Specific Conductance	umhos/cm	MW-45A	11/21/2024		1515.9000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-46A	11/13/2023		1733.4000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-46A	01/23/2024		1760.1000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-46A	06/11/2024		1613.0000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-46A	12/09/2024		2875.5000	*	1345.9956
Field Specific Conductance	umhos/cm	MW-7A	10/13/2007		845.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	01/09/2008		812.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	04/08/2008		830.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	05/04/2015		608.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	09/14/2015		736.1000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	04/04/2016		596.3000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	11/16/2016		820.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	05/08/2017		584.2000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	11/01/2017		511.5000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	06/06/2018		725.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	10/30/2018		641.9000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	06/04/2019		805.7800		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	11/04/2019		781.0800		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	02/03/2020		903.0000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	06/17/2020		740.0900		1345.9956

* - 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
Field Specific Conductance	umhos/cm	MW-7A	11/05/2020		723.9200		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	02/23/2021		816.3400		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	05/25/2021		806.1400		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	09/23/2021		643.6600		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	03/15/2022		748.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	08/31/2022		766.7600		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	06/13/2023		1089.7000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	08/29/2023		1076.4000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	11/13/2023		1103.6000		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	06/18/2024		765.1900		1345.9956
Field Specific Conductance	umhos/cm	MW-7A	11/19/2024		1625.4000	*	1345.9956
Nickel	ug/L	MW-11	10/12/2007	ND	50.0000		20.9000
Nickel	ug/L	MW-11	01/09/2008	ND	50.0000		20.9000
Nickel	ug/L	MW-11	04/08/2008		50.3000	*	20.9000
Nickel	ug/L	MW-11	07/16/2008	ND	50.0000		20.9000
Nickel	ug/L	MW-11	12/28/2009	ND	50.0000		20.9000
Nickel	ug/L	MW-11	02/25/2010	ND	50.0000		20.9000
Nickel	ug/L	MW-11	02/25/2011	ND	50.0000		20.9000
Nickel	ug/L	MW-11	04/13/2011	ND	50.0000		20.9000
Nickel	ug/L	MW-11	08/25/2011	ND	50.0000		20.9000
Nickel	ug/L	MW-11	04/24/2012		31.9000	*	20.9000
Nickel	ug/L	MW-11	10/24/2012		29.3000	*	20.9000

* - 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
Nickel	ug/L	MW-11	10/31/2018		43.3000	*	20.9000
Nickel	ug/L	MW-11	12/17/2018		35.1000	*	20.9000
Nickel	ug/L	MW-11	06/03/2021		34.1000	*	20.9000
Nickel	ug/L	MW-11	08/03/2021		22.6000	*	20.9000
Nickel	ug/L	MW-11	09/07/2022		30.2000	*	20.9000
Nickel	ug/L	MW-11	06/20/2023		21.6000	*	20.9000
Nickel	ug/L	MW-11	07/01/2024		16.3000		20.9000
Nickel	ug/L	MW-29A	11/20/2019		49.7000	*	20.9000
Nickel	ug/L	MW-29A	02/06/2020		49.2000	*	20.9000
Nickel	ug/L	MW-29A	06/30/2020		51.1000	*	20.9000
Nickel	ug/L	MW-29A	08/26/2020		57.0000	*	20.9000
Nickel	ug/L	MW-29A	11/20/2020		47.2000	*	20.9000
Nickel	ug/L	MW-29A	05/24/2021		55.5000	*	20.9000
Nickel	ug/L	MW-29A	09/28/2021		51.0000	*	20.9000
Nickel	ug/L	MW-29A	03/29/2022		63.6000	*	20.9000
Nickel	ug/L	MW-29A	09/12/2022		69.1000	*	20.9000
Nickel	ug/L	MW-29A	06/12/2023		76.0000	*	20.9000
Nickel	ug/L	MW-29A	11/15/2023		87.0000	*	20.9000
Nickel	ug/L	MW-29A	06/26/2024		63.9000	*	20.9000
Nickel	ug/L	MW-29A	12/09/2024		69.6000	*	20.9000
Nickel	ug/L	MW-31A	11/05/2019		20.4000		20.9000
Nickel	ug/L	MW-31A	02/07/2020		21.6000	*	20.9000

* - 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
Nickel	ug/L	MW-31A	06/18/2020		27.5000	*	20.9000
Nickel	ug/L	MW-31A	08/26/2020		47.0000	*	20.9000
Nickel	ug/L	MW-31A	11/18/2020		52.8000	*	20.9000
Nickel	ug/L	MW-31A	05/19/2021		53.4000	*	20.9000
Nickel	ug/L	MW-31A	09/29/2021		47.7000	*	20.9000
Nickel	ug/L	MW-31A	03/15/2022		28.1000	*	20.9000
Nickel	ug/L	MW-31A	09/07/2022		112.0000	*	20.9000
Nickel	ug/L	MW-31A	06/20/2023		39.7000	*	20.9000
Nickel	ug/L	MW-31A	11/14/2023		30.8000	*	20.9000
Nickel	ug/L	MW-31A	07/01/2024		30.3000	*	20.9000
Nickel	ug/L	MW-31A	12/17/2024		32.3000	*	20.9000
Nickel	ug/L	MW-42A	08/31/2022		37.2000	*	20.9000
Nickel	ug/L	MW-42A	12/06/2022		14.7000		20.9000
Nickel	ug/L	MW-42A	06/07/2023		8.6200		20.9000
Nickel	ug/L	MW-42A	08/28/2023		19.3000		20.9000
Nickel	ug/L	MW-42A	11/02/2023		14.8000		20.9000
Nickel	ug/L	MW-42A	06/18/2024		16.6000		20.9000
Nickel	ug/L	MW-42A	12/05/2024		27.6000	*	20.9000
Nickel	ug/L	MW-42A	02/14/2025		23.5000	*	20.9000
Nickel	ug/L	MW-43A	09/01/2022		24.4000	*	20.9000
Nickel	ug/L	MW-43A	12/06/2022		25.6000	*	20.9000
Nickel	ug/L	MW-43A	06/07/2023		31.0000	*	20.9000

* - 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
Nickel	ug/L	MW-43A	08/28/2023		41.5000	*	20.9000
Nickel	ug/L	MW-43A	11/02/2023		36.4000	*	20.9000
Nickel	ug/L	MW-43A	06/11/2024		17.3000		20.9000
Nickel	ug/L	MW-43A	12/03/2024		25.9000	*	20.9000
Nickel	ug/L	MW-44A	09/01/2022		21.7000	*	20.9000
Nickel	ug/L	MW-44A	12/06/2022		51.8000	*	20.9000
Nickel	ug/L	MW-44A	06/07/2023		28.7000	*	20.9000
Nickel	ug/L	MW-44A	08/28/2023		70.2000	*	20.9000
Nickel	ug/L	MW-44A	11/02/2023		66.6000	*	20.9000
Nickel	ug/L	MW-44A	06/26/2024		21.6000	*	20.9000
Nickel	ug/L	MW-44A	12/03/2024		34.2000	*	20.9000
Nickel	ug/L	MW-46A	11/13/2023		33.8000	*	20.9000
Nickel	ug/L	MW-46A	01/23/2024		35.0000	*	20.9000
Nickel	ug/L	MW-46A	06/11/2024		26.6000	*	20.9000
Nickel	ug/L	MW-46A	09/05/2024		26.6000	*	20.9000
Nickel	ug/L	MW-46A	12/09/2024		28.2000	*	20.9000
Zinc	ug/L	MW-11	10/12/2007		134.0000	*	18.6000
Zinc	ug/L	MW-11	01/09/2008	ND	20.0000		18.6000
Zinc	ug/L	MW-11	04/08/2008		61.6000	*	18.6000
Zinc	ug/L	MW-11	07/16/2008		31.8000	*	18.6000
Zinc	ug/L	MW-11	12/28/2009		177.0000	*	18.6000
Zinc	ug/L	MW-11	02/25/2010		28.8000	*	18.6000

* - 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
Zinc	ug/L	MW-11	02/25/2011		92.9000	*	18.6000
Zinc	ug/L	MW-11	04/13/2011		23.5000	*	18.6000
Zinc	ug/L	MW-11	08/25/2011		28.3000	*	18.6000
Zinc	ug/L	MW-11	04/24/2012		32.1000	*	18.6000
Zinc	ug/L	MW-11	10/24/2012		40.7000	*	18.6000
Zinc	ug/L	MW-11	10/31/2018		119.0000	*	18.6000
Zinc	ug/L	MW-11	12/17/2018		82.8000	*	18.6000
Zinc	ug/L	MW-11	06/03/2021		140.0000	*	18.6000
Zinc	ug/L	MW-11	08/03/2021		70.1000	*	18.6000
Zinc	ug/L	MW-11	09/07/2022		146.0000	*	18.6000
Zinc	ug/L	MW-11	06/20/2023		98.5000	*	18.6000
Zinc	ug/L	MW-11	07/01/2024		60.0000	*	18.6000

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

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Antimony (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.69**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Arsenic (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **4.57**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Barium (ug/L)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}$ = **sum[Y]** / **N** = **201.961** / **42** = **4.809**	Compute mean on a natural log scale.
3	$S_Y = ((\mathbf{sum[Y^2]} - \mathbf{sum[Y]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{976.334} - \mathbf{40788.208}/\mathbf{42}) / (\mathbf{42}-1))^{1/2}$ = **0.356**	Compute sd on a natural log scale.
4	alpha = min[$(1-.95^{1/\mathbf{K}})^{1/3}$, .01] = min[$(1-.95^{1/\mathbf{432}})^{1/3}$, .01] = **0.01**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
5	$PL = \exp[\overline{\mathbf{Y}} + \mathbf{tS_Y}(1+1/\mathbf{N})^{1/2}]$ = exp[**4.809** + (**2.421*****0.356**)(1+1/**42**)$^{1/2}$] = **292.857**	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beryllium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.27**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cadmium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.209**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Chromium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **2.63**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cobalt (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **3.4**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Copper (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **7.64**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Field pH (SU)
Normal Prediction Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **280.67** / **39** = **7.197**	Compute upgradient mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2028.483** - **78775.649**/**39**) / (**39**-1))^{½} = **0.476**	Compute upgradient sd.
3	alpha = min[(1-.95$^{1/\mathbf{K}}$)$^{1/3}$, .01] = min[(1-.95$^{1/\mathbf{432}}$)$^{1/3}$, .01] = **0.01**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
4	PL = $\overline{\mathbf{X}}$ + **tS**(1+1/**N**)^{½} = **7.197** + (**2.428*****0.476**)(1+1/**39**)^{½} = **8.366**	One-sided normal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Field Specific Conductance (umhos/cm)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}$ = **sum[Y]** / **N** = **250.727** / **39** = **6.429**	Compute mean on a natural log scale.
3	$S_Y = ((\mathbf{sum[Y^2]} - \mathbf{sum[Y]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{1615.677} - \mathbf{62863.858}/\mathbf{39}) / (\mathbf{39}-1))^{1/2}$ = **0.316**	Compute sd on a natural log scale.
4	alpha = min[$(1-.95^{1/\mathbf{K}})^{1/3}$, .01] = min[$(1-.95^{1/\mathbf{432}})^{1/3}$, .01] = **0.01**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
5	$PL = \exp[\overline{\mathbf{Y}} + \mathbf{tS_Y}(1+1/\mathbf{N})^{1/2}]$ $= \exp[\mathbf{6.429}$ $+ (\mathbf{2.428}*\mathbf{0.316})(1+1/\mathbf{39})^{1/2}]$ = **1345.996**	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Lead (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **3.25**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Nickel (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **20.9**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Selenium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.41**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Silver (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.24**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Thallium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.26**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

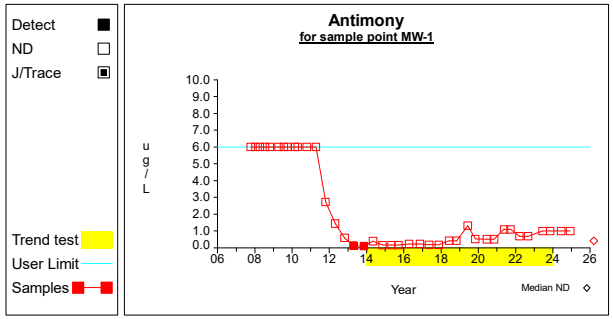
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vanadium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.77**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

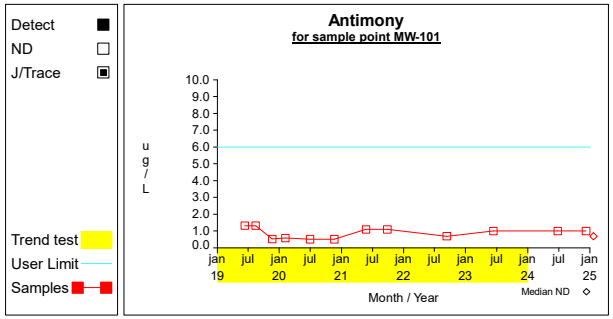
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Zinc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **18.6**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

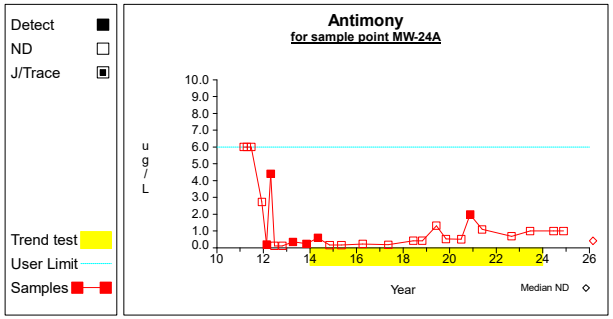
Time Series



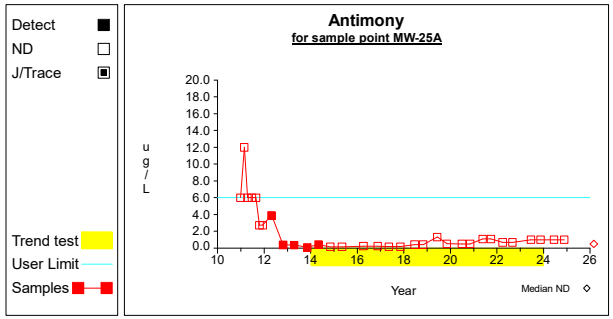
Graph 1



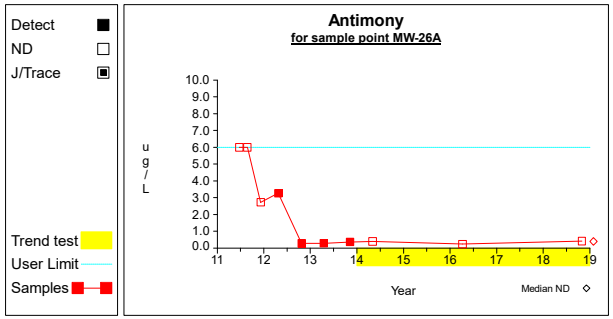
Graph 2



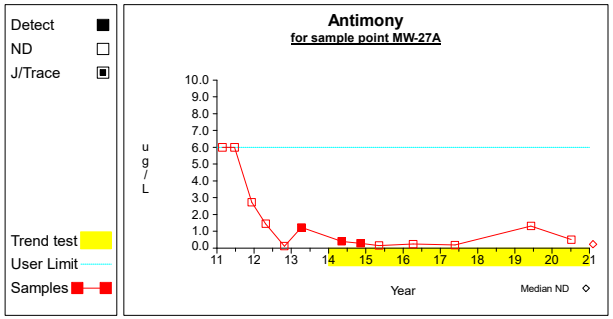
Graph 3



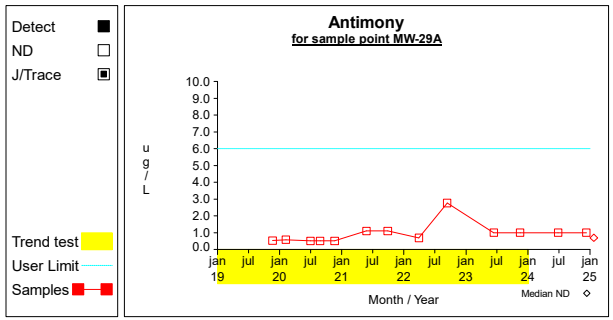
Graph 4



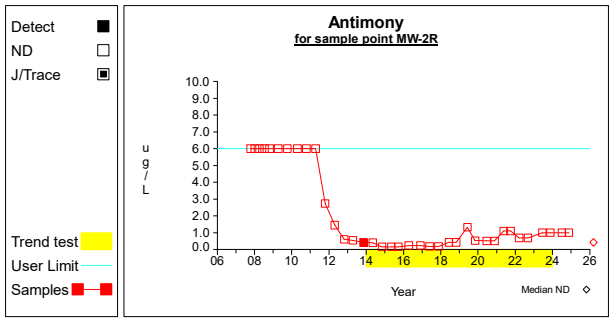
Graph 5



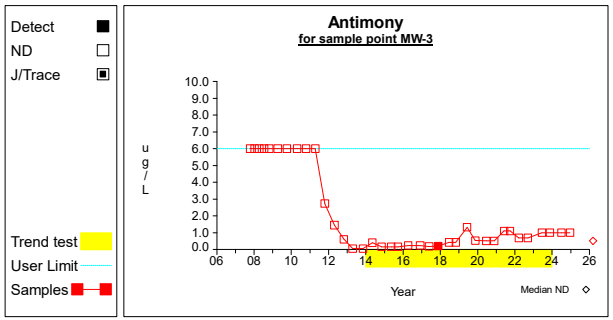
Graph 6



Graph 7

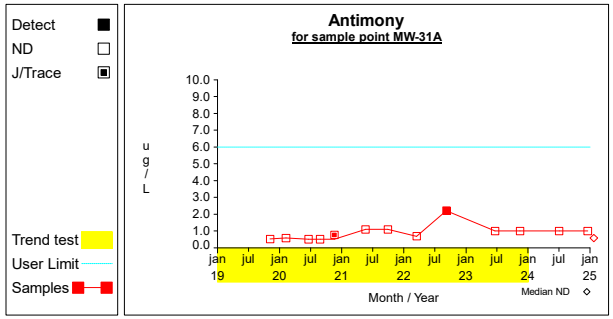


Graph 8

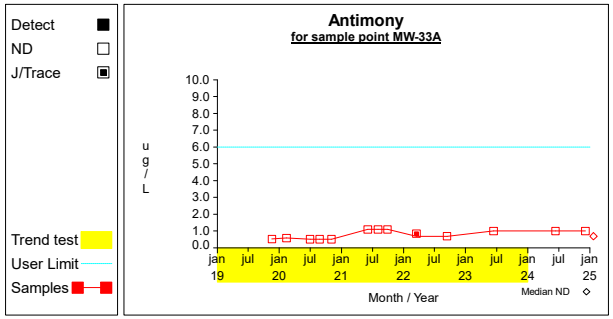


Graph 9

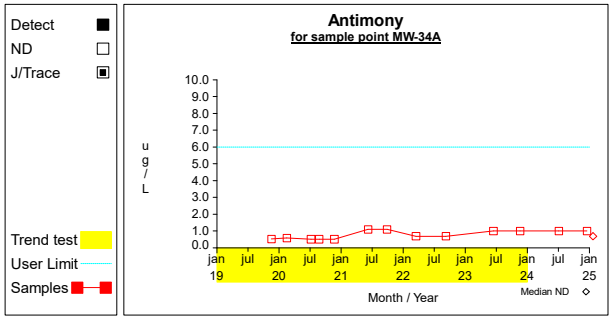
Time Series



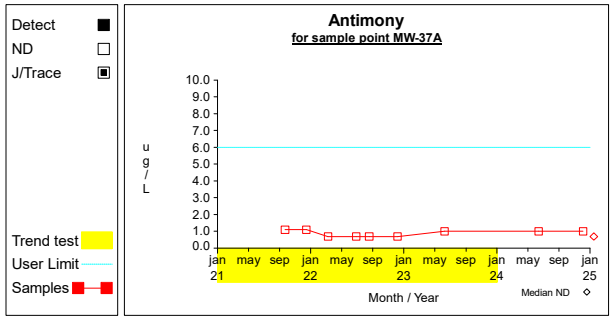
Graph 10



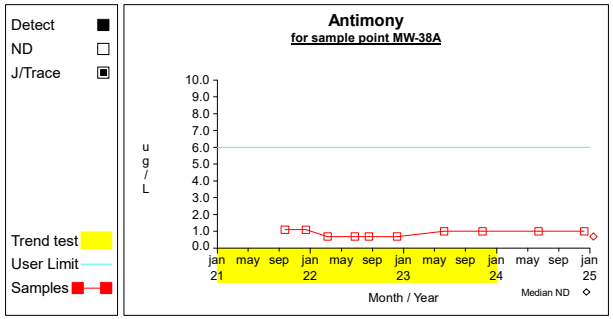
Graph 11



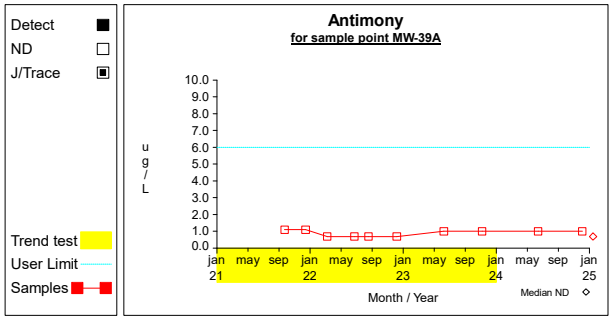
Graph 12



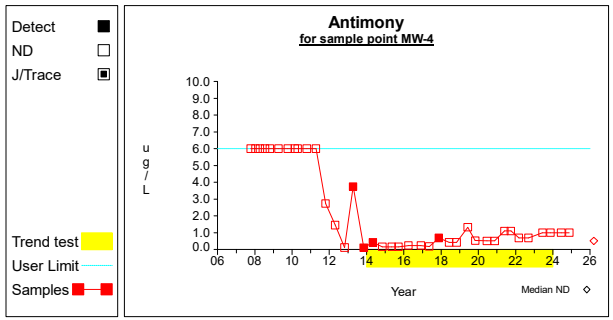
Graph 13



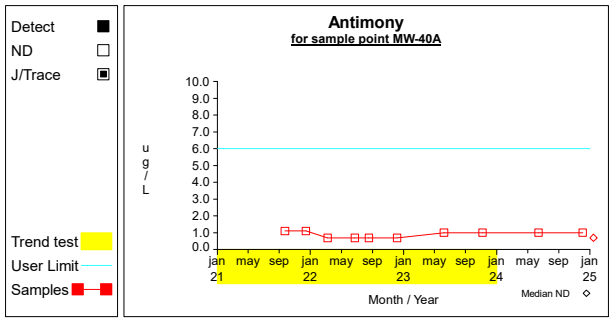
Graph 14



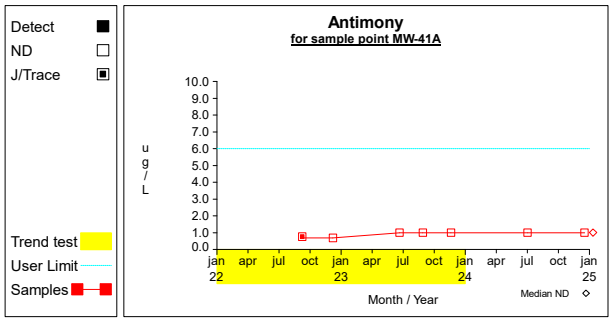
Graph 15



Graph 16

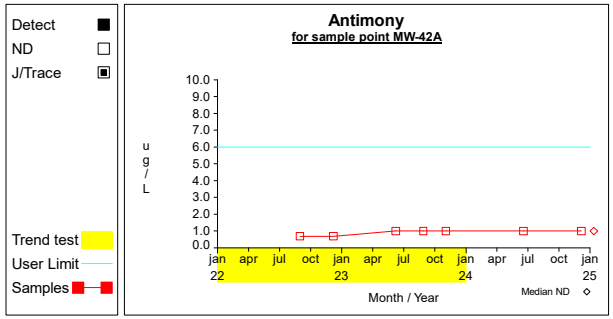


Graph 17

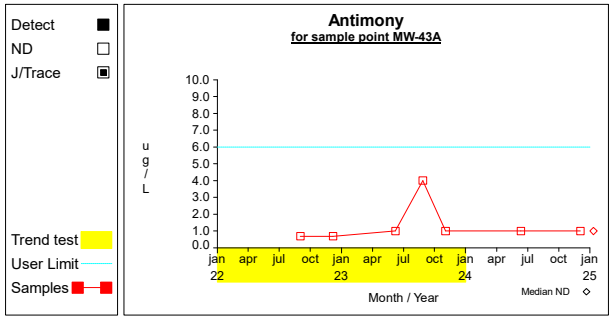


Graph 18

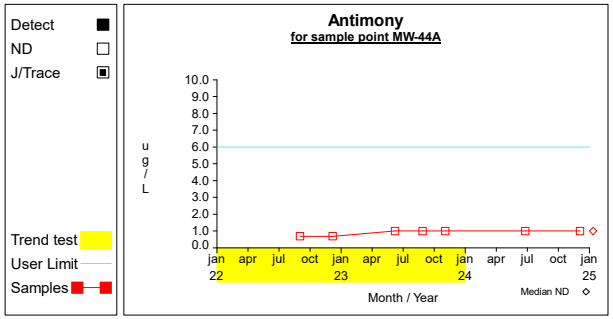
Time Series



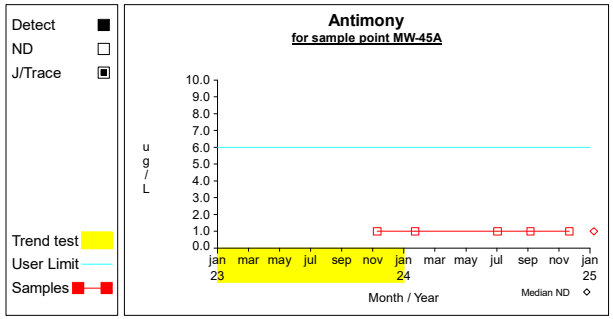
Graph 19



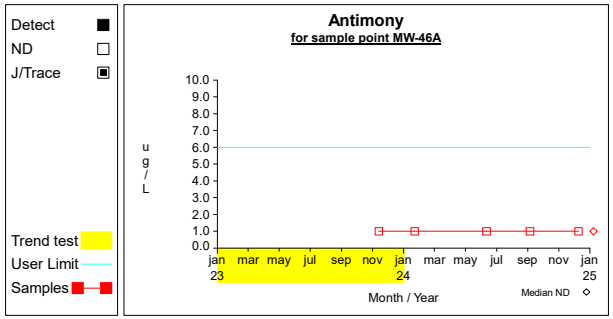
Graph 20



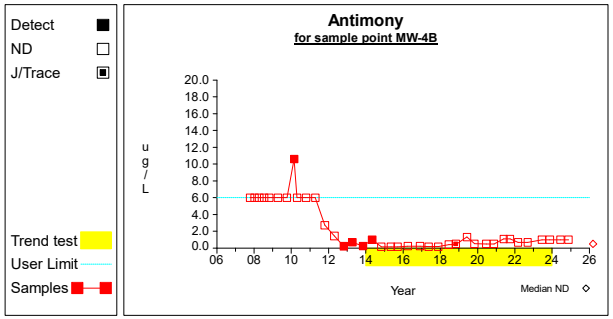
Graph 21



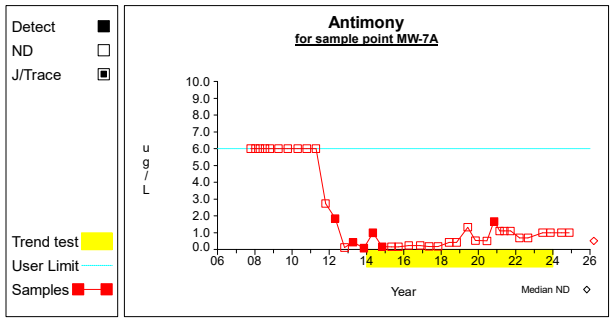
Graph 22



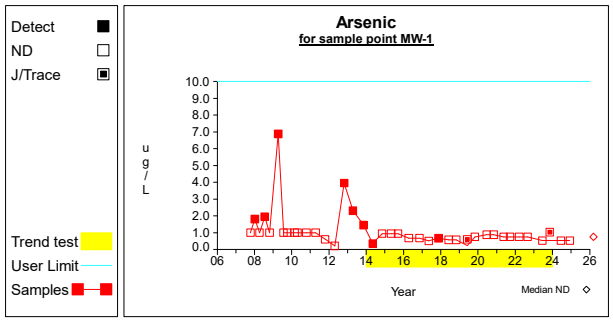
Graph 23



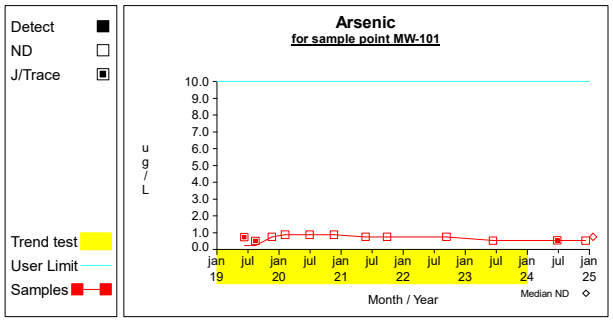
Graph 24



Graph 25

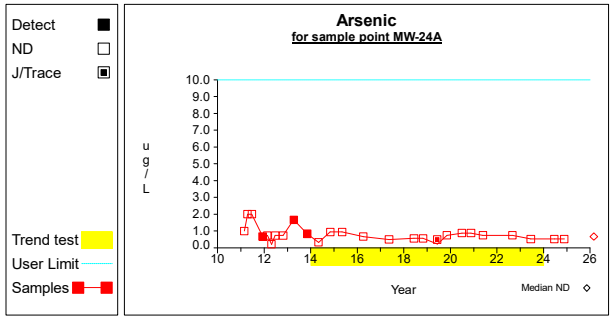


Graph 26

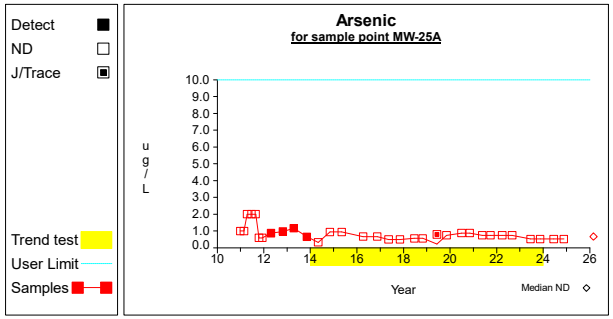


Graph 27

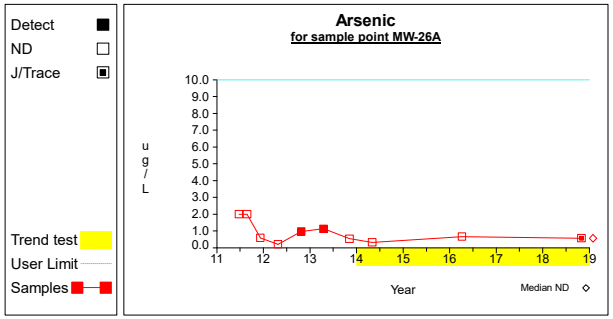
Time Series



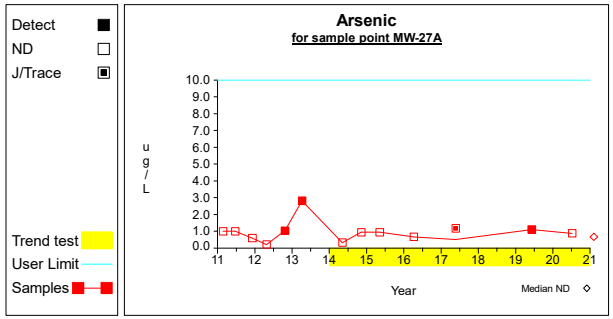
Graph 28



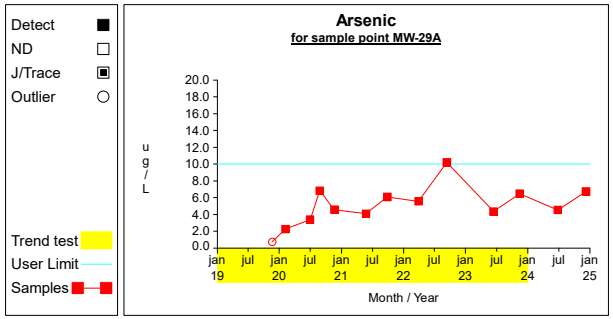
Graph 29



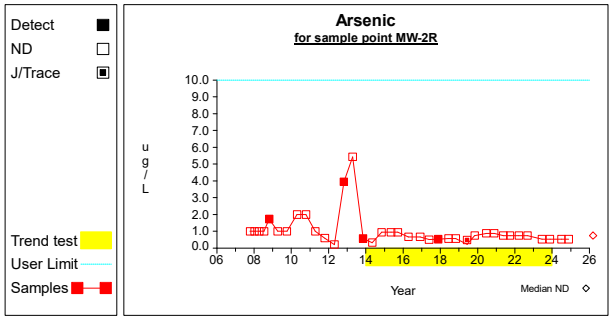
Graph 30



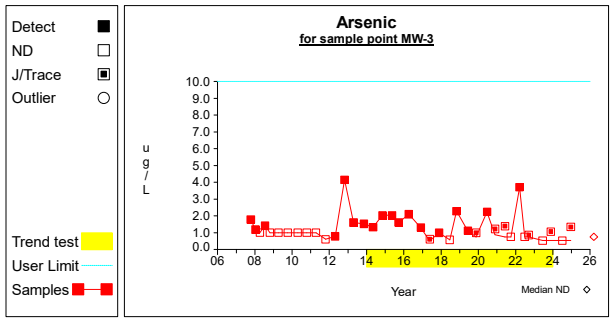
Graph 31



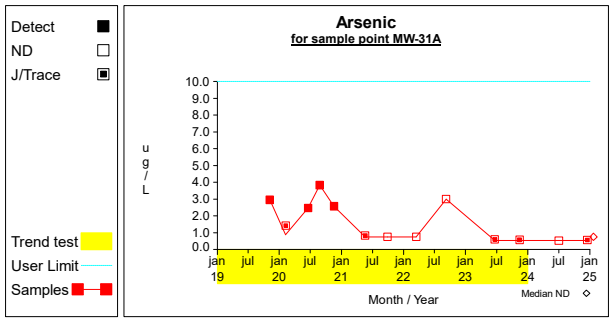
Graph 32



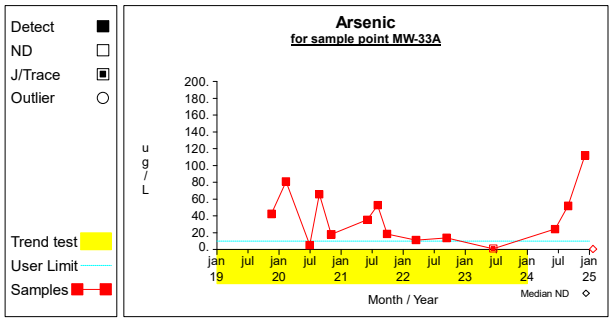
Graph 33



Graph 34

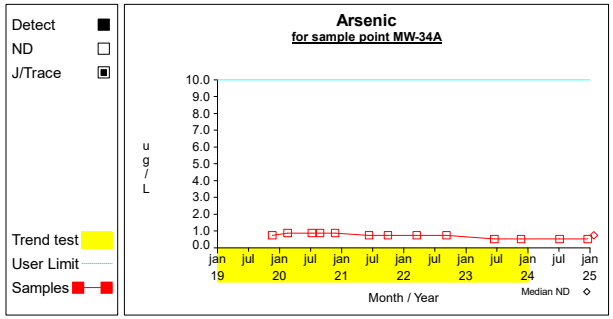


Graph 35

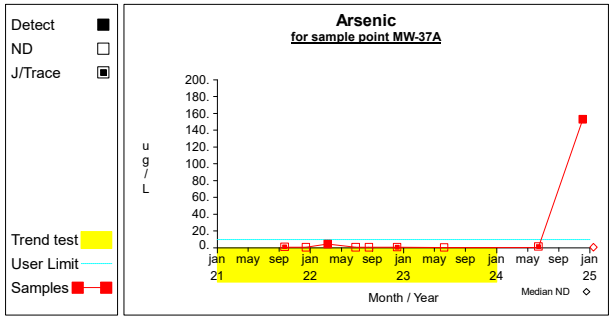


Graph 36

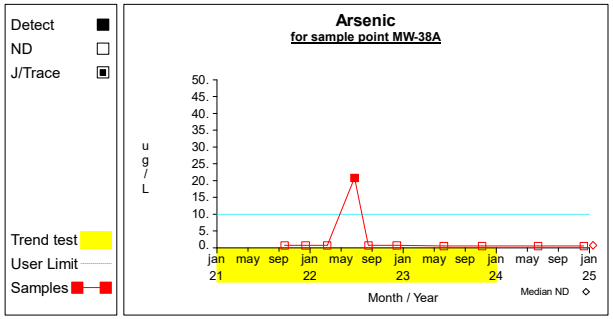
Time Series



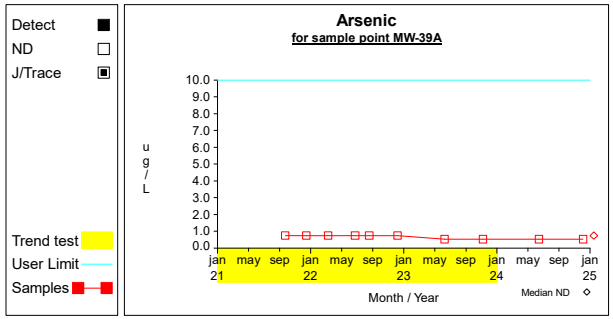
Graph 37



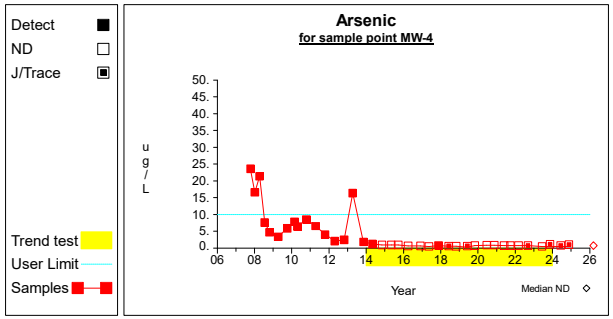
Graph 38



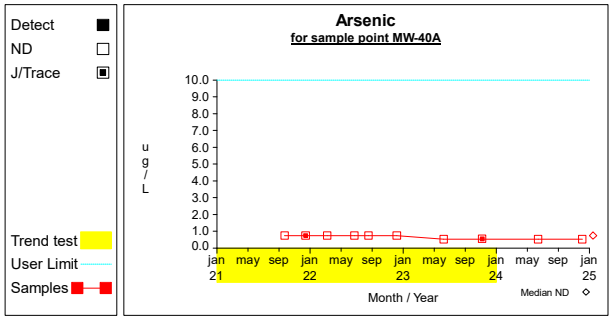
Graph 39



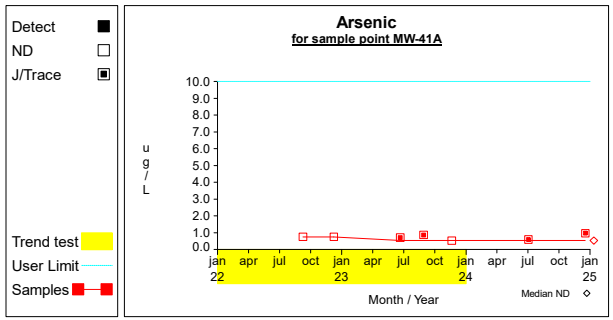
Graph 40



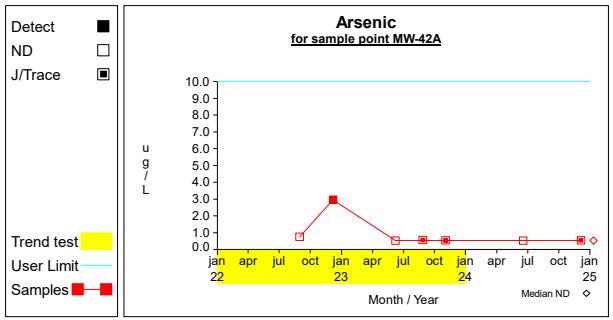
Graph 41



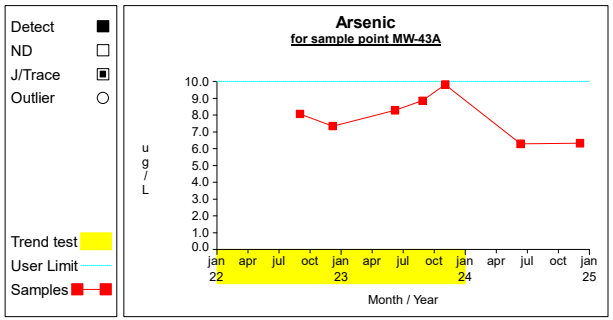
Graph 42



Graph 43

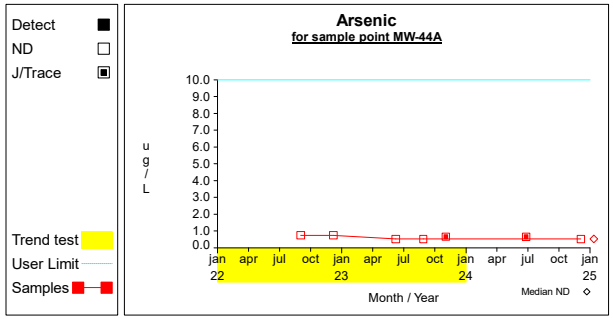


Graph 44

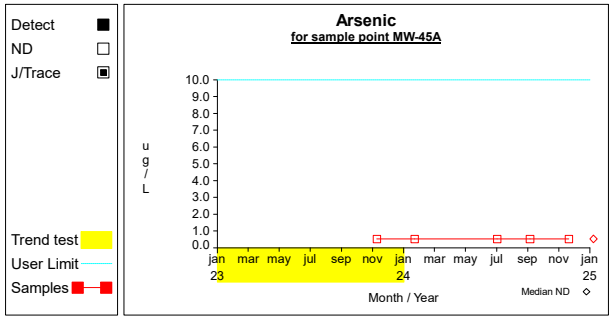


Graph 45

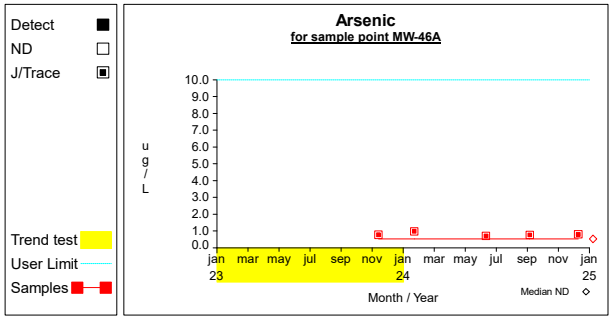
Time Series



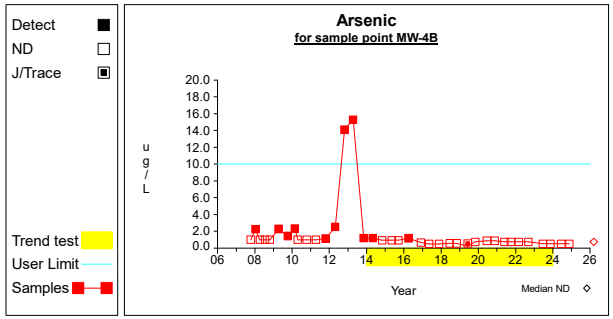
Graph 46



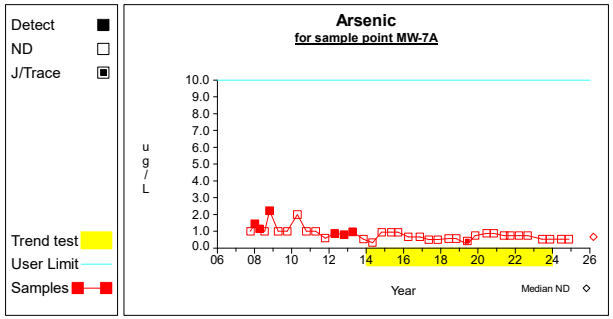
Graph 47



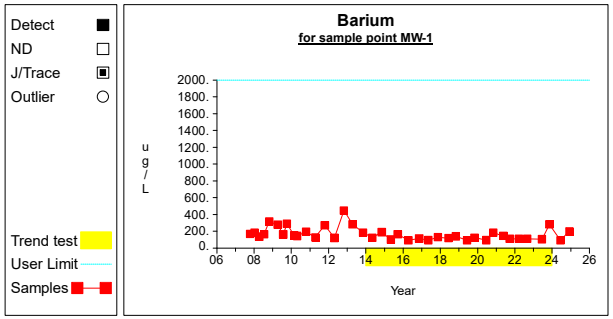
Graph 48



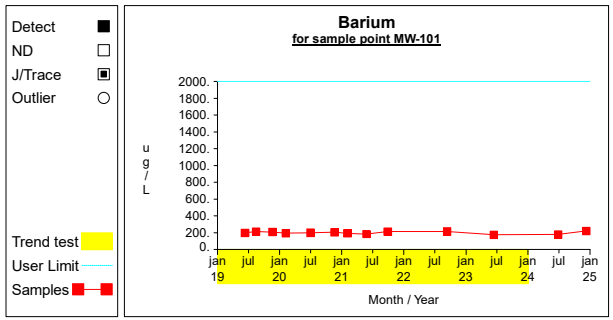
Graph 49



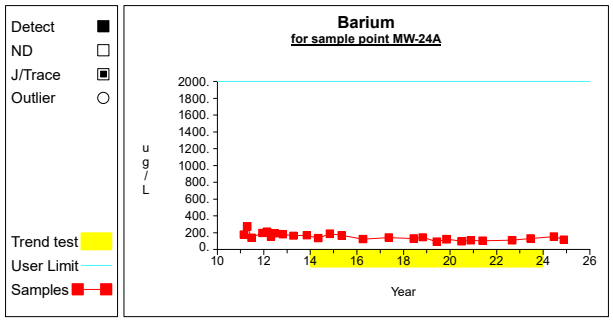
Graph 50



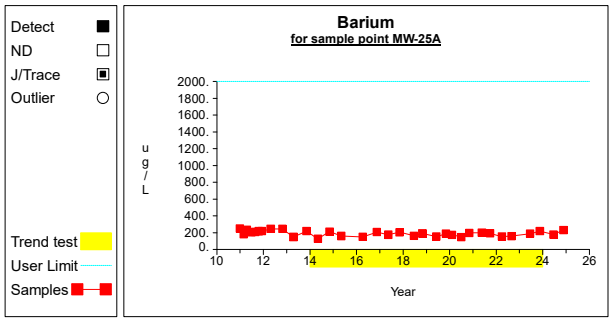
Graph 51



Graph 52

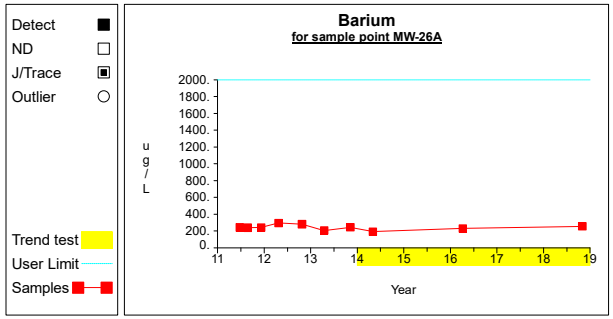


Graph 53

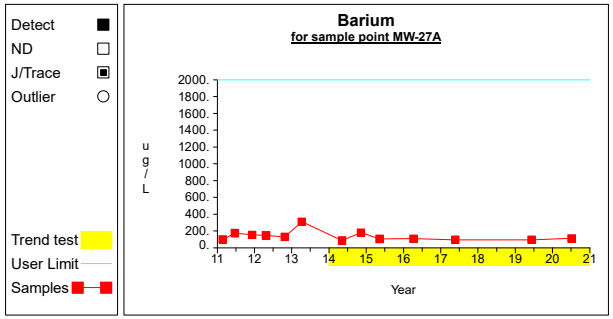


Graph 54

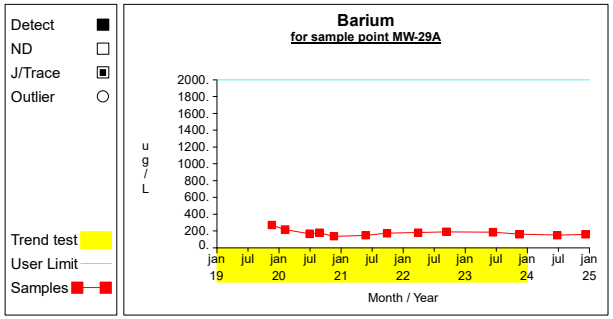
Time Series



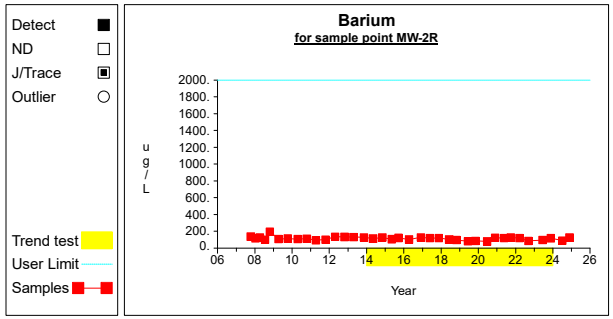
Graph 55



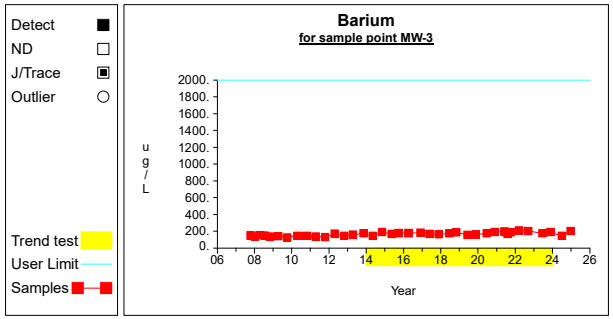
Graph 56



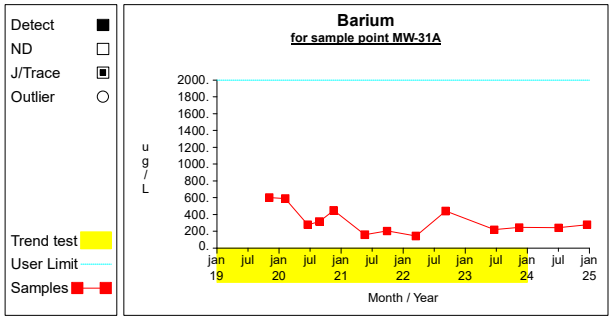
Graph 57



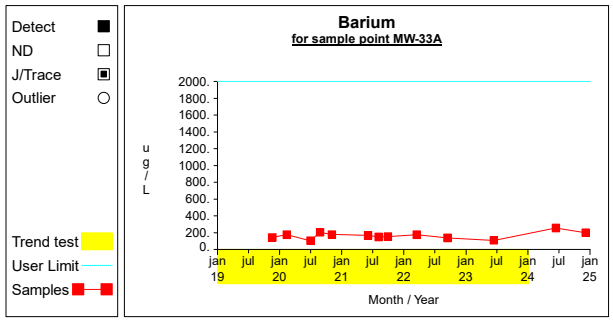
Graph 58



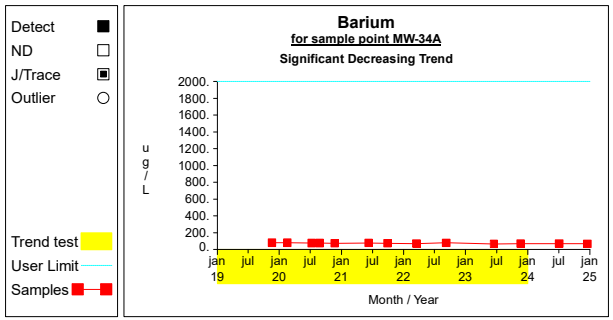
Graph 59



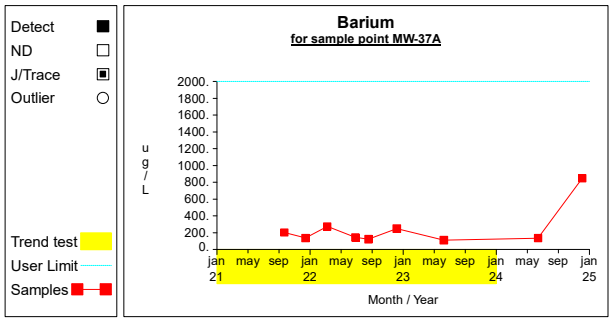
Graph 60



Graph 61

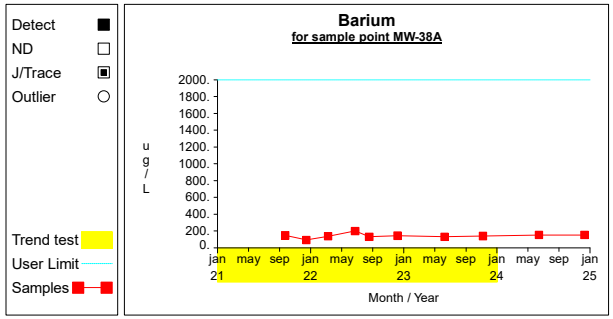


Graph 62

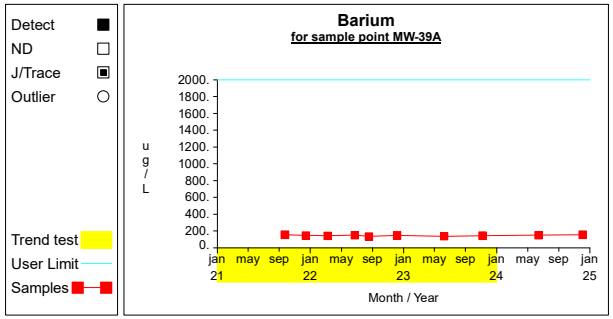


Graph 63

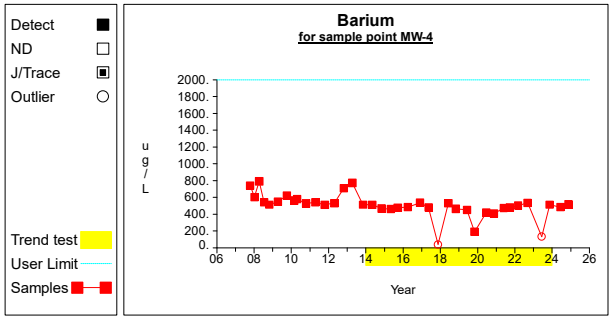
Time Series



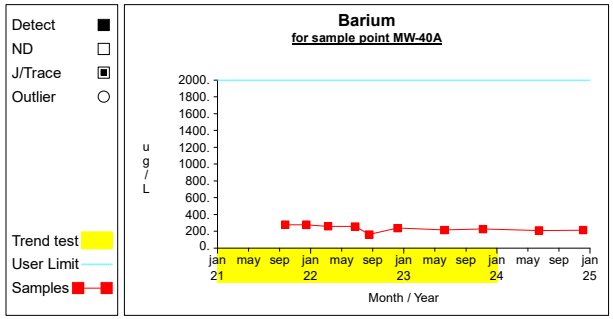
Graph 64



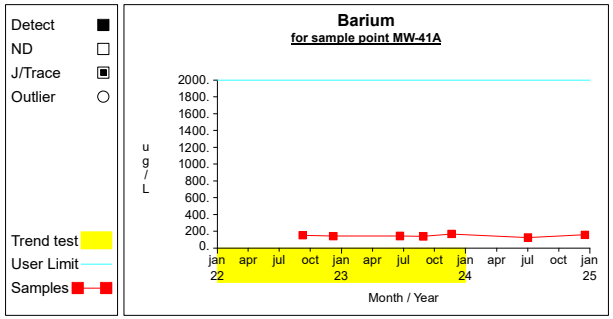
Graph 65



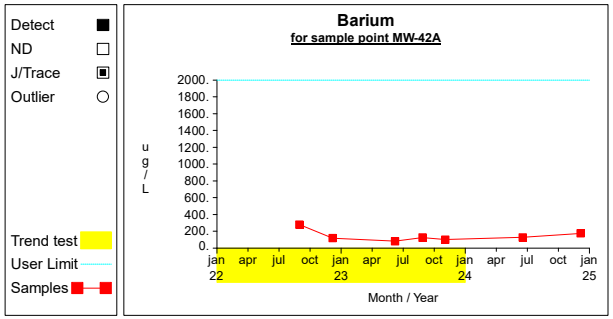
Graph 66



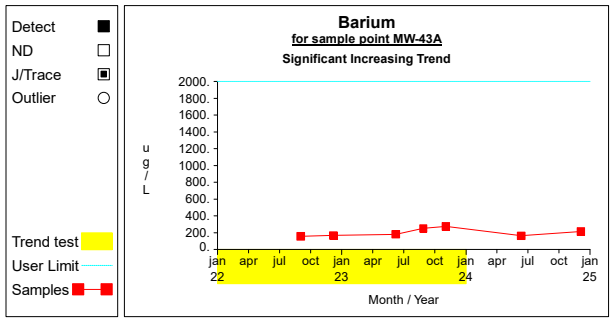
Graph 67



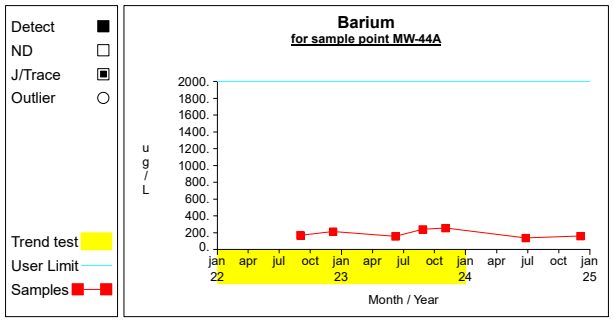
Graph 68



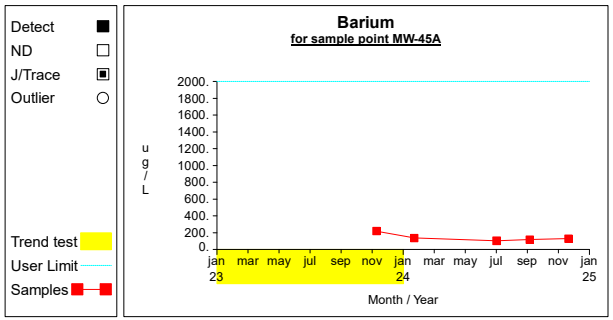
Graph 69



Graph 70

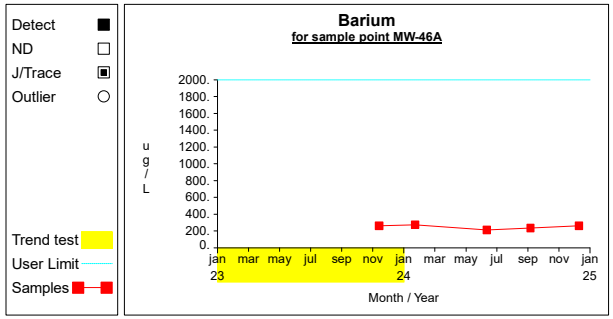


Graph 71

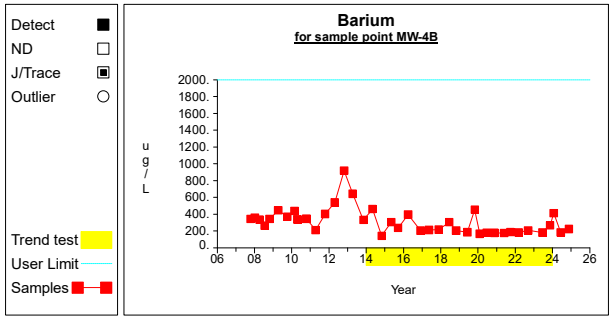


Graph 72

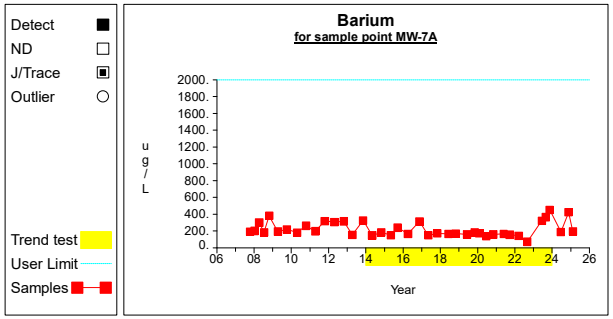
Time Series



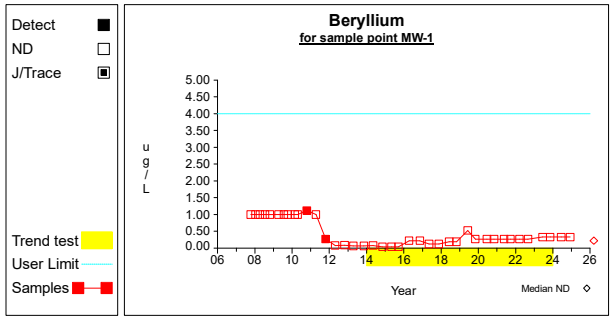
Graph 73



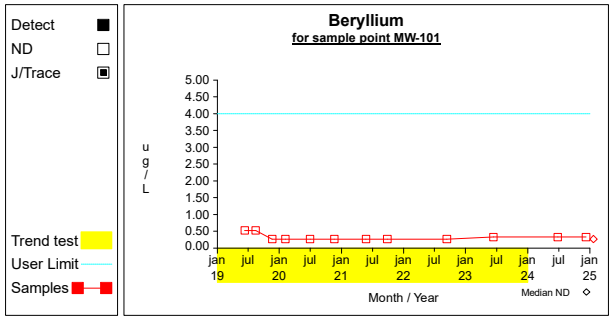
Graph 74



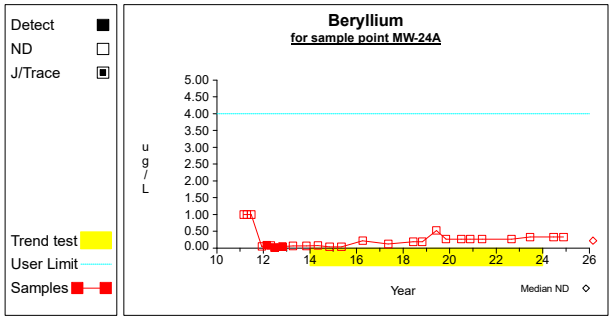
Graph 75



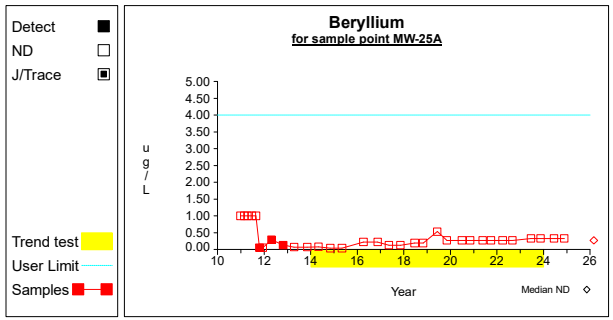
Graph 76



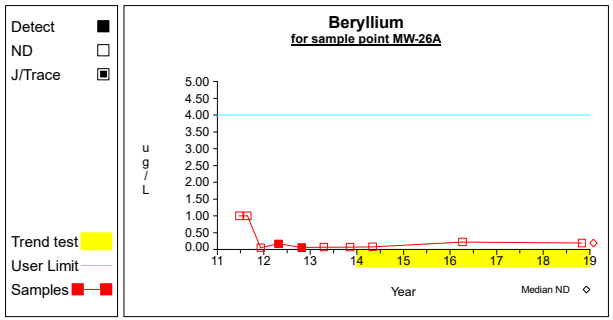
Graph 77



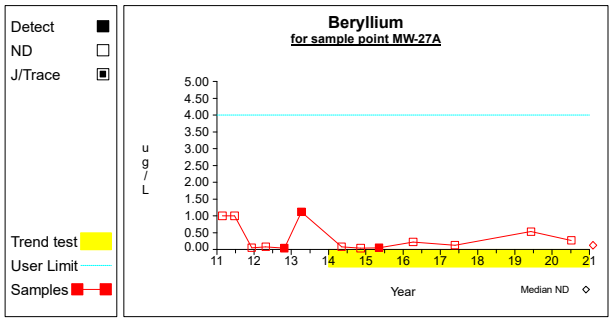
Graph 78



Graph 79

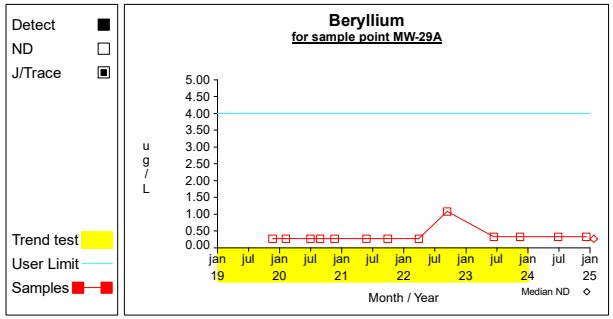


Graph 80

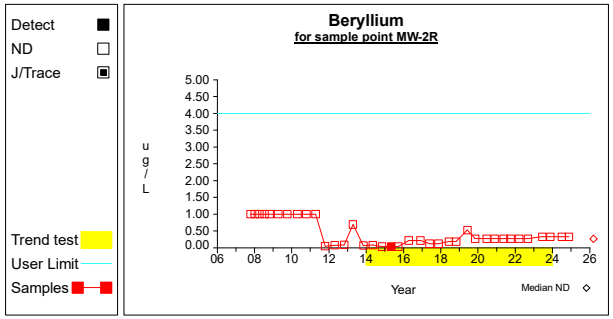


Graph 81

Time Series



Graph 82



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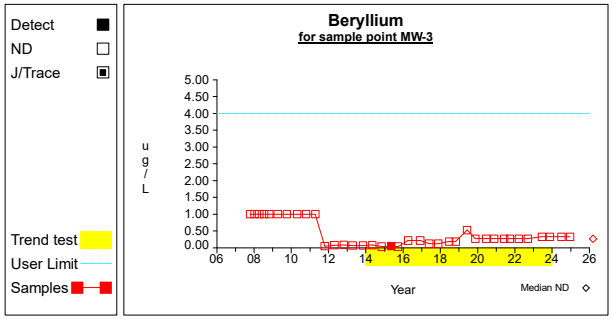

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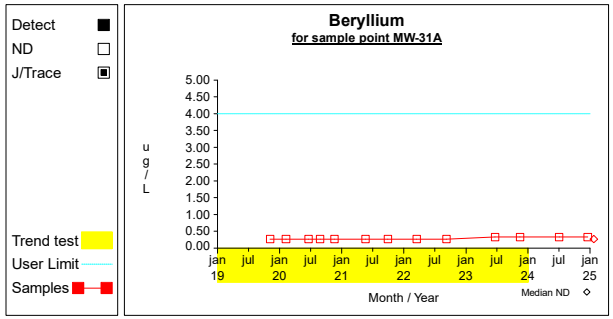
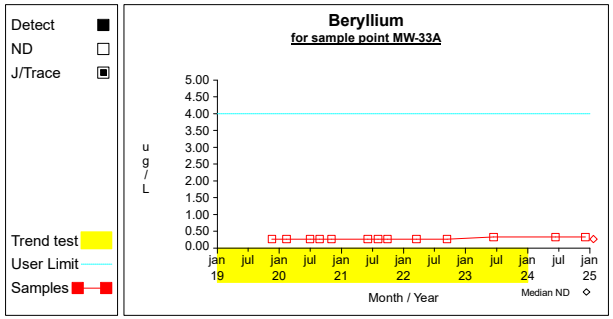
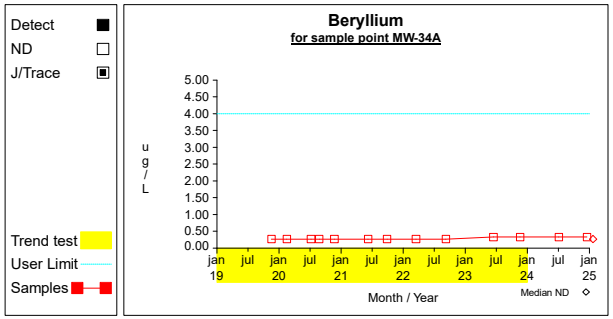


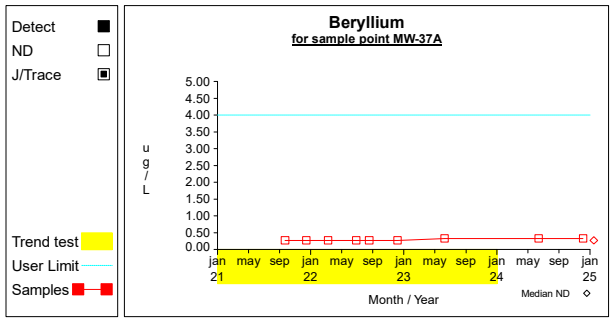
Graph 85



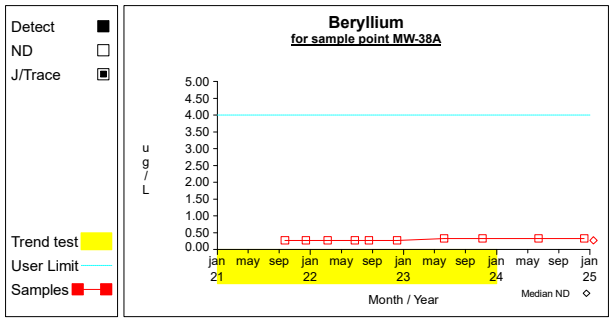
Graph 86



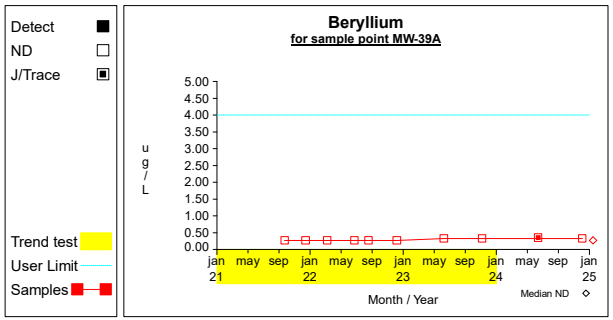
Graph 87



Graph 88

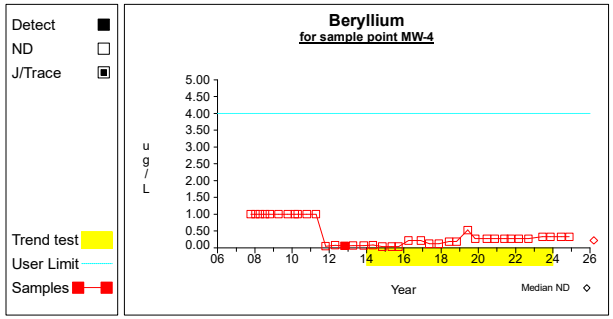


Graph 89

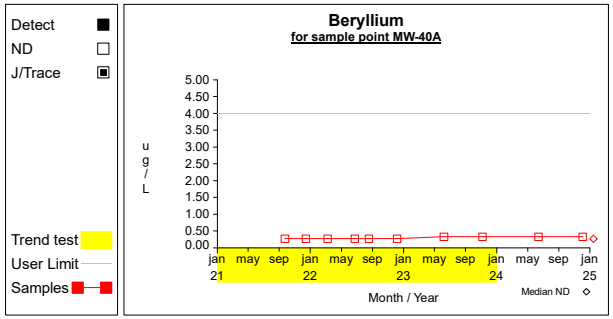


Graph 90

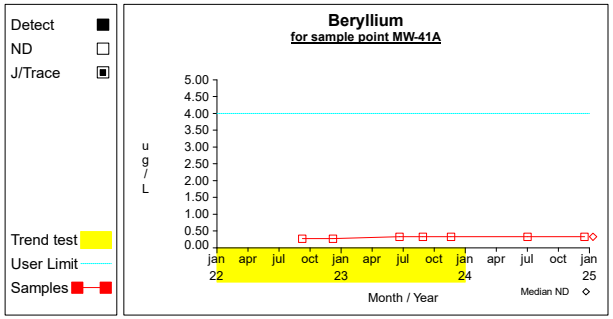
Time Series



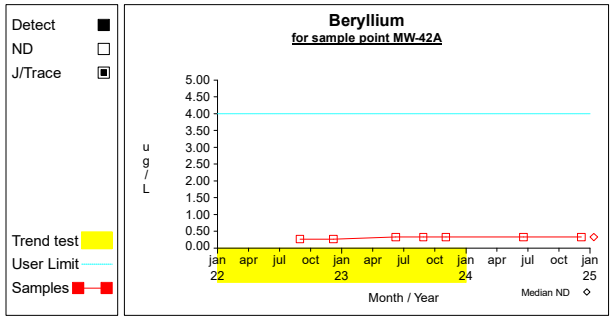
Graph 91



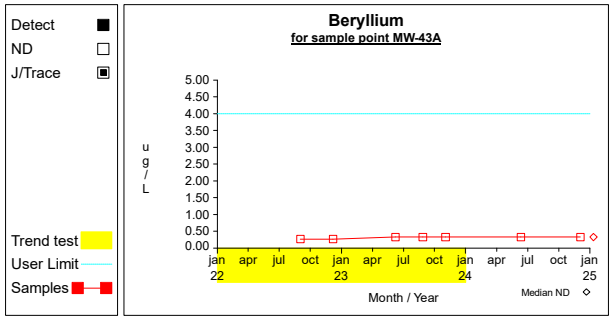
Graph 92



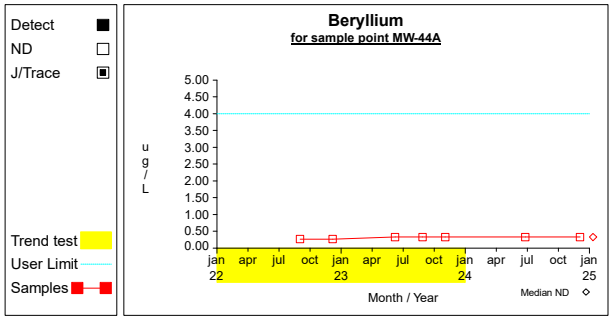
Graph 93



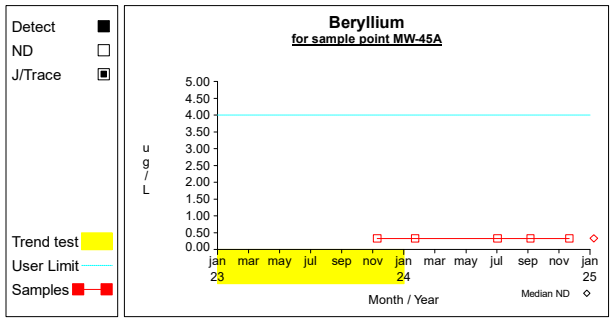
Graph 94



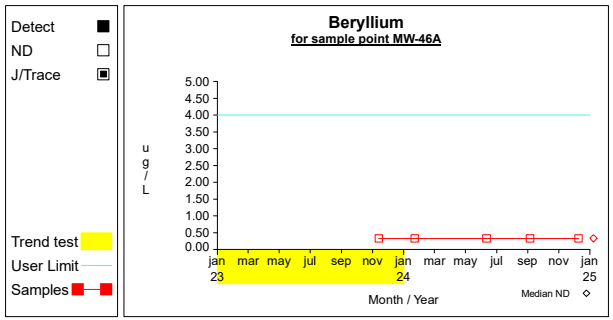
Graph 95



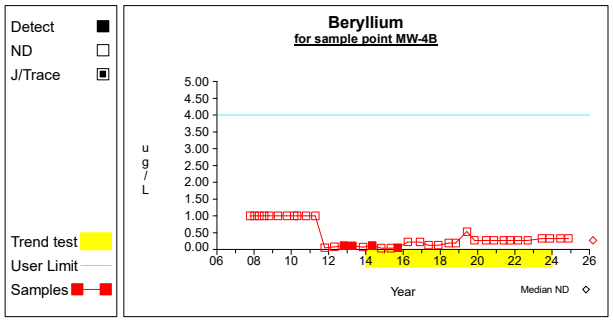
Graph 96



Graph 97

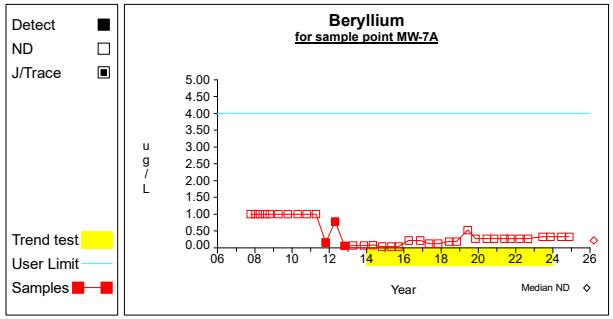


Graph 98

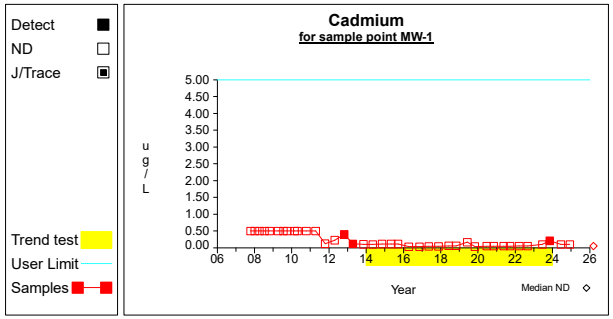


Graph 99

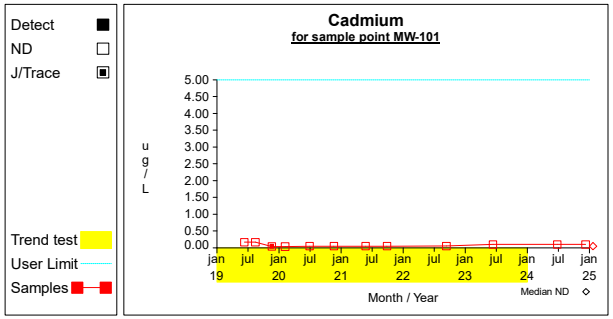
Time Series



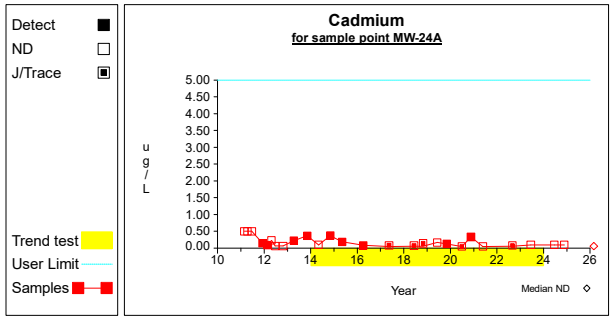
Graph 100



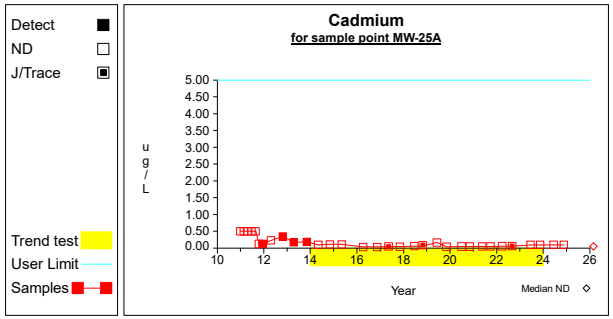
Graph 101



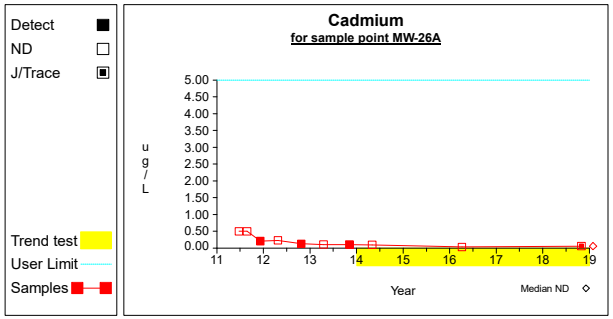
Graph 102



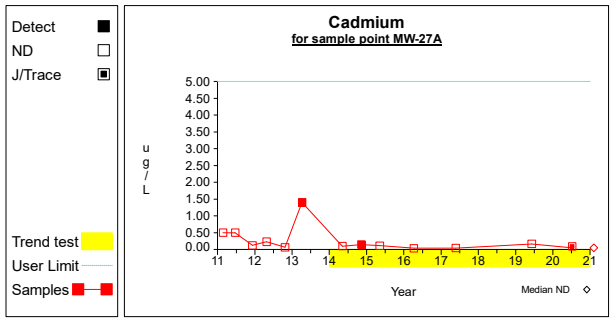
Graph 103



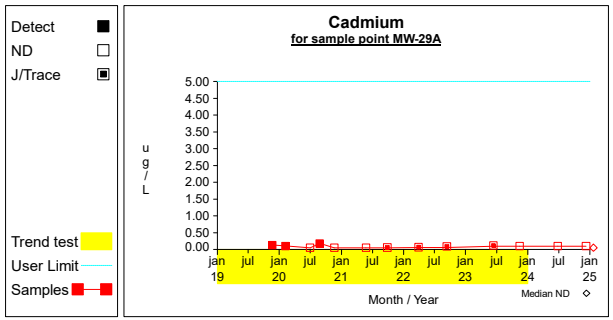
Graph 104



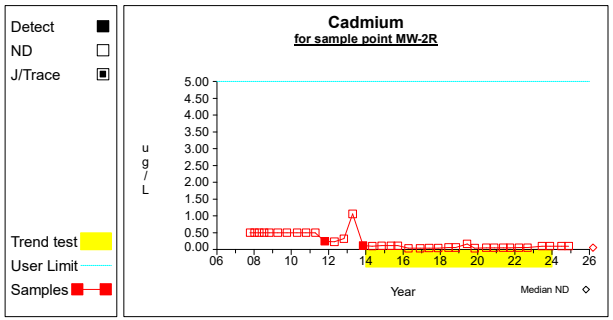
Graph 105



Graph 106

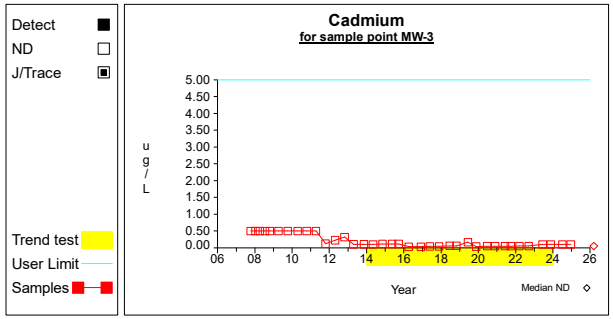


Graph 107

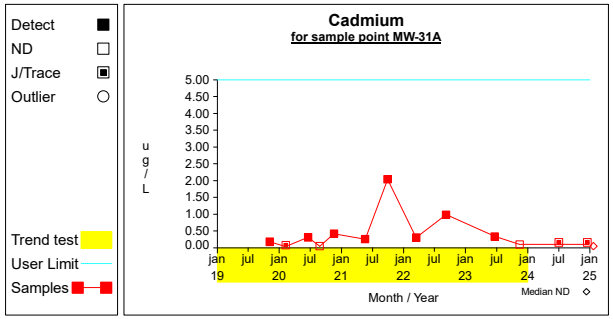


Graph 108

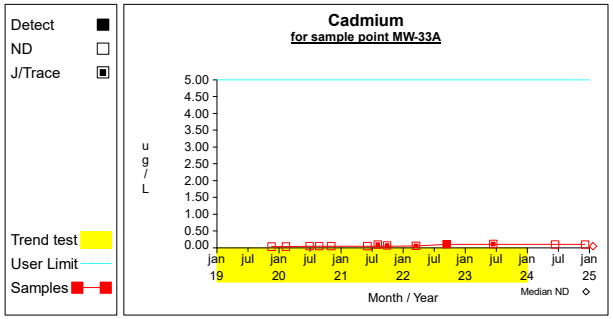
Time Series



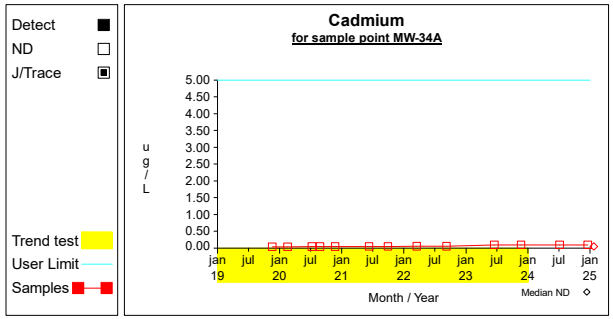
Graph 109



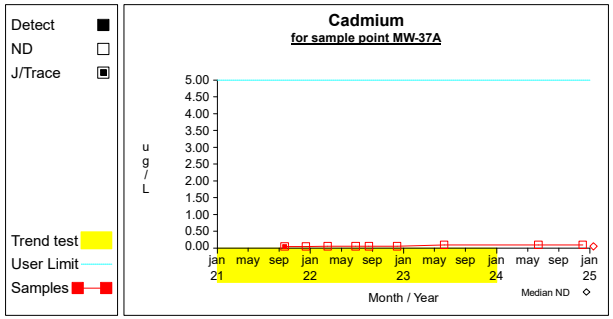
Graph 110



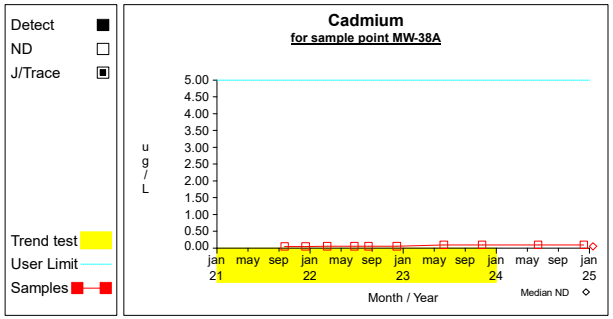
Graph 111



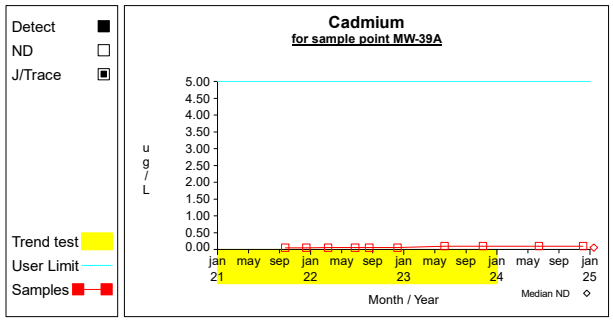
Graph 112



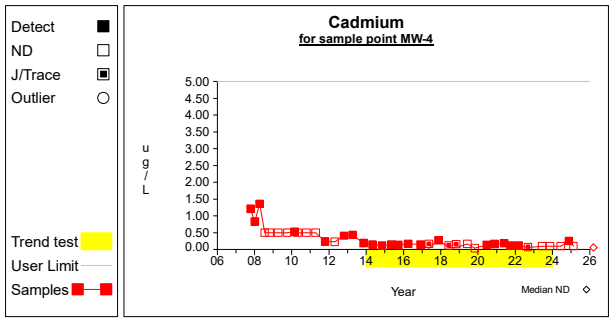
Graph 113



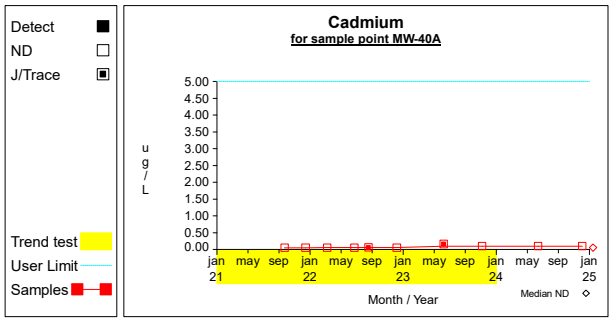
Graph 114



Graph 115

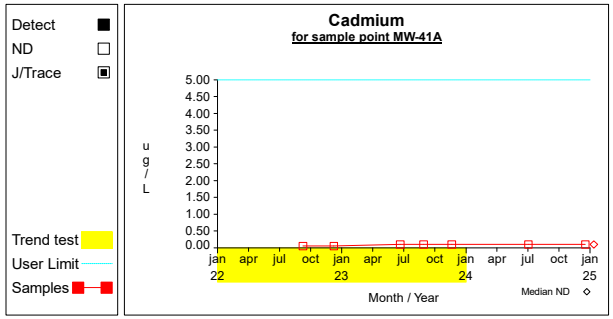


Graph 116

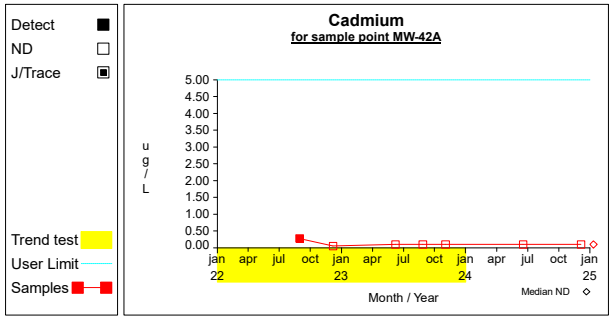


Graph 117

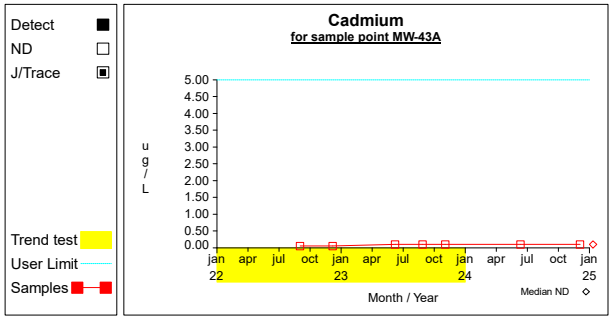
Time Series



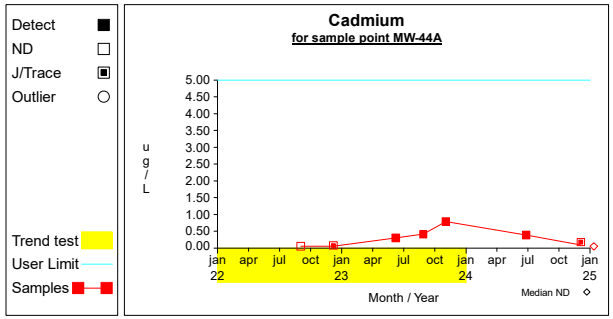
Graph 118



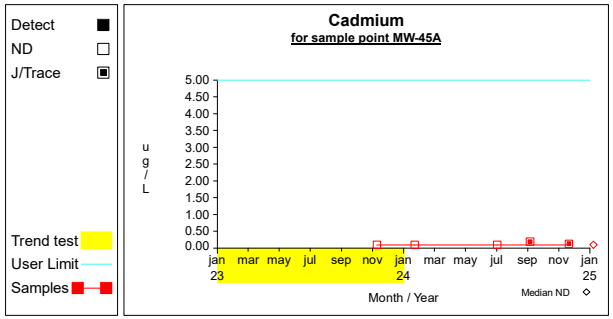
Graph 119



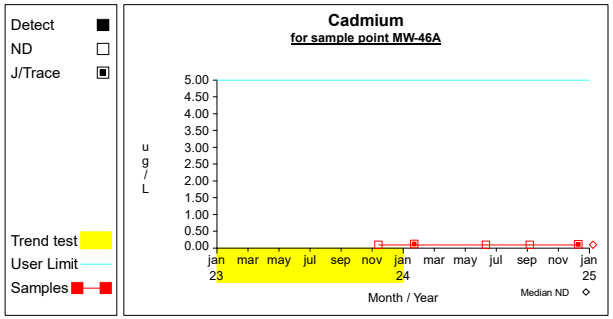
Graph 120



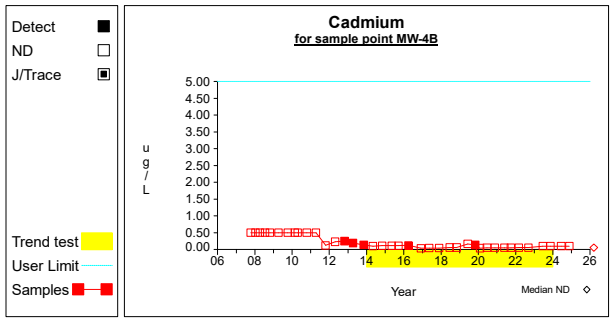
Graph 121



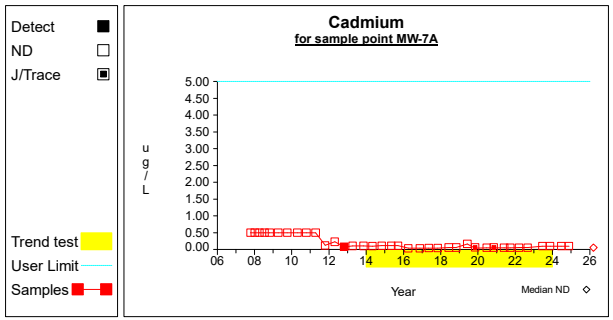
Graph 122



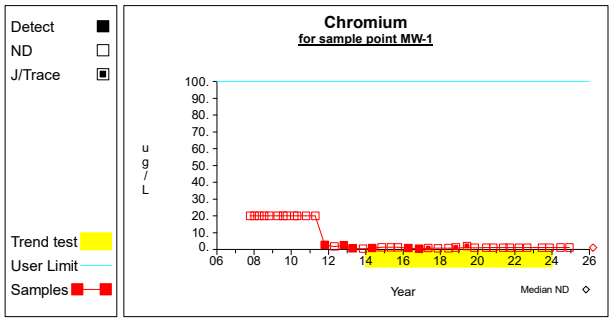
Graph 123



Graph 124

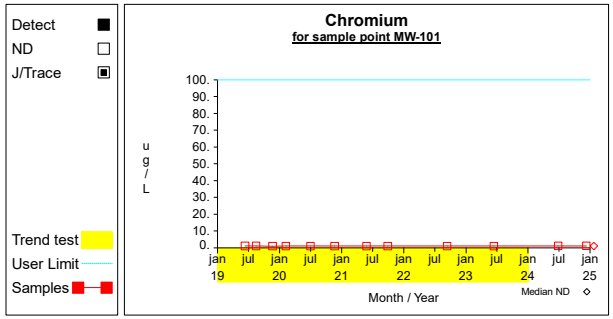


Graph 125

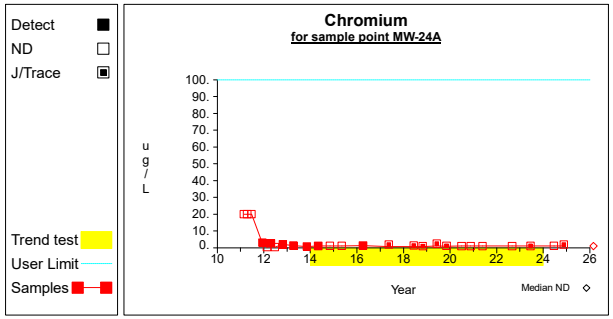


Graph 126

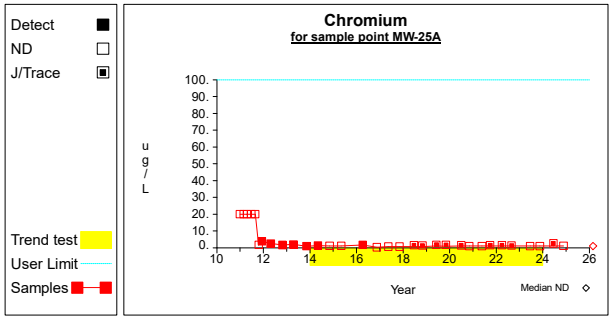
Time Series



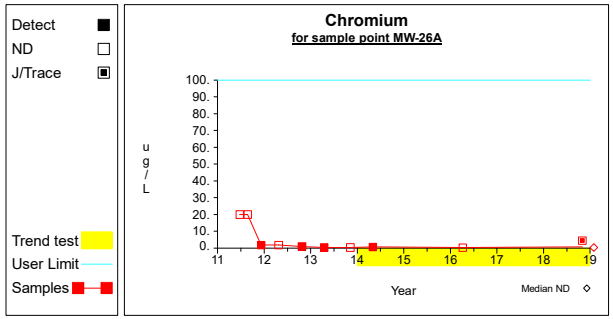
Graph 127



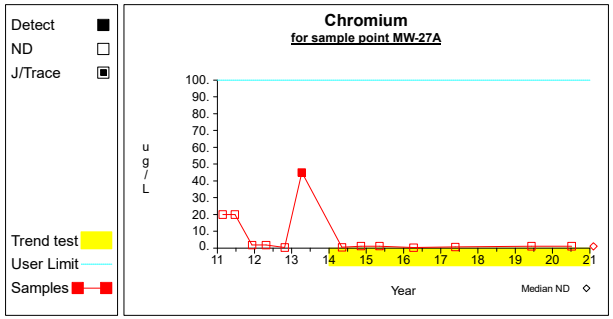
Graph 128



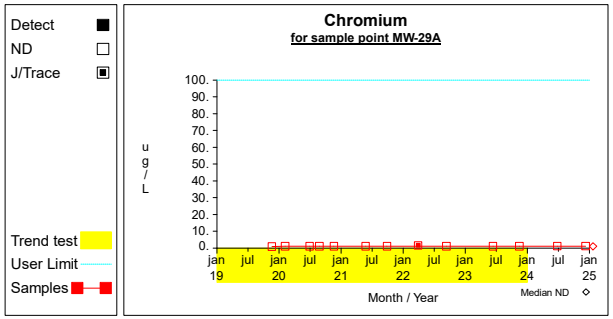
Graph 129



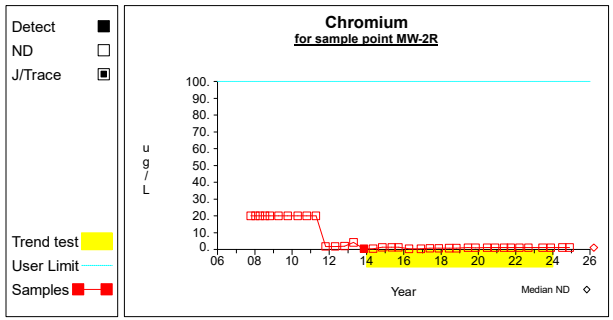
Graph 130



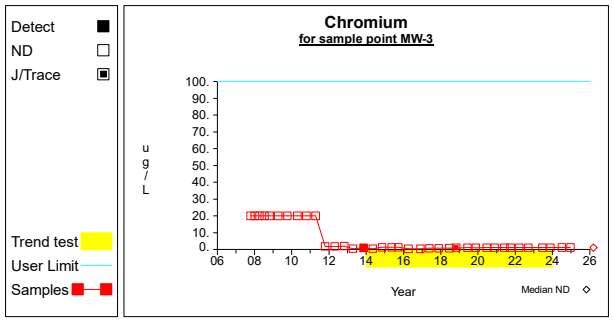
Graph 131



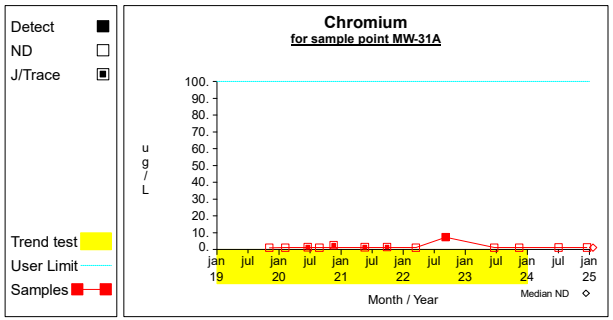
Graph 132



Graph 133

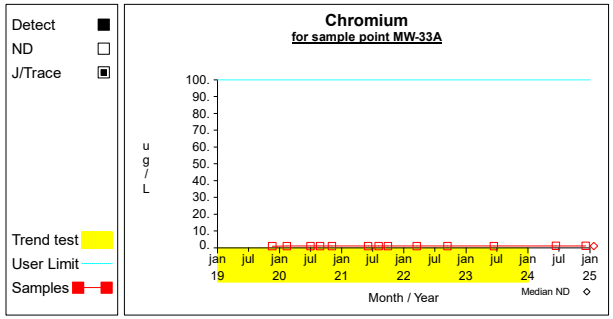


Graph 134

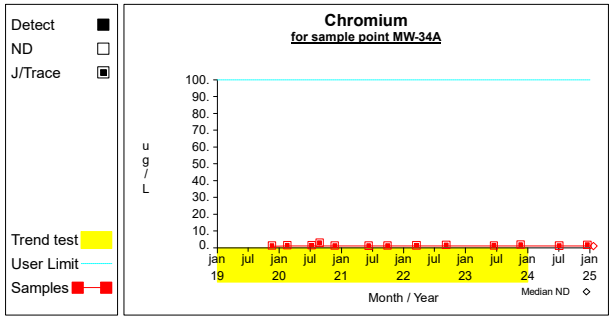


Graph 135

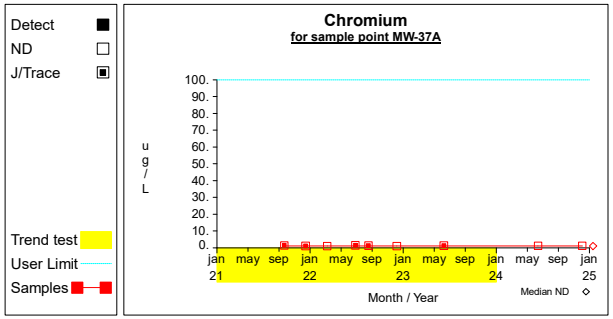
Time Series



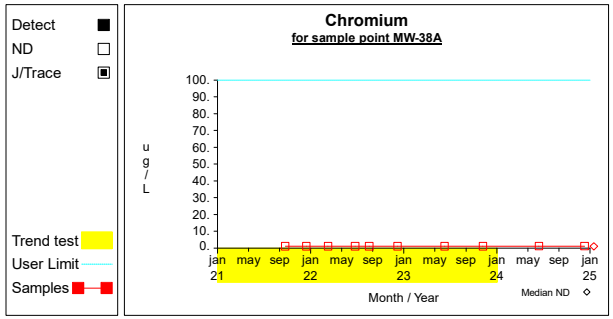
Graph 136



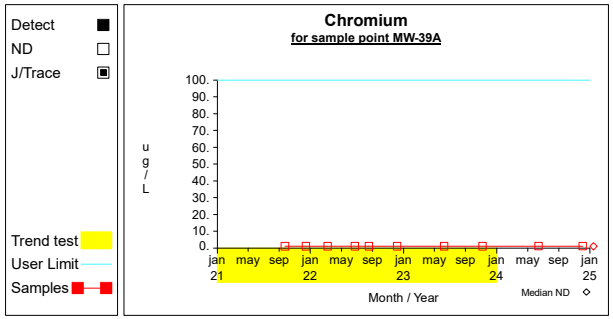
Graph 137



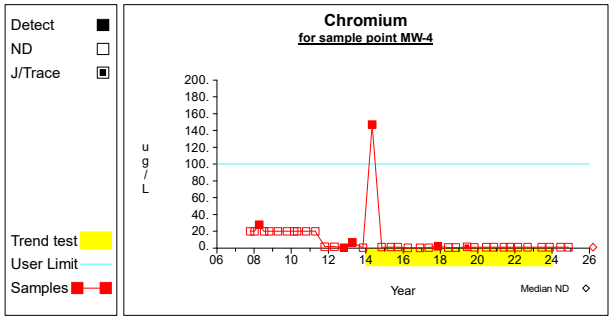
Graph 138



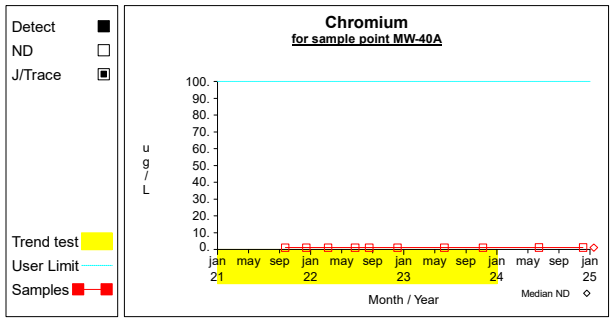
Graph 139



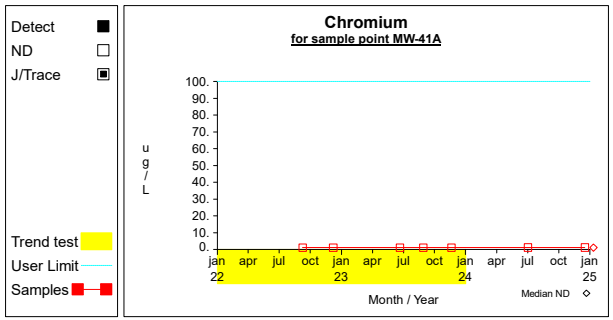
Graph 140



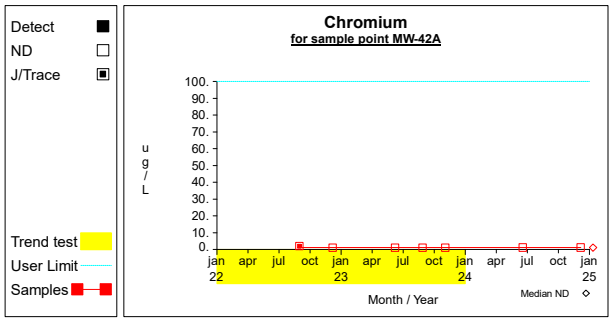
Graph 141



Graph 142

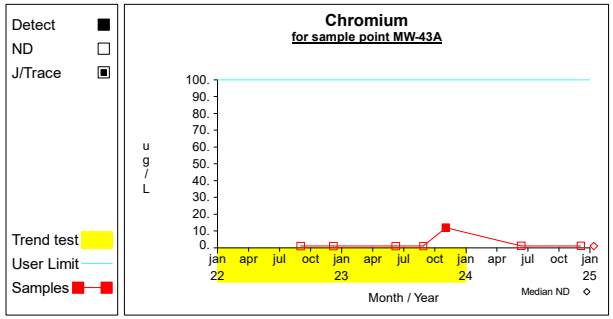


Graph 143

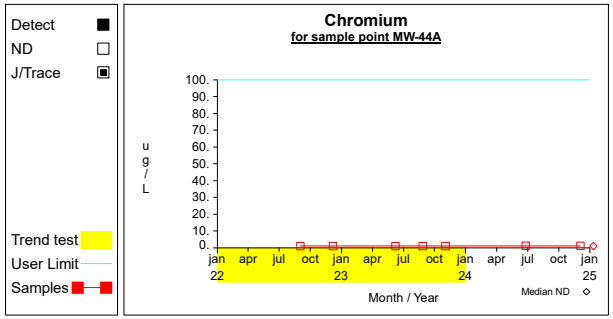


Graph 144

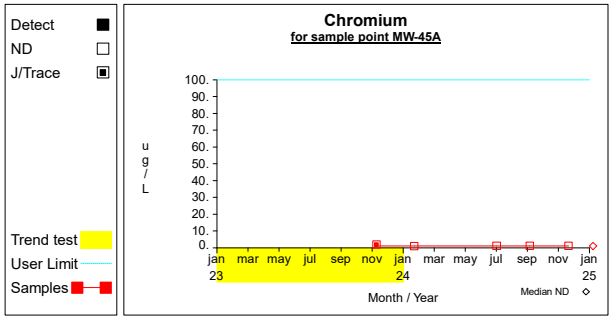
Time Series



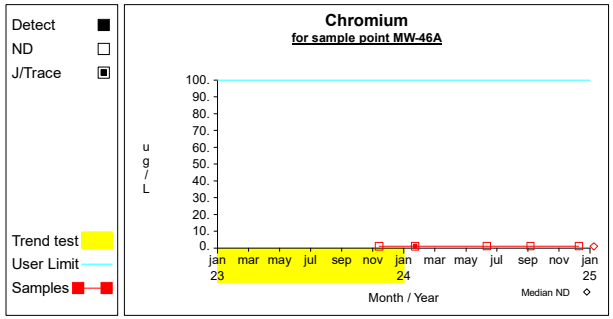
Graph 145



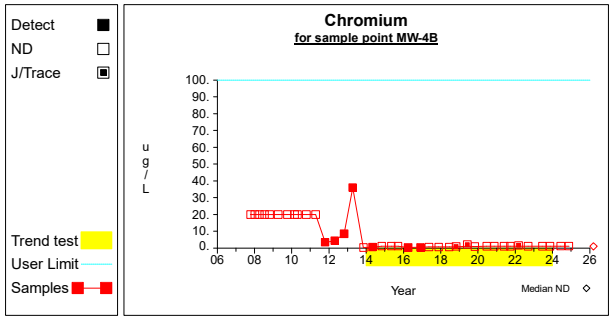
Graph 146



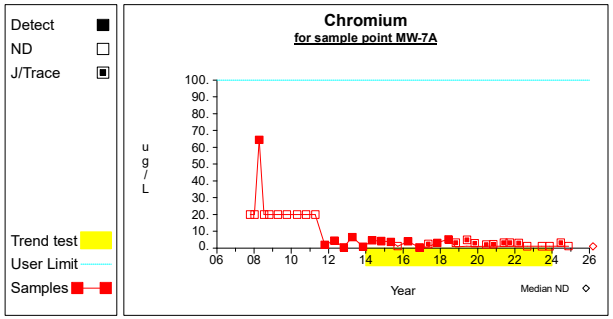
Graph 147



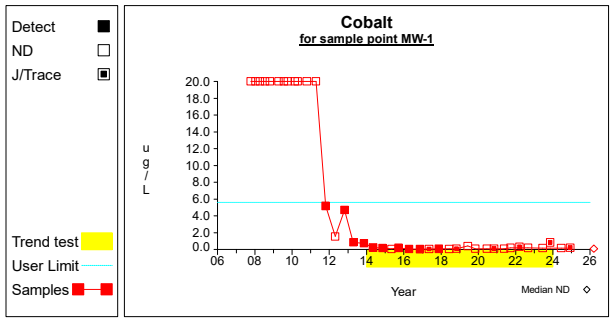
Graph 148



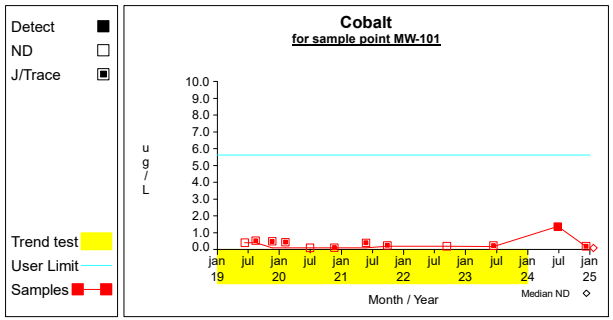
Graph 149



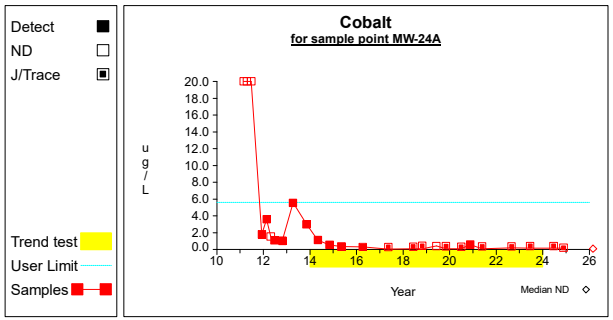
Graph 150



Graph 151

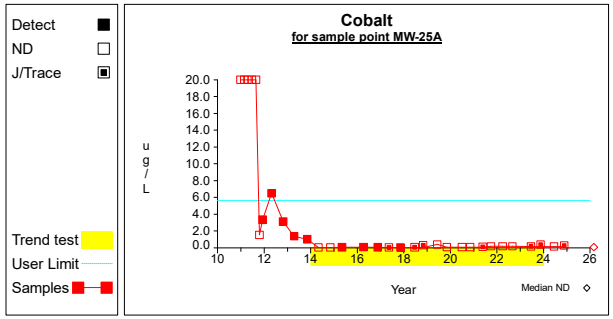


Graph 152

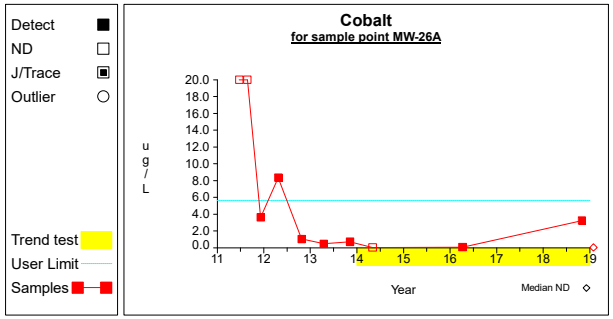


Graph 153

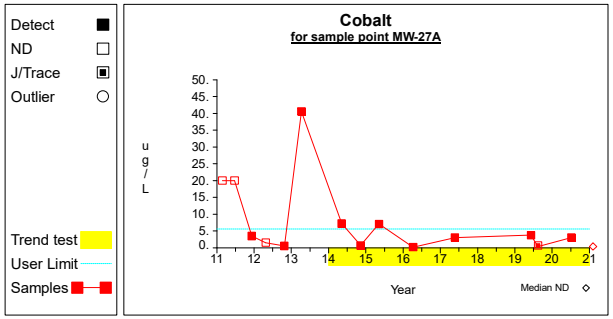
Time Series



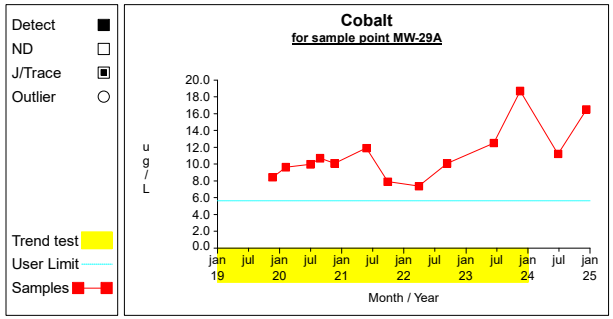
Graph 154



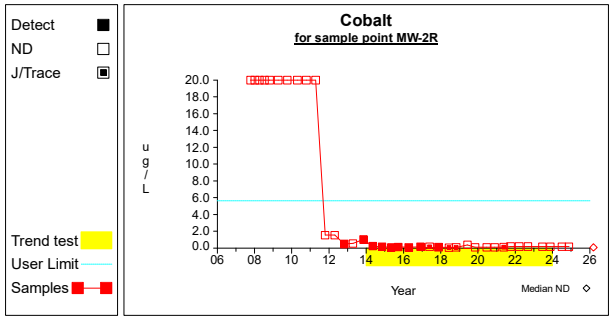
Graph 155



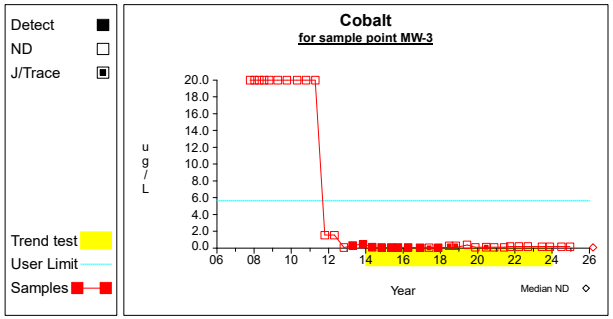
Graph 156



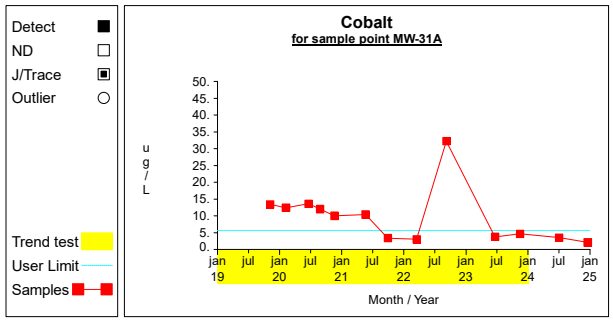
Graph 157



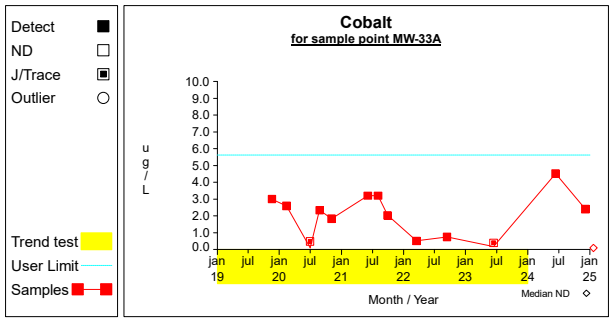
Graph 158



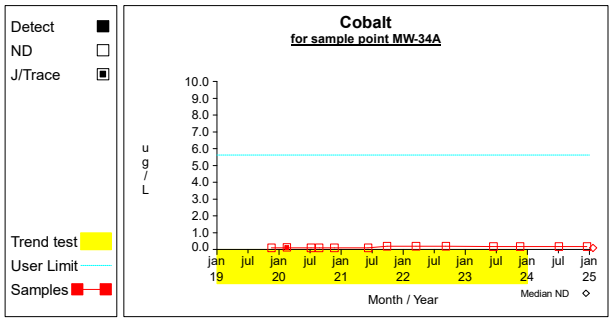
Graph 159



Graph 160

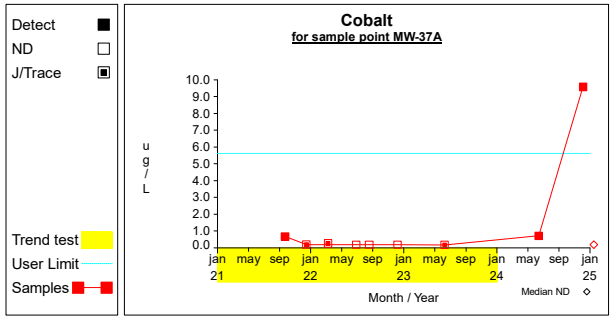


Graph 161

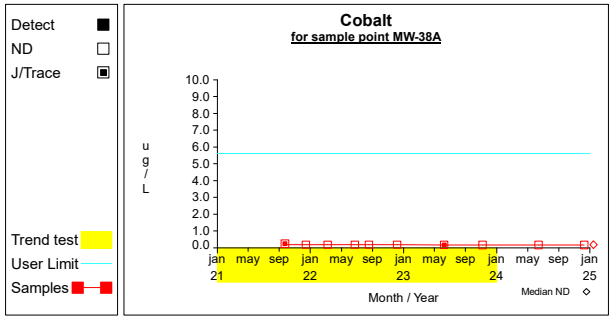


Graph 162

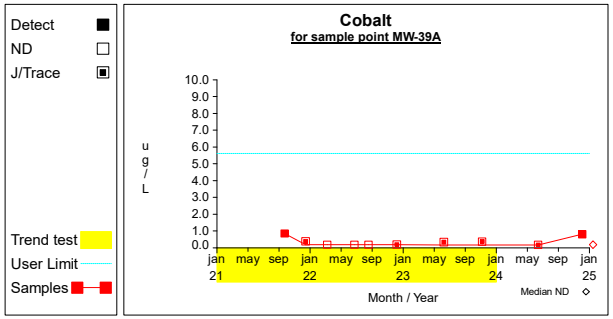
Time Series



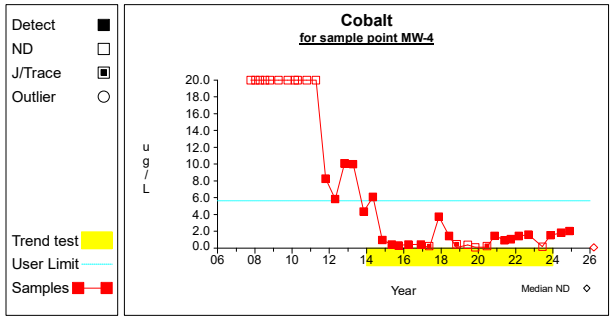
Graph 163



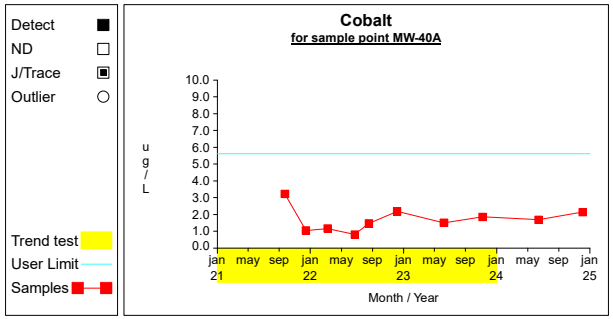
Graph 164



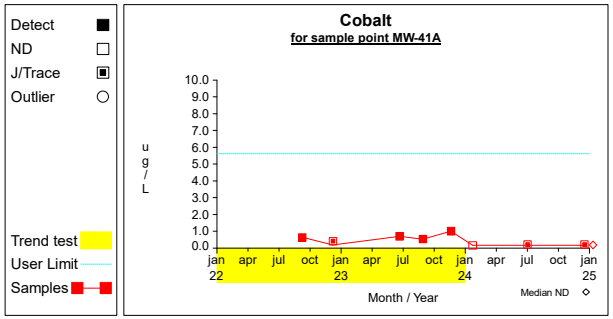
Graph 165



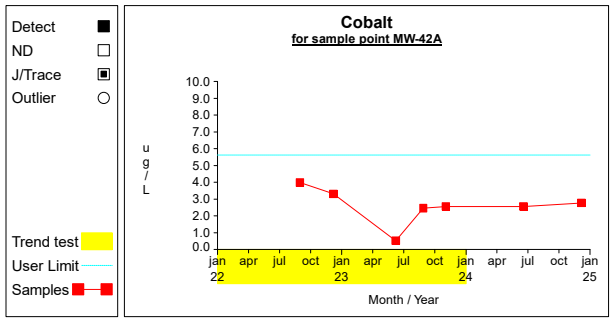
Graph 166



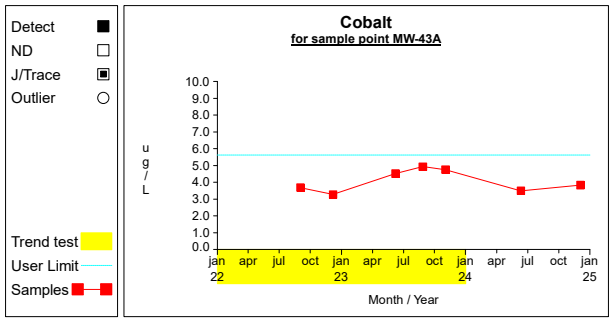
Graph 167



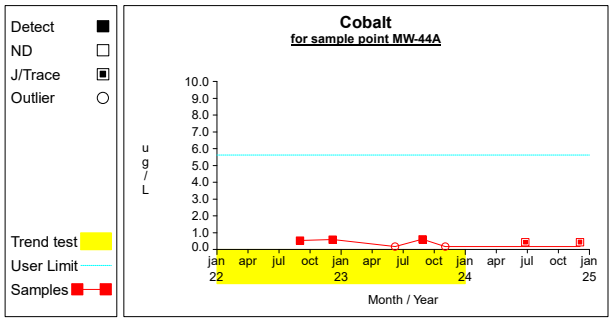
Graph 168



Graph 169

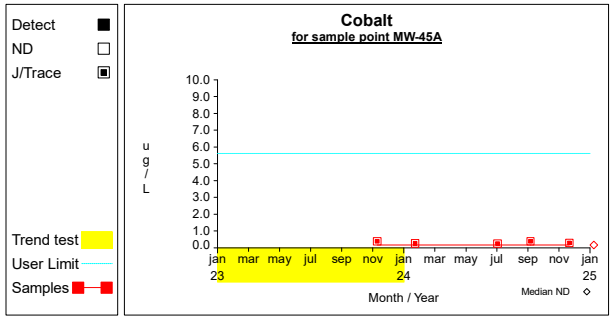


Graph 170

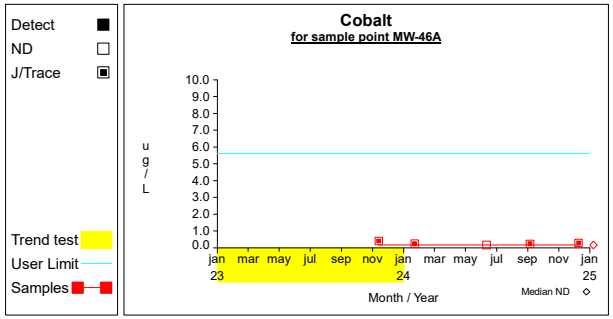


Graph 171

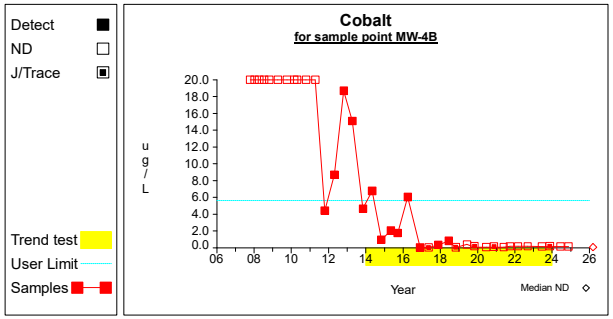
Time Series



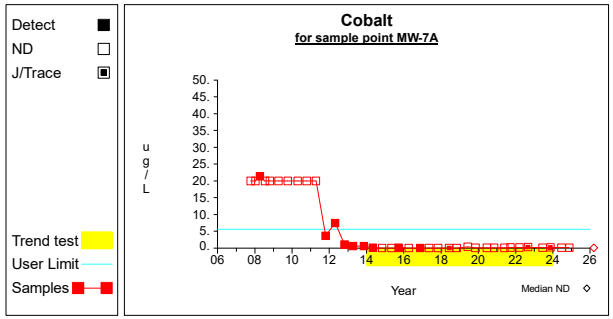
Graph 172



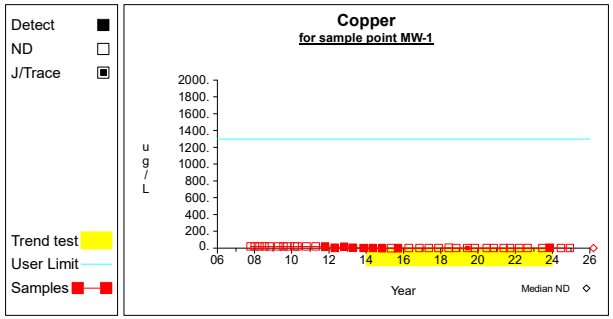
Graph 173



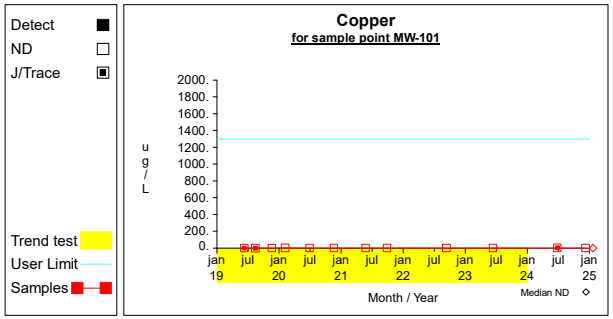
Graph 174



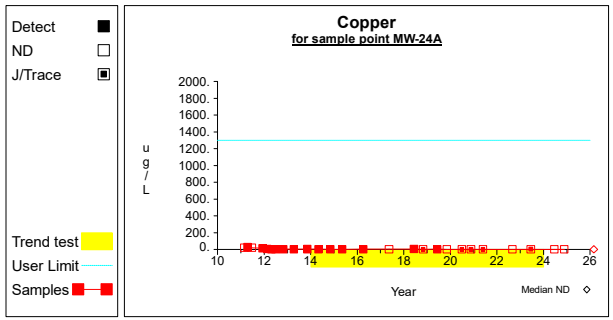
Graph 175



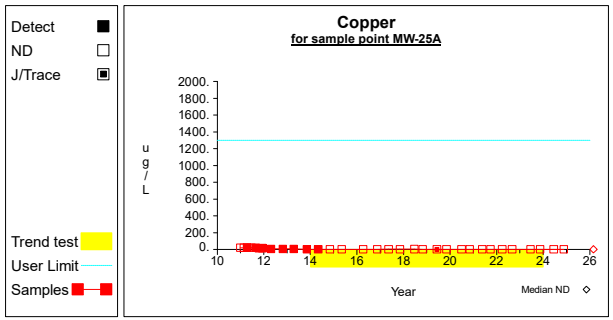
Graph 176



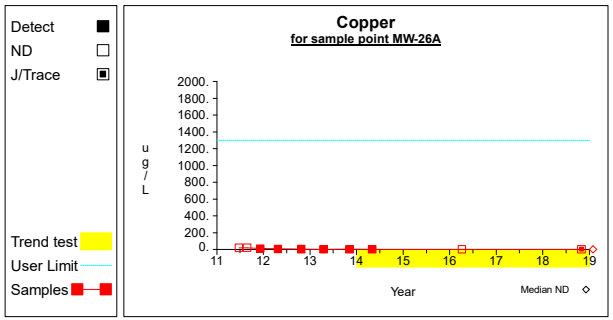
Graph 177



Graph 178

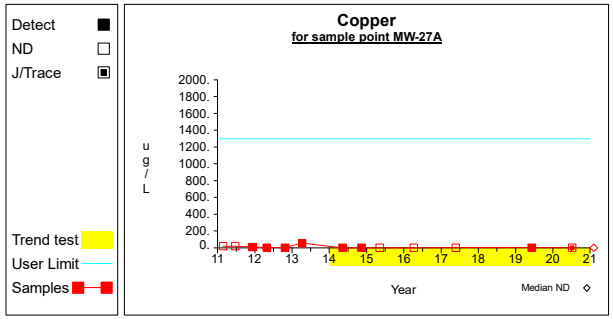


Graph 179

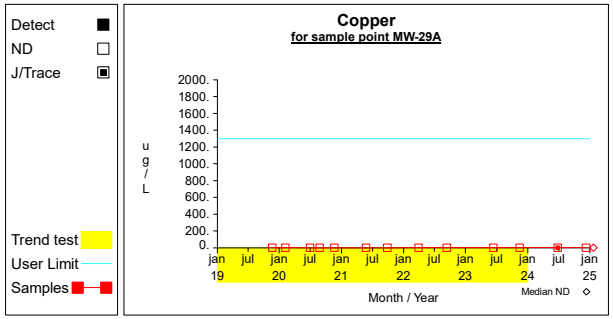


Graph 180

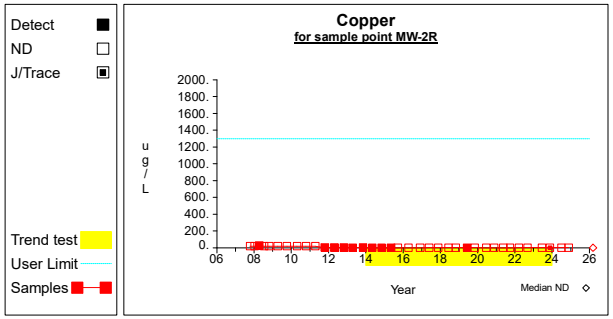
Time Series



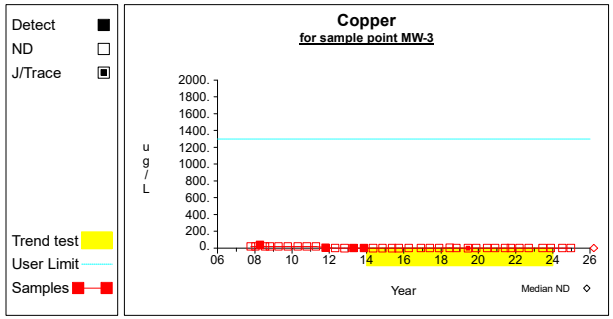
Graph 181



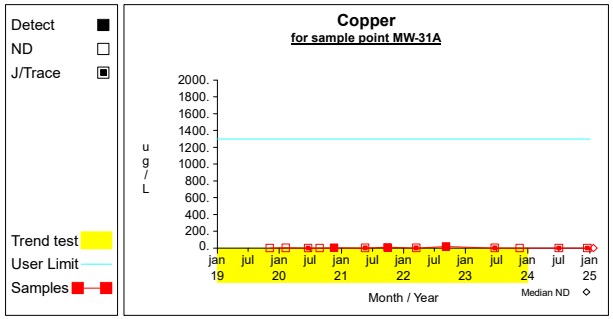
Graph 182



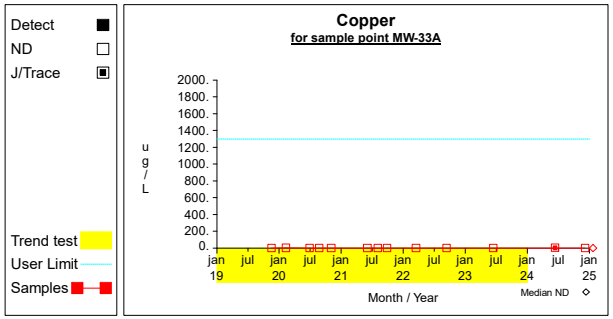
Graph 183



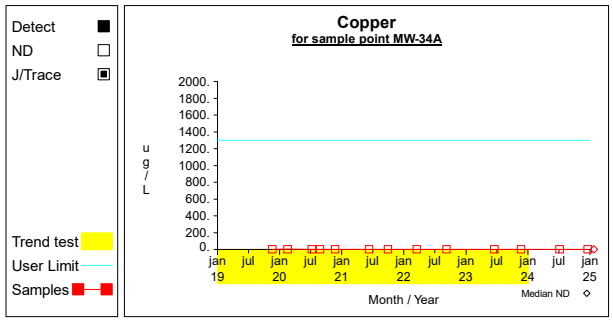
Graph 184



Graph 185



Graph 186



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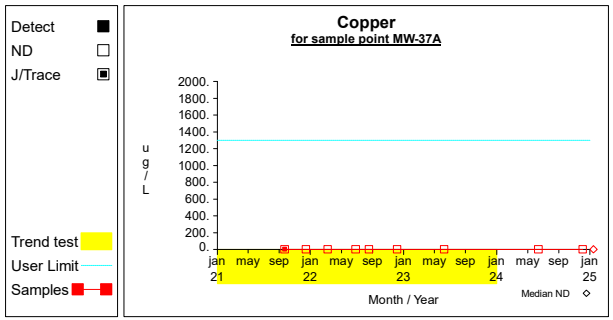
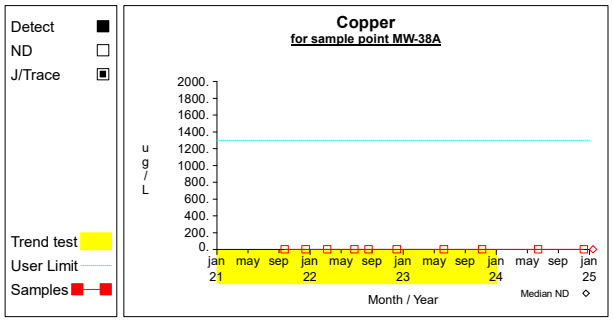
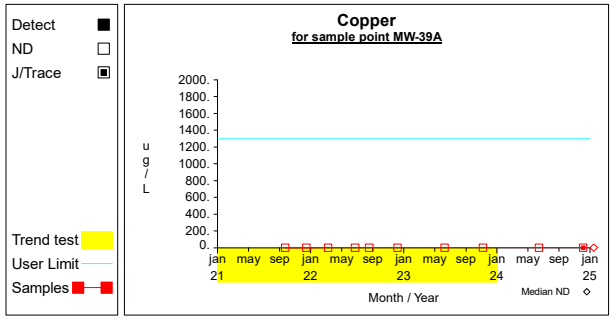


Graph 188

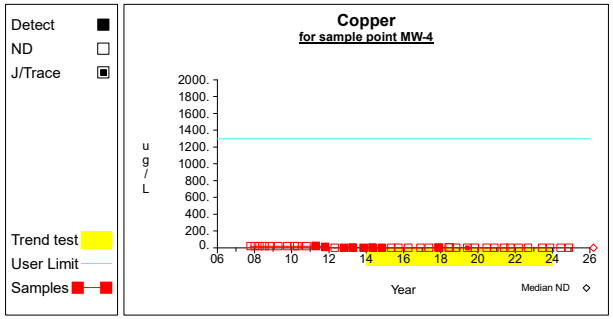


Graph 189

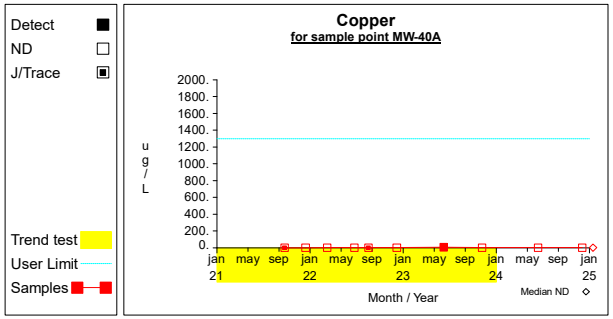
Time Series



Graph 190



Graph 191



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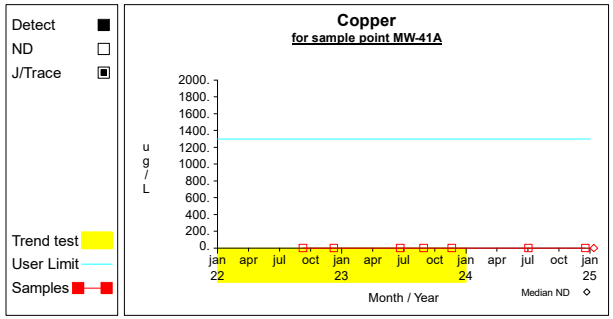

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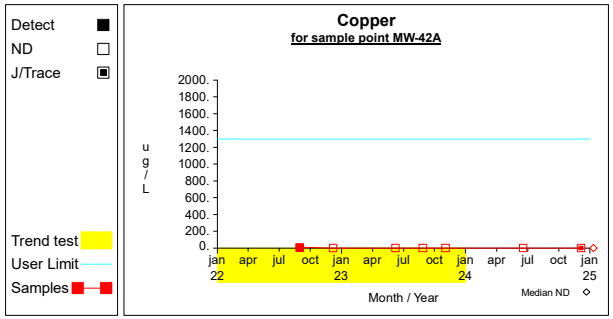

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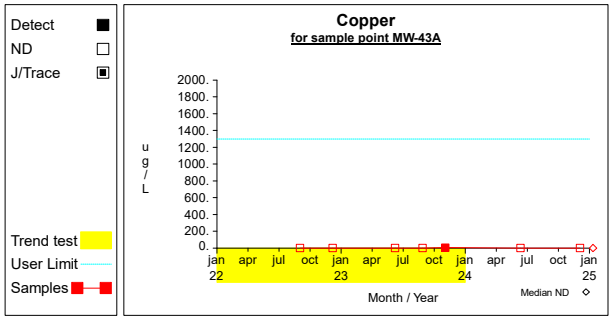

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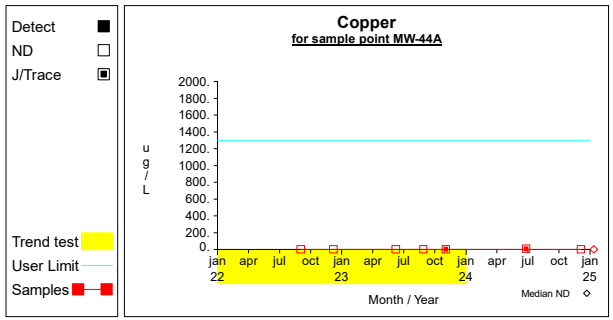

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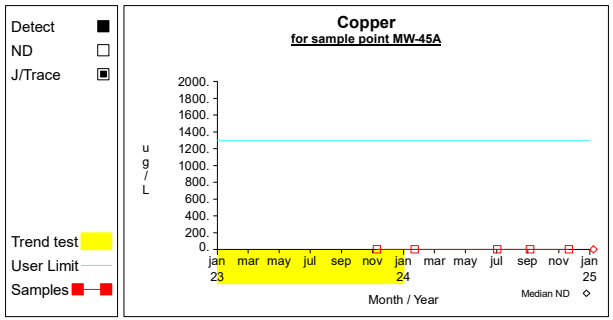

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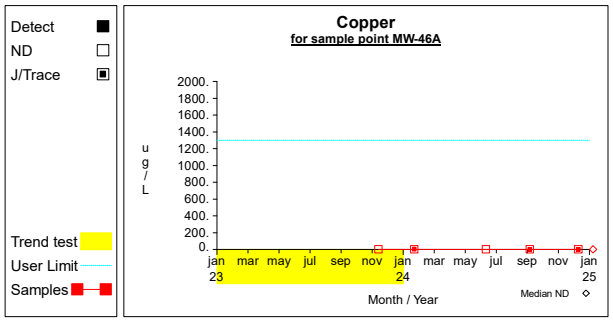
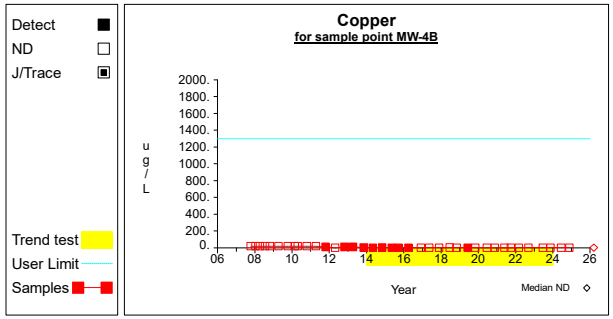
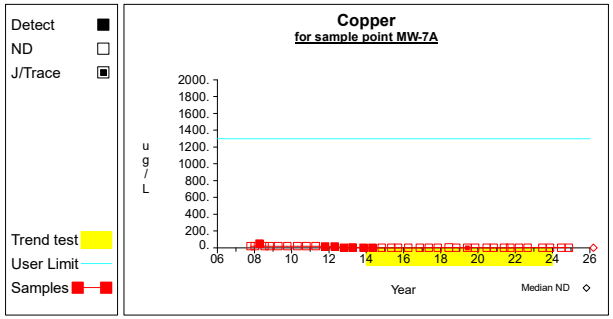


Graph 198

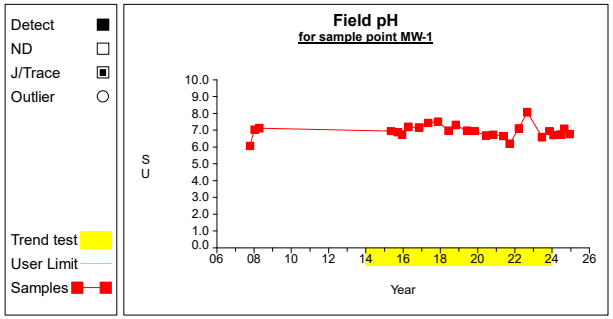
Time Series



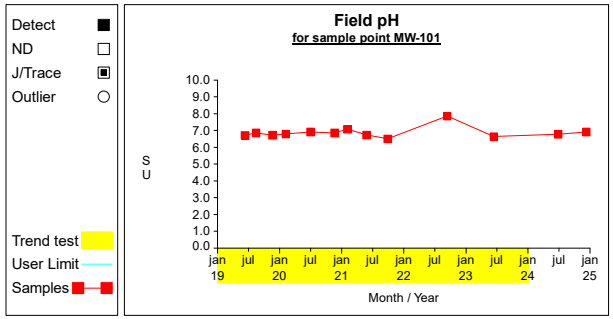
Graph 199



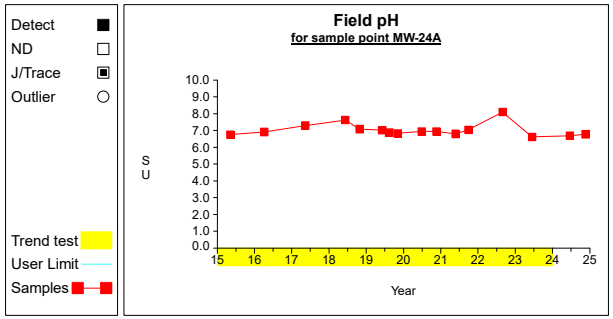
Graph 200



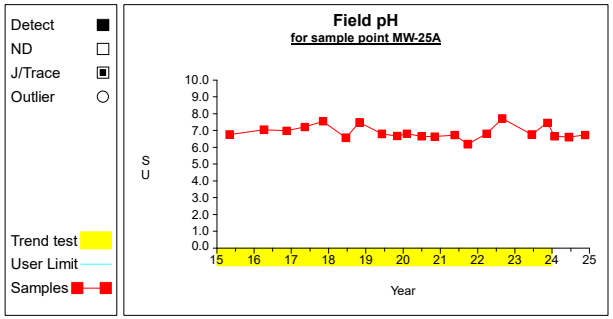
Graph 201



Graph 202



Graph 203



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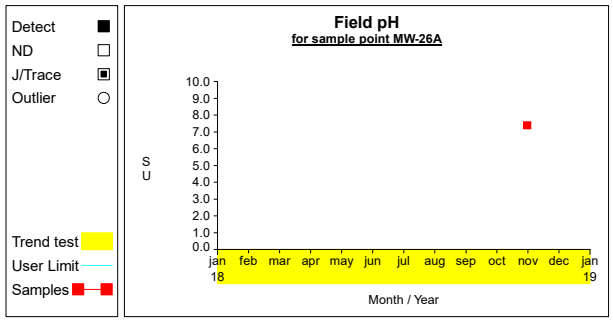
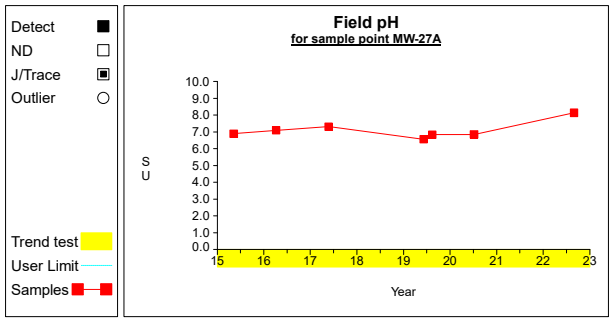
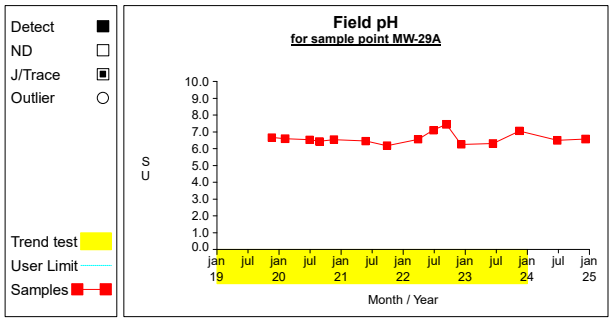


Graph 205

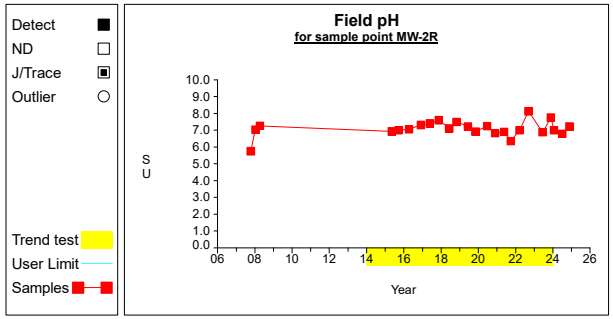


Graph 206

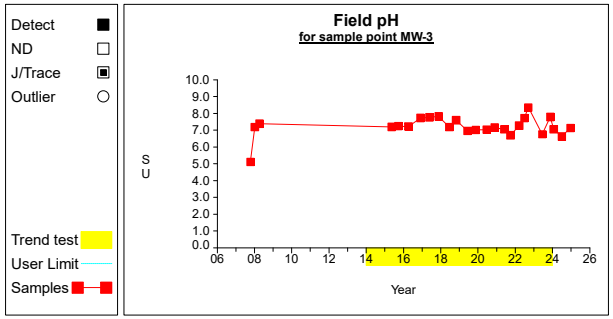


Graph 207

Time Series



Graph 208



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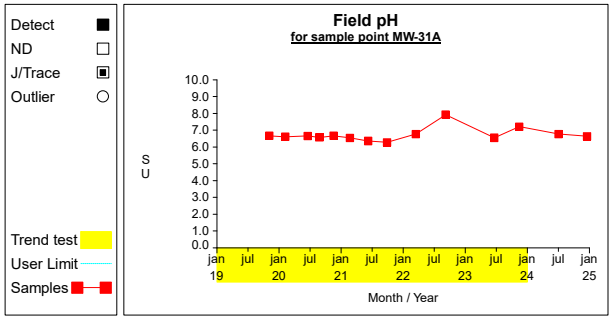
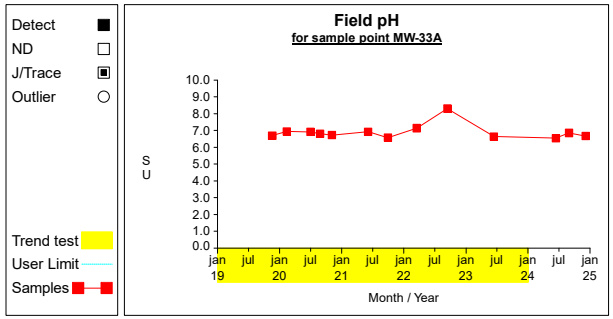


Graph 210



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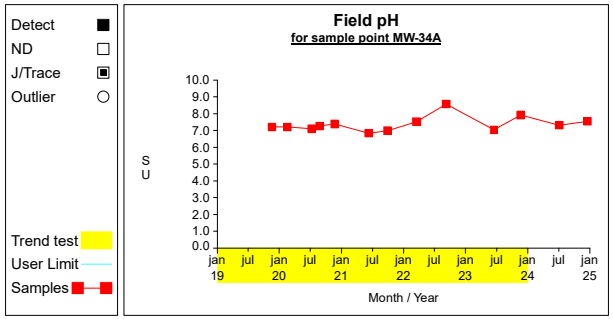

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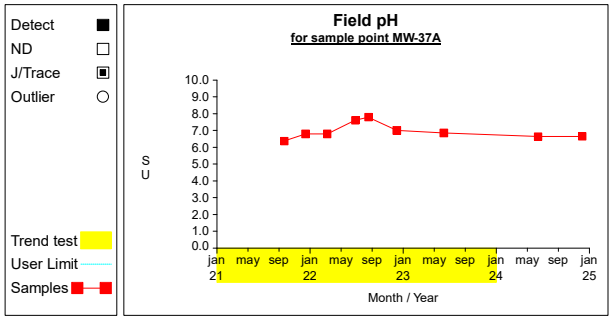

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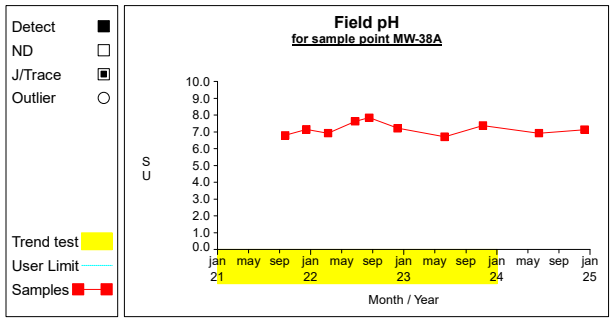
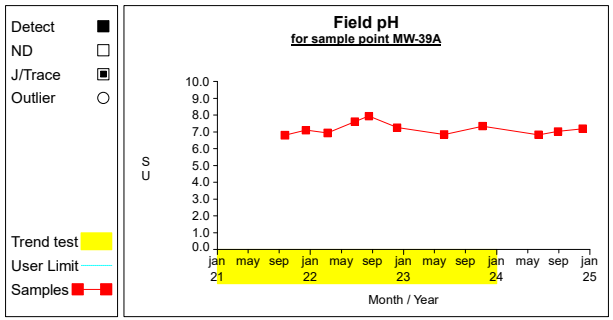


Graph 214



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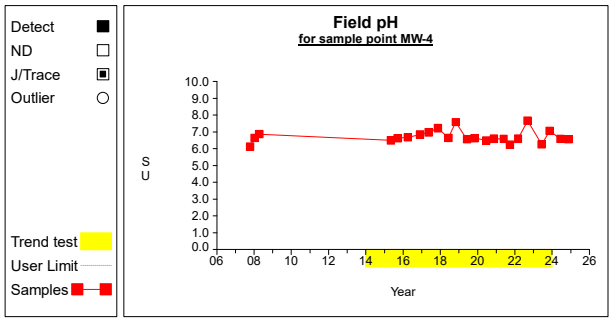
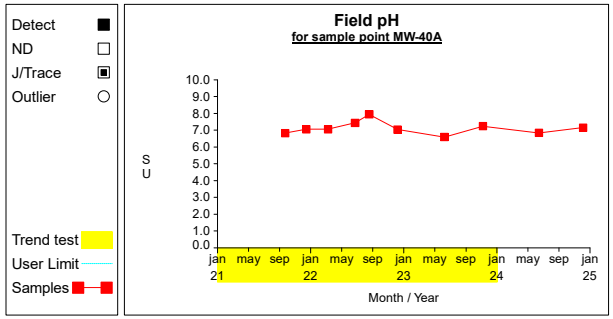
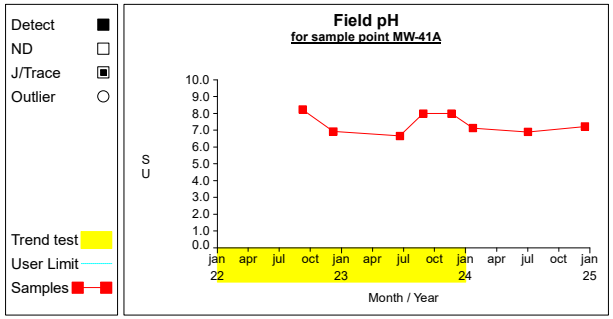


Graph 216

Time Series



Graph 217



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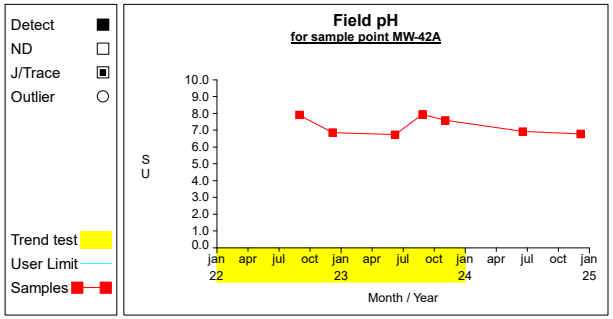

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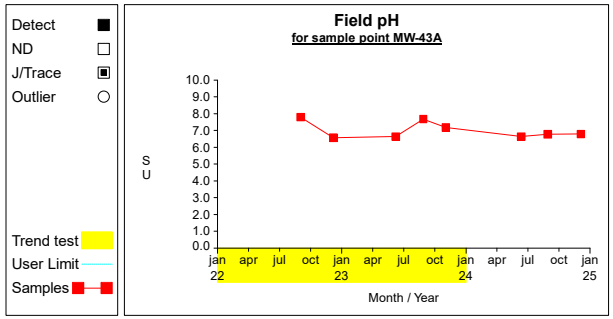
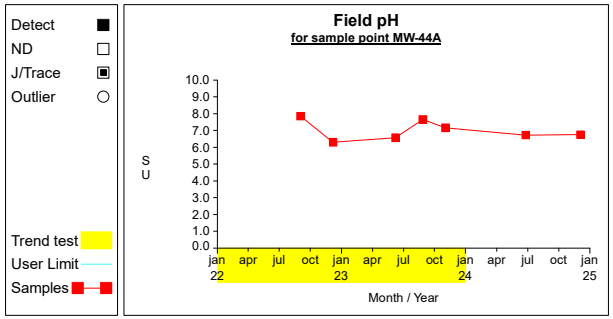
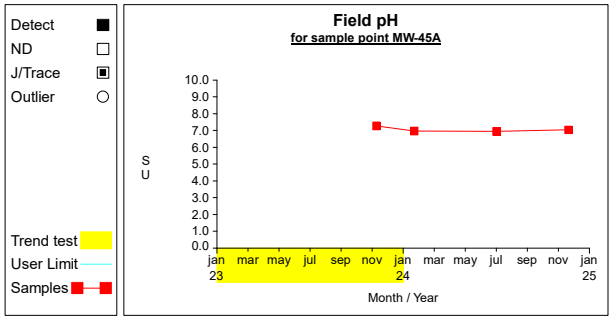


Graph 220



Graph 221



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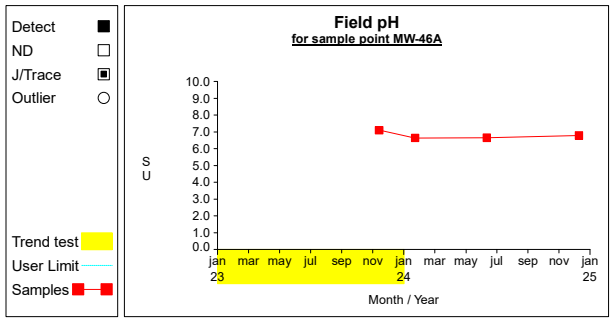
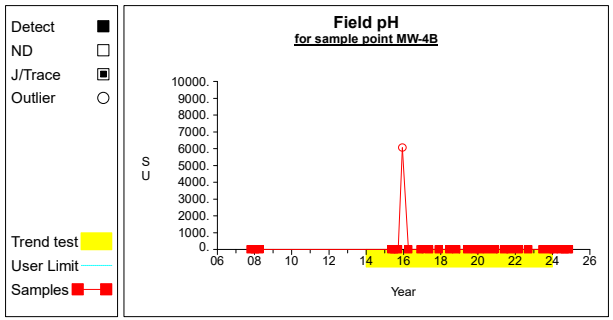


Graph 223



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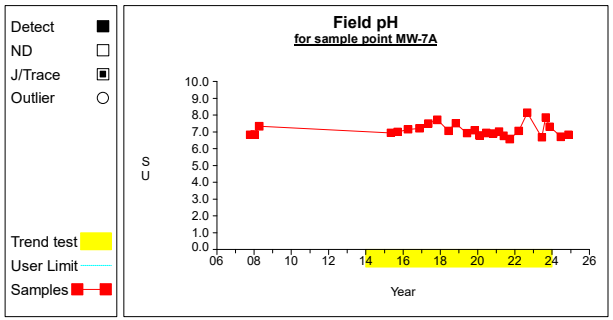
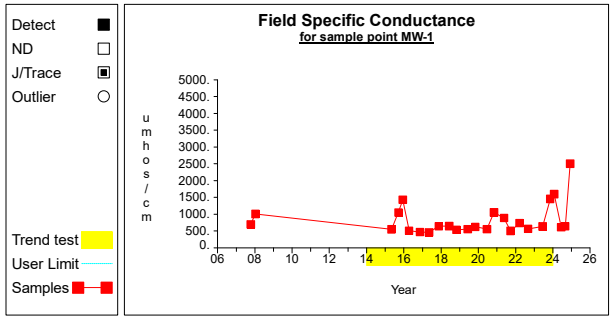
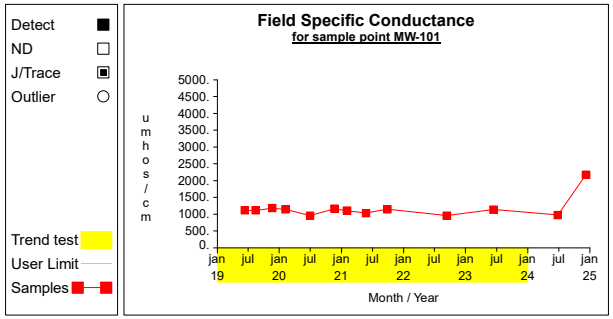


Graph 225

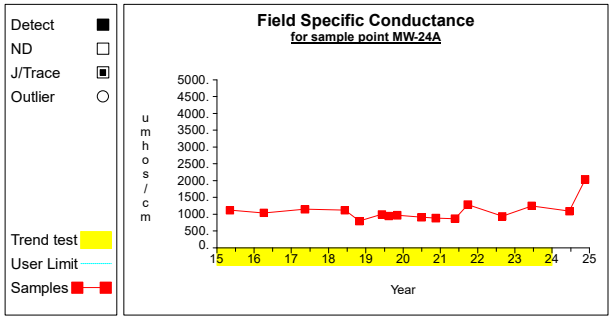
Time Series



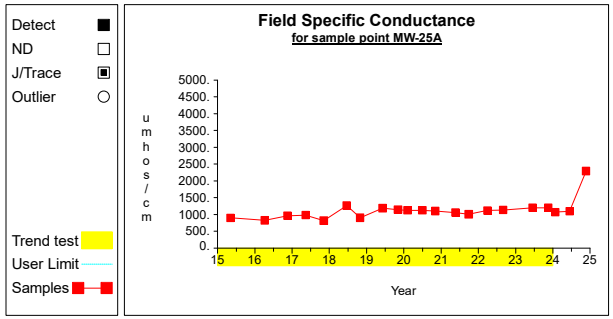
Graph 226



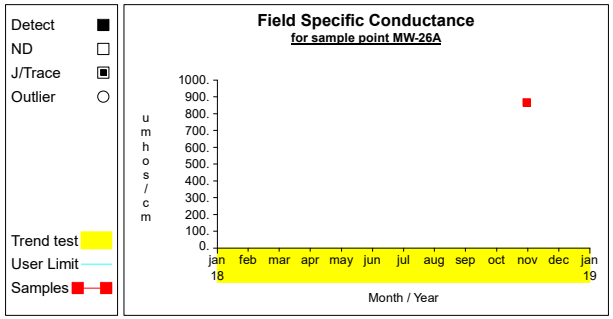
Graph 227



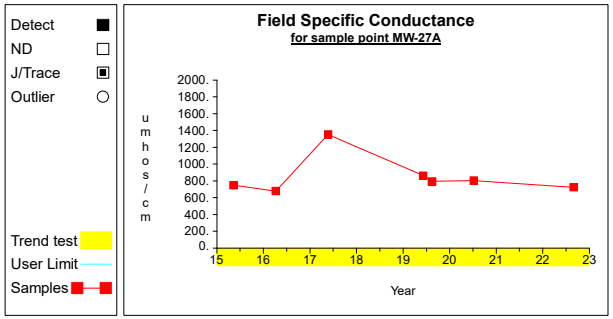
Graph 228



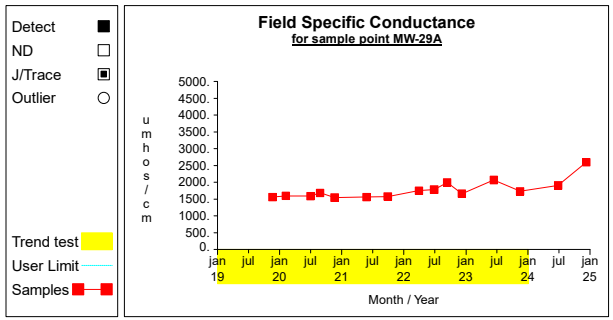
Graph 229



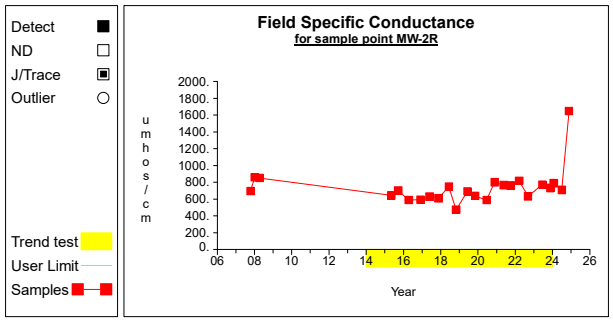
Graph 230



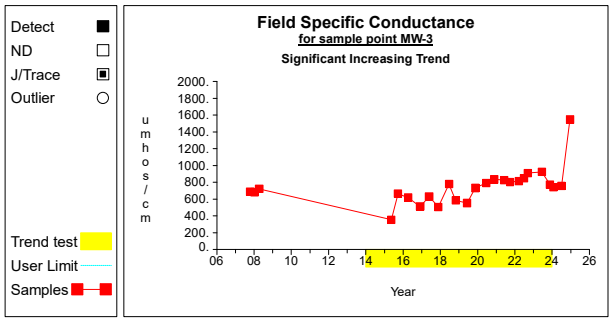
Graph 231



Graph 232

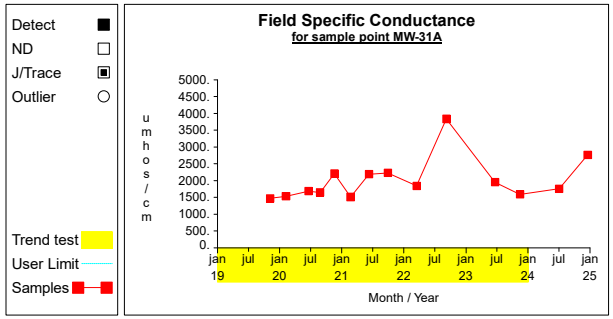


Graph 233

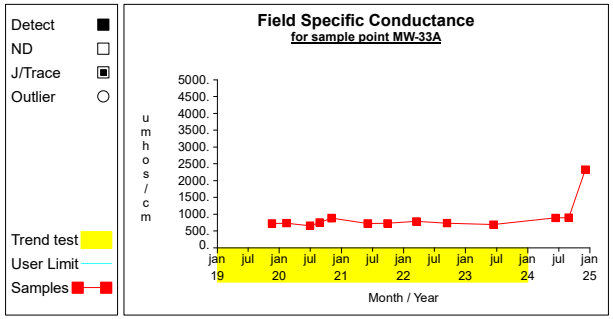


Graph 234

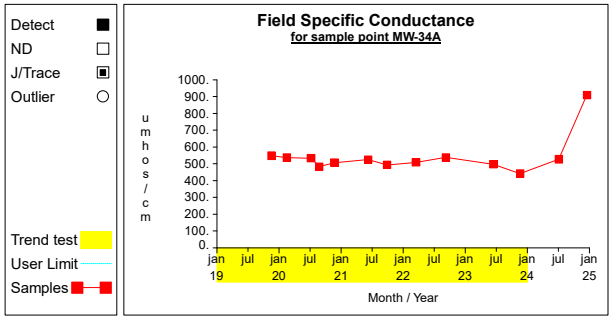
Time Series



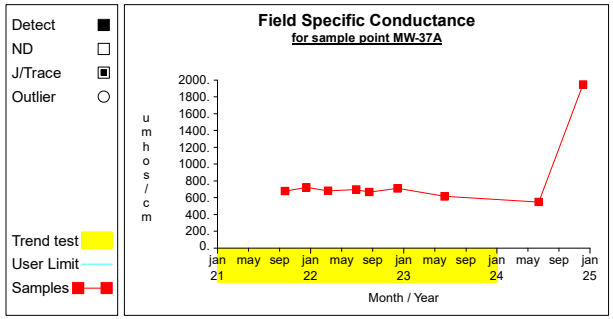
Graph 235



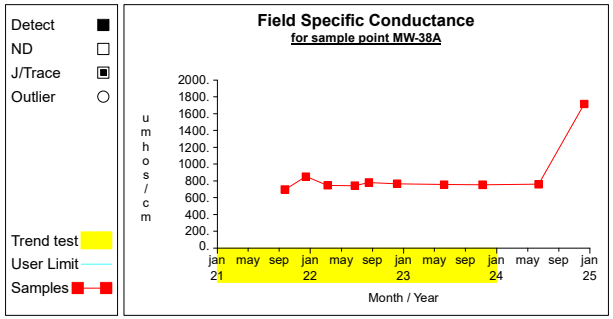
Graph 236



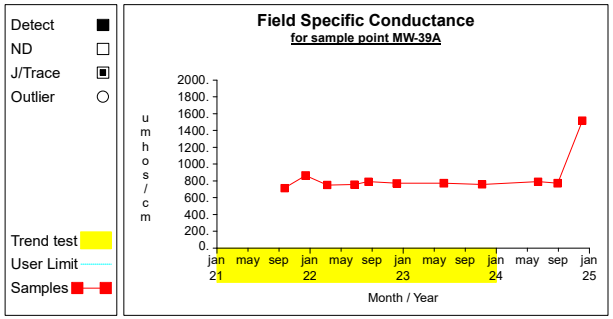
Graph 237



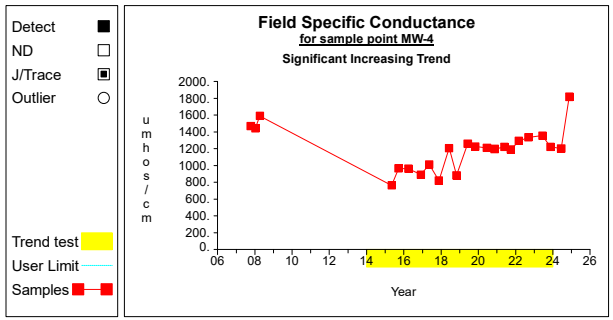
Graph 238



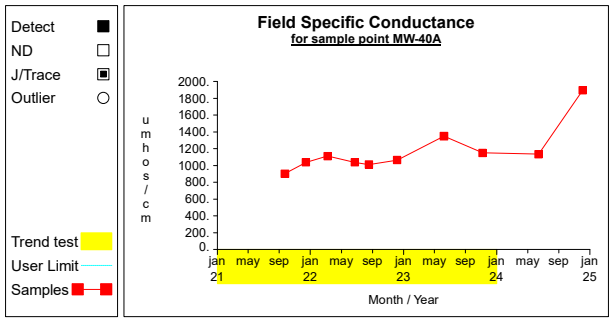
Graph 239



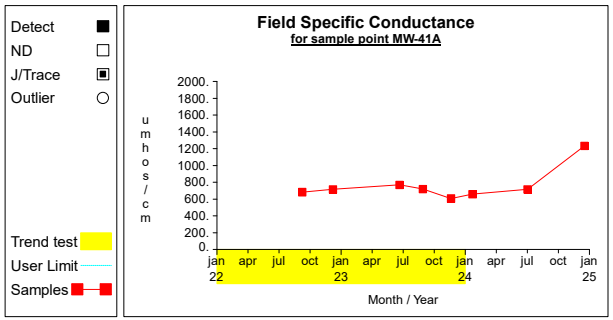
Graph 240



Graph 241

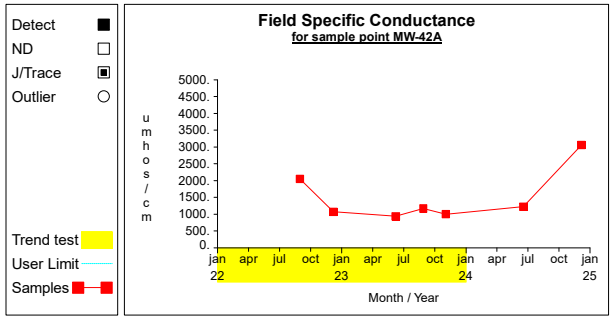


Graph 242

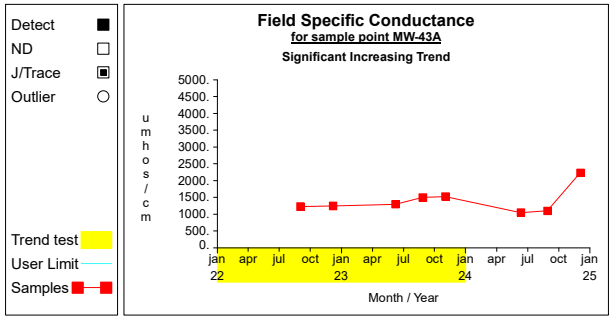


Graph 243

Time Series



Graph 244



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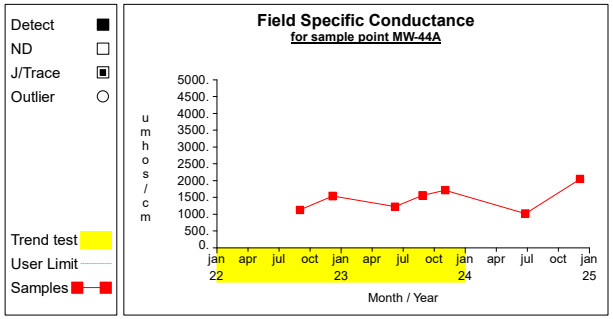
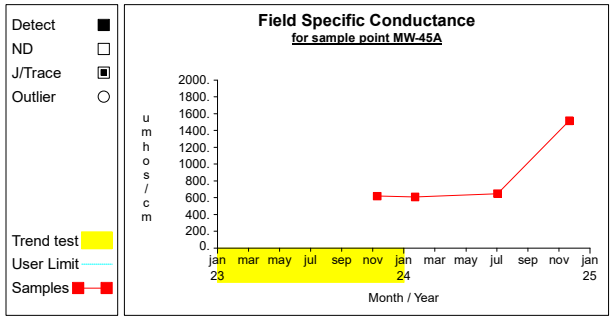
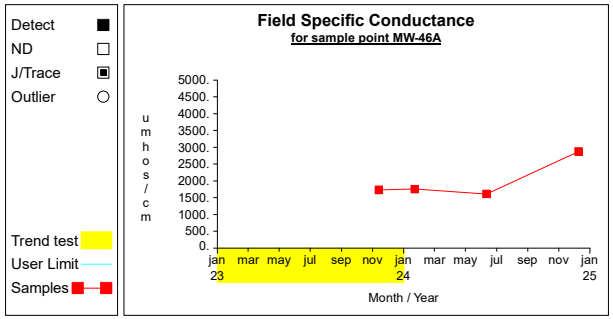


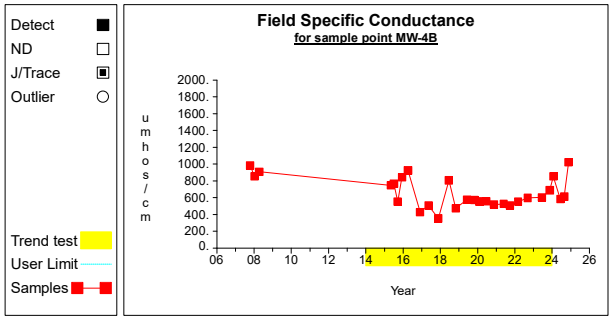
Graph 246



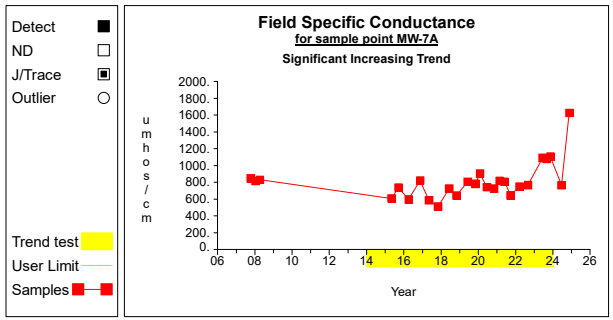
Graph 247



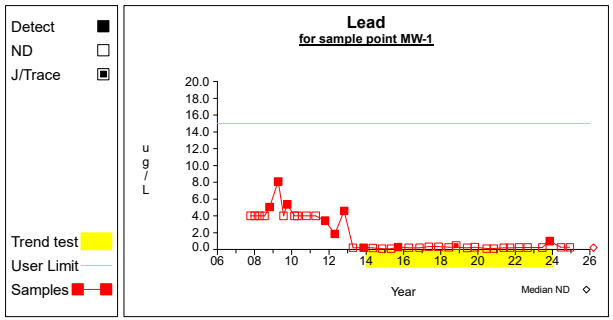
Graph 248



Graph 249



Graph 250



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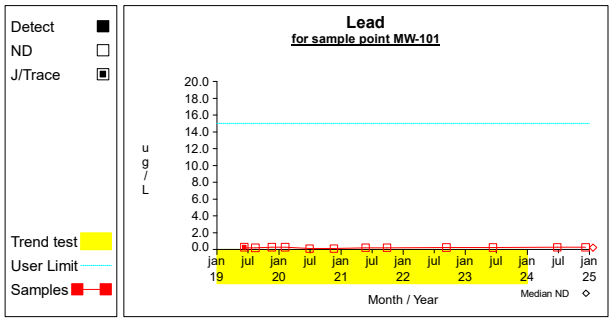
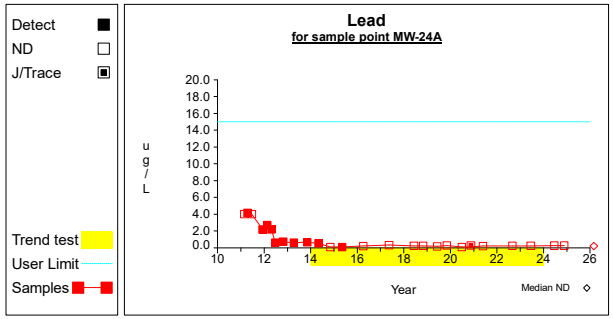
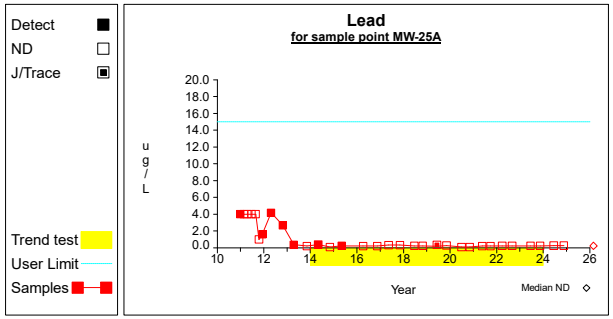


Graph 252

Time Series



Graph 253



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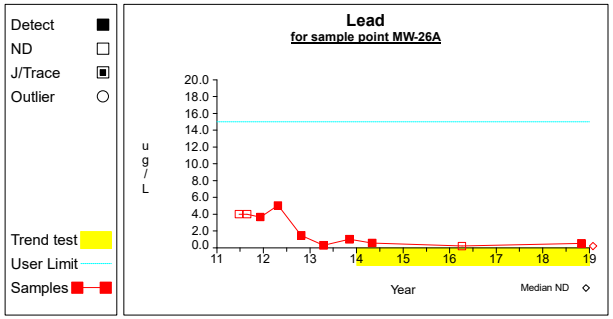

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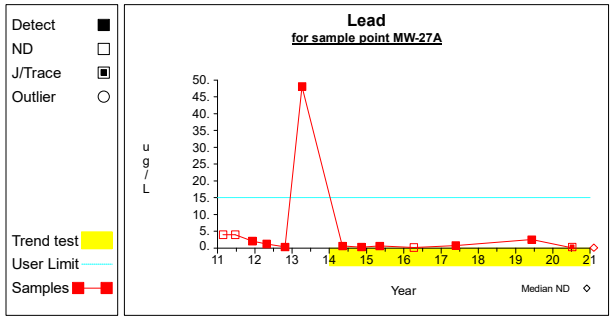

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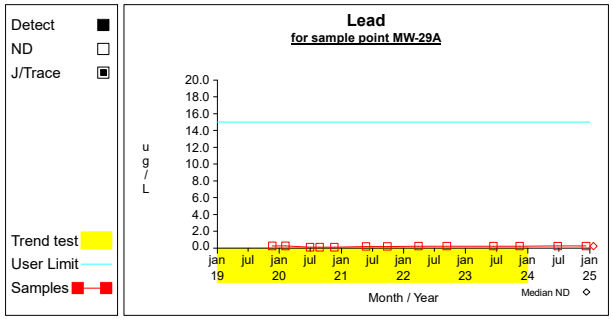
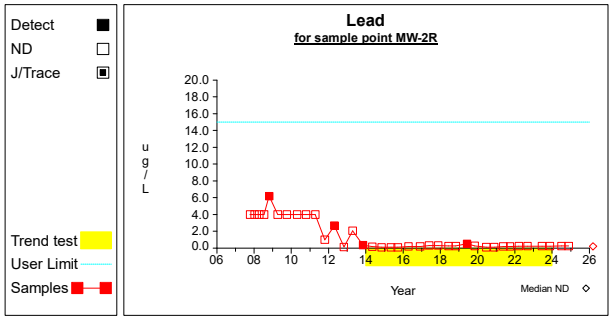
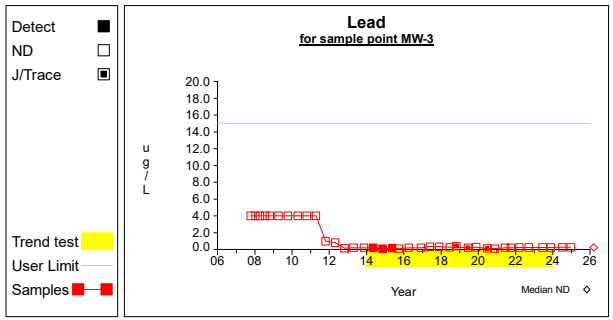


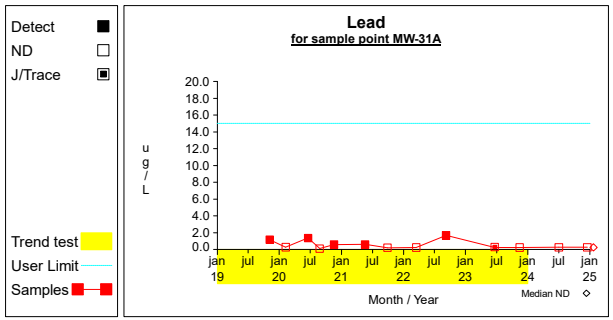
Graph 257



Graph 258



Graph 259



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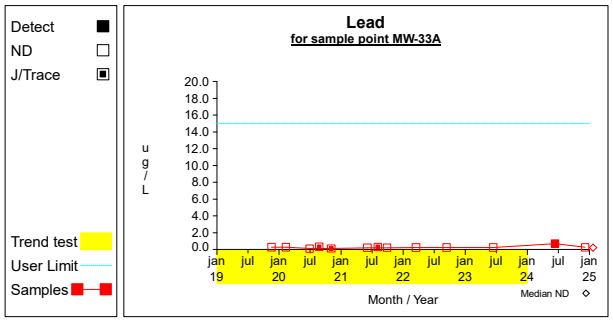
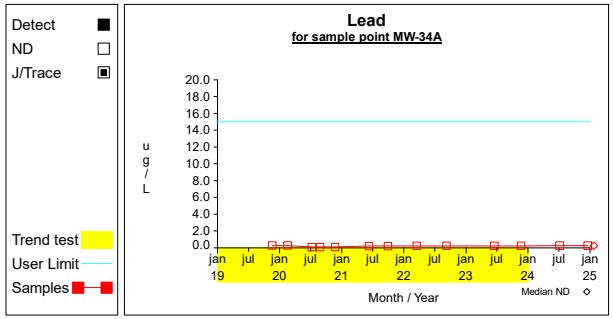
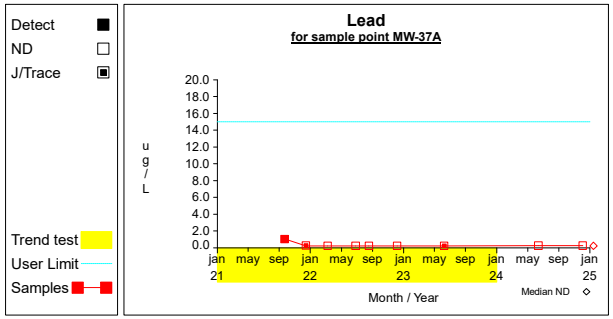


Graph 261

Time Series



Graph 262



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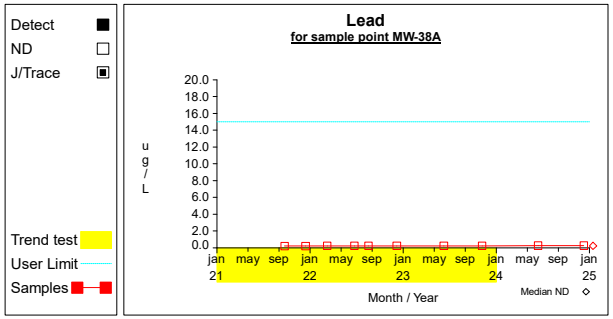
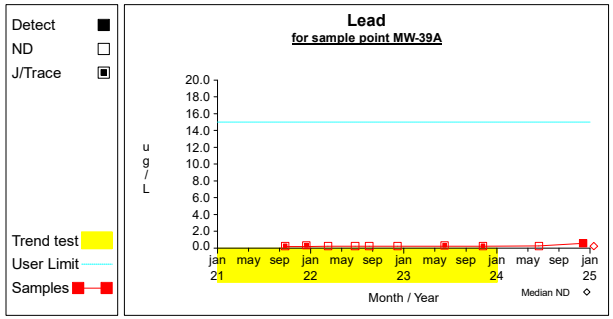


Graph 264



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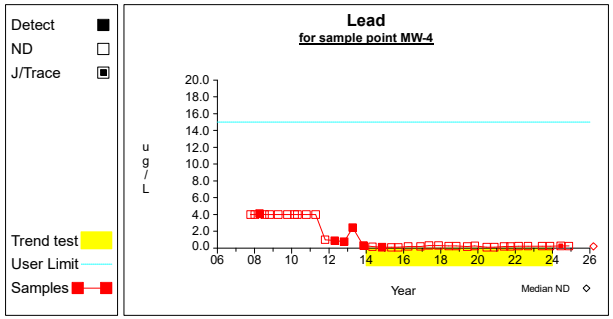
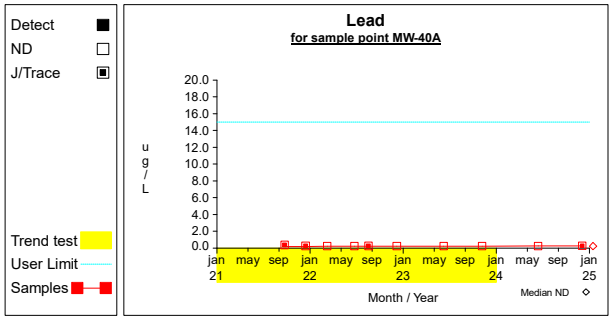


Graph 266



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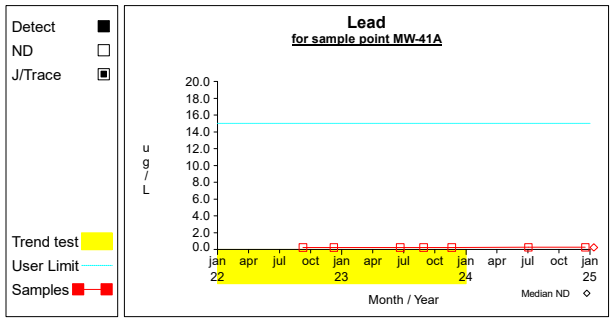
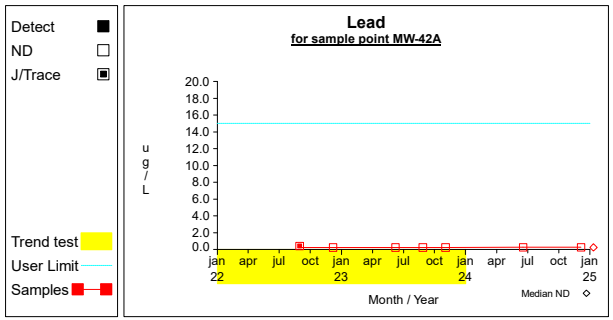
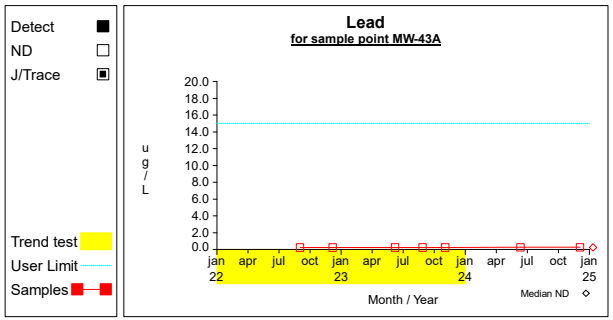


Graph 268

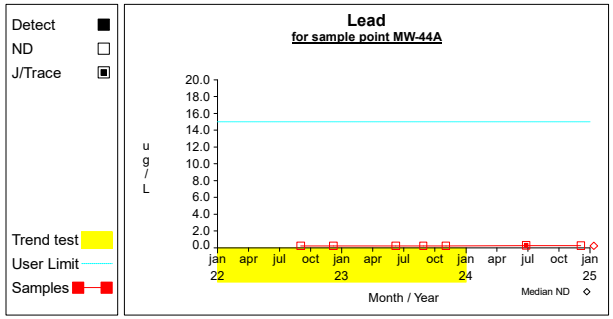


Graph 269

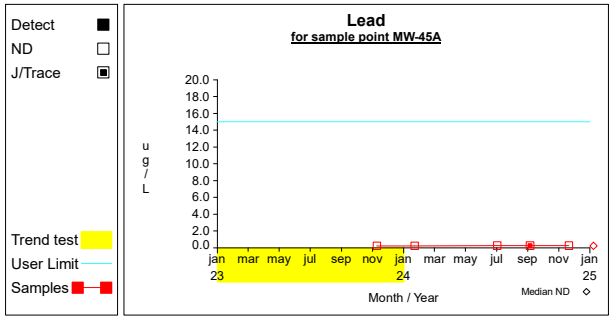


Graph 270

Time Series



Graph 271



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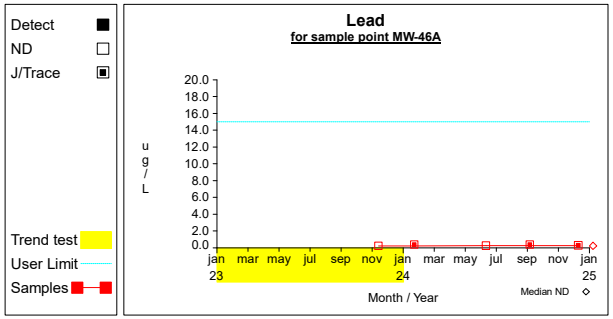

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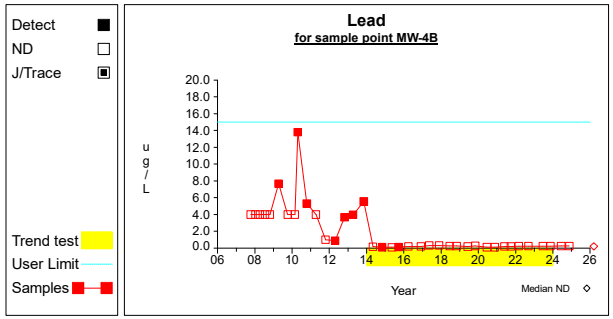
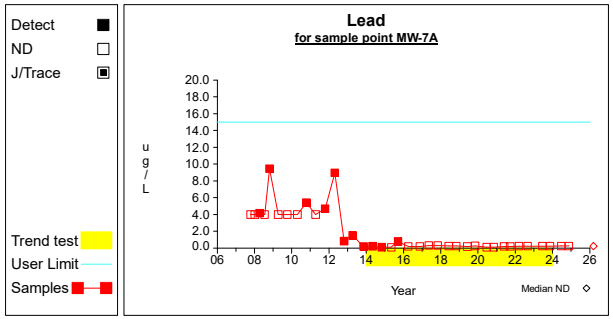
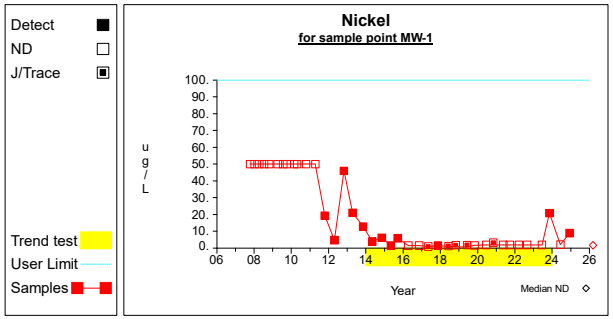


Graph 274



Graph 275



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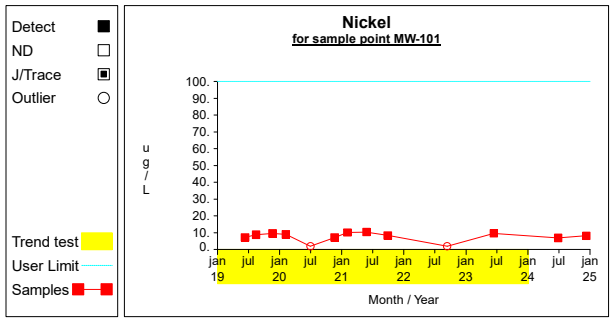

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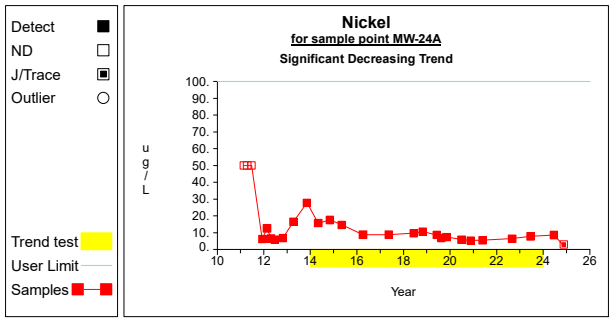

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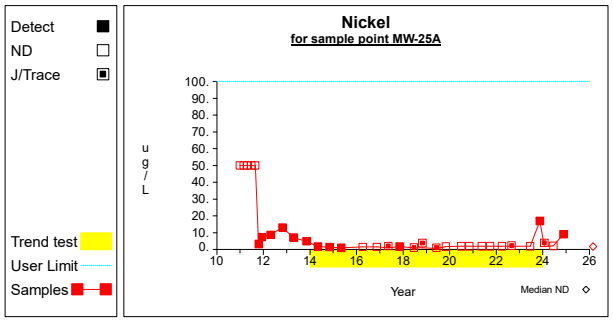
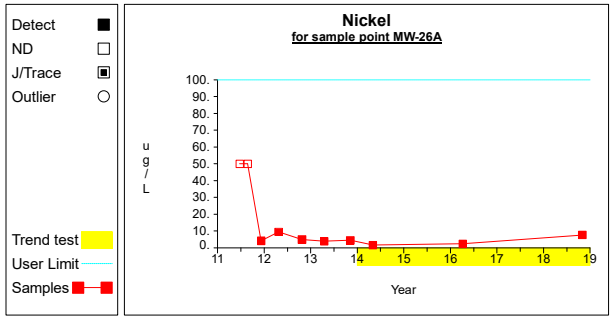
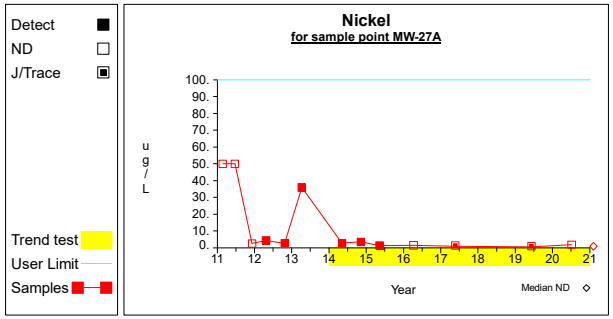


Graph 279

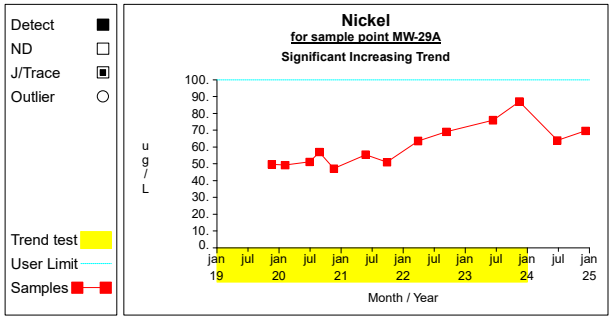
Time Series



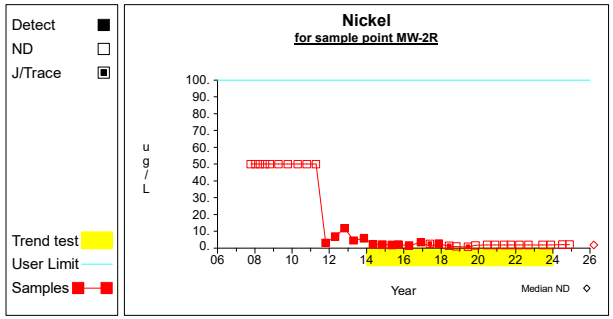
Graph 280



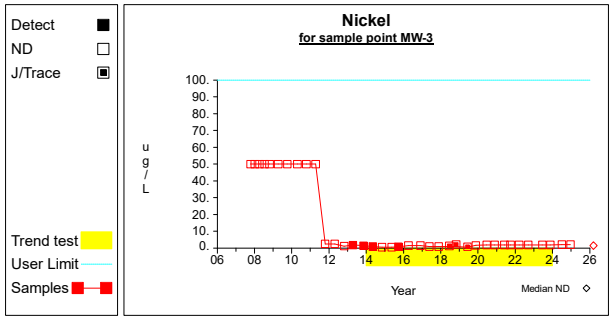
Graph 281



Graph 282



Graph 283



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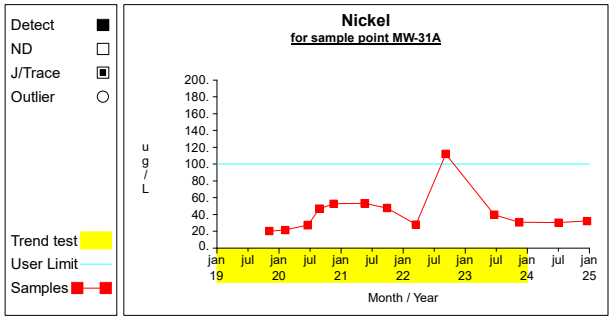

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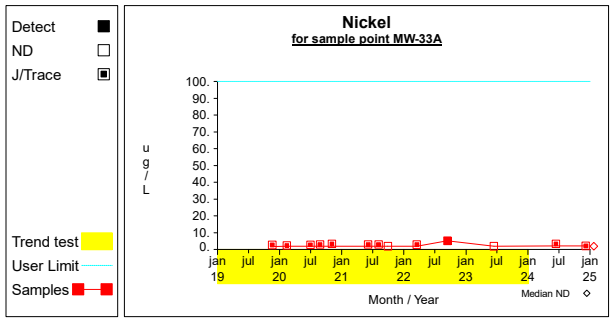
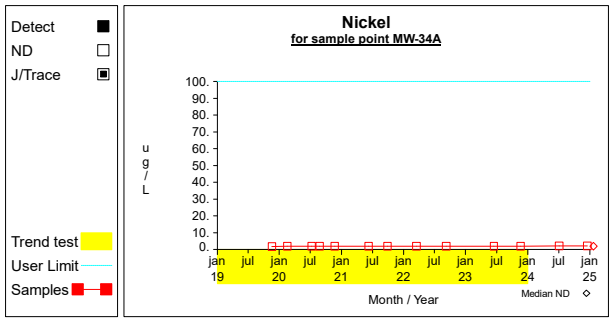
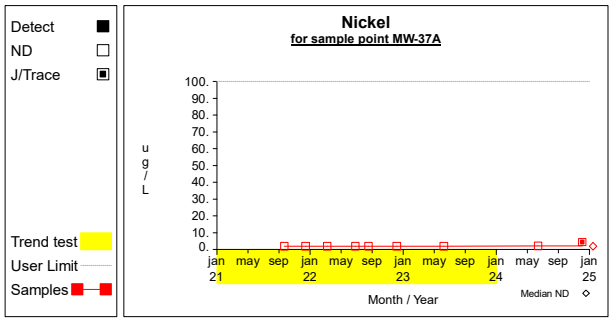


Graph 286

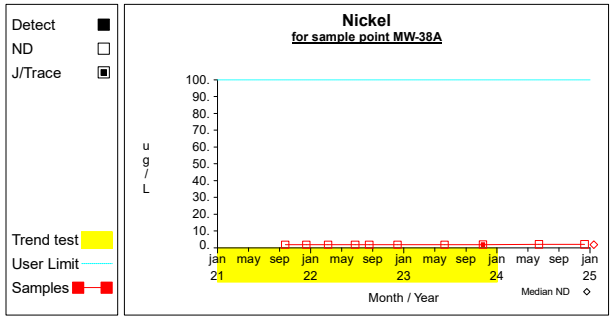


Graph 287

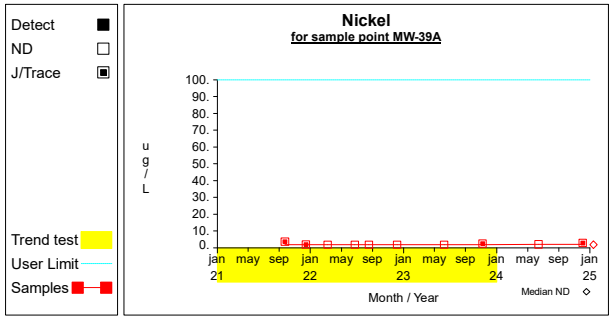


Graph 288

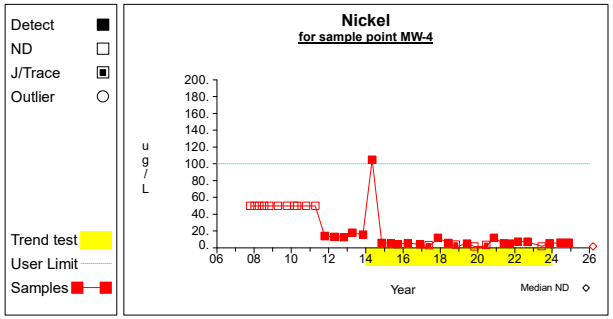
Time Series



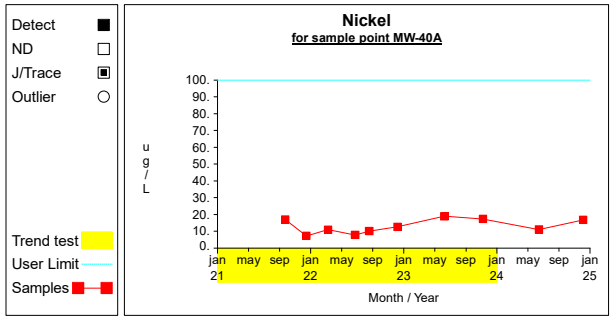
Graph 289



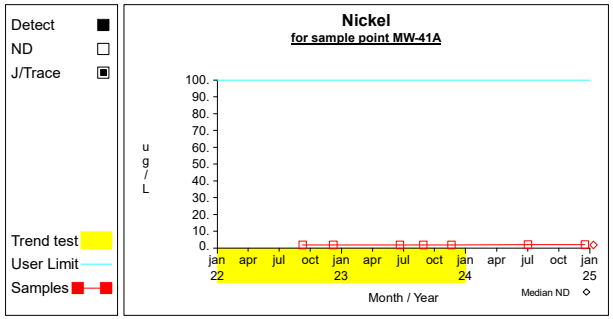
Graph 290



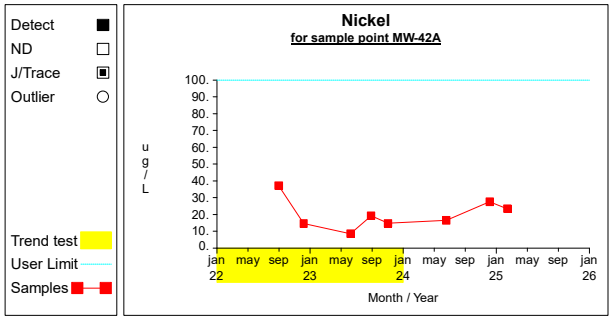
Graph 291



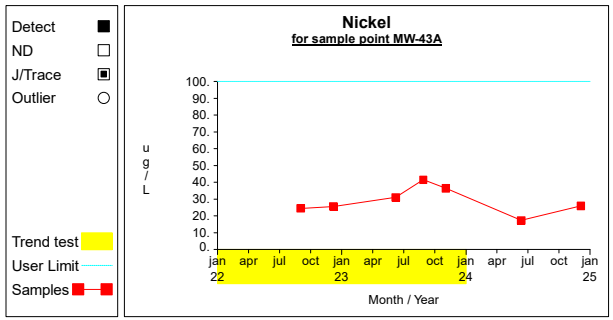
Graph 292



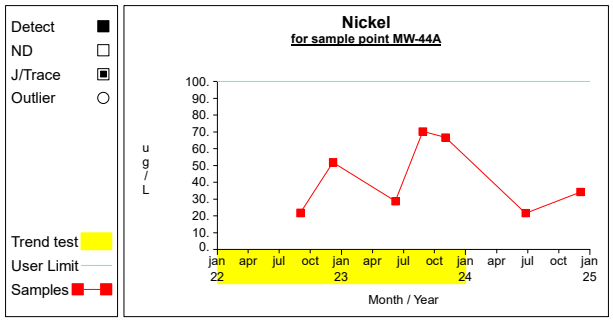
Graph 293



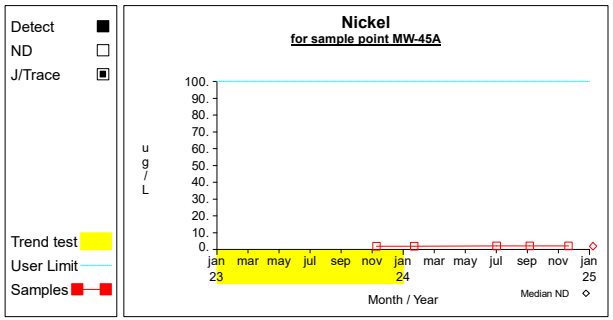
Graph 294



Graph 295

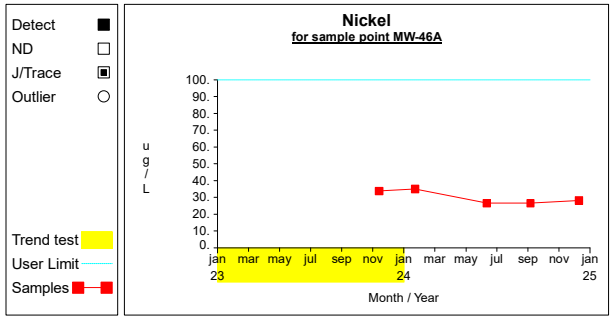


Graph 296

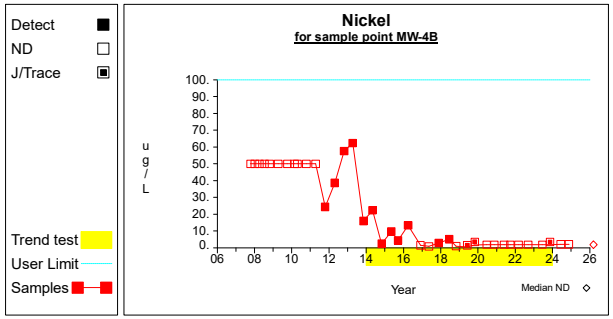


Graph 297

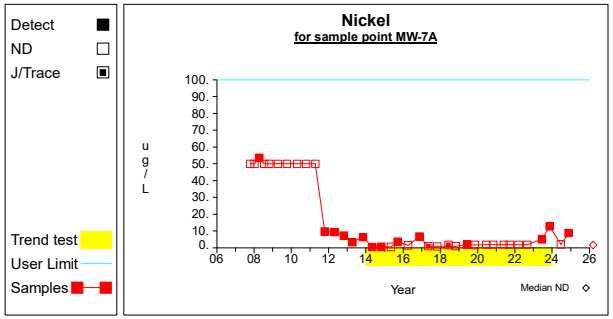
Time Series



Graph 298



Graph 299



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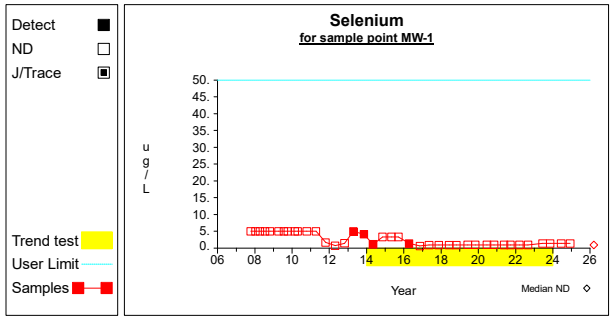

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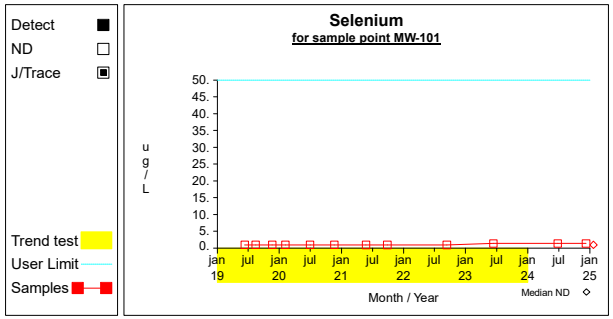

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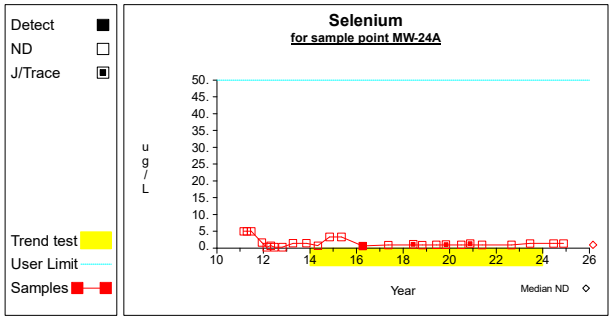
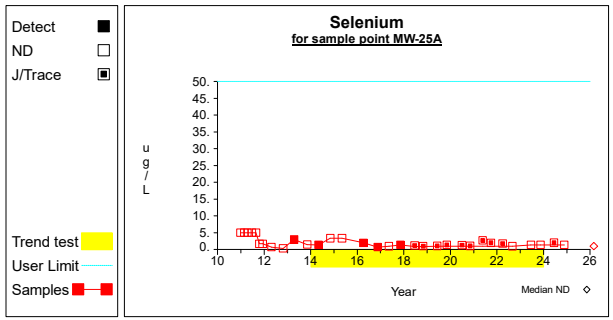
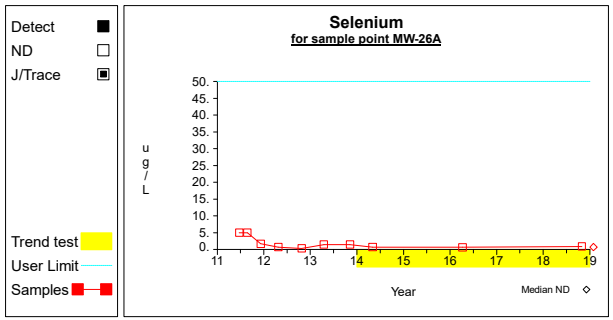


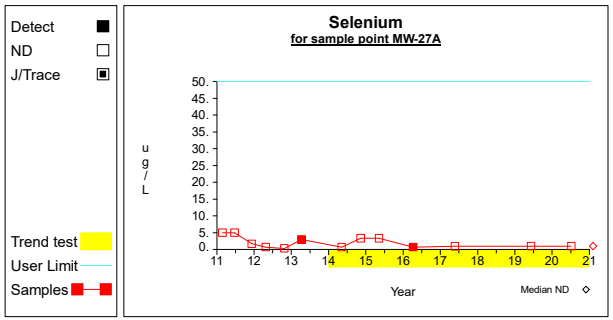
Graph 303



Graph 304

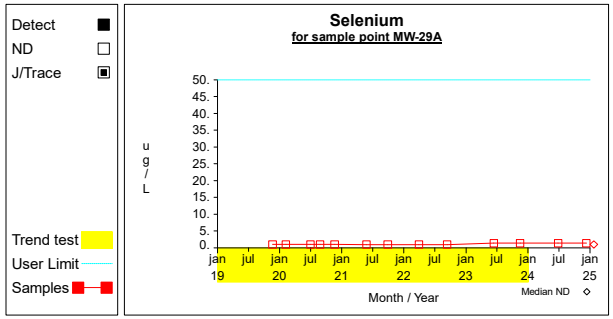


Graph 305

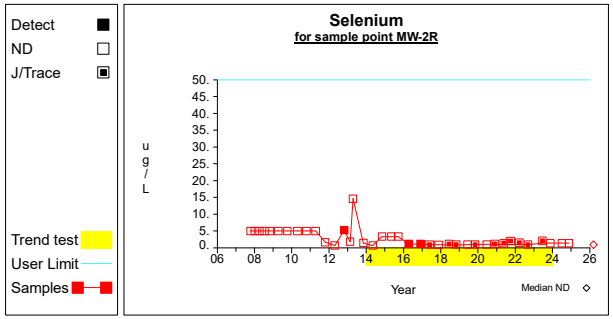


Graph 306

Time Series



Graph 307



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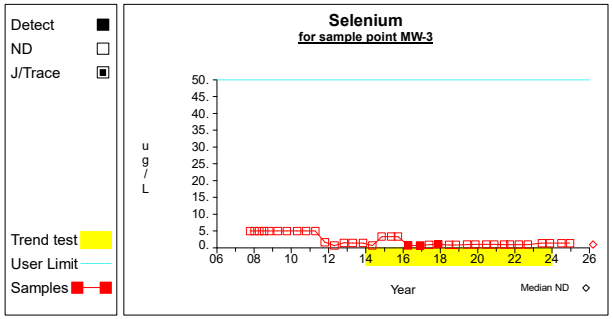
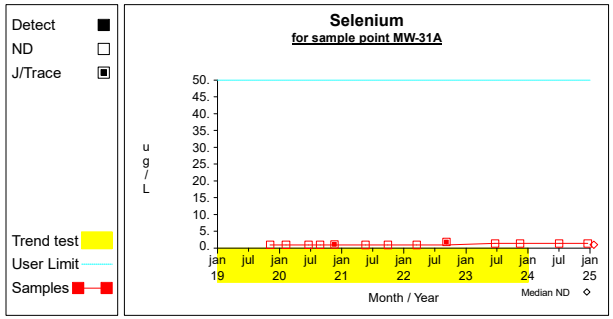


Graph 309



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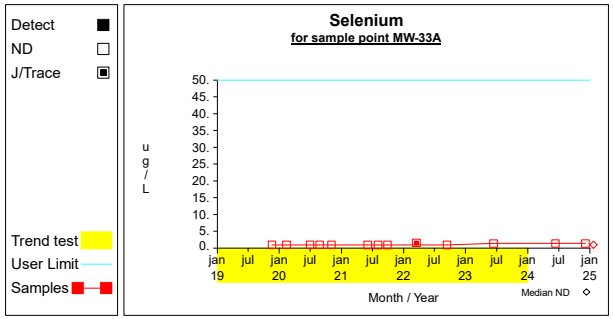
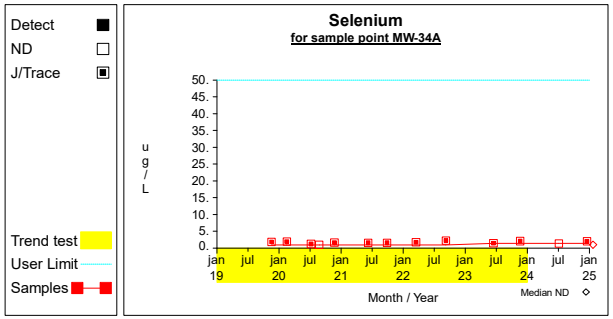
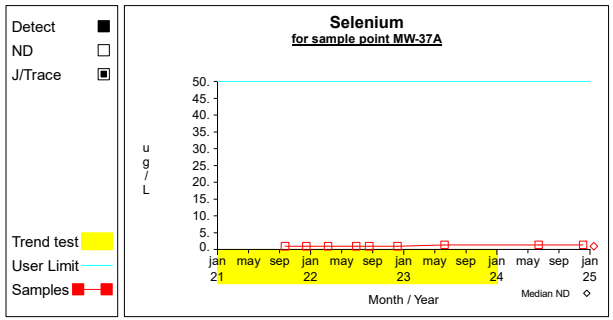


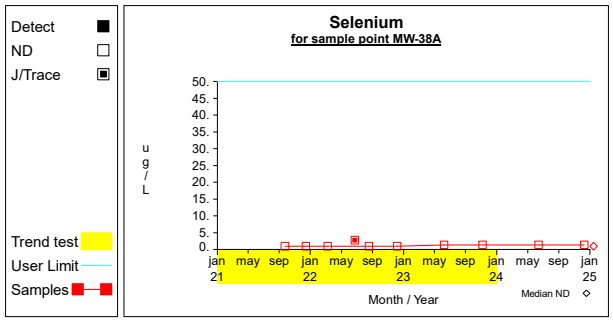
Graph 311



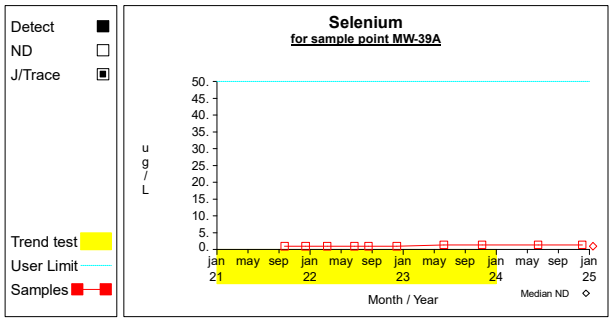
Graph 312



Graph 313

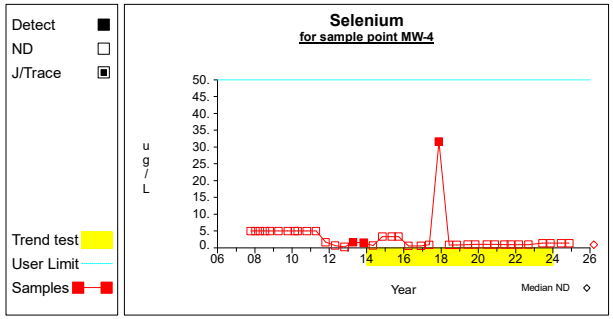


Graph 314

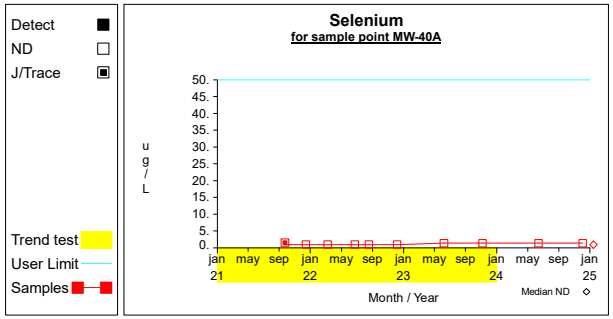


Graph 315

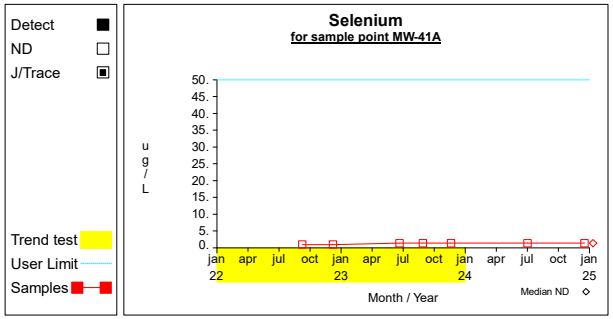
Time Series



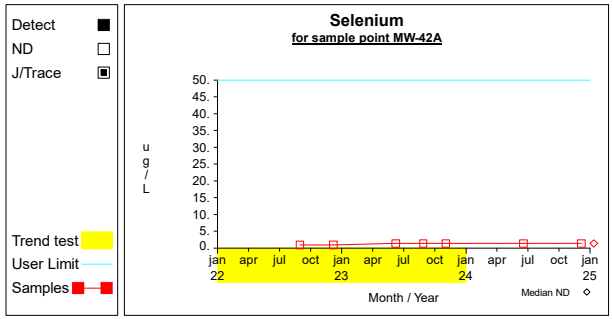
Graph 316



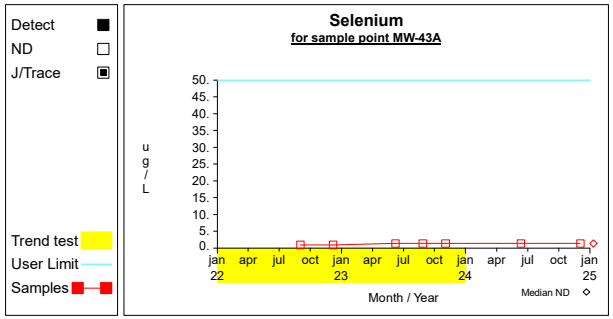
Graph 317



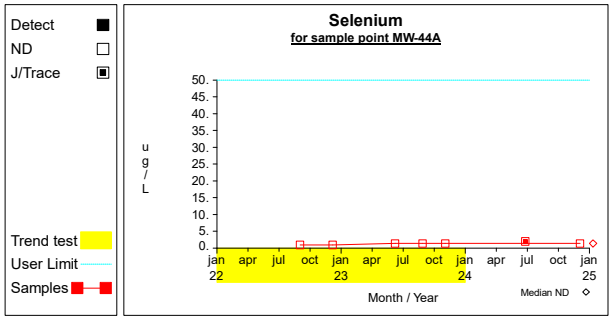
Graph 318



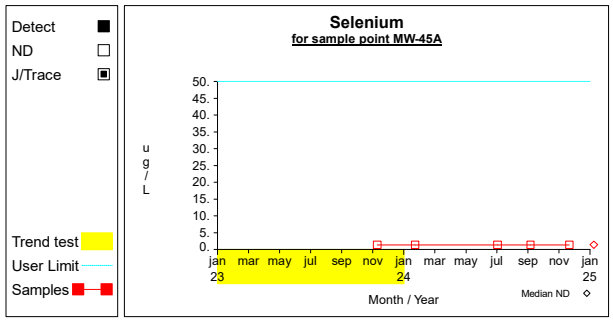
Graph 319



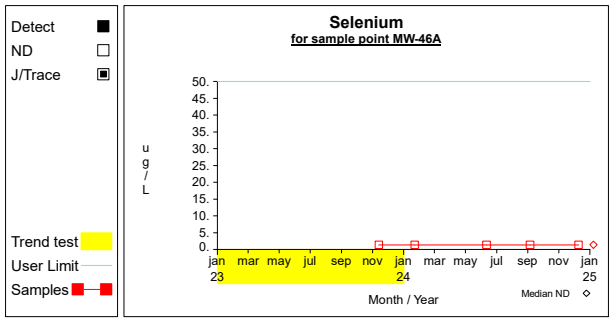
Graph 320



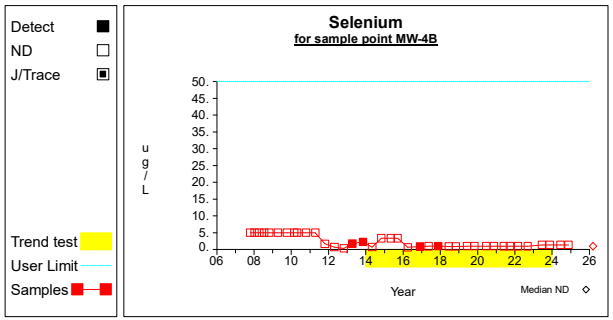
Graph 321



Graph 322

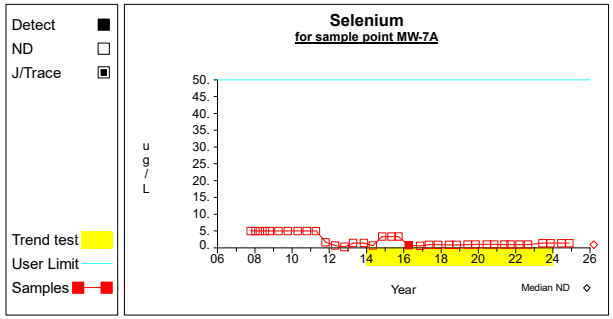


Graph 323

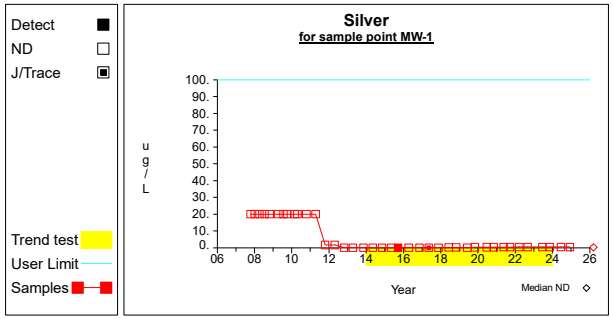


Graph 324

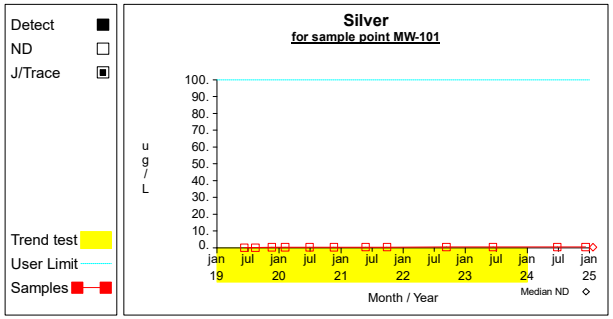
Time Series



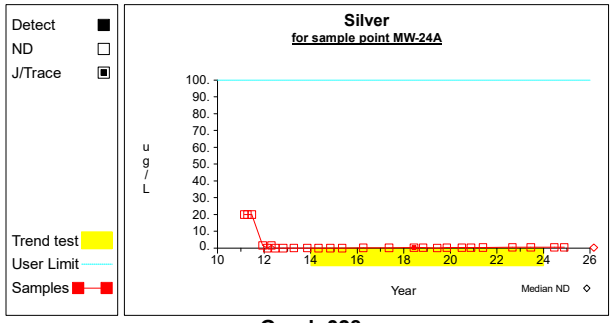
Graph 325



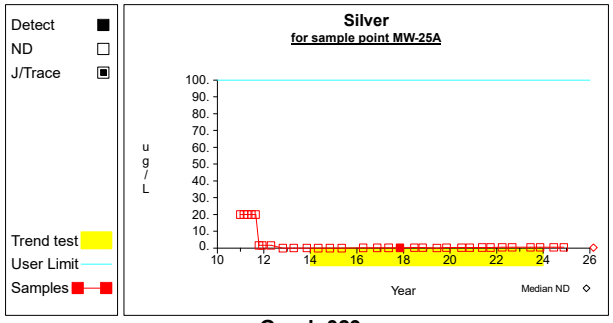
Graph 326



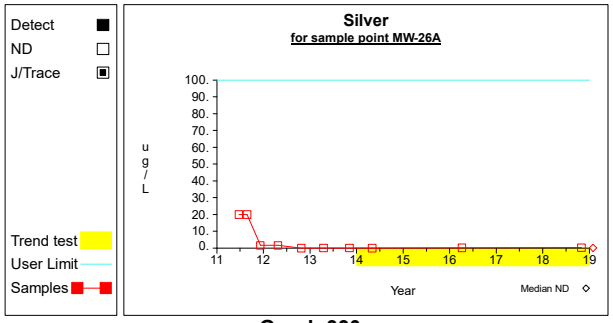
Graph 327



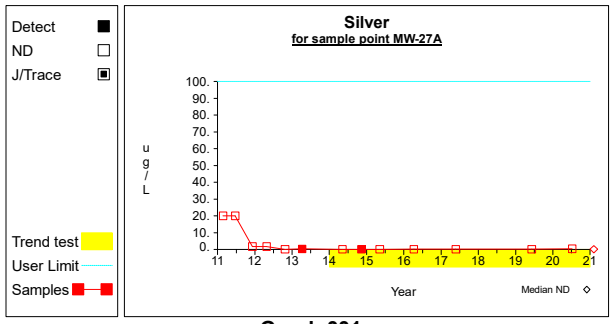
Graph 328



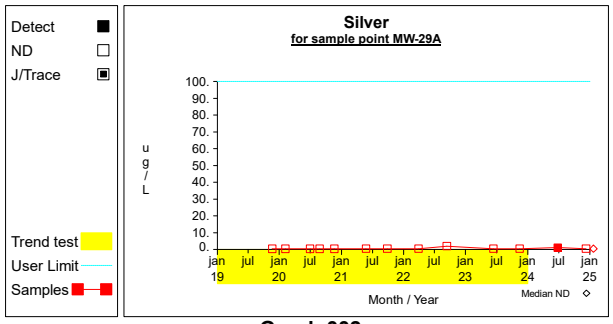
Graph 329



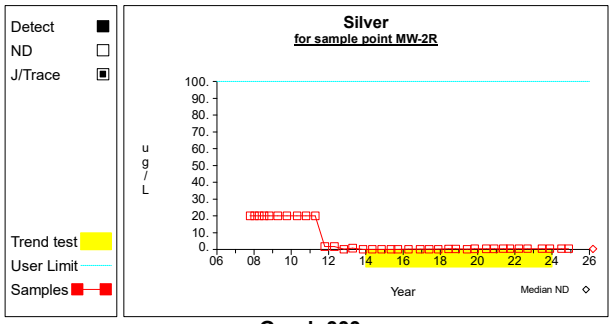
Graph 330



Graph 331

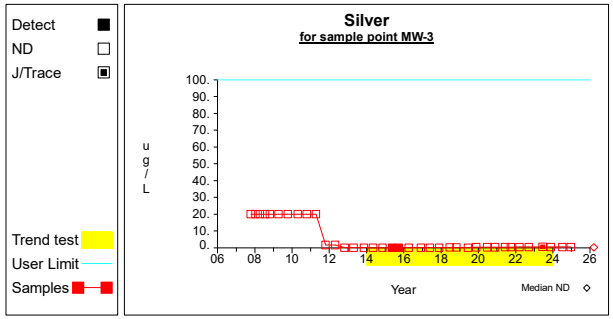


Graph 332

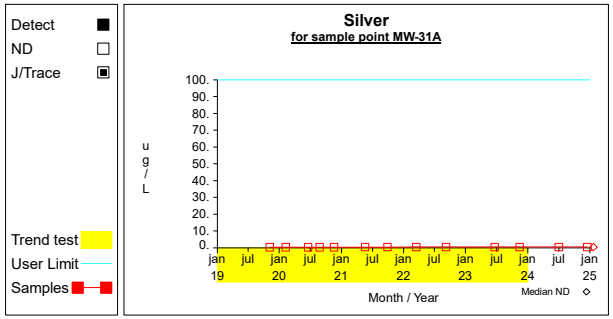


Graph 333

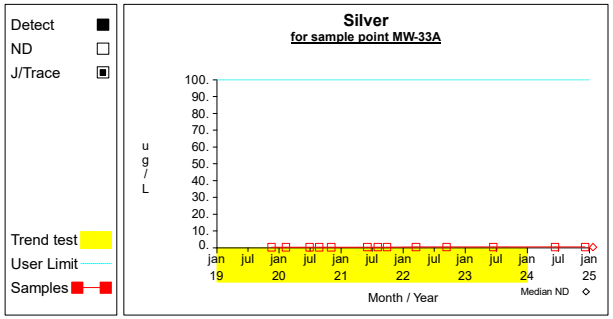
Time Series



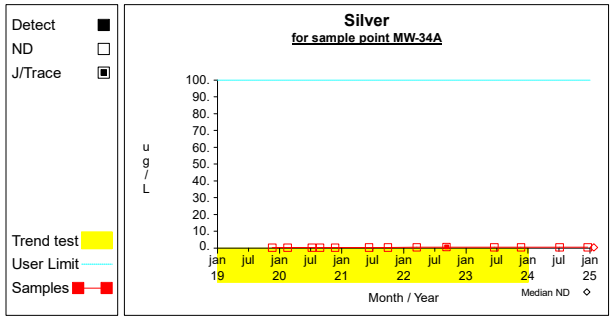
Graph 334



Graph 335



Graph 336



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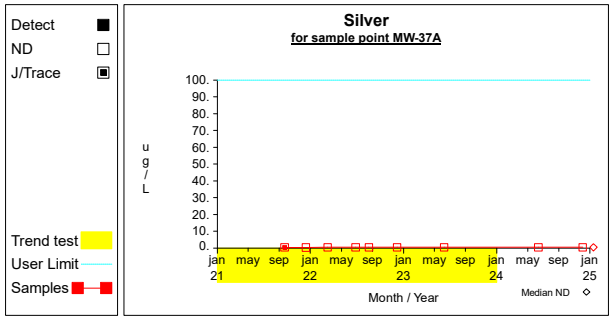
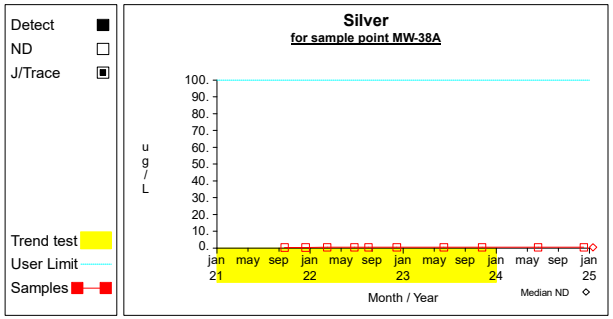
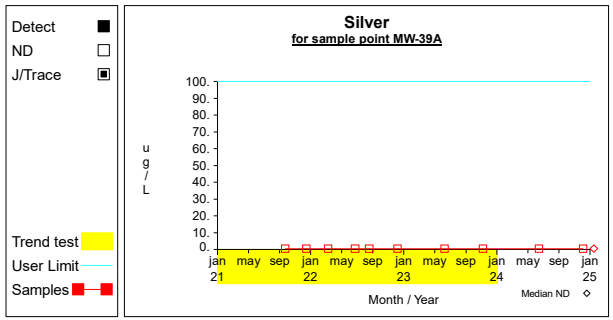


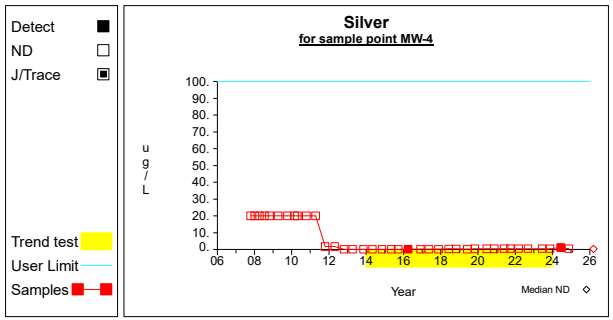
Graph 338



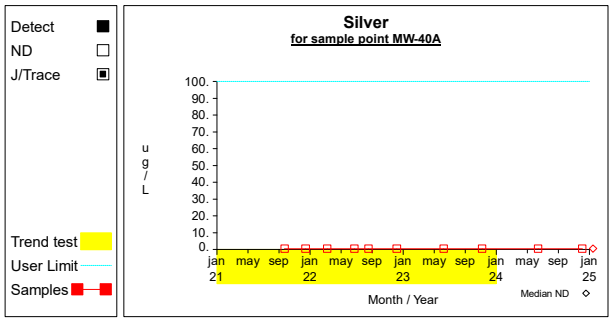
Graph 339



Graph 340

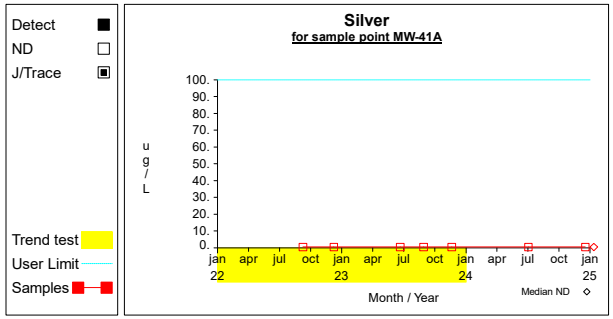


Graph 341

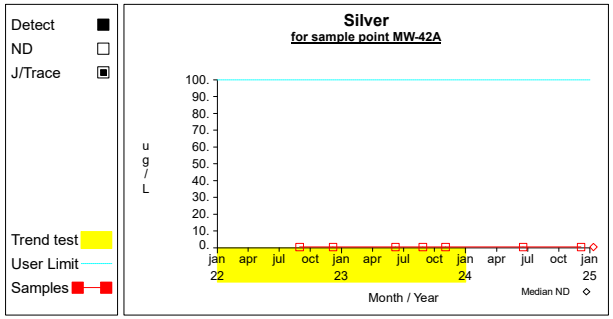


Graph 342

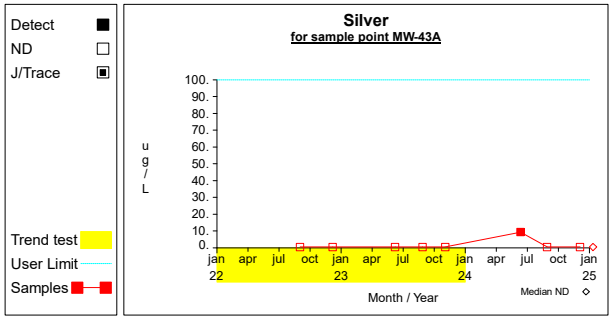
Time Series



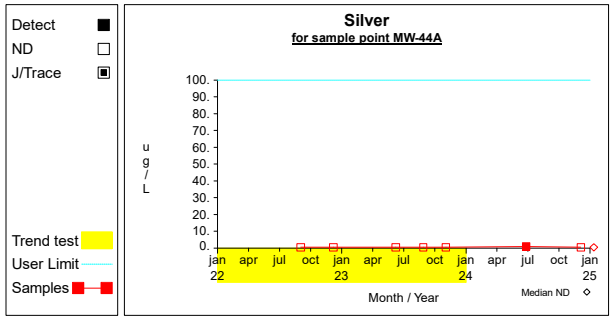
Graph 343



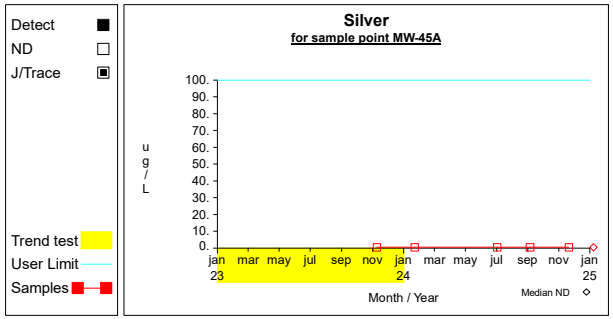
Graph 344



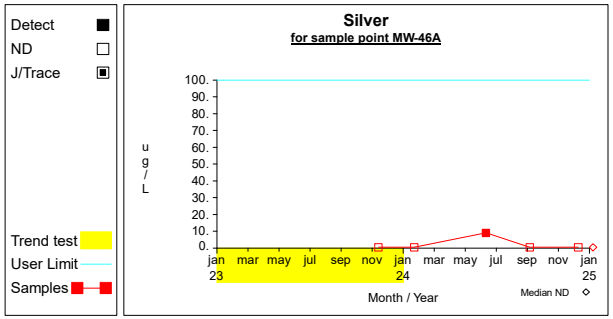
Graph 345



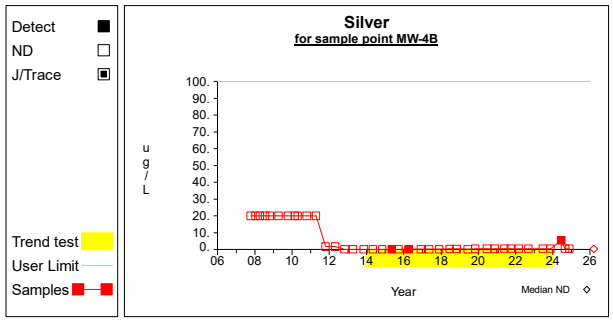
Graph 346



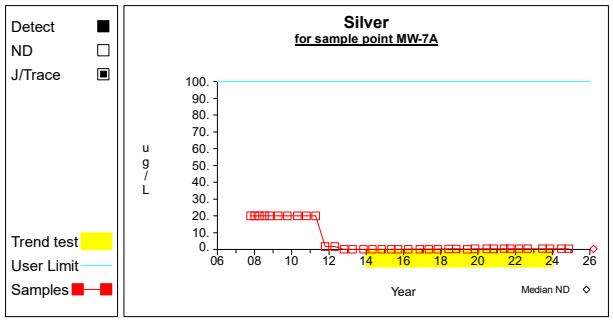
Graph 347



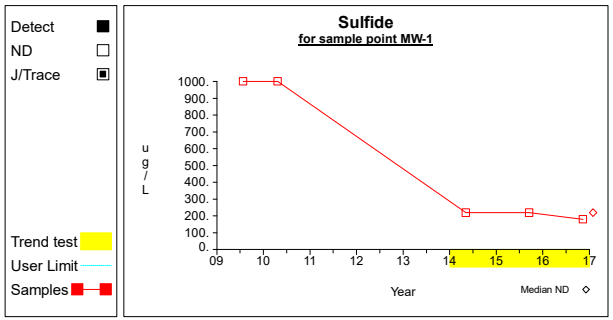
Graph 348



Graph 349

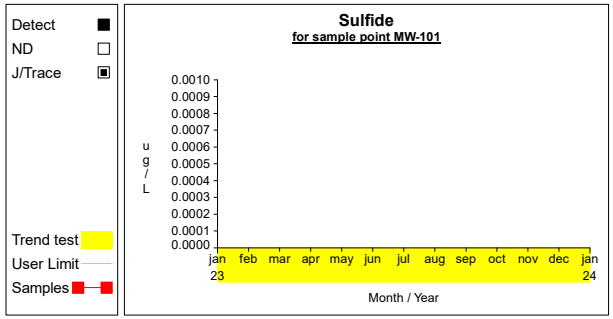


Graph 350

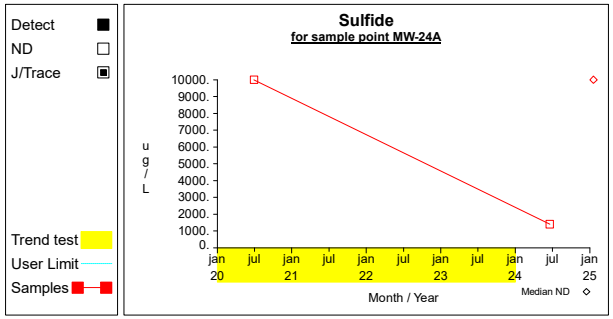


Graph 351

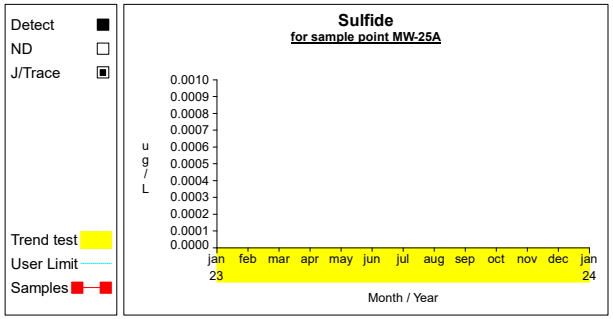
Time Series



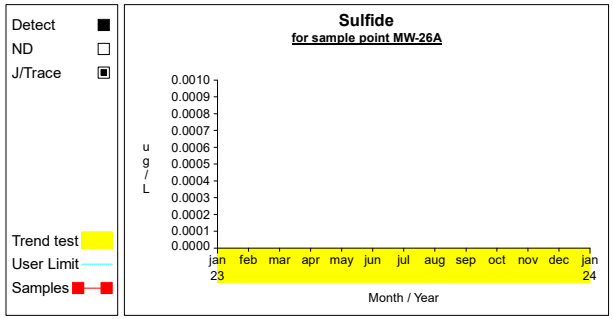
Graph 352



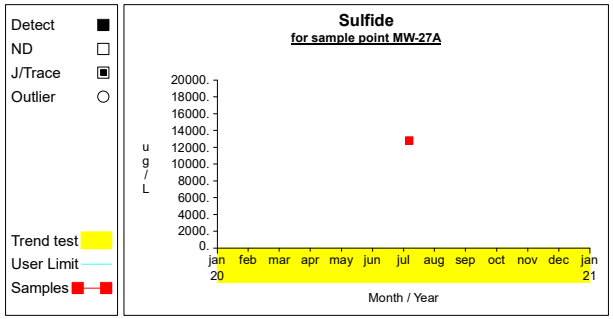
Graph 353



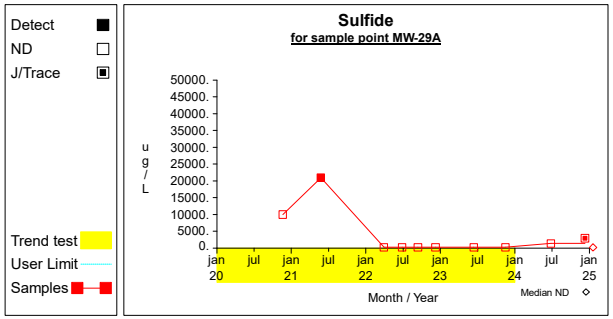
Graph 354



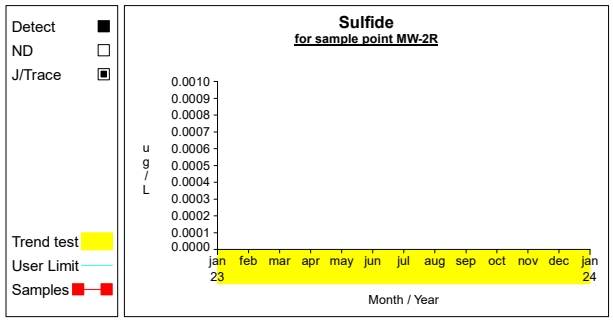
Graph 355



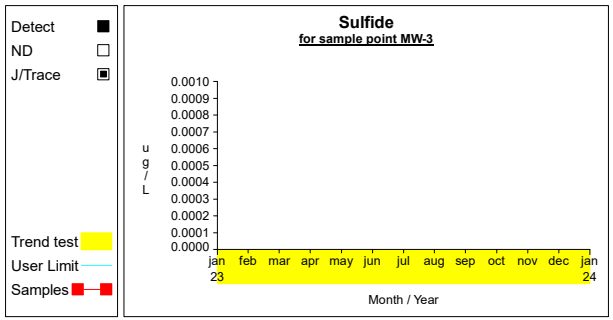
Graph 356



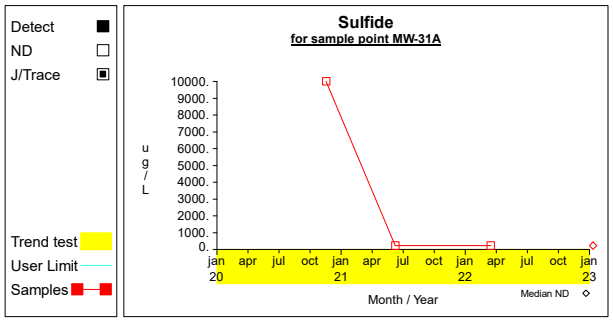
Graph 357



Graph 358

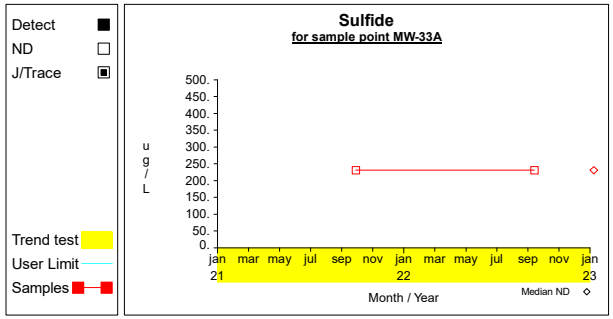


Graph 359

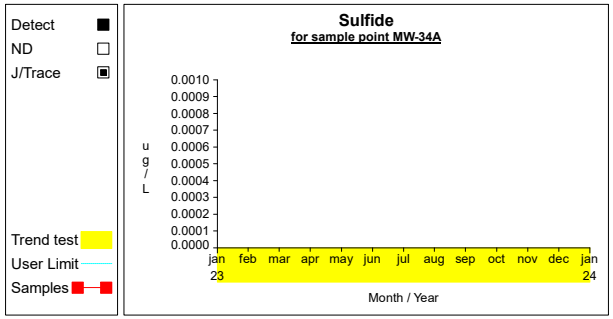


Graph 360

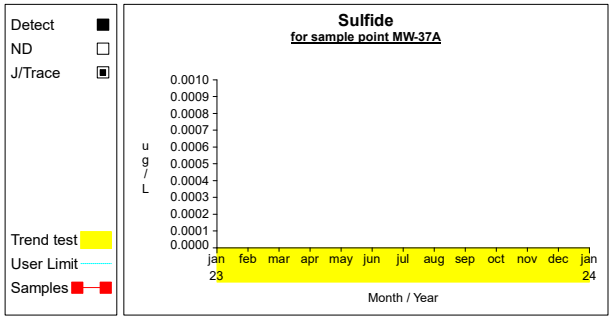
Time Series



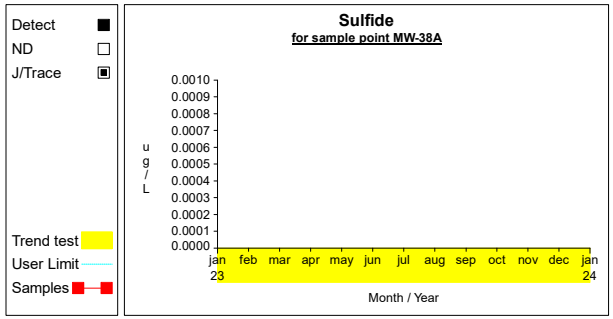
Graph 361



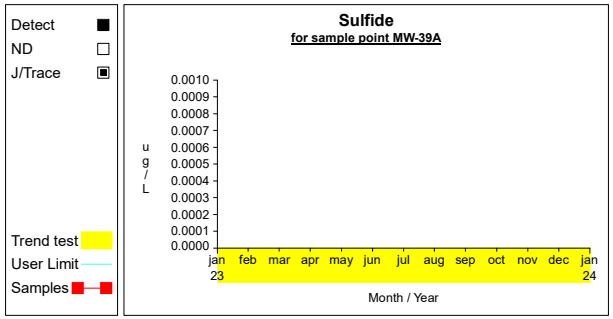
Graph 362



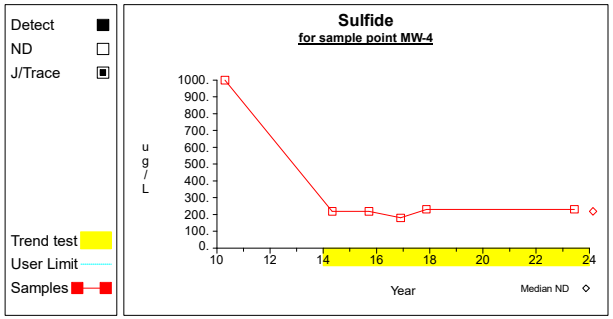
Graph 363



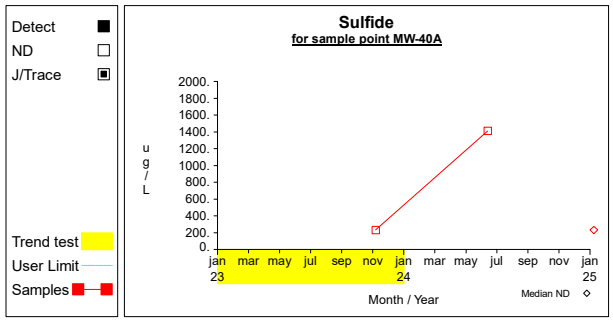
Graph 364



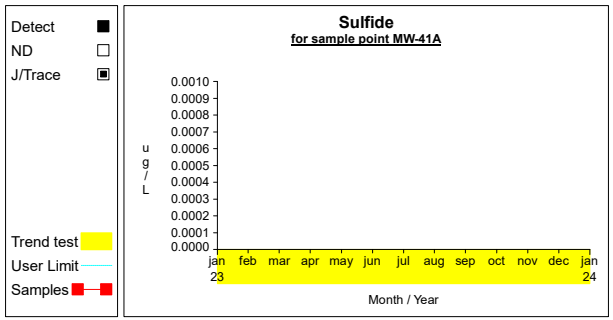
Graph 365



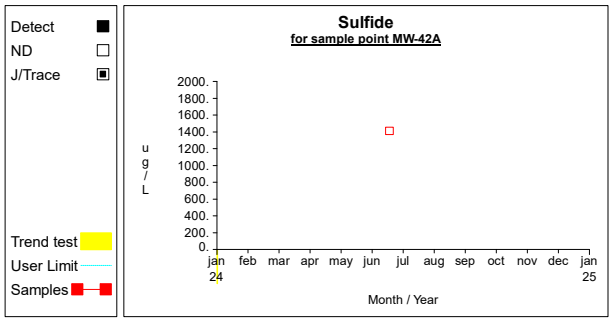
Graph 366



Graph 367

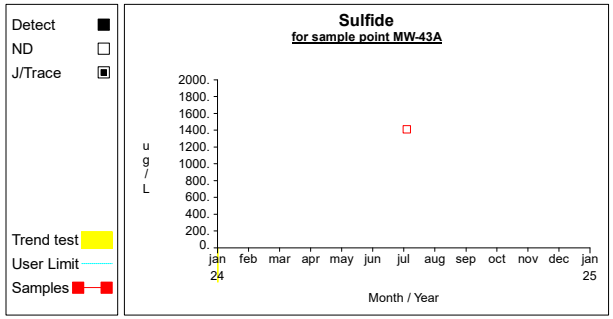


Graph 368

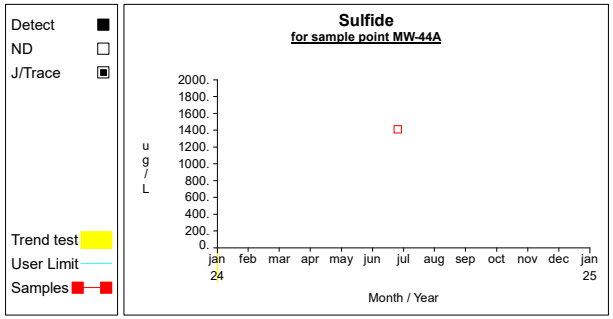


Graph 369

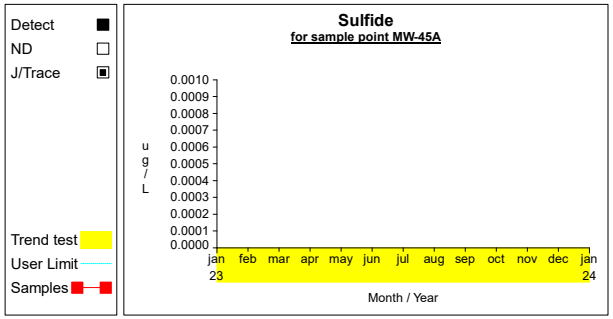
Time Series



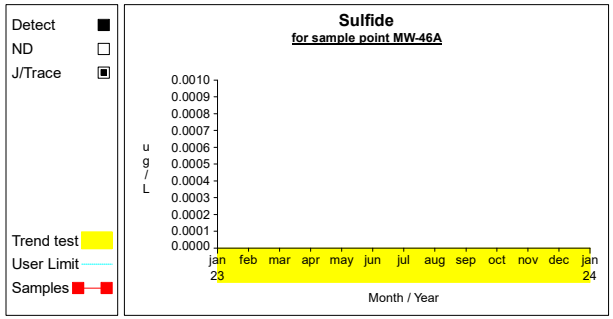
Graph 370



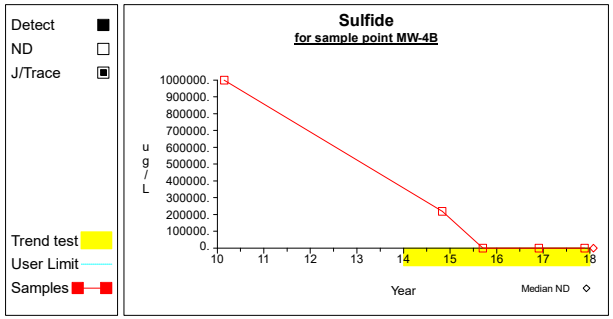
Graph 371



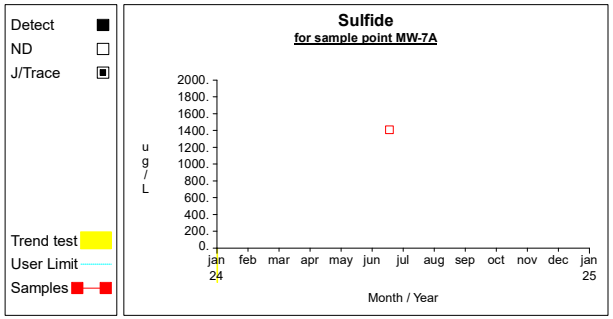
Graph 372



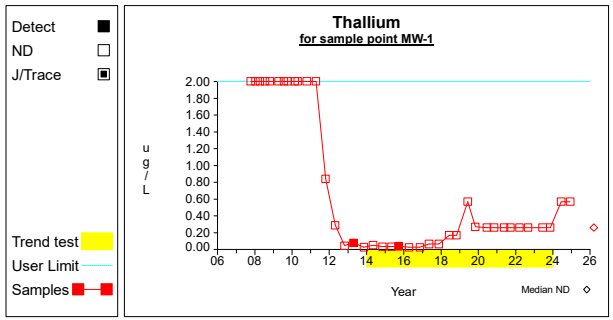
Graph 373



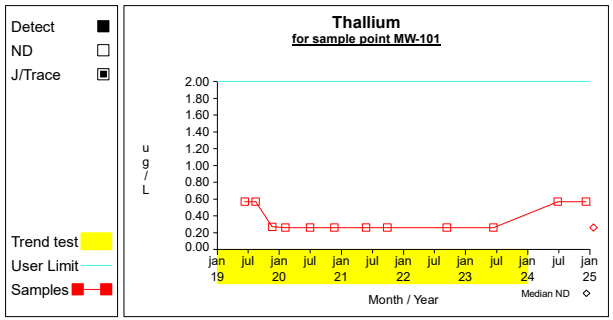
Graph 374



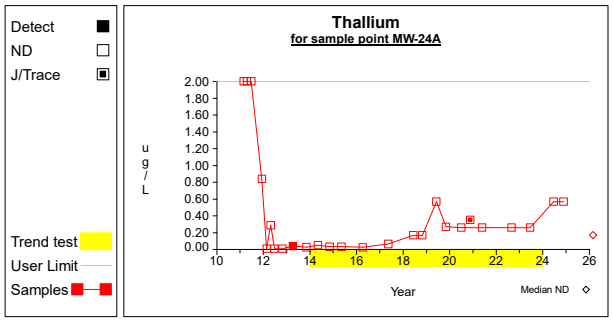
Graph 375



Graph 376

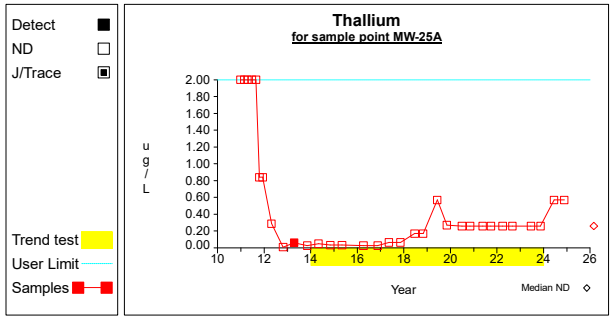


Graph 377

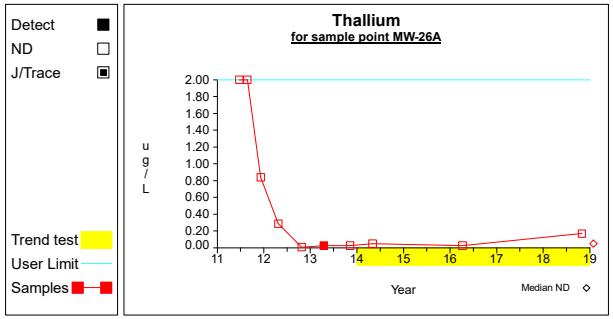


Graph 378

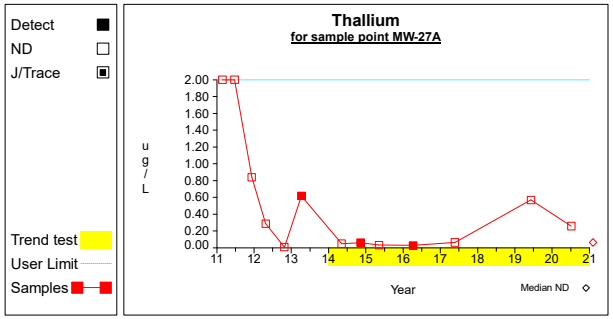
Time Series



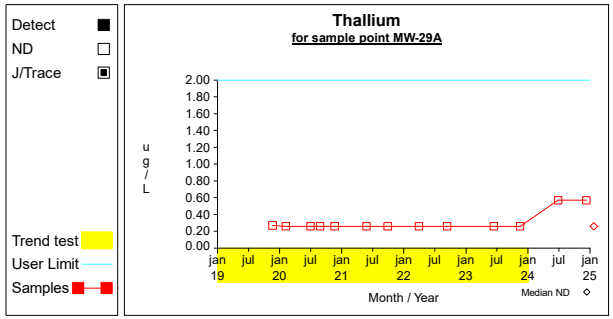
Graph 379



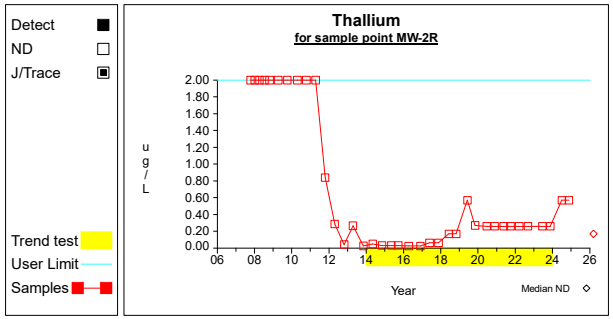
Graph 380



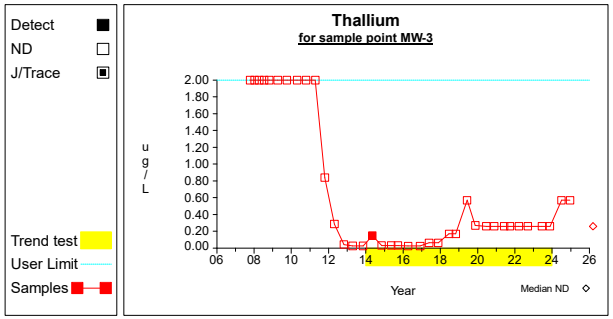
Graph 381



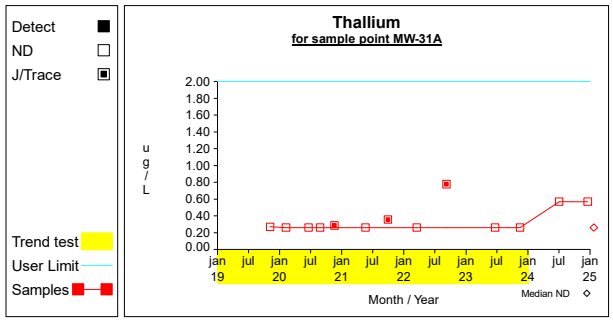
Graph 382



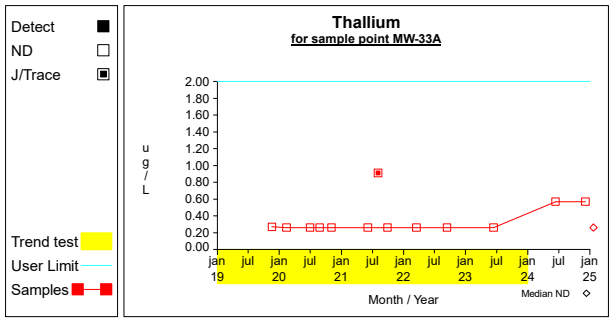
Graph 383



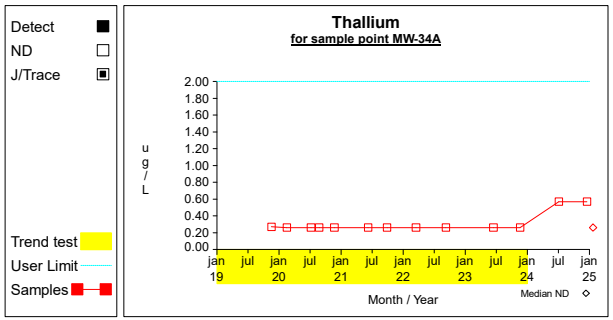
Graph 384



Graph 385

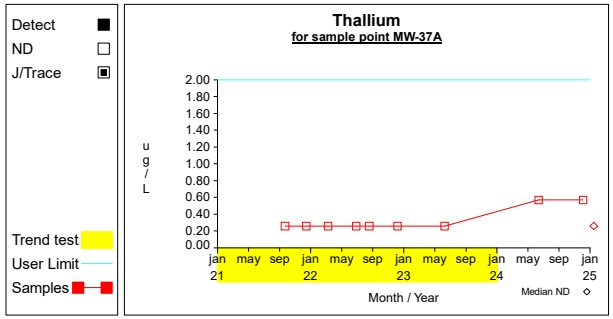


Graph 386

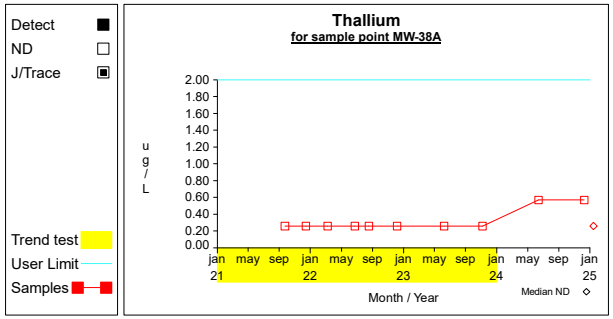


Graph 387

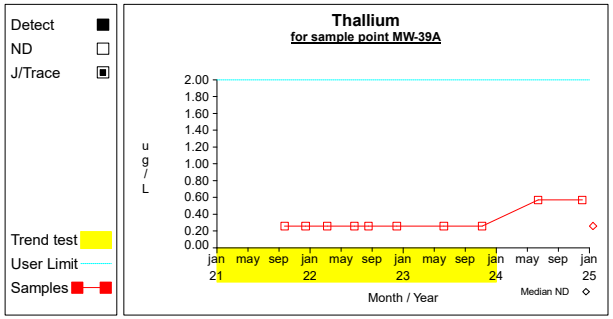
Time Series



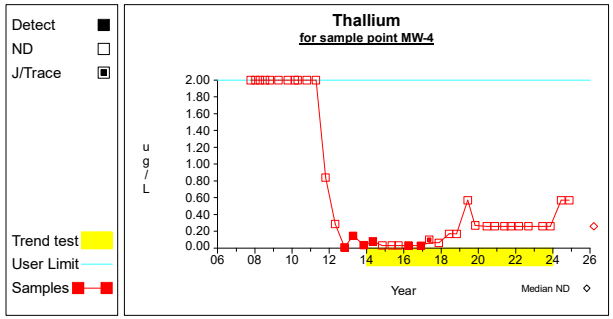
Graph 388



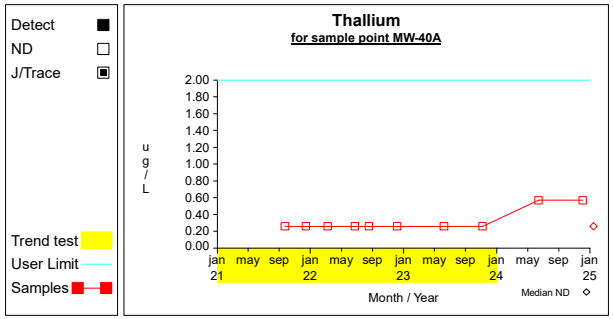
Graph 389



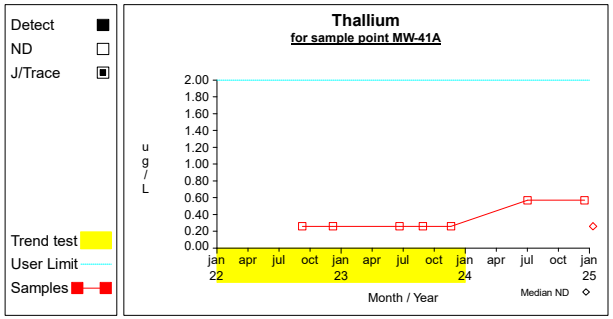
Graph 390



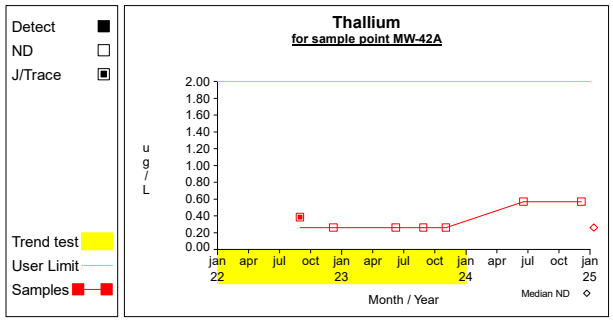
Graph 391



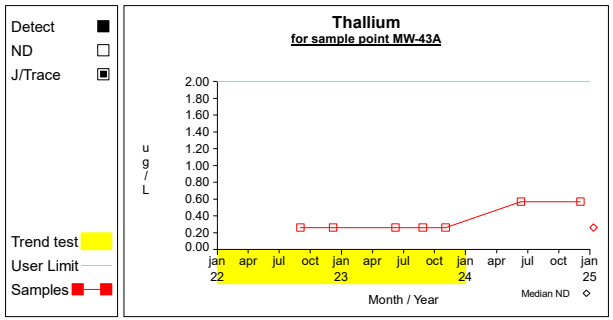
Graph 392



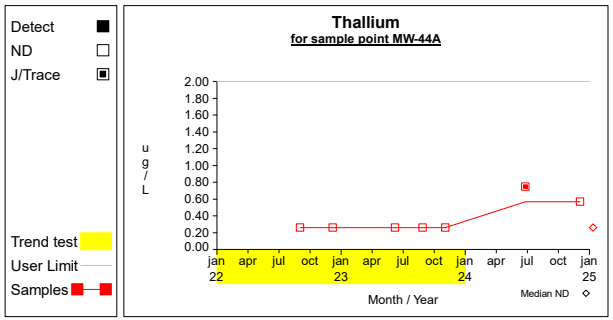
Graph 393



Graph 394

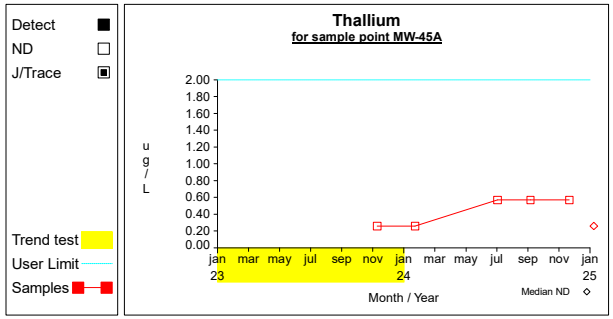


Graph 395

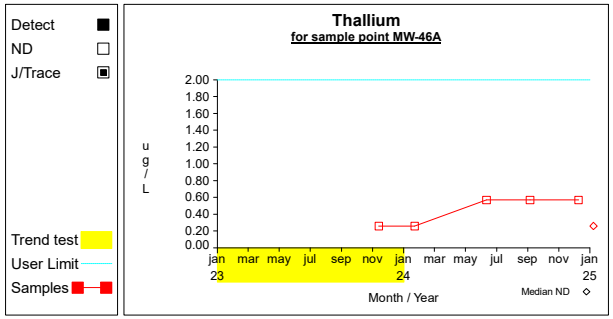


Graph 396

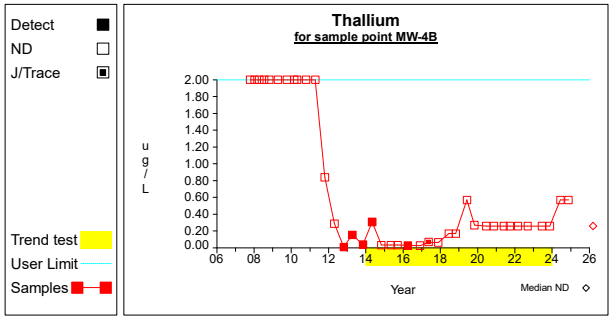
Time Series



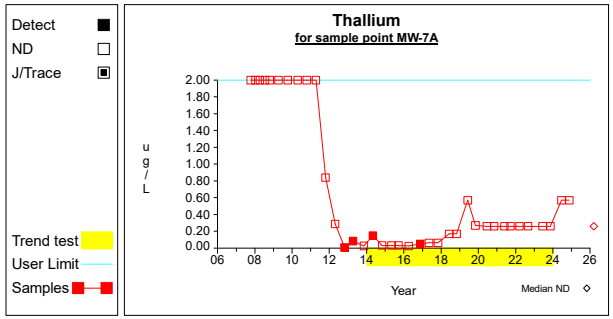
Graph 397



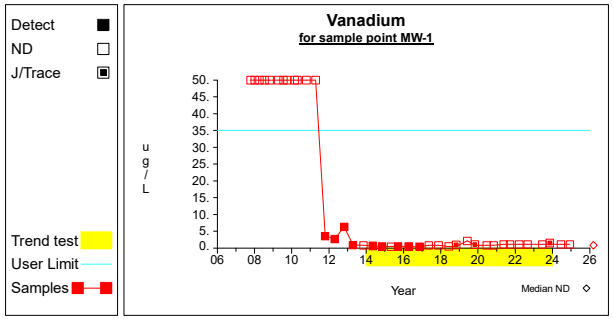
Graph 398



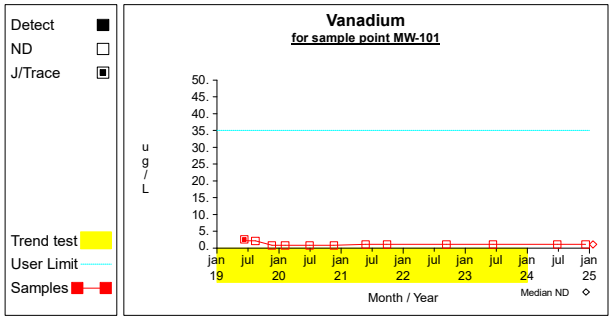
Graph 399



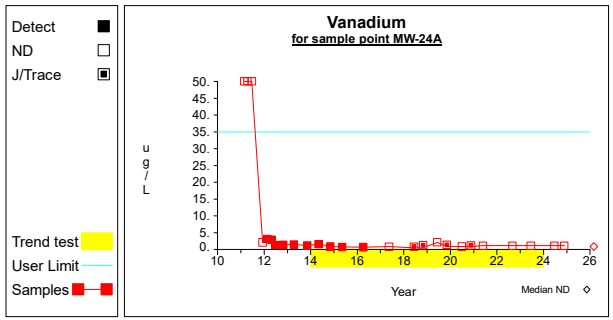
Graph 400



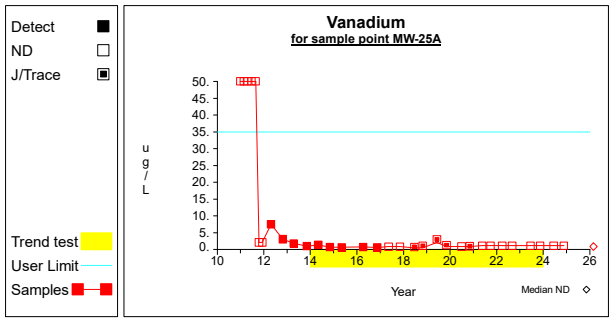
Graph 401



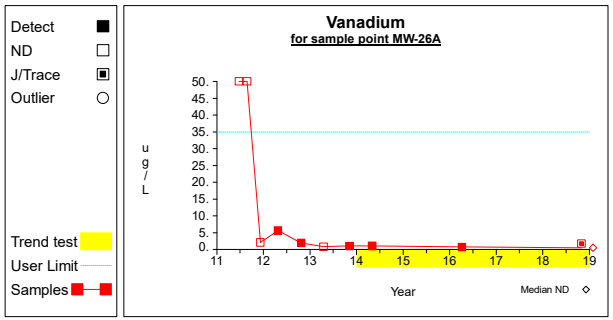
Graph 402



Graph 403

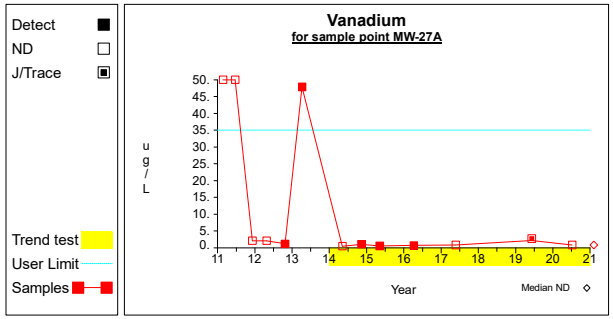


Graph 404

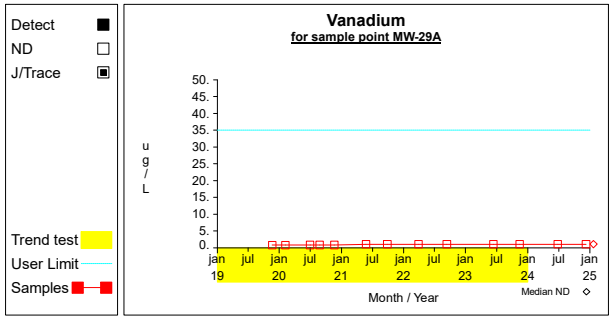


Graph 405

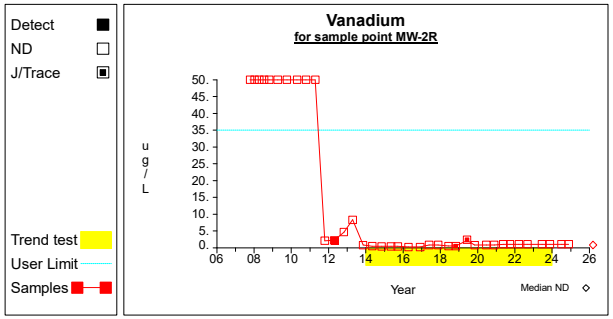
Time Series



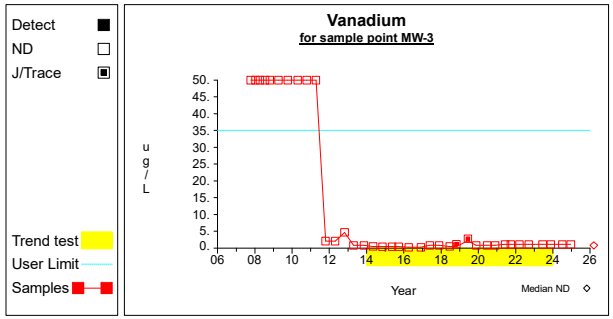
Graph 406



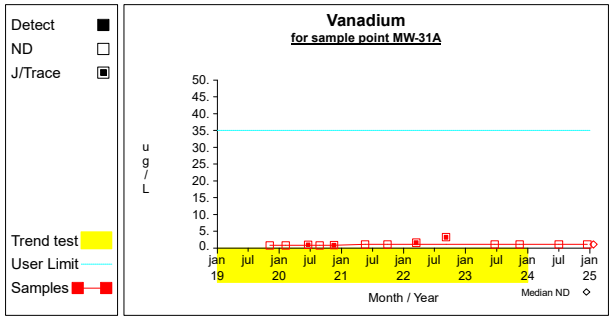
Graph 407



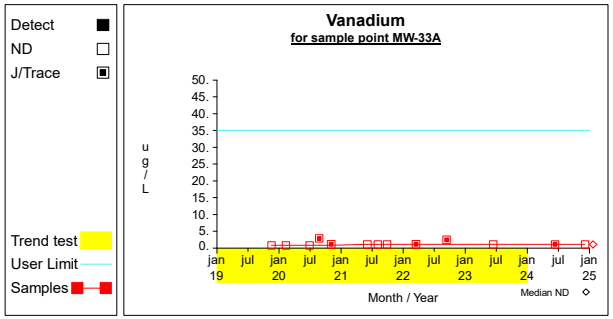
Graph 408



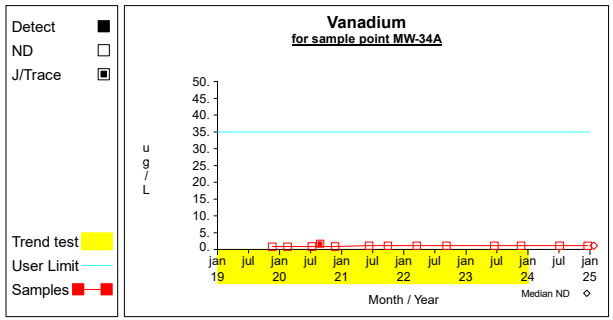
Graph 409



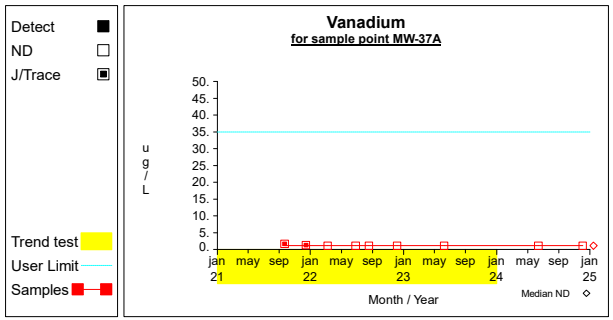
Graph 410



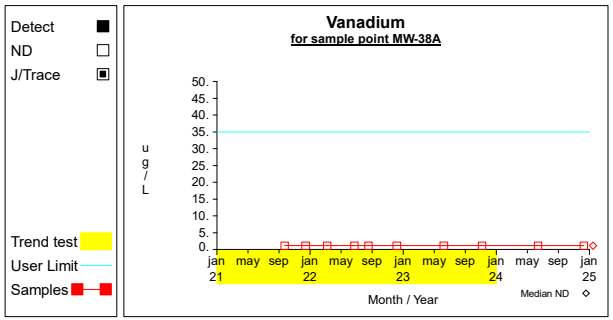
Graph 411



Graph 412

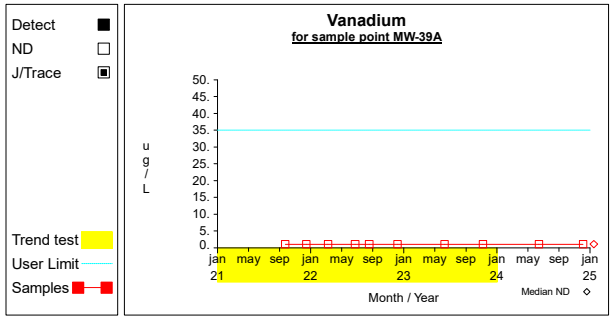


Graph 413

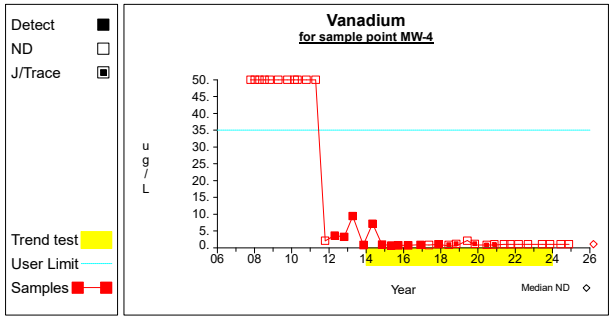


Graph 414

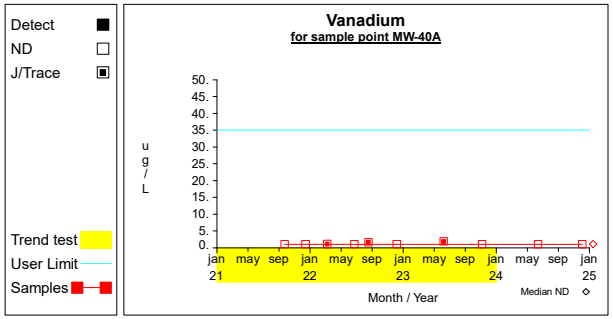
Time Series



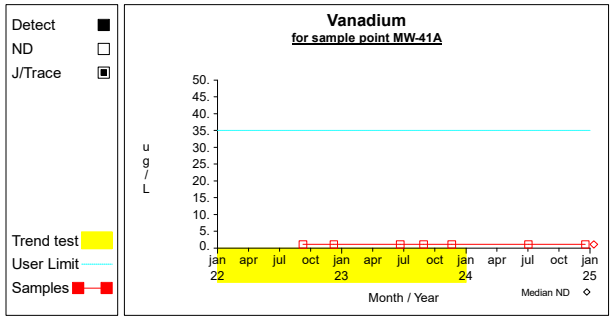
Graph 415



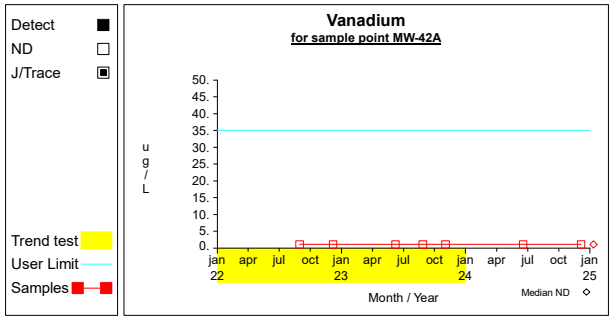
Graph 416



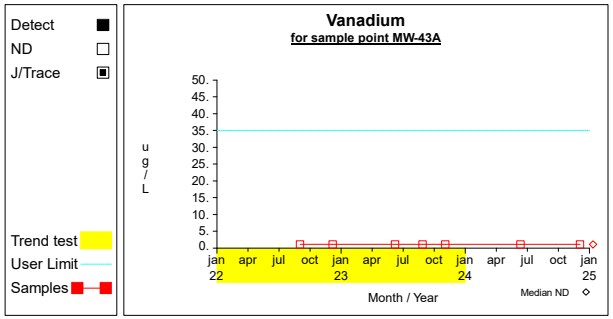
Graph 417



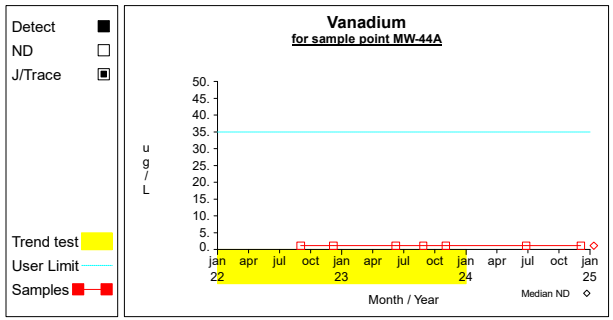
Graph 418



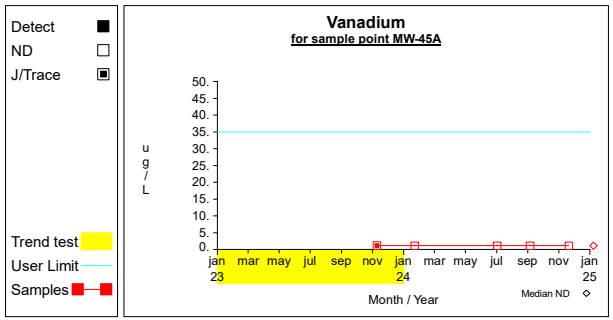
Graph 419



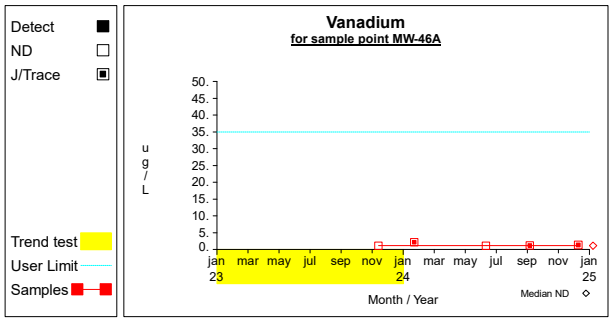
Graph 420



Graph 421

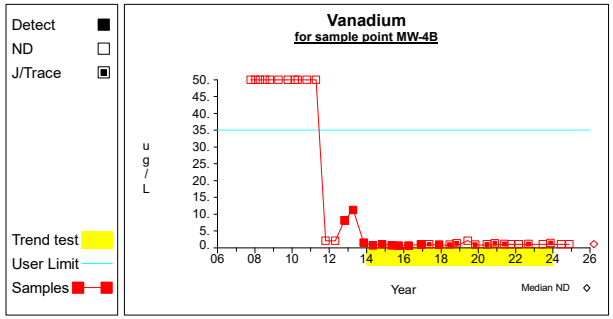


Graph 422

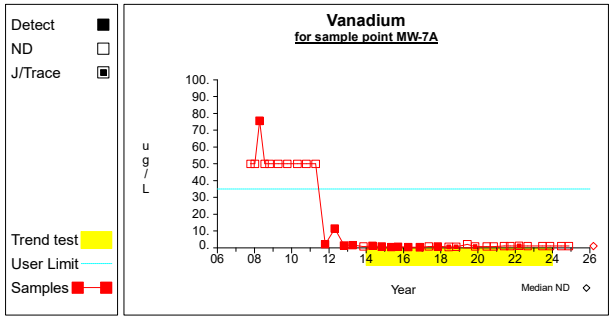


Graph 423

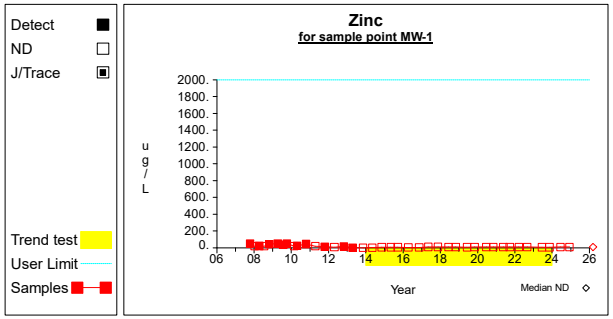
Time Series



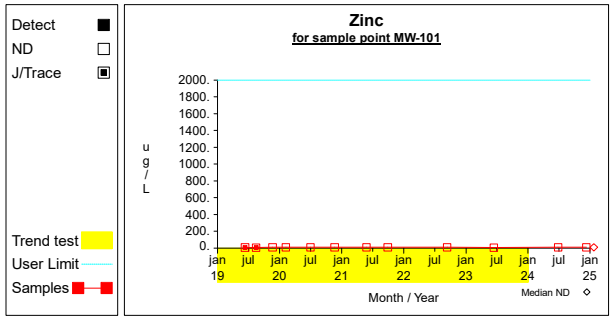
Graph 424



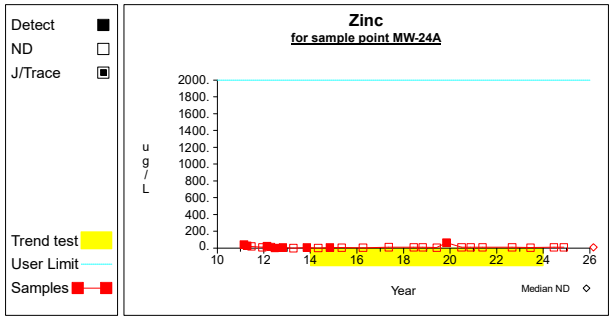
Graph 425



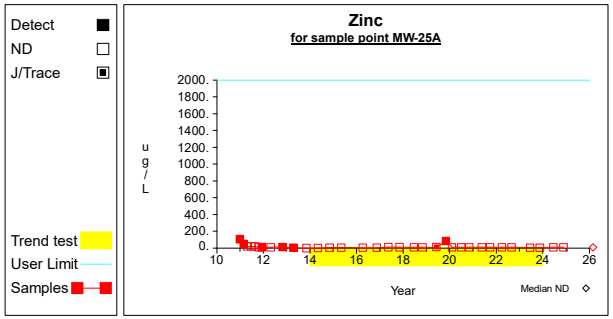
Graph 426



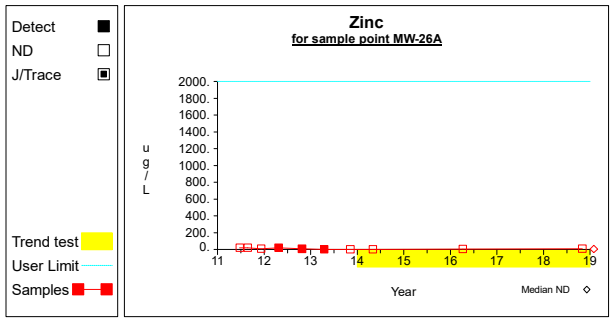
Graph 427



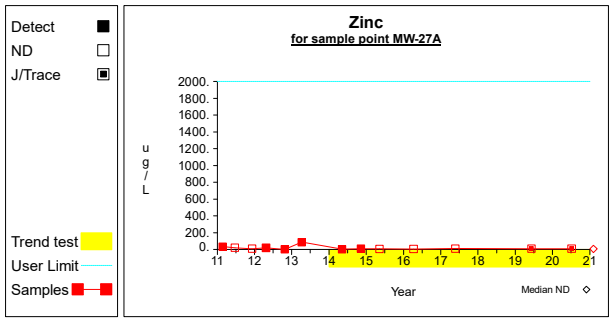
Graph 428



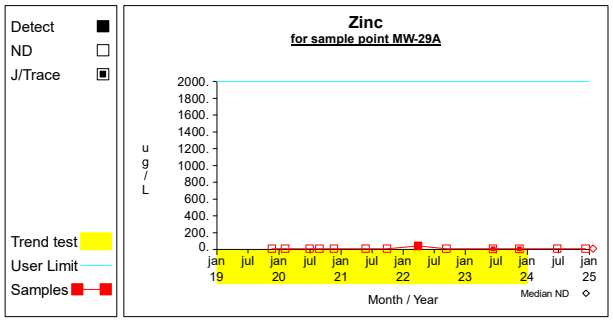
Graph 429



Graph 430

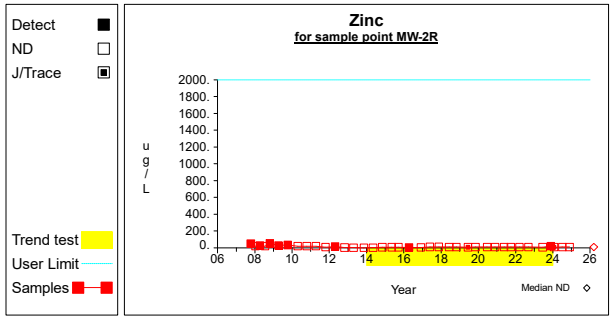


Graph 431

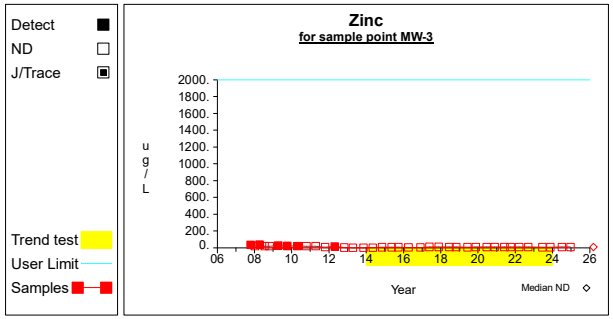


Graph 432

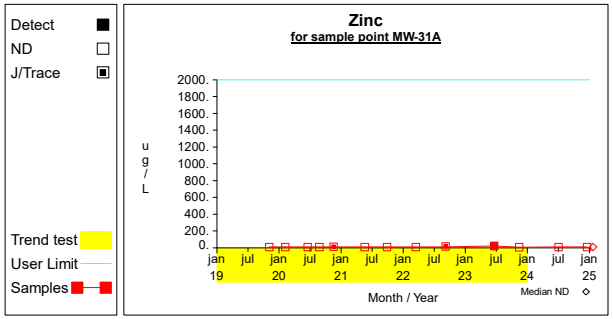
Time Series



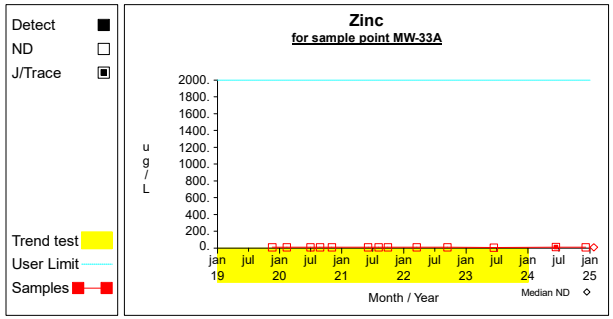
Graph 433



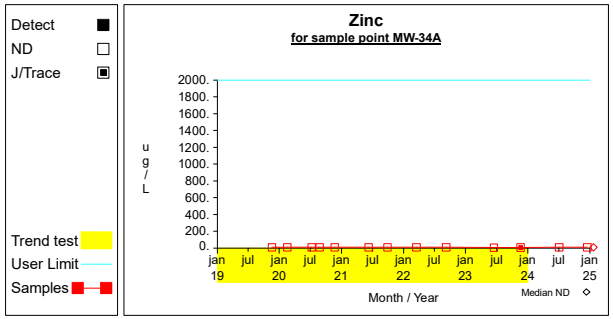
Graph 434



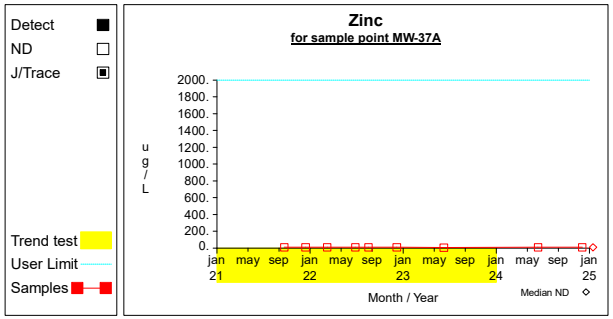
Graph 435



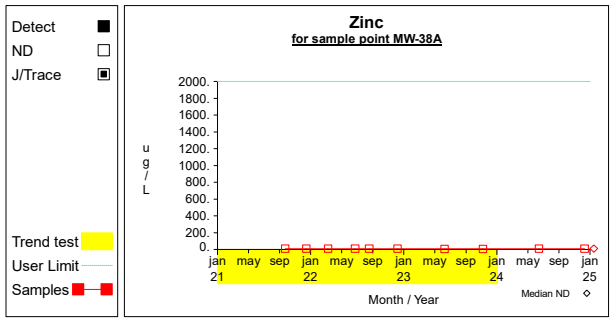
Graph 436



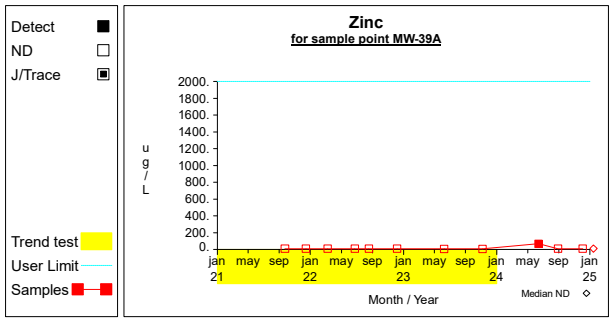
Graph 437



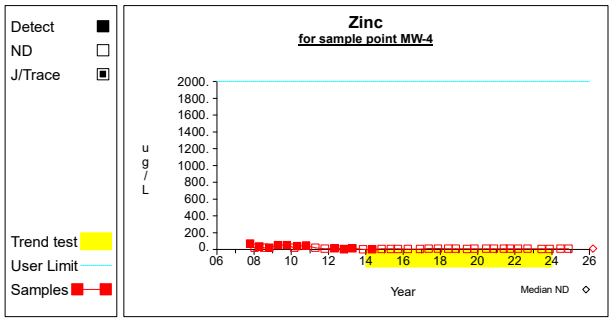
Graph 438



Graph 439

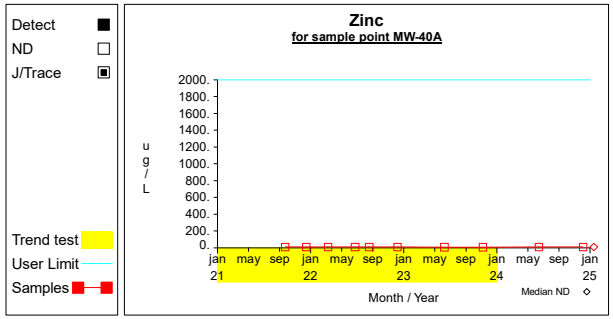


Graph 440

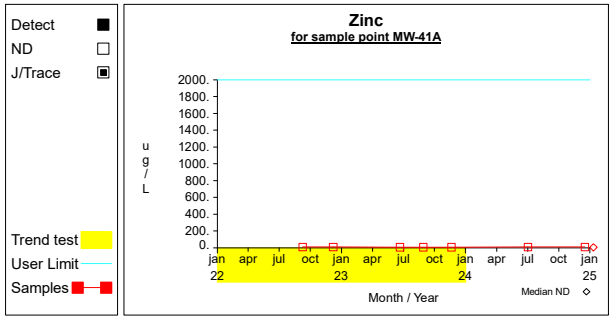


Graph 441

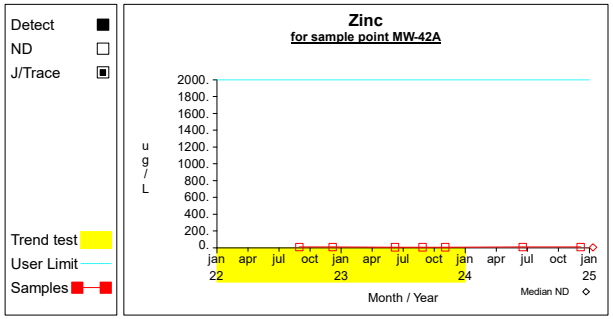
Time Series



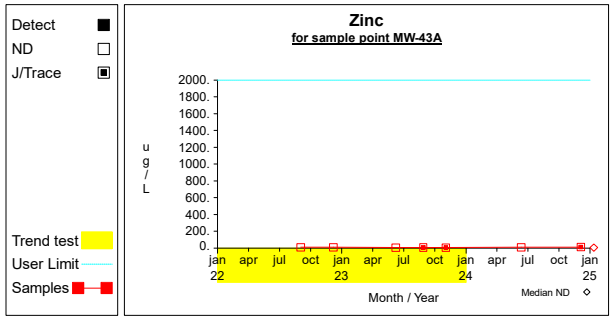
Graph 442



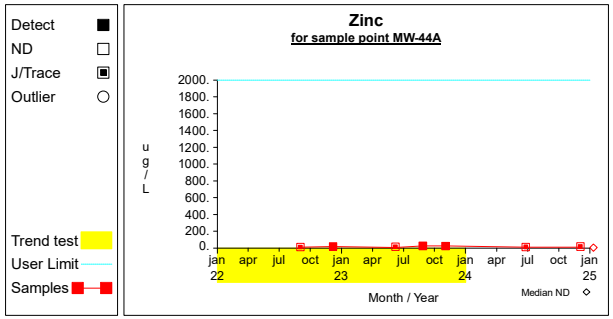
Graph 443



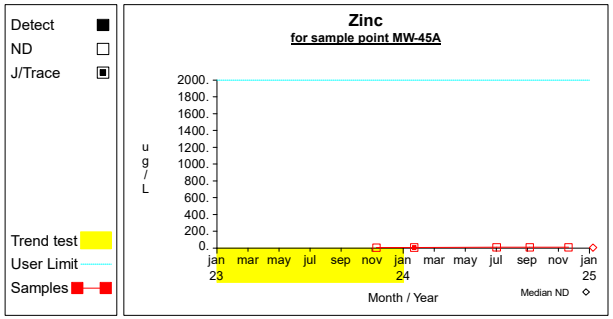
Graph 444



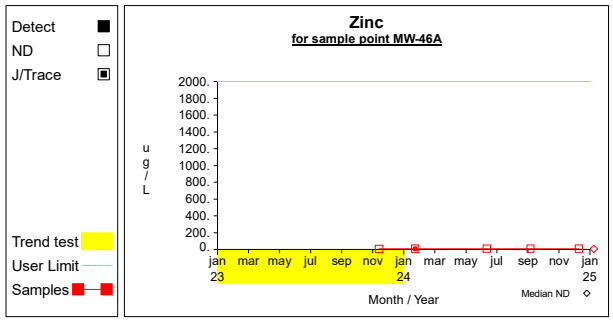
Graph 445



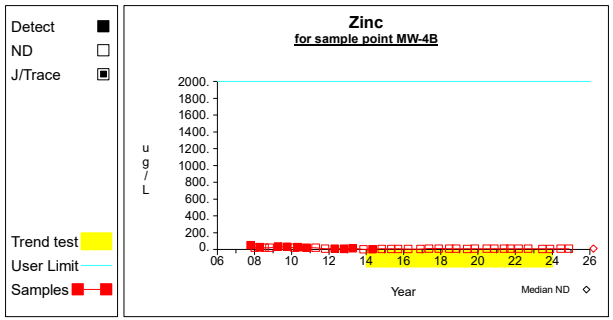
Graph 446



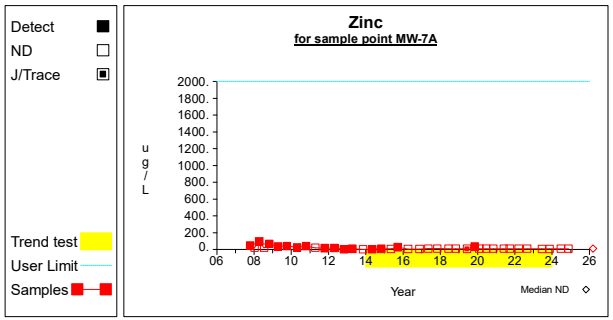
Graph 447



Graph 448



Graph 449



Graph 450

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,1,2,2-tetrachloroethane	MW-1	10/26/2012		.21	.10	ug/L
1,2-dibromo-3-chloropropane	MW-1	10/26/2012		1.17	.12	ug/L
1,2-dichlorobenzene	MW-1	10/26/2012		.480	.140	ug/L
1,2-dichlorobenzene	MW-1	4/15/2013		.185	.140	ug/L
1,2-dichloroethane	MW-1	10/26/2012		.18	.18	ug/L
1,4-dichlorobenzene	MW-1	10/26/2012		3.09	.20	ug/L
1,4-dichlorobenzene	MW-1	4/15/2013		1.52	.20	ug/L
2-butanone	MW-1	4/24/2012		.650	.470	ug/L
2-butanone	MW-1	10/26/2012		.800	.470	ug/L
2-butanone	MW-1	4/15/2013		.709	.470	ug/L
4,4'-dde	MW-1	9/16/2015		.00427	.00239	ug/L
4,4'-dde	MW-1	12/09/2015		.00671	.00233	ug/L
4,4'-ddt	MW-1	9/16/2015		.00632	.00432	ug/L
4,4'-ddt	MW-1	12/09/2015		.00947	.00422	ug/L
Acetone	MW-1	10/18/2011		2.07	1.79	ug/L
Acetone	MW-1	4/15/2013		1.94	1.79	ug/L
Acetone	MW-1	11/16/2017		1.98	1.79	ug/L
Acetonitrile	MW-1	11/11/2016		166	126	ug/L
Alpha-bhc	MW-1	9/16/2015		.00287	.00193	ug/L
Benzene	MW-1	4/01/1991		1.000	1.000	ug/L
Benzene	MW-1	10/18/2011		.170	.110	ug/L
Benzene	MW-1	10/26/2012		.650	.110	ug/L
Benzene	MW-1	4/15/2013		.287	.110	ug/L
Beta-bhc	MW-1	5/05/2014		.00594	.00511	ug/L
Bis(2-ethylhexyl)phthalate	MW-1	11/11/2016		.679	.429	ug/L
Bromomethane	MW-1	10/26/2012		.26	.22	ug/L
Carbon disulfide	MW-1	10/26/2012		.17	.15	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-1	10/23/2008		1.82	1.00	ug/L
Chlorobenzene	MW-1	4/08/2009		1.33	1.00	ug/L
Chlorobenzene	MW-1	10/05/2009		1.06	1.00	ug/L
Chlorobenzene	MW-1	10/18/2011		1.63	.19	ug/L
Chlorobenzene	MW-1	4/24/2012		.43	.19	ug/L
Chlorobenzene	MW-1	10/26/2012		9.15	.19	ug/L
Chlorobenzene	MW-1	4/15/2013		4.66	.19	ug/L
Chlorobenzene	MW-1	11/07/2014		1.42	.19	ug/L
Chlorobenzene	MW-1	11/09/2023		2.89	.40	ug/L
Chlorobenzene	MW-1	1/25/2024		4.64	.40	ug/L
Chloroethane	MW-1	10/26/2012		.57	.15	ug/L
Delta-bhc	MW-1	9/16/2015		.00458	.00261	ug/L
Dichloromethane	MW-1	10/18/2011		.280	.170	ug/L
Dichloromethane	MW-1	10/26/2012		.260	.170	ug/L
Dichloromethane	MW-1	5/05/2014		.228	.170	ug/L
Dichloromethane	MW-1	11/11/2016		.925	.170	ug/L
Dichloromethane	MW-1	11/16/2017		.286	.170	ug/L
Dieldrin	MW-1	9/16/2015		.00683	.00227	ug/L
Diethyl phthalate	MW-1	5/05/2014		.361	.274	ug/L
Diethyl phthalate	MW-1	11/07/2014		1.060	.289	ug/L
Diethyl phthalate	MW-1	12/22/2014		.348	.263	ug/L
Diethyl phthalate	MW-1	9/16/2015		.453	.274	ug/L
Di-n-octyl phthalate	MW-1	5/05/2014		.255	.242	ug/L
Di-n-octyl phthalate	MW-1	5/01/2015		1.080	.235	ug/L
Di-n-octyl phthalate	MW-1	11/11/2016		1.790	.253	ug/L
Endosulfan ii	MW-1	5/05/2014		.00375	.00202	ug/L
Endosulfan ii	MW-1	11/07/2014		.00589	.00218	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
Endosulfan sulfate	MW-1	9/16/2015		.00544	.00284	ug/L
Endosulfan sulfate	MW-1	12/09/2015		.00772	.00278	ug/L
Endrin	MW-1	9/16/2015		.00247	.00216	ug/L
Gamma-bhc (lindane)	MW-1	9/16/2015		.00267	.00216	ug/L
Heptachlor	MW-1	9/16/2015		.00335	.00295	ug/L
Heptachlor	MW-1	12/09/2015		.00490	.00289	ug/L
Methoxychlor	MW-1	5/05/2014		.01710	.00223	ug/L
Methoxychlor	MW-1	12/22/2014		.00889	.00228	ug/L
Methoxychlor	MW-1	5/01/2015		.01170	.00214	ug/L
Styrene	MW-1	10/26/2012		.11	.10	ug/L
Xylenes	MW-1	10/26/2012		.32	.13	ug/L
1,2-dibromo-3-chloropropane	MW-24A	2/21/2012		.12	.12	ug/L
1,4-dichlorobenzene	MW-24A	4/08/2013		.246	.200	ug/L
2-butanone	MW-24A	12/07/2011		1.29	.47	ug/L
2-butanone	MW-24A	4/24/2012		2.96	.47	ug/L
Acetone	MW-24A	2/21/2012		1.89	1.79	ug/L
Acetone	MW-24A	4/24/2012		3.97	1.79	ug/L
Acetone	MW-24A	4/04/2016		1.94	1.79	ug/L
Bromomethane	MW-24A	2/21/2012		.30	.22	ug/L
Carbon disulfide	MW-24A	10/24/2012		.160	.150	ug/L
Carbon disulfide	MW-24A	11/03/2014		.451	.150	ug/L
Chloroethane	MW-24A	12/07/2011		.45	.15	ug/L
Dichloromethane	MW-24A	2/21/2012		.63	.17	ug/L
Toluene	MW-24A	4/08/2013		.184	.150	ug/L
2-butanone	MW-25A	10/18/2011		.97	.47	ug/L
2-butanone	MW-25A	4/24/2012		1.51	.47	ug/L
Acetone	MW-25A	4/24/2012		2.55	1.79	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-25A	11/06/2017		2.39	1.79	ug/L
Benzene	MW-25A	12/07/2011		.11	.11	ug/L
Carbon disulfide	MW-25A	11/03/2014		.751	.150	ug/L
Chloroethane	MW-25A	10/18/2011		.27	.15	ug/L
Chloroethane	MW-25A	12/07/2011		.19	.15	ug/L
Dichloromethane	MW-25A	10/18/2011		.210	.170	ug/L
Dichloromethane	MW-25A	4/15/2013		.179	.170	ug/L
Dichloromethane	MW-25A	11/15/2016		.608	.170	ug/L
Dichloromethane	MW-25A	11/06/2017		.494	.170	ug/L
Toluene	MW-25A	11/15/2023		2.86	.43	ug/L
Tribromomethane	MW-25A	4/15/2013		.215	.140	ug/L
Acetone	MW-2R	11/30/2016		2.01	1.79	ug/L
Bromomethane	MW-2R	5/07/2015		.313	.220	ug/L
Bromomethane	MW-2R	11/30/2016		.404	.220	ug/L
Carbon disulfide	MW-2R	11/04/2014		1.97	.15	ug/L
Dichloromethane	MW-2R	10/26/2012		.250	.170	ug/L
Dichloromethane	MW-2R	11/06/2013		.361	.170	ug/L
Dichloromethane	MW-2R	11/30/2016		1.050	.170	ug/L
Dichloromethane	MW-2R	11/17/2017		.293	.170	ug/L
Toluene	MW-2R	11/20/2023		1.42	.43	ug/L
Acetone	MW-3	11/30/2016		2.41	1.79	ug/L
Benzene	MW-3	11/06/2014		.613	.110	ug/L
Bromomethane	MW-3	11/30/2016		.487	.220	ug/L
Bromomethane	MW-3	11/21/2017		.676	.220	ug/L
Carbon disulfide	MW-3	11/06/2014		1.08	.15	ug/L
Chloromethane	MW-3	11/30/2016		.366	.310	ug/L
Dichloromethane	MW-3	4/24/2012		.380	.170	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
Dichloromethane	MW-3	10/26/2012		.380	.170	ug/L
Dichloromethane	MW-3	11/06/2013		.352	.170	ug/L
Dichloromethane	MW-3	11/30/2016		.803	.170	ug/L
Toluene	MW-3	11/06/2014		.58	.15	ug/L
Toluene	MW-3	11/20/2023		1.20	.43	ug/L
1,1-dichloroethane	MW-31A	11/05/2019		1.26	.22	ug/L
1,1-dichloroethane	MW-31A	8/26/2020		1.40	.22	ug/L
1,1-dichloroethane	MW-31A	6/20/2023		1.23	.22	ug/L
Acetone	MW-31A	6/18/2020		11.8	3.1	ug/L
Endosulfan i	MW-31A	11/18/2020		.05310	.00244	ug/L
Endosulfan i	MW-31A	9/29/2021		.05800	.01200	ug/L
Acetone	MW-33A	6/12/2024		37.7	3.1	ug/L
Benzene	MW-33A	11/03/2020		.614	.220	ug/L
Benzene	MW-33A	12/05/2024		2.450	.220	ug/L
Chlorobenzene	MW-33A	11/03/2020		1.27	.40	ug/L
Chlorobenzene	MW-33A	12/05/2024		2.37	.40	ug/L
Chloroethane	MW-34A	2/17/2020		4.44	.79	ug/L
Acetone	MW-37A	6/12/2024		18.1	3.1	ug/L
Benzene	MW-37A	12/03/2024		6.01	.22	ug/L
1,1,1-trichloroethane	MW-4	9/05/1990		1.0	1.0	ug/L
1,1,1-trichloroethane	MW-4	11/19/1990		4.8	1.0	ug/L
1,1,1-trichloroethane	MW-4	6/18/1991		4.0	1.0	ug/L
1,1,1-trichloroethane	MW-4	10/03/1991		7.1	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/22/1992		5.5	1.0	ug/L
1,1,1-trichloroethane	MW-4	4/27/1992		5.6	1.0	ug/L
1,1,1-trichloroethane	MW-4	10/16/1992		3.2	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/05/1993		13.7	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
1,1,1-trichloroethane	MW-4	4/21/1994		1.8	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/25/1995		1.1	1.0	ug/L
1,1,1-trichloroethane	MW-4	10/27/1995		1.5	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/01/1996		1.2	1.0	ug/L
1,1-dichloroethane	MW-4	10/13/2007		2.940	1.000	ug/L
1,1-dichloroethane	MW-4	1/09/2008		2.240	1.000	ug/L
1,1-dichloroethane	MW-4	4/08/2008		1.500	1.000	ug/L
1,1-dichloroethane	MW-4	7/16/2008		1.180	1.000	ug/L
1,1-dichloroethane	MW-4	2/25/2010		1.670	1.000	ug/L
1,1-dichloroethane	MW-4	4/21/2010		1.010	1.000	ug/L
1,1-dichloroethane	MW-4	10/18/2011		.580	.210	ug/L
1,1-dichloroethane	MW-4	4/24/2012		.560	.210	ug/L
1,1-dichloroethane	MW-4	10/24/2012		.340	.210	ug/L
1,1-dichloroethane	MW-4	4/08/2013		.812	.210	ug/L
1,1-dichloroethane	MW-4	3/31/2016		.320	.210	ug/L
1,1-dichloroethylene	MW-4	9/05/1990		1.0	1.0	ug/L
1,1-dichloroethylene	MW-4	10/03/1991		1.2	1.0	ug/L
1,1-dichloroethylene	MW-4	4/27/1992		1.3	1.0	ug/L
1,1-dichloroethylene	MW-4	10/16/1992		1.2	1.0	ug/L
1,1-dichloroethylene	MW-4	10/05/1993		51.2	1.0	ug/L
1,1-dichloroethylene	MW-4	4/21/1994		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-4	4/08/2013		.38	.14	ug/L
1,2-dichloroethane	MW-4	9/05/1990		1.000	1.000	ug/L
1,2-dichloroethane	MW-4	11/19/1990		1.500	1.000	ug/L
1,2-dichloroethane	MW-4	4/25/1991		1.700	1.000	ug/L
1,2-dichloroethane	MW-4	4/27/1992		1.500	1.000	ug/L
1,2-dichloroethane	MW-4	10/16/1992		4.500	1.000	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
1,2-dichloroethane	MW-4	4/21/1994		3.000	1.000	ug/L
1,2-dichloroethane	MW-4	1/25/1995		2.200	1.000	ug/L
1,2-dichloroethane	MW-4	4/24/1995		2.200	1.000	ug/L
1,2-dichloroethane	MW-4	10/27/1995		3.900	1.000	ug/L
1,2-dichloroethane	MW-4	1/01/1996		3.100	1.000	ug/L
1,2-dichloroethane	MW-4	4/01/1996		3.100	1.000	ug/L
1,2-dichloroethane	MW-4	7/01/1996		2.200	.400	ug/L
1,2-dichloroethane	MW-4	10/01/1996		3.200	.400	ug/L
1,2-dichloroethane	MW-4	1/16/1997		3.000	.400	ug/L
1,2-dichloroethane	MW-4	2/01/1997		3.000	.400	ug/L
1,2-dichloroethane	MW-4	4/01/1997		3.000	.400	ug/L
1,2-dichloroethane	MW-4	7/01/1997		3.200	.800	ug/L
1,2-dichloroethane	MW-4	10/27/1997		3.300	.400	ug/L
1,2-dichloroethane	MW-4	1/01/1998		3.400	.400	ug/L
1,2-dichloroethane	MW-4	4/01/1998		32.600	.400	ug/L
1,2-dichloroethane	MW-4	2/18/1999		2.200	.800	ug/L
1,2-dichloroethane	MW-4	5/25/1999		2.100	.400	ug/L
1,2-dichloroethane	MW-4	10/21/1999		1.600	.400	ug/L
1,2-dichloroethane	MW-4	4/27/2000		1.100	.400	ug/L
1,2-dichloroethane	MW-4	10/27/2000		1.300	.400	ug/L
1,2-dichloroethane	MW-4	4/25/2001		1.400	.400	ug/L
1,2-dichloroethane	MW-4	11/09/2001		.800	.400	ug/L
1,2-dichloroethane	MW-4	10/18/2002		1.000	.400	ug/L
1,2-dichloroethane	MW-4	5/19/2004		.900	.400	ug/L
1,2-dichloroethane	MW-4	4/14/2005		.510	.400	ug/L
1,2-dichloroethane	MW-4	4/08/2013		.208	.180	ug/L
1,2-dichloropropane	MW-4	10/13/2007		1.21	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
1,4-dichlorobenzene	MW-4	9/05/1990		1.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/25/1991		1.10	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/03/1991		2.00	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/22/1992		2.60	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/21/1994		3.10	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/25/1995		3.30	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/24/1995		2.70	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/27/1995		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/01/1996		3.00	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/01/1996		4.80	1.00	ug/L
1,4-dichlorobenzene	MW-4	7/01/1996		2.80	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/01/1996		7.30	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/16/1997		4.90	1.00	ug/L
1,4-dichlorobenzene	MW-4	2/01/1997		5.00	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/01/1997		5.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/27/1997		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/01/1998		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/01/1998		4.90	1.00	ug/L
1,4-dichlorobenzene	MW-4	7/01/1998		4.70	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/01/1998		2.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	5/25/1999		3.40	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/21/1999		2.90	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/27/2000		2.40	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/27/2000		3.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/25/2001		2.70	1.00	ug/L
1,4-dichlorobenzene	MW-4	11/09/2001		3.10	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/23/2003		4.40	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
1,4-dichlorobenzene	MW-4	5/19/2004		3.44	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/14/2005		4.19	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/14/2005		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/11/2006		1.43	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/10/2006		4.49	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/30/2007		4.07	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/13/2007		3.41	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/09/2008		2.66	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/08/2008		4.37	1.00	ug/L
1,4-dichlorobenzene	MW-4	7/16/2008		2.14	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/23/2008		2.54	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/09/2009		2.93	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/05/2009		3.35	1.00	ug/L
1,4-dichlorobenzene	MW-4	2/25/2010		4.88	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/21/2010		3.12	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/14/2010		3.77	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/13/2011		3.68	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/18/2011		3.83	.20	ug/L
1,4-dichlorobenzene	MW-4	4/24/2012		4.33	.20	ug/L
1,4-dichlorobenzene	MW-4	10/24/2012		2.62	.20	ug/L
1,4-dichlorobenzene	MW-4	4/08/2013		4.84	.20	ug/L
1,4-dichlorobenzene	MW-4	11/05/2013		1.72	.20	ug/L
1,4-dichlorobenzene	MW-4	11/16/2017		.55	.20	ug/L
2-butanone	MW-4	4/08/2013		.816	.470	ug/L
Benzene	MW-4	9/05/1990		7.600	1.000	ug/L
Benzene	MW-4	11/19/1990		2.800	1.000	ug/L
Benzene	MW-4	4/25/1991		9.200	1.000	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
Benzene	MW-4	6/18/1991		5.900	1.000	ug/L
Benzene	MW-4	10/03/1991		3.100	1.000	ug/L
Benzene	MW-4	1/22/1992		5.700	1.000	ug/L
Benzene	MW-4	4/27/1992		7.200	1.000	ug/L
Benzene	MW-4	10/16/1992		16.800	1.000	ug/L
Benzene	MW-4	2/01/1994		10.500	1.000	ug/L
Benzene	MW-4	4/21/1994		11.500	1.000	ug/L
Benzene	MW-4	7/12/1994		4.300	1.000	ug/L
Benzene	MW-4	10/10/1994		9.600	1.000	ug/L
Benzene	MW-4	1/25/1995		10.200	1.000	ug/L
Benzene	MW-4	4/24/1995		8.800	1.000	ug/L
Benzene	MW-4	7/27/1995		11.600	1.000	ug/L
Benzene	MW-4	10/27/1995		13.300	1.000	ug/L
Benzene	MW-4	1/01/1996		10.900	1.000	ug/L
Benzene	MW-4	4/01/1996		12.900	1.000	ug/L
Benzene	MW-4	7/01/1996		9.100	1.000	ug/L
Benzene	MW-4	10/01/1996		16.000	1.000	ug/L
Benzene	MW-4	1/16/1997		10.900	.500	ug/L
Benzene	MW-4	2/01/1997		12.100	.500	ug/L
Benzene	MW-4	4/01/1997		11.400	.500	ug/L
Benzene	MW-4	7/01/1997		9.600	.500	ug/L
Benzene	MW-4	10/27/1997		10.900	.500	ug/L
Benzene	MW-4	1/01/1998		9.800	.500	ug/L
Benzene	MW-4	4/01/1998		8.900	.500	ug/L
Benzene	MW-4	7/01/1998		7.400	.500	ug/L
Benzene	MW-4	10/01/1998		4.500	.500	ug/L
Benzene	MW-4	2/18/1999		4.500	.500	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
Benzene	MW-4	5/25/1999		4.500	.500	ug/L
Benzene	MW-4	10/21/1999		3.300	.500	ug/L
Benzene	MW-4	4/27/2000		2.800	.500	ug/L
Benzene	MW-4	10/27/2000		2.800	.500	ug/L
Benzene	MW-4	4/25/2001		1.400	.500	ug/L
Benzene	MW-4	11/09/2001		2.400	.500	ug/L
Benzene	MW-4	5/15/2002		2.000	.500	ug/L
Benzene	MW-4	10/18/2002		1.500	.500	ug/L
Benzene	MW-4	4/23/2003		3.000	.500	ug/L
Benzene	MW-4	10/22/2003		3.540	.500	ug/L
Benzene	MW-4	5/19/2004		3.500	.500	ug/L
Benzene	MW-4	4/14/2005		2.460	.500	ug/L
Benzene	MW-4	10/14/2005		2.870	.500	ug/L
Benzene	MW-4	4/11/2006		.870	.500	ug/L
Benzene	MW-4	10/10/2006		3.630	.500	ug/L
Benzene	MW-4	4/30/2007		2.820	.500	ug/L
Benzene	MW-4	10/13/2007		2.290	.500	ug/L
Benzene	MW-4	1/09/2008		1.450	.500	ug/L
Benzene	MW-4	4/08/2008		1.630	.500	ug/L
Benzene	MW-4	7/16/2008		.580	.500	ug/L
Benzene	MW-4	10/23/2008		.610	.500	ug/L
Benzene	MW-4	4/09/2009		.650	.500	ug/L
Benzene	MW-4	10/05/2009		.920	.500	ug/L
Benzene	MW-4	2/25/2010		2.010	.500	ug/L
Benzene	MW-4	4/21/2010		1.070	.500	ug/L
Benzene	MW-4	10/14/2010		1.700	.500	ug/L
Benzene	MW-4	4/13/2011		1.300	.500	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
Benzene	MW-4	10/18/2011		.950	.110	ug/L
Benzene	MW-4	4/24/2012		1.080	.110	ug/L
Benzene	MW-4	10/24/2012		.480	.110	ug/L
Benzene	MW-4	4/08/2013		1.480	.110	ug/L
Benzene	MW-4	11/05/2013		.459	.110	ug/L
Benzene	MW-4	5/02/2014		.480	.110	ug/L
Benzene	MW-4	3/31/2016		.269	.110	ug/L
Benzene	MW-4	11/28/2016		.138	.110	ug/L
Benzene	MW-4	11/16/2017		.156	.110	ug/L
Carbon tetrachloride	MW-4	9/05/1990		1.0	.5	ug/L
Carbon tetrachloride	MW-4	4/27/1992		1.0	1.0	ug/L
Carbon tetrachloride	MW-4	10/16/1992		1.0	1.0	ug/L
Carbon tetrachloride	MW-4	4/21/1994		1.0	1.0	ug/L
Chlorobenzene	MW-4	10/13/2007		3.430	1.000	ug/L
Chlorobenzene	MW-4	1/09/2008		1.950	1.000	ug/L
Chlorobenzene	MW-4	4/08/2008		2.930	1.000	ug/L
Chlorobenzene	MW-4	7/16/2008		1.040	1.000	ug/L
Chlorobenzene	MW-4	10/23/2008		1.030	1.000	ug/L
Chlorobenzene	MW-4	4/09/2009		1.210	1.000	ug/L
Chlorobenzene	MW-4	10/05/2009		2.010	1.000	ug/L
Chlorobenzene	MW-4	2/25/2010		3.950	1.000	ug/L
Chlorobenzene	MW-4	4/21/2010		1.980	1.000	ug/L
Chlorobenzene	MW-4	10/14/2010		2.190	1.000	ug/L
Chlorobenzene	MW-4	4/13/2011		2.050	1.000	ug/L
Chlorobenzene	MW-4	10/18/2011		1.620	.190	ug/L
Chlorobenzene	MW-4	4/24/2012		2.200	.190	ug/L
Chlorobenzene	MW-4	10/24/2012		1.080	.190	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-4	4/08/2013		2.460	.190	ug/L
Chlorobenzene	MW-4	11/04/2014		.236	.190	ug/L
Chlorobenzene	MW-4	11/16/2017		.205	.190	ug/L
Chloroethane	MW-4	10/18/2011		.82	.15	ug/L
Chloroethane	MW-4	4/24/2012		.53	.15	ug/L
Chloroethane	MW-4	4/08/2013		1.01	.15	ug/L
Cis-1,2-dichloroethylene	MW-4	10/18/2011		.370	.130	ug/L
Cis-1,2-dichloroethylene	MW-4	4/24/2012		.190	.130	ug/L
Cis-1,2-dichloroethylene	MW-4	10/24/2012		.210	.130	ug/L
Cis-1,2-dichloroethylene	MW-4	4/08/2013		.302	.130	ug/L
Dichloromethane	MW-4	11/28/2016		.355	.170	ug/L
Dichloromethane	MW-4	11/16/2017		.226	.170	ug/L
Diethyl phthalate	MW-4	5/02/2014		.504	.280	ug/L
Diethyl phthalate	MW-4	6/26/2014		.735	.277	ug/L
Di-n-octyl phthalate	MW-4	11/28/2016		1.380	.253	ug/L
Endosulfan sulfate	MW-4	11/16/2017		.00282	.00272	ug/L
Endrin aldehyde	MW-4	11/16/2017		.00884	.00793	ug/L
Tetrachloroethylene	MW-4	1/09/2008		1.160	1.000	ug/L
Tetrachloroethylene	MW-4	10/18/2011		.390	.180	ug/L
Tetrachloroethylene	MW-4	4/24/2012		.360	.180	ug/L
Tetrachloroethylene	MW-4	10/24/2012		.250	.180	ug/L
Tetrachloroethylene	MW-4	4/08/2013		.265	.180	ug/L
Tetrachloroethylene	MW-4	11/05/2013		.766	.180	ug/L
Tetrachloroethylene	MW-4	5/02/2014		.531	.180	ug/L
Tetrachloroethylene	MW-4	11/04/2014		.507	.180	ug/L
Tetrachloroethylene	MW-4	5/06/2015		.648	.180	ug/L
Tetrachloroethylene	MW-4	9/18/2015		.453	.180	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
Tetrachloroethylene	MW-4	3/31/2016		.532	.180	ug/L
Tetrachloroethylene	MW-4	11/28/2016		.598	.180	ug/L
Tetrachloroethylene	MW-4	11/16/2017		.491	.180	ug/L
Toluene	MW-4	4/08/2013		.319	.150	ug/L
Toluene	MW-4	11/13/2023		2.090	.430	ug/L
Trans-1,2-dichloroethylene	MW-4	4/08/2013		.23	.21	ug/L
Trichloroethylene	MW-4	9/05/1990		3.60	1.00	ug/L
Trichloroethylene	MW-4	11/19/1990		5.70	1.00	ug/L
Trichloroethylene	MW-4	4/25/1991		2.60	1.00	ug/L
Trichloroethylene	MW-4	6/18/1991		4.30	1.00	ug/L
Trichloroethylene	MW-4	10/03/1991		20.30	1.00	ug/L
Trichloroethylene	MW-4	1/22/1992		26.40	1.00	ug/L
Trichloroethylene	MW-4	4/27/1992		28.90	1.00	ug/L
Trichloroethylene	MW-4	7/15/1992		26.90	1.00	ug/L
Trichloroethylene	MW-4	10/16/1992		30.50	1.00	ug/L
Trichloroethylene	MW-4	1/05/1993		26.80	1.00	ug/L
Trichloroethylene	MW-4	5/10/1993		29.60	1.00	ug/L
Trichloroethylene	MW-4	10/05/1993		12.90	1.00	ug/L
Trichloroethylene	MW-4	2/01/1994		11.30	1.00	ug/L
Trichloroethylene	MW-4	4/21/1994		11.90	1.00	ug/L
Trichloroethylene	MW-4	7/12/1994		8.00	1.00	ug/L
Trichloroethylene	MW-4	10/10/1994		9.40	1.00	ug/L
Trichloroethylene	MW-4	1/25/1995		7.80	1.00	ug/L
Trichloroethylene	MW-4	4/24/1995		6.90	1.00	ug/L
Trichloroethylene	MW-4	7/27/1995		8.50	5.00	ug/L
Trichloroethylene	MW-4	10/27/1995		11.90	1.00	ug/L
Trichloroethylene	MW-4	1/01/1996		9.10	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
Trichloroethylene	MW-4	4/01/1996		9.40	1.00	ug/L
Trichloroethylene	MW-4	7/01/1996		5.60	1.00	ug/L
Trichloroethylene	MW-4	10/01/1996		7.10	1.00	ug/L
Trichloroethylene	MW-4	1/16/1997		7.90	1.00	ug/L
Trichloroethylene	MW-4	2/01/1997		6.60	1.00	ug/L
Trichloroethylene	MW-4	4/01/1997		6.90	1.00	ug/L
Trichloroethylene	MW-4	7/01/1997		7.20	1.00	ug/L
Trichloroethylene	MW-4	10/27/1997		9.30	1.00	ug/L
Trichloroethylene	MW-4	1/01/1998		8.00	1.00	ug/L
Trichloroethylene	MW-4	4/01/1998		5.00	1.00	ug/L
Trichloroethylene	MW-4	7/01/1998		9.60	1.00	ug/L
Trichloroethylene	MW-4	10/01/1998		6.60	1.00	ug/L
Trichloroethylene	MW-4	2/18/1999		5.90	1.00	ug/L
Trichloroethylene	MW-4	5/25/1999		5.10	1.00	ug/L
Trichloroethylene	MW-4	10/21/1999		4.80	1.00	ug/L
Trichloroethylene	MW-4	4/27/2000		2.10	1.00	ug/L
Trichloroethylene	MW-4	10/27/2000		4.00	1.00	ug/L
Trichloroethylene	MW-4	4/25/2001		4.00	1.00	ug/L
Trichloroethylene	MW-4	11/09/2001		3.00	1.00	ug/L
Trichloroethylene	MW-4	10/18/2002		3.00	1.00	ug/L
Trichloroethylene	MW-4	4/23/2003		1.30	1.00	ug/L
Trichloroethylene	MW-4	4/11/2006		1.16	1.00	ug/L
Vinyl chloride	MW-4	1/01/1996		12.200	.300	ug/L
Vinyl chloride	MW-4	4/01/1996		10.200	2.000	ug/L
Vinyl chloride	MW-4	7/01/1996		9.000	.300	ug/L
Vinyl chloride	MW-4	10/01/1996		13.000	2.000	ug/L
Vinyl chloride	MW-4	1/16/1997		10.800	1.000	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
Vinyl chloride	MW-4	2/01/1997		9.000	1.000	ug/L
Vinyl chloride	MW-4	4/01/1997		9.400	1.000	ug/L
Vinyl chloride	MW-4	7/01/1997		8.200	.300	ug/L
Vinyl chloride	MW-4	10/27/1997		14.500	.300	ug/L
Vinyl chloride	MW-4	1/01/1998		12.400	.300	ug/L
Vinyl chloride	MW-4	4/01/1998		9.300	.300	ug/L
Vinyl chloride	MW-4	7/01/1998		11.300	.300	ug/L
Vinyl chloride	MW-4	2/18/1999		5.900	.300	ug/L
Vinyl chloride	MW-4	5/25/1999		8.400	.300	ug/L
Vinyl chloride	MW-4	10/21/1999		5.200	.300	ug/L
Vinyl chloride	MW-4	4/27/2000		3.500	.300	ug/L
Vinyl chloride	MW-4	10/27/2000		3.800	.300	ug/L
Vinyl chloride	MW-4	4/25/2001		3.400	.300	ug/L
Vinyl chloride	MW-4	11/09/2001		2.600	.300	ug/L
Vinyl chloride	MW-4	4/23/2003		2.040	.470	ug/L
Vinyl chloride	MW-4	5/19/2004		1.340	.470	ug/L
Vinyl chloride	MW-4	4/14/2005		1.100	.470	ug/L
Vinyl chloride	MW-4	10/14/2005		1.110	.470	ug/L
Vinyl chloride	MW-4	4/30/2007		1.290	1.000	ug/L
Vinyl chloride	MW-4	10/18/2011		.320	.100	ug/L
Vinyl chloride	MW-4	4/24/2012		.260	.100	ug/L
Vinyl chloride	MW-4	10/24/2012		.170	.100	ug/L
Vinyl chloride	MW-4	4/08/2013		.524	.100	ug/L
Benzene	MW-40A	9/23/2021		.543	.220	ug/L
Benzene	MW-40A	12/14/2021		.768	.220	ug/L
Benzene	MW-40A	12/06/2022		.994	.220	ug/L
Benzene	MW-40A	11/06/2023		.521	.220	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
Benzene	MW-42A	12/06/2022		.539	.220	ug/L
1,1,1-trichloroethane	MW-4B	4/01/1992		7.4	1.0	ug/L
1,1,1-trichloroethane	MW-4B	7/16/1992		4.1	1.0	ug/L
1,1,1-trichloroethane	MW-4B	10/16/1992		3.1	1.0	ug/L
1,1,1-trichloroethane	MW-4B	1/05/1993		3.9	1.0	ug/L
1,1,1-trichloroethane	MW-4B	5/10/1993		3.6	1.0	ug/L
1,1,1-trichloroethane	MW-4B	7/14/1993		5.7	1.0	ug/L
1,1,1-trichloroethane	MW-4B	10/05/1993		4.5	1.0	ug/L
1,1,1-trichloroethane	MW-4B	4/21/1994		3.7	1.0	ug/L
1,1,1-trichloroethane	MW-4B	7/12/1994		2.4	1.0	ug/L
1,1-dichloroethane	MW-4B	4/09/2009		1.28	1.00	ug/L
1,1-dichloroethane	MW-4B	10/05/2009		1.81	1.00	ug/L
1,1-dichloroethane	MW-4B	10/18/2011		1.87	.21	ug/L
1,1-dichloroethane	MW-4B	4/24/2012		1.97	.21	ug/L
1,1-dichloroethane	MW-4B	10/24/2012		1.94	.21	ug/L
1,1-dichloroethane	MW-4B	4/08/2013		2.28	.21	ug/L
1,1-dichloroethane	MW-4B	5/02/2014		1.52	.21	ug/L
1,1-dichloroethane	MW-4B	3/31/2016		.58	.21	ug/L
1,1-dichloroethylene	MW-4B	7/14/1993		20.1	1.0	ug/L
1,1-dichloroethylene	MW-4B	4/21/1994		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-4B	4/08/2013		.292	.140	ug/L
1,2-dichloroethane	MW-4B	7/16/1992		2.100	1.000	ug/L
1,2-dichloroethane	MW-4B	4/21/1994		1.000	1.000	ug/L
1,2-dichloroethane	MW-4B	10/27/1995		2.900	1.000	ug/L
1,2-dichloroethane	MW-4B	4/01/1996		1.600	1.000	ug/L
1,2-dichloroethane	MW-4B	10/01/1996		1.400	.400	ug/L
1,2-dichloroethane	MW-4B	1/16/1997		1.300	.400	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
1,2-dichloroethane	MW-4B	2/01/1997		1.000	.400	ug/L
1,2-dichloroethane	MW-4B	10/27/1997		.840	.400	ug/L
1,2-dichloroethane	MW-4B	1/01/1998		.790	.400	ug/L
1,2-dichloroethane	MW-4B	4/01/1998		9.900	.400	ug/L
1,2-dichloroethane	MW-4B	5/25/1999		.410	.400	ug/L
1,2-dichloroethane	MW-4B	10/21/1999		.460	.400	ug/L
1,2-dichloroethane	MW-4B	4/27/2000		.780	.400	ug/L
1,2-dichloroethane	MW-4B	10/23/2003		.970	.400	ug/L
1,2-dichloroethane	MW-4B	5/19/2004		.410	.400	ug/L
1,2-dichloroethane	MW-4B	4/24/2012		.180	.180	ug/L
1,2-dichloroethane	MW-4B	4/08/2013		.204	.180	ug/L
1,4-dichlorobenzene	MW-4B	4/21/1994		1.00	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/27/1995		2.10	1.00	ug/L
1,4-dichlorobenzene	MW-4B	4/01/1996		1.10	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/01/1996		2.60	1.00	ug/L
1,4-dichlorobenzene	MW-4B	1/16/1997		1.50	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/27/1997		1.10	1.00	ug/L
1,4-dichlorobenzene	MW-4B	4/27/2000		1.20	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/23/2003		2.85	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/01/2005		1.30	1.00	ug/L
1,4-dichlorobenzene	MW-4B	4/09/2009		1.17	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/05/2009		1.57	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/18/2011		2.31	.20	ug/L
1,4-dichlorobenzene	MW-4B	4/24/2012		2.55	.20	ug/L
1,4-dichlorobenzene	MW-4B	10/24/2012		3.78	.20	ug/L
1,4-dichlorobenzene	MW-4B	4/08/2013		3.36	.20	ug/L
2,4-dinitrophenol	MW-4B	11/21/2017		2.34	1.46	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
2-butanone	MW-4B	4/24/2012		.540	.470	ug/L
2-butanone	MW-4B	4/08/2013		.635	.470	ug/L
Acetone	MW-4B	4/24/2012		2.04	1.79	ug/L
Acetone	MW-4B	10/24/2012		2.04	1.79	ug/L
Benzene	MW-4B	4/01/1992		5.700	1.000	ug/L
Benzene	MW-4B	7/16/1992		12.800	1.000	ug/L
Benzene	MW-4B	10/16/1992		15.000	1.000	ug/L
Benzene	MW-4B	1/05/1993		12.900	10.000	ug/L
Benzene	MW-4B	5/10/1993		6.800	1.000	ug/L
Benzene	MW-4B	7/14/1993		2.600	1.000	ug/L
Benzene	MW-4B	2/01/1994		6.200	1.000	ug/L
Benzene	MW-4B	4/21/1994		3.700	1.000	ug/L
Benzene	MW-4B	7/12/1994		12.200	1.000	ug/L
Benzene	MW-4B	10/10/1994		13.300	1.000	ug/L
Benzene	MW-4B	4/24/1995		16.700	1.000	ug/L
Benzene	MW-4B	7/27/1995		12.200	1.000	ug/L
Benzene	MW-4B	10/27/1995		13.700	1.000	ug/L
Benzene	MW-4B	1/01/1996		10.700	1.000	ug/L
Benzene	MW-4B	4/01/1996		7.400	1.000	ug/L
Benzene	MW-4B	10/01/1996		10.000	1.000	ug/L
Benzene	MW-4B	1/16/1997		7.500	.500	ug/L
Benzene	MW-4B	2/01/1997		6.200	.500	ug/L
Benzene	MW-4B	4/01/1997		1.600	.500	ug/L
Benzene	MW-4B	7/01/1997		6.400	.500	ug/L
Benzene	MW-4B	10/27/1997		5.700	.500	ug/L
Benzene	MW-4B	1/01/1998		5.100	.500	ug/L
Benzene	MW-4B	4/01/1998		1.300	.500	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
Benzene	MW-4B	7/01/1998		.680	.500	ug/L
Benzene	MW-4B	10/01/1998		4.800	.500	ug/L
Benzene	MW-4B	2/18/1999		5.100	.500	ug/L
Benzene	MW-4B	5/25/1999		2.000	.500	ug/L
Benzene	MW-4B	10/21/1999		3.000	.500	ug/L
Benzene	MW-4B	4/27/2000		4.500	.500	ug/L
Benzene	MW-4B	10/27/2000		2.200	.500	ug/L
Benzene	MW-4B	10/22/2002		.600	.500	ug/L
Benzene	MW-4B	4/23/2003		1.700	.500	ug/L
Benzene	MW-4B	10/23/2003		4.610	.500	ug/L
Benzene	MW-4B	5/19/2004		1.350	.500	ug/L
Benzene	MW-4B	10/04/2004		.710	.500	ug/L
Benzene	MW-4B	4/01/2005		1.170	.500	ug/L
Benzene	MW-4B	10/01/2005		2.130	.500	ug/L
Benzene	MW-4B	10/10/2006		.630	.500	ug/L
Benzene	MW-4B	10/23/2008		.500	.500	ug/L
Benzene	MW-4B	10/05/2009		1.040	.500	ug/L
Benzene	MW-4B	2/25/2010		.560	.500	ug/L
Benzene	MW-4B	10/18/2011		.890	.110	ug/L
Benzene	MW-4B	4/24/2012		.980	.110	ug/L
Benzene	MW-4B	10/24/2012		1.250	.110	ug/L
Benzene	MW-4B	4/08/2013		1.150	.110	ug/L
Benzene	MW-4B	11/05/2013		.313	.110	ug/L
Benzene	MW-4B	5/02/2014		.724	.110	ug/L
Benzene	MW-4B	5/06/2015		.481	.110	ug/L
Benzene	MW-4B	3/31/2016		.496	.110	ug/L
Benzo (a) pyrene	MW-4B	10/31/2014		.535	.278	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
Benzo (b) fluoranthene	MW-4B	10/31/2014		.514	.344	ug/L
Benzo (g,h,i) perylene	MW-4B	10/31/2014		.394	.256	ug/L
Benzo (k) fluoranthene	MW-4B	10/31/2014		.723	.222	ug/L
Bromomethane	MW-4B	11/21/2017		.549	.220	ug/L
Butyl benzyl phthalate	MW-4B	10/31/2014		.466	.378	ug/L
Carbon tetrachloride	MW-4B	4/21/1994		1	1	ug/L
Chlorobenzene	MW-4B	4/09/2009		1.060	1.000	ug/L
Chlorobenzene	MW-4B	10/05/2009		1.910	1.000	ug/L
Chlorobenzene	MW-4B	10/18/2011		2.510	.190	ug/L
Chlorobenzene	MW-4B	4/24/2012		2.870	.190	ug/L
Chlorobenzene	MW-4B	10/24/2012		3.660	.190	ug/L
Chlorobenzene	MW-4B	4/08/2013		3.200	.190	ug/L
Chlorobenzene	MW-4B	5/06/2015		1.290	.190	ug/L
Chlorobenzene	MW-4B	11/21/2017		.254	.190	ug/L
Chloroethane	MW-4B	10/18/2011		.450	.150	ug/L
Chloroethane	MW-4B	4/24/2012		.400	.150	ug/L
Chloroethane	MW-4B	4/08/2013		.487	.150	ug/L
Dibenzo (a,h) anthracene	MW-4B	10/31/2014		.364	.278	ug/L
Dichloromethane	MW-4B	10/24/2012		.280	.170	ug/L
Dichloromethane	MW-4B	4/08/2013		.171	.170	ug/L
Dichloromethane	MW-4B	5/02/2014		.380	.170	ug/L
Dichloromethane	MW-4B	10/31/2014		1.600	.170	ug/L
Dichloromethane	MW-4B	11/29/2016		.197	.170	ug/L
Di-n-octyl phthalate	MW-4B	10/31/2014		1.360	.256	ug/L
Di-n-octyl phthalate	MW-4B	11/29/2016		1.430	.253	ug/L
Endosulfan i	MW-4B	9/15/2015		.00257	.00222	ug/L
Endosulfan i	MW-4B	12/09/2015		.01490	.00227	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
Indeno (1,2,3-cd) pyrene	MW-4B	10/31/2014		.403	.267	ug/L
Pentachlorophenol	MW-4B	11/21/2017		1.700	.261	ug/L
Tetrachloroethylene	MW-4B	10/18/2011		.29	.18	ug/L
Toluene	MW-4B	4/24/2012		.210	.150	ug/L
Toluene	MW-4B	4/08/2013		.394	.150	ug/L
Trichloroethylene	MW-4B	4/01/1992		18.6	1.0	ug/L
Trichloroethylene	MW-4B	7/16/1992		24.4	1.0	ug/L
Trichloroethylene	MW-4B	10/16/1992		26.5	1.0	ug/L
Trichloroethylene	MW-4B	1/05/1993		26.2	1.0	ug/L
Trichloroethylene	MW-4B	5/10/1993		20.3	1.0	ug/L
Trichloroethylene	MW-4B	7/14/1993		7.0	1.0	ug/L
Trichloroethylene	MW-4B	10/05/1993		2.3	1.0	ug/L
Trichloroethylene	MW-4B	2/01/1994		9.4	1.0	ug/L
Trichloroethylene	MW-4B	4/21/1994		8.6	1.0	ug/L
Trichloroethylene	MW-4B	7/12/1994		15.3	1.0	ug/L
Trichloroethylene	MW-4B	10/10/1994		13.2	1.0	ug/L
Trichloroethylene	MW-4B	10/27/1995		2.0	1.0	ug/L
Trichloroethylene	MW-4B	4/01/1996		2.0	1.0	ug/L
Trichloroethylene	MW-4B	1/16/1997		2.0	1.0	ug/L
Trichloroethylene	MW-4B	2/01/1997		1.5	1.0	ug/L
Trichloroethylene	MW-4B	4/01/1997		2.1	1.0	ug/L
Trichloroethylene	MW-4B	10/27/1997		1.4	1.0	ug/L
Trichloroethylene	MW-4B	1/01/1998		1.2	1.0	ug/L
Trichloroethylene	MW-4B	4/01/1998		1.4	1.0	ug/L
Trichloroethylene	MW-4B	7/01/1998		1.7	1.0	ug/L
Trichloroethylene	MW-4B	5/25/1999		1.2	1.0	ug/L
Vinyl chloride	MW-4B	4/01/1996		1.900	2.000	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
Vinyl chloride	MW-4B	1/16/1997		1.500	1.000	ug/L
Vinyl chloride	MW-4B	2/01/1997		1.400	1.000	ug/L
Vinyl chloride	MW-4B	7/01/1997		.840	.300	ug/L
Vinyl chloride	MW-4B	10/27/1997		1.100	.300	ug/L
Vinyl chloride	MW-4B	1/01/1998		.980	.300	ug/L
Vinyl chloride	MW-4B	4/01/1998		.480	.300	ug/L
Vinyl chloride	MW-4B	10/01/1998		.440	.300	ug/L
Vinyl chloride	MW-4B	5/25/1999		.930	.300	ug/L
Vinyl chloride	MW-4B	10/21/1999		.450	.300	ug/L
Vinyl chloride	MW-4B	10/23/2003		.550	.470	ug/L
Vinyl chloride	MW-4B	10/18/2011		.170	.100	ug/L
Vinyl chloride	MW-4B	4/24/2012		.270	.100	ug/L
Vinyl chloride	MW-4B	10/24/2012		.280	.100	ug/L
Vinyl chloride	MW-4B	4/08/2013		.284	.100	ug/L
1,2-dichlorobenzene	MW-7A	4/08/2013		.15	.14	ug/L
1,4-dichlorobenzene	MW-7A	4/08/2013		.236	.200	ug/L
2-butanone	MW-7A	4/24/2012		1.27	.47	ug/L
Acetone	MW-7A	4/04/2016		2.04	1.79	ug/L
Acetone	MW-7A	11/01/2017		2.20	1.79	ug/L
Carbon disulfide	MW-7A	10/24/2012		.150	.150	ug/L
Carbon disulfide	MW-7A	10/31/2014		.642	.150	ug/L
Chloroethane	MW-7A	10/18/2011		.21	.15	ug/L
Dichloromethane	MW-7A	10/24/2012		.250	.170	ug/L
Dichloromethane	MW-7A	11/16/2016		.301	.170	ug/L
Dichloromethane	MW-7A	11/01/2017		.780	.170	ug/L
Toluene	MW-7A	11/13/2023		2.00	.43	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 9

Analytical Data Summary for MW-1

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	7/24/2009	10/5/2009
Antimony	ug/L	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000
Arsenic	ug/L	<1.000	1.810	<1.000	1.950	<1.000	6.880	<1.000	<1.000
Barium	ug/L	170.0	185.0	137.0	165.0	317.0	279.0	163.0	290.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L							<10.00	
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	5.0400	8.1000	<4.0000	5.3800
Mercury	ug/L							<.2000	
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	51.200	<20.000	22.600	<20.000	42.900	51.200	36.600	50.800

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

Table 9

Analytical Data Summary for MW-1

Constituents	2/25/2010	4/21/2010	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013
Antimony	<6.0000	<6.0000	<6.0000	<6.0000	<2.7300	<1.4500	<.6000	.1360
Arsenic	<1.000	<1.000	<1.000	<1.000	<.600	<.216	3.950	2.310
Barium	153.0	144.0	195.0	128.0	273.0	123.0	448.0	282.0
Beryllium	<1.0000	<1.0000	1.1200	<1.0000	.2760	<.0790	<.0890	<.0696
Cadmium	<.5000	<.5000	<.5000	<.5000	<.1240	<.2290	.4000	.1200
Chromium	<20.000	<20.000	<20.000	<20.000	2.800	<1.810	2.550	.643
Cobalt	<20.0000	<20.0000	<20.0000	<20.0000	5.1900	<1.5500	4.7000	.8570
Copper	<20.000	<20.000	<20.000	<20.000	19.000	3.940	18.200	7.010
Cyanide		<10.00						
Lead	<4.0000	<4.0000	<4.0000	<4.0000	3.4400	1.8400	4.6000	<.2070
Mercury		<.2000						
Nickel	<50.000	<50.000	<50.000	<50.000	19.400	4.800	46.000	21.000
Selenium	<5.000	<5.000	<5.000	<5.000	<1.690	<.700	<1.480	4.980
Silver	<20.0000	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<.1350	<.0789
Thallium	<2.0000	<2.0000	<2.0000	<2.0000	<.8400	<.2880	<.0435	.0796
Total suspended solids								
Turbidity, field								
Vanadium	<50.000	<50.000	<50.000	<50.000	3.590	2.740	6.350	.904
Zinc	<20.000	24.000	44.900	<20.000	13.900	<9.110	18.000	1.710

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

Table 9

Analytical Data Summary for MW-1

Constituents	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	12/19/2014 12/22/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	12/9/2015	3/24/2016 4/13/2016
Antimony	.0993	<.4000	<.1610		<.1610	<.1610		<.2370
Arsenic	1.450	.354	<.945		<.945	<.945		<.672
Barium	186.0	124.0	190.0		104.0	166.0		93.8
Beryllium	<.0696	<.0800	<.0390		<.0390	<.0390		<.2210
Cadmium	<.1060	<.1000	<.1120		<.1120	<.1120		<.0351
Chromium	<.418	.816	<1.240		<1.240	<1.240		.852
Cobalt	.7450	.2310	.1680		<.0528	.1820		.0520
Copper	2.250	1.040	.906		<.485	.526		<1.220
Cyanide		<3.10				<3.04		
Lead	.2120	<.1800	<.0967		<.0967	.3030		<.2110
Mercury		<.0710				<.0926		
Nickel	12.900	4.010	6.200		1.490	5.870		<1.530
Selenium	4.170	1.150	<3.340		<3.340	<3.340		1.410
Silver	<.0789	<.0330	<.0420		<.0420	.1170		<.1530
Thallium	<.0267	<.0500	<.0325		<.0325	.0380		<.0255
Total suspended solids			2.170		<1.200	<3.200	3.380	<.581
Turbidity, field			2.8350	1.9810	.3323	3.4630	7.8000	.0104
Vanadium	<.833	.676	.510		<.449	.542		.466
Zinc	<.625	<2.000	<6.950		<6.950	<6.950		<5.210

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

Table 9

Analytical Data Summary for MW-1

Constituents	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019
Antimony	<.2370	<.1850	<.1850	<.4200	<.4200	<1.3200
Arsenic	<.672	<.505	.662	<.570	<.570	<.232 .604J
Barium	114.0	95.1	130.0	119.0	142.0	93.8
Beryllium	<.2210	<.1250	<.1250	<.1900	<.1900	<.5300
Cadmium	<.0351	<.0441	<.0441	<.0600	<.0600	<.1670
Chromium	.423	<.729 .870J	<.729	<.760	<.760 1.150J	<1.140 2.080J
Cobalt	.0470	<.0453 .0650J	.0830	<.0610	<.0610 .0960J	<.4020
Copper	<1.220	<2.190	<2.190	<3.800 *	<1.600	<.497 .991J
Cyanide	<3.52					
Lead	<.2110	<.3240	<.3240	<.2500	<.2500 .4590J	<.1860
Mercury	<.1420					
Nickel	<1.530	<.929 .971J	1.530	<1.000 1.320J	<1.000 1.840J	<.625 1.880J
Selenium	<.630	<.928	<.928	<.900	<.900	<.982
Silver	<.1530	<.1400 .1420J	<.1400	<.3000	<.3000	<.1150
Thallium	<.0255	<.0644	<.0644	<.1700	<.1700	<.5700
Total suspended solids	.875	<.581 1.750J	6.870	<.638	2.880	<.638
Turbidity, field	.1540	6.9930	1.6980	1.7410	6.9230	
Vanadium	.394	<.840	<.840	<.520	<.520 .973J	<2.150
Zinc	<5.210	<11.500	<11.500	<10.000	<10.000	<6.920

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

Table 9

Analytical Data Summary for MW-1

Constituents	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022
Antimony	<.5300	<.5100	<.5100	<1.1000	<1.1000	<.6900	<.6900
Arsenic	<.750	<.880	<.880	<.750	<.750	<.750	<.750
Barium	124.0	94.9	184.0	146.0	111.0	112.0	112.0
Beryllium	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700
Cadmium	<.0390	<.0490	<.0490	<.0510	<.0510	<.0550	<.0550
Chromium	<.980	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
Cobalt	<.0910	<.0910	<.0910 .1050J	<.0910	<.1900	<.1900 .3170J	<.1900
Copper	<2.000	<1.500	<1.500	<1.400	<1.400	<1.800	<1.800
Cyanide							
Lead	<.2700	<.1100	<.1100	<.2100	<.2100	<.2400	<.2400
Mercury							
Nickel	<1.700	<1.900	<1.900 3.250J	<1.900	<1.900	<1.900	<1.900
Selenium	<1.000	<1.000	<1.000	<.960	<.960	<.960	<.960
Silver	<.3700	<.3700	<.3700	<.4200	<.4200	<.4900	<.4900
Thallium	<.2700	<.2600	<.2600	<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638	<.638 1.250J	<1.700	<.638 1.500J	<.638 .750J	<.638	<.638
Turbidity, field	.4400	.6400	1.0100	1.3700	3.4400	10.9700	.0000
Vanadium	<.820 1.040J	<.850	<.850	<1.100	<1.100	<1.100	<1.100
Zinc	<10.000	<10.000	<10.000	<10.000	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-1

Constituents	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.0000	<1.0000		<1.0000	<1.0000
Arsenic	<.530	<.530 1.030J		<.530	<.530
Barium	106.0	282.0		94.7	201.0
Beryllium	<.3300	<.3300		<.3300	<.3300
Cadmium	<.1000	.2090		<.1000	<.1000
Chromium	<1.100	<1.100		<1.200	<1.200
Cobalt	<.1700	<.1700 .8440J		<.1700	<.1700 .2250J
Copper	<1.800	5.270		<1.800	<1.800
Cyanide					
Lead	<.2400	.9940		<.2600	<.2600
Mercury					
Nickel	<1.900	20.900		<2.100	9.010
Selenium	<1.400	<1.400		<1.400	<1.400
Silver	<.5000	<.5000		<.5000	<.5000
Thallium	<.2600	<.2600		<.5700	<.5700
Total suspended solids	<.638	276.000		<1.390	3.860
Turbidity, field	.5700	146.7200	.5800	1.7300	10.6000
Vanadium	<1.100	<1.100 1.530J		<1.100	<1.100
Zinc	<6.400	<6.400		<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-101

Constituents	Units	6/4/2019 6/13/2019	8/13/2019 8/15/2019	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	11/3/2020 11/23/2020
Antimony	ug/L	<1.32	<1.32	<.53	<.58	<.51	<.51
Arsenic	ug/L	<.232 .735J	<.232 .506J	<.750	<.880	<.880	<.880
Barium	ug/L	196	213	207	194	198	205
Beryllium	ug/L	<.53	<.53	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.167	<.167	<.039 .045J	<.039	<.049	<.049
Chromium	ug/L	<1.14	<1.14	<.98	<1.10	<1.10	<1.10
Cobalt	ug/L	<.402	<.402 .521J	<.091 .480J	<.091 .434J	<.091	<.091 .113J
Copper	ug/L	<.497 1.670J	<.497 .898J	<2.000	<3.200	<1.500	<1.500
Lead	ug/L	<.186 .261J	<.186	<.270	<.270	<.110	<.110
Nickel	ug/L	7.24	8.82	9.54	8.93	<1.90 4.61J	7.15
Selenium	ug/L	<.982	<.982	<1.000	<1.000	<1.000	<1.000
Silver	ug/L	<.115	<.115	<.370	<.370	<.370	<.370
Thallium	ug/L	<.57	<.57	<.27	<.26	<.26	<.26
Total suspended solids	mg/L	<.638 1.630J	<.638 1.250J	<.638 1.630J	3.250	<.638 1.630J	2.630
Turbidity, field	NTU	.75	3.94	2.85	1.38	1.98	1.27
Vanadium	ug/L	<2.15 2.61J	<2.15	<.82	<.82	<.85	<.85
Zinc	ug/L	<6.92 8.28J	<6.92 7.30J	<10.00	<10.00	<10.00	<10.00

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

Table 9

Analytical Data Summary for MW-101

Constituents	2/3/2021 2/24/2021	5/17/2021 6/8/2021	9/21/2021 9/29/2021	8/16/2022 9/13/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony		<1.10	<1.10	<.69	<1.00	<1.00	<1.00
Arsenic		<.750	<.750	<.750	<.530	<.530 .541J	<.530
Barium	191	183	212	214	175	177	221
Beryllium		<.27	<.27	<.27	<.33	<.33	<.33
Cadmium		<.051	<.051	<.055	<.100	<.100	<.100
Chromium		<1.10	<1.10	<1.10	<1.10	<1.20	<1.20
Cobalt		<.091 .399J	<.190 .241J	<.190	<.170 .232J	1.360	<.170 .189J
Copper		<1.400	<1.400	<1.800	<1.800	<1.800 3.570J	<1.800
Lead		<.210	<.210	<.240	<.240	<.260	<.260
Nickel	10.10	10.40	8.31	<1.90 3.73J	9.62	6.92	8.19
Selenium		<.960	<.960	<.960	<1.400	<1.400	<1.400
Silver		<.420	<.420	<.490	<.500	<.500	<.500
Thallium		<.26	<.26	<.26	<.26	<.57	<.57
Total suspended solids	1.880	27.600	3.130	2.000	<1.700	<1.390 1.750J	<1.530
Turbidity, field	1.63	480.28	6.14	5.49	1.73	4.32	3.35
Vanadium		<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Zinc		<10.00	<10.00	<10.00	<6.40	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-24A

Constituents	Units	2/25/2011	4/13/2011	6/22/2011	12/7/2011	2/21/2012	4/24/2012	6/21/2012	10/24/2012 10/26/2012
Antimony	ug/L	<6.000	<6.000	<6.000	<2.730	.200	4.410	<.120	<.120
Arsenic	ug/L	<1.000	<2.000	<2.000	.679	<.730	<.216	<.730	<.730
Barium	ug/L	177.0	274.0	139.0	196.0	210.0	156.0	192.0	180.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<.0510	.0900	<.0790	.0200	.0500
Cadmium	ug/L	<.5000	<.5000	<.5000	.1470	.0900	<.2290	<.0640	<.0640
Chromium	ug/L	<20.000	<20.000	<20.000	3.150	<.390	2.690	<.390	2.080
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	1.7900	3.6000	<1.5500	1.0700	1.0300
Copper	ug/L	<20.00	26.60	<20.00	13.70	5.19	2.55	1.45	2.88
Cyanide	ug/L								
Lead	ug/L	<4.0000	4.1700	<4.0000	2.1900	2.7000	2.2100	.6300	.7300
Mercury	ug/L								
Nickel	ug/L	<50.00	<50.00	<50.00	6.15	12.60	6.60	5.89	6.70
Selenium	ug/L	<5.000	<5.000	<5.000	<1.690	<.297	<.700	<.297	<.297
Silver	ug/L	<20.0000	<20.0000	<20.0000	<1.7000	<.0270	<1.7000	<.0270	<.0270
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<.8400	<.0087	<.2880	<.0087	<.0087
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<2.100	3.090	2.900	1.300	1.340
Zinc	ug/L	43.500	28.100	<20.000	<9.110	22.900	15.300	1.840	7.620

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

Table 9

Analytical Data Summary for MW-24A

Constituents	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	3/24/2016 4/13/2016	5/5/2017 5/25/2017	6/4/2018 6/27/2018
Antimony	.356	.243	.602	<.161	<.161	<.237	<.185	<.420
Arsenic	1.670	.836	<.330	<.945	<.945	<.672	<.505	<.570
Barium	164.0	169.0	135.0	187.0	168.0	124.0	142.0	130.0
Beryllium	<.0696	<.0696	<.0800	<.0390	<.0390	<.2210	<.1250	<.1900
Cadmium	.2240	.3710	<.1000	.3720	.1880	.0840	<.0441 .0850J	<.0600 .0770J
Chromium	1.300	.824	1.170	<1.240	<1.240	1.420	<.729 1.910J	<.760 1.350J
Cobalt	5.5600	3.0000	1.1200	.5490	.3510	.3060	<.0453 .3030J	<.0610 .3390J
Copper	3.34	4.18	2.74	1.25	1.25	2.27	<2.19	5.26
Cyanide								
Lead	.6310	.6710	.5520	<.0967	.1030	<.2110	<.3240	<.2500
Mercury								
Nickel	16.50	27.80	15.70	17.50	14.60	8.78	8.80	9.67
Selenium	<1.460	<1.460	<.700	<3.340	<3.340	.653	<.928	<.900 1.170J
Silver	<.0789	<.0789	<.0330	<.0420	<.0420	<.1530	<.1400	<.3000 .3400J
Thallium	.0402	<.0267	<.0500	<.0325	<.0325	<.0255	<.0644	<.1700
Total suspended solids				<1.410	<1.200	<.581	<.581	<.887
Turbidity, field				2.4670	.0270	.0912	1.3300	.3474
Vanadium	1.520	1.180	1.580	.923	.759	.674	<.840	<.520 .848J
Zinc	<.625	7.480	<2.000	7.530	<6.950	<5.210	<11.500	<10.000

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

Table 9

Analytical Data Summary for MW-24A

Constituents	10/28/2018 10/31/2018	6/4/2019 6/13/2019	8/13/2019 8/15/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020
Antimony	<.420	<1.320		<.530	<.510	1.990
Arsenic	<.570	<.232 .498J		<.750	<.880	<.880
Barium	145.0	94.1		122.0	97.8	108.0
Beryllium	<.1900	<.5300		<.2700	<.2700	<.2700
Cadmium	<.0600 .1440J	<.1670		.1280	<.0490 .0530J	.3330
Chromium	<.760 1.080J	<1.140 2.530J		<.980 1.240J	<1.100	<1.100
Cobalt	<.0610 .4400J	<.4020		<.0910 .3830J	<.0910 .3200J	.5700
Copper	<1.60 1.68J	2.12		<2.00	<1.50 1.79J	<1.50 1.80J
Cyanide					<5.0	
Lead	<.2500	<.1860		<.2700	<.1100	<.1100 .2950J
Mercury					<.100000	
Nickel	10.60	8.67	6.78	7.39	5.83	5.28
Selenium	<.900	<.982		<1.000 1.030J	<1.000	<1.000 1.390J
Silver	<.3000	<.1150		<.3700	<.3700	<.3700
Thallium	<.1700	<.5700		<.2700	<.2600	<.2600 .3520J
Total suspended solids	<.638 1.630J	<.638	<.638	1.880	<.638	<.638 1.130J
Turbidity, field	1.3390	5.0100	15.6100	.4500	1.0600	.0300
Vanadium	<.520 1.300J	<2.150		<.820 1.370J	<.850	<.850 1.230J
Zinc	<10.000	<6.920		65.400	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-24A

Constituents	5/17/2021 6/8/2021	8/16/2022 9/13/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.100	<.690	<1.000	<1.000	<1.000
Arsenic	<.750	<.750	<.530	<.530	<.530
Barium	105.0	109.0	132.0	152.0	117.0
Beryllium	<.2700	<.2700	<.3300	<.3300	<.3300
Cadmium	<.0510	<.0550 .0800J	<.1000	<.1000	<.1000
Chromium	<1.100	<1.100	<1.100 1.180J	<1.200	<1.200 1.910J
Cobalt	<.0910 .3630J	<.1900 .3610J	<.1700 .4110J	<.1700 .4070J	<.1700 .2040J
Copper	<1.40 1.78J	<1.80	<1.80 2.82J	<1.80	<1.80
Cyanide				<3.5	
Lead	<.2100	<.2400	<.2400	<.2600	<.2600
Mercury				<.110000	
Nickel	5.49	6.42	7.85	8.53	<2.10 2.95J
Selenium	<.960	<.960	<1.400	<1.400	<1.400
Silver	<.4200	<.4900	<.5000	<.5000	<.5000
Thallium	<.2600	<.2600	<.2600	<.5700	<.5700
Total suspended solids	<.638 .875J	<.638	<.638 1.130J	<1.390	<1.480
Turbidity, field	2.3100	.4900	1.7000	4.6900	1.3400
Vanadium	<1.100	<1.100	<1.100	<1.100	<1.100
Zinc	<10.000	<10.000	<6.400	<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-25A

Constituents	Units	12/27/2010	2/25/2011	4/13/2011	6/22/2011	8/25/2011	10/18/2011	12/7/2011	4/24/2012
Antimony	ug/L	<6.0000	<12.0000	<6.0000	<6.0000	<6.0000	<2.7300	<2.7300	3.9000
Arsenic	ug/L	<1.000	<1.000	<2.000	<2.000	<2.000	<.600	<.600	.877
Barium	ug/L	250	181	235	206	208	217	218	246
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	.0540	<.0510	.2900
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.1240	.1300	<.2290
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<1.810	3.880	2.600
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<1.5500	3.3600	6.4900
Copper	ug/L	<20.000	<20.000	24.900	<20.000	20.400	13.400	15.000	6.560
Lead	ug/L	4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<1.0000	1.6100	4.1800
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	3.210	7.370	8.700
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<1.690	<1.690	<.700
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<1.7000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<.8400	<.8400	<.2880
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<2.100	<2.100	7.510
Zinc	ug/L	106.000	51.100	<20.000	<20.000	<20.000	<9.110	11.100	<9.110

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

Table 9

Analytical Data Summary for MW-25A

Constituents	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016
Antimony	.3900	.3740	.0911	.4150	<.1610	<.1610	<.2370	<.2370
Arsenic	.980	1.170	.662	<.330	<.945	<.945	<.672	<.672
Barium	246	149	218	126	212	160	150	208
Beryllium	.1300	<.0696	<.0696	<.0800	<.0390	<.0390	<.2210	<.2210
Cadmium	.3500	.1750	.1890	<.1000	<.1120	<.1120	<.0351	<.0351
Chromium	1.680	2.060	.990	1.380	<1.240	<1.240	1.820	<.355
Cobalt	3.1500	1.3800	1.0200	<.0540	<.0528	.0730	.0940	.0750
Copper	5.850	5.520	1.900	1.660	<.485	<.485	<1.220	<1.220
Lead	2.6900	.3770	<.2070	.3950	<.0967	.2520	<.2110	<.2110
Nickel	13.100	7.100	4.860	1.800	1.400	.972	<1.530	<1.530
Selenium	<.297	2.960	<1.460	1.360	<3.340	<3.340	1.970	.696
Silver	<.0270	<.0789	<.0789	<.0330	<.0420	<.0420	<.1530	<.1530
Thallium	<.0087	.0629	<.0267	<.0500	<.0325	<.0325	<.0255	<.0255
Total suspended solids					<1.410	<1.200	<.581	1.630
Turbidity, field					.3307	2.5710	.1175	.0964
Vanadium	3.050	1.800	.972	1.390	.710	.622	.750	.599
Zinc	14.900	4.110	<.625	<2.000	<6.950	<6.950	<5.210	<5.210

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

Table 9

Analytical Data Summary for MW-25A

Constituents	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019
Antimony	<.1850	<.1850	<.4200	<.4200	<1.3200	<.5300
Arsenic	<.505	<.505	<.570	<.570	<.232 .796J	<.750
Barium	176	205	163	190	153	188
Beryllium	<.1250	<.1250	<.1900	<.1900	<.5300	<.2700
Cadmium	<.0441 .0540J	<.0441	<.0600	<.0600 .0940J	<.1670	<.0390
Chromium	<.729	<.729	<.760 1.590J	<.760 1.420J	<1.140 1.840J	<.980 1.810J
Cobalt	<.0453 .0600J	.0580	<.0610 .0740J	<.0610 .3200J	<.4020	<.0910
Copper	<2.190	<2.190	<3.800 *	<1.600	<.497 1.310J	<2.000
Lead	<.3240	<.3240	<.2500	<.2500	<.1860 .3570J	<.2700
Nickel	<.929 2.060J	1.720	<1.000 1.170J	<1.000 3.800J	<.625 1.130J	<1.700
Selenium	<.928	1.400	<.900 1.190J	<.900 .994J	<.982 1.070J	<1.000 1.360J
Silver	<.1400	.1460	<.3000	<.3000	<.1150	<.3700
Thallium	<.0644	<.0644	<.1700	<.1700	<.5700	<.2700
Total suspended solids	<.581 .625J	1.130	<.638	3.130	4.130	<.638 .875J
Turbidity, field	2.0550	1.0350	1.5560	3.1780	2.7300	.9400
Vanadium	<.840	<.840	<.520 .763J	<.520 1.090J	<2.150 3.000J	<.820 1.320J
Zinc	<11.500	<11.500	<10.000	<10.000	<6.920 14.700J	85.200

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

Table 9

Analytical Data Summary for MW-25A

Constituents	2/3/2020 2/17/2020	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022
Antimony		<.5100	<.5100	<1.1000	<1.1000	<.6900
Arsenic		<.880	<.880	<.750	<.750	<.750
Barium	174	147	197	199	192	154
Beryllium		<.2700	<.2700	<.2700	<.2700	<.2700
Cadmium		<.0490	<.0490	<.0510	<.0510	<.0550
Chromium		<1.100 1.520J	<1.100	<1.100	<1.100 1.580J	<1.100 1.650J
Cobalt		<.0910	<.0910	<.0910 .1350J	<.1900	<.1900
Copper		<1.500	<1.500	<1.400	<1.400	<1.800
Lead		<.1100	<.1100	<.2100	<.2100	<.2400
Nickel		<1.900	<1.900	<1.900	<1.900	<1.900
Selenium		<1.000 1.300J	<1.000 1.080J	<.960 2.690J	<.960 1.960J	<.960 1.760J
Silver		<.3700	<.3700	<.4200	<.4200	<.4900
Thallium		<.2600	<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638	<.638 .750J	<.638	<.638	<.638	<.638 1.380J
Turbidity, field	.0000	.7600	.6500	.8900	3.9700	2.2400
Vanadium		<.850	<.850 .948J	<1.100	<1.100	<1.100
Zinc	<10.000	<10.000	<10.000	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-25A

Constituents	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<.6900	<1.0000	<1.0000		<1.0000	<1.0000
Arsenic	<.750	<.530	<.530		<.530	<.530
Barium	159	189	219		178	229
Beryllium	<.2700	<.3300	<.3300		<.3300	<.3300
Cadmium	<.0550 .0640J	<.1000	<.1000		<.1000	<.1000
Chromium	<1.100 1.360J	<1.100	<1.100		<1.200 2.640J	<1.200
Cobalt	<.1900	<.1700 .1760J	<.1700 .3910J		<.1700	<.1700 .2760J
Copper	<1.800	<1.800	<1.800		<1.800	<1.800
Lead	<.2400	<.2400	<.2400		<.2600	<.2600
Nickel	<1.900 2.260J	<1.900	17.000	<1.900 3.930J	<2.100	9.120
Selenium	<.960	<1.400	<1.400		<1.400 2.020J	<1.400
Silver	<.4900	<.5000	<.5000		<.5000	<.5000
Thallium	<.2600	<.2600	<.2600		<.5700	<.5700
Total suspended solids	<.638 1.130J	<.638	<.638	<.638	<1.390	<1.480
Turbidity, field	.9400	.9500	.6900	.4300	2.8200	3.3800
Vanadium	<1.100	<1.100	<1.100		<1.100	<1.100
Zinc	<10.000	<6.400	<6.400		<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-29A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021
Antimony	ug/L	<.53	<.58	<.51	<.51	<.51	<1.10	<1.10
Arsenic	ug/L	<.75 1.74J	2.28	3.40	6.84	4.59	4.09	6.09
Barium	ug/L	272	217	168	180	138	150	173
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	.131	.104	<.049	.180	<.049	<.051	<.051 .059J
Chromium	ug/L	<.98	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Cobalt	ug/L	8.43	9.64	9.98	10.70	10.10	11.90	7.90
Copper	ug/L	<2.00	<3.20	<1.50	<1.50	<1.50	<1.40	<1.40
Cyanide	ug/L					<5.0	<5.3	
Lead	ug/L	<.27	<.27	<.11	<.11	<.11	<.21	<.21
Mercury	ug/L					<.100000	<.150000	
Nickel	ug/L	49.7	49.2	51.1	57.0	47.2	55.5	51.0
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00	<.96	<.96
Silver	ug/L	<.37	<.37	<.37	<.37	<.37	<.42	<.42
Thallium	ug/L	<.27	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	<1.28 3.25J	5.00	6.25	10.40	4.80	5.38	7.50
Turbidity, field	NTU	1.33	4.47	22.71	63.02	45.29	56.29	43.58
Vanadium	ug/L	<.82	<.82	<.85	<.85	<.85	<1.10	<1.10
Zinc	ug/L	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00

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

Table 9

Analytical Data Summary for MW-29A

Constituents	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024
Antimony	<.69		<2.76		<1.00	<1.00	<1.00
Arsenic	5.57		10.20		4.37	6.49	4.54
Barium	182		191		187	163	151
Beryllium	<.27		<1.08		<.33	<.33	<.33
Cadmium	<.055 .066J		<.055 .092J		<.100 .120J	<.100	<.100
Chromium	<1.10 1.67J		<1.10		<1.10	<1.10	<1.20
Cobalt	7.38		10.10		12.50	18.70	11.20
Copper	<1.80		<1.80		<1.80	<1.80	<1.80 1.82J
Cyanide	<4.3						
Lead	<.24		<.24		<.24	<.24	<.26
Mercury	<.110000						
Nickel	63.6		69.1		76.0	87.0	63.9
Selenium	<.96		<.96		<1.40	<1.40	<1.40
Silver	<.49		<1.96		<.50	<.50	1.10
Thallium	<.26		<.26		<.26	<.26	<.57
Total suspended solids	<1.70 4.33J		14.30		3.87	4.00	7.00
Turbidity, field	48.96	74.41	5.11	21.07	59.78	15.27	55.13
Vanadium	<1.10		<1.10		<1.10	<1.10	<1.10
Zinc	42.10		<10.00		<6.40 7.90J	<6.40 8.31J	<9.70

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

Table 9

Analytical Data Summary for MW-29A

Constituents	11/19/2024 12/18/2024
Antimony	<1.00
Arsenic	6.75
Barium	161
Beryllium	<.33
Cadmium	<.100
Chromium	<1.20
Cobalt	16.50
Copper	<1.80
Cyanide	
Lead	<.26
Mercury	
Nickel	69.6
Selenium	<1.40
Silver	<.50
Thallium	<.57
Total suspended solids	13.70
Turbidity, field	32.22
Vanadium	<1.10
Zinc	<9.70

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

Table 9

Analytical Data Summary for MW-2R

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	4/21/2010
Antimony	ug/L	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000
Arsenic	ug/L	<1.000	<1.000	<1.000	<1.000	1.730	<1.000	<1.000	<2.000
Barium	ug/L	137.0	118.0	127.0	101.0	197.0	108.0	114.0	108.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	26.900	<20.000	<20.000	<20.000	<20.000	<20.000
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	6.2000	<4.0000	<4.0000	<4.0000
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	52.300	<20.000	27.200	<20.000	52.700	28.700	34.600	<20.000

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

Table 9

Analytical Data Summary for MW-2R

Constituents	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	2/20/2013	4/8/2013 4/16/2013	11/5/2013 11/7/2013
Antimony	<6.000	<6.000	<2.730	<1.450	<.600		<.541	.422
Arsenic	<2.000	<1.000	<.600	<.216	3.950		<5.440	.571
Barium	113.0	93.2	101.0	136.0	133.0		132.0	128.0
Beryllium	<1.0000	<1.0000	<.0510	<.0790	<.0890		<.6960	<.0696
Cadmium	<.5000	<.5000	.2400	<.2290	<.3200		<1.0600	.1160
Chromium	<20.000	<20.000	<1.810	<1.810	<1.950		<4.180	.448
Cobalt	<20.0000	<20.0000	<1.5500	<1.5500	.5000		<.5540	1.0300
Copper	<20.000	<20.000	5.580	4.100	3.750		2.390	3.360
Lead	<4.0000	<4.0000	<1.0000	2.6800	<.1450		<2.0700	.3460
Nickel	<50.000	<50.000	3.210	6.820	11.900		4.570	5.910
Selenium	<5.000	<5.000	<1.690	<.700	5.250	<1.830	<14.600	<1.460
Silver	<20.0000	<20.0000	<1.7000	<1.7000	<.1350		<.7890	<.0789
Thallium	<2.0000	<2.0000	<.8400	<.2880	<.0435		<.2670	<.0267
Total suspended solids								
Turbidity, field								
Vanadium	<50.000	<50.000	<2.100	2.250	<4.700		<8.330	<.833
Zinc	<20.000	<20.000	<9.110	17.100	<4.600		<3.130	<.625

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

Table 9

Analytical Data Summary for MW-2R

Constituents	5/1/2014 5/8/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	<.400	<.161	<.161	<.161	<.237	<.237	<.185	<.185
Arsenic	<.330	<.945	<.945	<.945	<.672	<.672	<.505	.533
Barium	115.0	127.0	107.0	123.0	103.0	128.0	119.0	121.0
Beryllium	<.0800	<.0390	.0390	<.0390	<.2210	<.2210	<.1250	<.1250
Cadmium	<.1000	<.1120	<.1120	<.1120	<.0351	<.0351	<.0441	<.0441
Chromium	<.500	<1.240	<1.240	<1.240	<.355	<.355	<.729	<.729
Cobalt	.2380	.1620	.0990	.1410	.0930	.1630	<.0453 .1760J	.1140
Copper	1.020	.669	.825	<.485	<1.220	<1.220	<2.190	<2.190
Lead	<.1800	<.0967	<.0967	<.0967	<.2110	<.2110	<.3240	<.3240
Nickel	2.420	2.040	1.900	2.160	1.600	3.510	<.929 2.640J	2.680
Selenium	<.700	<3.340	<3.340	<3.340	1.150	1.180	<.928 .986J	<.928
Silver	<.0330	<.0420	<.0420	<.0420	<.1530	<.1530	<.1400	<.1400
Thallium	<.0500	<.0325	<.0325	<.0325	<.0255	<.0255	<.0644	<.0644
Total suspended solids		1.500	<1.200	1.380	2.130	2.130	<.581 1.750J	1.000
Turbidity, field		.8694	.1373	3.2990	1.7520	1.4730	2.2420	.9645
Vanadium	<.500	<.449	<.449	<.449	<.255	<.255	<.840	<.840
Zinc	<2.000	<6.950	<6.950	<6.950	5.350	<5.210	<11.500	<11.500

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

Table 9

Analytical Data Summary for MW-2R

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020
Antimony	<.420	<.420	<1.320	<.530	<.510	<.510
Arsenic	<.570	<.570	<.232 .486J	<.750	<.880	<.880
Barium	103.0	97.5	82.8	86.2	79.0	124.0
Beryllium	<.1900	<.1900	<.5300	<.2700	<.2700	<.2700
Cadmium	<.0600	<.0600	<.1670	<.0390	<.0490	<.0490
Chromium	<.760	<.760	<1.140	<.980	<1.100	<1.100
Cobalt	<.0610 .0670J	<.0610 .0950J	<.4020	<.0910	<.0910	<.0910
Copper	<1.600	<1.600	2.250	<2.000	<1.500	<1.500
Lead	<.2500	<.2500	.5200	<.2700	<.1100	<.1100
Nickel	<1.000 1.470J	<1.000	<.625 .921J	<1.700	<1.900	<1.900
Selenium	<.900 1.170J	<.900 .989J	<.982	<1.000 1.010J	<1.000	<1.000 1.140J
Silver	<.3000	<.3000	<.1150	<.3700	<.3700	<.3700
Thallium	<.1700	<.1700	<.5700	<.2700	<.2600	<.2600
Total suspended solids	<1.020	<.638 1.380J	<.638 .875J	<.638 1.250J	<.638	<.638
Turbidity, field	2.3440	4.2830	13.4900	1.6700	.4700	.0000
Vanadium	<.520	<.520 .534J	<2.150 2.400J	<.820	<.850	<.850
Zinc	<10.000	<10.000	<6.920 7.240J	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-2R

Constituents	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023
Antimony	<1.100	<1.100	<.690	<.690	<1.000	<1.000
Arsenic	<.750	<.750	<.750	<.750	<.530	<.530
Barium	120.0	129.0	120.0	86.6	96.7	118.0
Beryllium	<.2700	<.2700	<.2700	<.2700	<.3300	<.3300
Cadmium	<.0510	<.0510	<.0550	<.0550	<.1000	<.1000
Chromium	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
Cobalt	<.0910 .1070J	<.1900	<.1900	<.1900	<.1700	<.1700
Copper	<1.400	<1.400	<1.800	<1.800	<1.800	<1.800 2.660J
Lead	<.2100	<.2100	<.2400	<.2400	<.2400	<.2400
Nickel	<1.900	<1.900	<1.900	<1.900	<1.900	<1.900
Selenium	<.960 1.400J	<.960 2.040J	<.960 1.510J	<.960 1.000J	<1.400 2.080J	<1.400
Silver	<.4200	<.4200	<.4900	<.4900	<.5000	<.5000
Thallium	<.2600	<.2600	<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638 .875J	<.638 .750J	<.638 .750J	<.638	<.638 1.500J	<.638 1.380J
Turbidity, field	.5200	4.1600	5.1600	6.3300	.7900	.3800
Vanadium	<1.100	<1.100	<1.100	<1.100	<1.100	<1.100
Zinc	<10.000	<10.000	<10.000	<10.000	<6.400	21.000

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

Table 9

Analytical Data Summary for MW-2R

Constituents	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony		<1.000	<1.000
Arsenic		<.530	<.530
Barium		91.0	129.0
Beryllium		<.3300	<.3300
Cadmium		<.1000	<.1000
Chromium		<1.200	<1.200
Cobalt		<.1700	<.1700
Copper		<1.800	<1.800
Lead		<.2600	<.2600
Nickel		<2.100	<2.100
Selenium		<1.400	<1.400
Silver		<.5000	<.5000
Thallium		<.5700	<.5700
Total suspended solids	<.638 1.750J	<1.390	2.630
Turbidity, field	.0000	1.3700	1.3500
Vanadium		<1.100	<1.100
Zinc	<6.400 8.480J	<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-3

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	4/21/2010
Antimony	ug/L	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000
Arsenic	ug/L	1.780	1.180	<1.000	1.420	<1.000	<1.000	<1.000	<1.000
Barium	ug/L	153	140	154	151	140	143	128	147
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	38.500	<20.000	<20.000	<20.000	<20.000	<20.000
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	35.900	<20.000	40.300	<20.000	<20.000	27.400	23.000	21.200

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

Table 9

Analytical Data Summary for MW-3

Constituents	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014
Antimony	<6.0000	<6.0000	<2.7300	<1.4500	<.6000	<.0541	<.0541	<.4000
Arsenic	<1.000	<1.000	<.600	.782	4.150	1.600	1.520	1.320
Barium	146	140	132	172	147	160	176	148
Beryllium	<1.0000	<1.0000	<.0510	<.0790	<.0890	<.0696	<.0696	<.0800
Cadmium	<.5000	<.5000	<.1240	<.2290	<.3200	<.1060	<.1060	<.1000
Chromium	<20.000	<20.000	<1.810	<1.810	<1.950	<.418	.920	<.500
Cobalt	<20.0000	<20.0000	<1.5500	<1.5500	<.0750	.3240	.4730	.1070
Copper	<20.000	<20.000	6.600	<1.510	<.600	1.100	1.600	<.560
Lead	<4.0000	<4.0000	<1.0000	<.8040	<.1450	<.2070	<.2070	.1820
Nickel	<50.000	<50.000	<2.580	<2.580	<1.200	1.840	1.440	.931
Selenium	<5.000	<5.000	<1.690	<.700	<1.480	<1.460	<1.460	<.700
Silver	<20.0000	<20.0000	<1.7000	<1.7000	<.1350	<.0789	<.0789	<.0330
Thallium	<2.0000	<2.0000	<.8400	<.2880	<.0435	<.0267	<.0267	.1490
Total suspended solids								
Turbidity, field								
Vanadium	<50.000	<50.000	<2.100	<2.100	<4.700	<.833	<.833	<.500
Zinc	<20.000	<20.000	<9.110	17.400	<4.600	<.625	<.625	<2.000

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

Table 9

Analytical Data Summary for MW-3

Constituents	10/31/2014 11/10/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	<.1610	<.1610	<.1610	<.2370	<.2370	<.1850	.2070
Arsenic	2.030	2.030	1.610	2.090	1.300	<.505 .610J	.992
Barium	193	170	180	180	184	168	166
Beryllium	<.0390	.0490	<.0390	<.2210	<.2210	<.1250	<.1250
Cadmium	<.1120	<.1120	<.1120	<.0351	<.0351	<.0441	<.0441
Chromium	<1.240	<1.240	<1.240	<.355	<.355	<.729	<.729
Cobalt	.0830	.0820	.0790	.0910	.0510	<.0453 .0490J	.0680
Copper	<.485	<.485	<.485	<1.220	<1.220	<2.190	<2.190
Lead	.0970	.1720	<.0967	<.2110	<.2110	<.3240	<.3240
Nickel	<.581	<.581	.788	<1.530	<1.530	<.929	<.929
Selenium	<3.340	<3.340	<3.340	.785	.674	<.928	1.090
Silver	<.0420	.0600	.0910	<.1530	<.1530	<.1400	<.1400
Thallium	<.0325	<.0325	<.0325	<.0255	<.0255	<.0644	<.0644
Total suspended solids	9.170	7.670	5.630	6.500	3.250	2.000	5.630
Turbidity, field	8.3890	12.2000	9.0940	10.0200	7.0280	.5395	2.9880
Vanadium	<.449	<.449	<.449	<.255	<.255	<.840	<.840
Zinc	<6.950	<6.950	<6.950	<5.210	<5.210	<11.500	<11.500

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

Table 9

Analytical Data Summary for MW-3

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020
Antimony	<.4200	<.4200	<1.3200	<.5300	<.5100	<.5100
Arsenic	<.570	2.280	1.110	<.750 .988J	2.240	<.880 1.220J
Barium	176	189	158	163	176	193
Beryllium	<.1900	<.1900	<.5300	<.2700	<.2700	<.2700
Cadmium	<.0600	<.0600	<.1670	<.0390	<.0490	<.0490
Chromium	<.760	<.760 1.120J	<1.140	<.980	<1.100	<1.100
Cobalt	<.0610 .2830J	<.0610 .2890J	<.4020	<.0910	<.0910 .1140J	<.0910
Copper	<3.800 *	<1.600	<.497 .686J	<2.000	<1.500	<1.500
Lead	<.2500	<.2500 .4080J	<.1860 .2060J	<.2700	<.1100 .1220J	<.1100
Nickel	<1.000 1.390J	<1.000 2.150J	<.625 .888J	<1.700	<1.900	<1.900
Selenium	<.900	<.900	<.982	<1.000	<1.000	<1.000
Silver	<.3000	<.3000	<.1150	<.3700	<.3700	<.3700
Thallium	<.1700	<.1700	<.5700	<.2700	<.2600	<.2600
Total suspended solids	<.638 1.380J	11.000	3.630	4.130	9.500	3.380
Turbidity, field	7.0420	5.2410	18.7300	2.0100	21.0100	17.4100
Vanadium	<.520	<.520 1.180J	<2.150 2.780J	<.820	<.850	<.850
Zinc	<10.000	<10.000	<6.920	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-3

Constituents	5/17/2021 6/8/2021	8/2/2021 8/3/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023
Antimony	<1.1000		<1.1000	<.6900		<.6900	<1.0000
Arsenic	<.750 1.390J		<.750	3.700	<.750	<.750 .858J	<.530
Barium	199	171	188	210		205	176
Beryllium	<.2700		<.2700	<.2700		<.2700	<.3300
Cadmium	<.0510		<.0510	<.0550		<.0550	<.1000
Chromium	<1.100		<1.100	<1.100		<1.100	<1.100
Cobalt	<.0910		<.1900	<.1900		<.1900	<.1700
Copper	<1.400		<1.400	<1.800		<1.800	<1.800
Lead	<.2100		<.2100	<.2400		<.2400	<.2400
Nickel	<1.900		<1.900	<1.900		<1.900	<1.900
Selenium	<.960		<.960	<.960		<.960	<1.400
Silver	<.4200		<.4200	<.4900		<.4900	<.5000 .7020J
Thallium	<.2600		<.2600	<.2600		<.2600	<.2600
Total suspended solids	4.130	3.750	3.130	14.300	5.880	3.250	2.630
Turbidity, field	7.4700	4.6900	4.3600	28.3800	10.8200	35.6400	6.3600
Vanadium	<1.100		<1.100	<1.100		<1.100	<1.100
Zinc	<10.000		<10.000	<10.000		<10.000	<6.400

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

Table 9

Analytical Data Summary for MW-3

Constituents	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.0000		<1.0000	<1.0000
Arsenic	<.530 1.060J		<.530	<.530 1.340J
Barium	193		146	205
Beryllium	<.3300		<.3300	<.3300
Cadmium	<.1000		<.1000	<.1000
Chromium	<1.100		<1.200	<1.200
Cobalt	<.1700		<.1700	<.1700
Copper	<1.800		<1.800	<1.800
Lead	<.2400		<.2600	<.2600
Nickel	<1.900		<2.100	<2.100
Selenium	<1.400		<1.400	<1.400
Silver	<.5000		<.5000	<.5000
Thallium	<.2600		<.5700	<.5700
Total suspended solids	2.880		2.380	5.000
Turbidity, field	3.0900	1.3400	4.1900	14.7800
Vanadium	<1.100		<1.100	<1.100
Zinc	<6.400		<9.700	<9.700

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

Table 9

Analytical Data Summary for MW-31A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	2/3/2021 2/24/2021	5/17/2021 6/8/2021
Antimony	ug/L	<.530	<.580	<.510	<.510	<.510 .771J		<1.100
Arsenic	ug/L	2.950	<.880 1.420J	2.470	3.830	2.570		<.750 .821J
Barium	ug/L	602	591	279	317	449		160
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27		<.27
Cadmium	ug/L	.179	<.039 .080J	.316	<.049	.424		.260
Chromium	ug/L	<.98	<1.10	<1.10 1.34J	<1.10	<1.10 2.50J		<1.10 1.31J
Cobalt	ug/L	13.40	12.40	13.60	12.00	10.00		10.40
Copper	ug/L	<2.00	<3.20	<1.50 1.84J	<1.50	5.01		<1.40 3.47J
Cyanide	ug/L					<5.0		<5.3
Lead	ug/L	1.150	<.270	1.370	<.110	.583		.609
Mercury	ug/L					<.100000		<.150000
Nickel	ug/L	20.4	21.6	27.5	47.0	52.8		53.4
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00 1.13J		<.96
Silver	ug/L	<.37	<.37	<.37	<.37	<.37		<.42
Thallium	ug/L	<.270	<.260	<.260	<.260	<.260 .286J		<.260
Total suspended solids	mg/L	9.000	2.630	19.000	10.400	7.250		1.880
Turbidity, field	NTU	2.06	.26	1.79	26.27	8.36	12.41	4.53 *
Vanadium	ug/L	<.820	<.820	<.850 .997J	<.850	<.850 .873J		<1.100
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0 13.8J		<10.0

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

Table 9

Analytical Data Summary for MW-31A

Constituents	8/2/2021 8/3/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024
Antimony		<1.100	<.690	2.220	<1.000	<1.000	<1.000
Arsenic		<.750	<.750	<3.000	<.530 .602J	<.530 .571J	<.530
Barium		205	145	441	220	247	243
Beryllium		<.27	<.27	<.27	<.33	<.33	<.33
Cadmium		2.040	.302	.984	.340	<.100	<.100 .160J
Chromium		<1.10 1.39J	<1.10	7.31	<1.10	<1.10	<1.20
Cobalt		3.37	3.01	32.20	3.75	4.62	3.48
Copper		9.84	<1.80 3.31J	21.30	<1.80 3.61J	<1.80	<1.80 1.91J
Cyanide			<4.3				
Lead		<.210	<.240	1.680	<.240 .283J	<.240	<.260
Mercury			<.110000				
Nickel		47.7	28.1	112.0	39.7	30.8	30.3
Selenium		<.96	<.96	<.96 1.86J	<1.40	<1.40	<1.40
Silver		<.42	<.49	<.49	<.50	<.50	<.50
Thallium		<.260 .355J	<.260	<.260 .777J	<.260	<.260	<.570
Total suspended solids		<.638 1.630J	<.638	5.000	6.070	<.638 1.250J	2.250
Turbidity, field	4.29	5.51	.86	74.50	4.71	4.04	2.38
Vanadium		<1.100	<1.100 1.620J	<1.100 3.260J	<1.100	<1.100	<1.100
Zinc		<10.0	<10.0	<10.0 18.1J	23.5	<6.4	<9.7

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

Table 9

Analytical Data Summary for MW-31A

Constituents	11/19/2024 12/18/2024
Antimony	<1.000
Arsenic	<.530 .562J
Barium	279
Beryllium	<.33
Cadmium	<.100 .161J
Chromium	<1.20
Cobalt	2.09
Copper	<1.80 2.60J
Cyanide	
Lead	<.260
Mercury	
Nickel	32.3
Selenium	<1.40
Silver	<.50
Thallium	<.570
Total suspended solids	<3.700
Turbidity, field	5.30
Vanadium	<1.100
Zinc	<9.7

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

Table 9

Analytical Data Summary for MW-33A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	8/2/2021 8/3/2021
Antimony	ug/L	<.530	<.580	<.510	<.510	<.510	<1.100	<1.100
Arsenic	ug/L	42.40	80.90	5.23	65.80	17.90	35.30	52.70
Barium	ug/L	144	176	105	203	177	168	149
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.039	<.039	<.049	<.049	<.049	<.051	<.051 .098J
Chromium	ug/L	<.98	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Cobalt	ug/L	3.000	2.590	<.091 .478J	2.340	1.830	3.200	3.200
Copper	ug/L	<2.00	<3.20	<1.50	<1.50	<1.50	<1.40	<1.40
Cyanide	ug/L							
Lead	ug/L	<.270	<.270	<.110	<.110 .316J	<.110 .116J	<.210	<.210 .303J
Mercury	ug/L							
Nickel	ug/L	<1.70 2.65J	<1.90 2.37J	<1.90 2.79J	<1.90 2.89J	<1.90 3.32J	<1.90 2.95J	<1.90 2.95J
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00	<.96	<.96
Silver	ug/L	<.37	<.37	<.37	<.37	<.37	<.42	<.42
Thallium	ug/L	<.27	<.26	<.26	<.26	<.26	<.26	<.26 .91J
Total suspended solids	mg/L	47.00	52.00	5.25	74.00	8.75	50.30	29.90
Turbidity, field	NTU	97.42	17.14	22.42	506.36	82.50	8.74	33.68
Vanadium	ug/L	<.82	<.82	<.85	<.85 2.91J	<.85 1.16J	<1.10	<1.10
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

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

Table 9

Analytical Data Summary for MW-33A

Constituents	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	<1.100	<.690 .846J	<.690	<1.000	<1.000		<1.000
Arsenic	18.40	11.30	13.80	<.53 1.16J	24.30	51.80	112.00
Barium	152	176	138	108	255		199
Beryllium	<.27	<.27	<.27	<.33	<.33		<.33
Cadmium	<.051 .068J	<.055 .062J	.108	<.100 .113J	<.100		<.100
Chromium	<1.10	<1.10	<1.10	<1.10	<1.20		<1.20
Cobalt	2.030	.503	.743	<.170 .396J	4.510		2.400
Copper	<1.40	<1.80	<1.80	<1.80	<1.80 4.25J		<1.80
Cyanide	<5.0 5.3J		<4.3				
Lead	<.210	<.240	<.240	<.240	.692		<.260
Mercury	<.00 .15J		<.11				
Nickel	<1.90	<1.90 2.82J	5.16	<1.90	<2.10 3.31J		<2.10 2.15J
Selenium	<.96	<.96 1.56J	<.96	<1.40	<1.40		<1.40
Silver	<.42	<.49	<.49	<.50	<.50		<.50
Thallium	<.26	<.26	<.26	<.26	<.57		<.57
Total suspended solids	8.33	7.62	14.80	4.50	59.00	52.00	43.00
Turbidity, field		28.51	11.49	5.19	51.45	6.21	13.51
Vanadium	<1.10	<1.10 1.15J	<1.10 2.48J	<1.10	<1.10 1.11J		<1.10
Zinc	<10.0	<10.0	<10.0	<6.4	<9.7 12.9J		<9.7

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

Table 9

Analytical Data Summary for MW-34A

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021
Antimony	ug/L	<.53	<.58	<.51	<.51	<.51	<1.10
Arsenic	ug/L	<.75	<.88	<.88	<.88	<.88	<.75
Barium	ug/L	80.4	80.0	76.3	75.2	73.6	76.9
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.039	<.039	<.049	<.049	<.049	<.051
Chromium	ug/L	<.98 1.37J	<1.10 1.66J	<1.10 1.63J	<1.10 3.06J	<1.10 1.36J	<1.10 1.29J
Cobalt	ug/L	<.091	<.091 .122J	<.091	<.091	<.091	<.091
Copper	ug/L	<2.0	<3.2	<1.5	<1.5	<1.5	<1.4
Lead	ug/L	<.27	<.27	<.11	<.11	<.11	<.21
Nickel	ug/L	<1.7	<1.9	<1.9	<1.9	<1.9	<1.9
Selenium	ug/L	<1.00 1.85J	<1.00 1.95J	<1.00 1.23J	<1.00	<1.00 1.69J	<.96 1.59J
Silver	ug/L	<.370	<.370	<.370	<.370	<.370	<.420
Thallium	ug/L	<.27	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	1.880	4.500	3.130	<.638 1.630J	<.638 1.250J	2.750
Turbidity, field	NTU	1.46	6.78	5.06	5.97	5.00	2.73
Vanadium	ug/L	<.82	<.82	<.85	<.85 1.72J	<.85	<1.10
Zinc	ug/L	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00

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

Table 9

Analytical Data Summary for MW-34A

Constituents	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.10	<.69	<.69	<1.00	<1.00	<1.00	<1.00
Arsenic	<.75	<.75	<.75	<.53	<.53	<.53	<.53
Barium	74.9	69.7	79.5	65.5	69.3	70.1	67.5
Beryllium	<.27	<.27	<.27	<.33	<.33	<.33	<.33
Cadmium	<.051	<.055	<.055	<.100	<.100	<.100	<.100
Chromium	<1.10 1.41J	<1.10 1.56J	<1.10 1.81J	<1.10 1.48J	<1.10 1.96J	<1.20 1.31J	<1.20 1.88J
Cobalt	<.190	<.190	<.190	<.170	<.170	<.170	<.170
Copper	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	<.21	<.24	<.24	<.24	<.24	<.26	<.26
Nickel	<1.9	<1.9	<1.9	<1.9	<1.9	<2.1	<2.1
Selenium	<.96 1.59J	<.96 1.74J	<.96 2.27J	<1.40 1.46J	<1.40 2.12J	<1.40	<1.40 2.01J
Silver	<.420	<.490	<.490 .747J	<.500	<.500	<.500	<.500
Thallium	<.26	<.26	<.26	<.26	<.26	<.57	<.57
Total suspended solids	2.000	2.880	<2.220	2.500	2.250	<1.390	6.000
Turbidity, field	10.46	8.91	12.61	2.00	4.28	5.88	8.37
Vanadium	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Zinc	<10.00	<10.00	<10.00	<6.40	<6.40 8.31J	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-37A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00
Arsenic	ug/L	<.75 1.38J	<.75	4.57	<.75	<.75	<.75 .91J	<.53
Barium	ug/L	202	137	273	144	122	247	111
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.33
Cadmium	ug/L	<.051 .052J	<.051	<.055	<.055	<.055	<.055	<.100
Chromium	ug/L	<1.10 1.50J	<1.10 1.16J	<1.10	<1.10 1.57J	<1.10 1.33J	<1.10	<1.10 1.33J
Cobalt	ug/L	.681	<.190 .194J	<.190 .263J	<.190	<.190	<.190	<.170 .179J
Copper	ug/L	<1.4 2.5J	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	ug/L	1.060	<.210 .275J	<.240	<.240	<.240	<.240	<.240 .244J
Nickel	ug/L	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90
Selenium	ug/L	<.96	<.96	<.96	<.96	<.96	<.96	<1.40
Silver	ug/L	<.420 .503J	<.420	<.490	<.490	<.490	<.490	<.500
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	159.000	45.600	17.300	31.300	<.638 1.000J	4.880	26.500
Turbidity, field	NTU	97.89	47.38	16.61	9.81	.00	10.27	26.51
Vanadium	ug/L	<1.10 1.67J	<1.10 1.30J	<1.10	<1.10	<1.10	<1.10	<1.10
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4

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

Table 9

Analytical Data Summary for MW-37A

Constituents	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.00	<1.00
Arsenic	<.53 1.62J	153.00
Barium	134	849
Beryllium	<.33	<.33
Cadmium	<.100	<.100
Chromium	<1.20	<1.20
Cobalt	.714	9.580
Copper	<1.8	<1.8
Lead	<.260	<.260
Nickel	<2.10	<2.10 4.39J
Selenium	<1.40	<1.40
Silver	<.500	<.500
Thallium	<.57	<.57
Total suspended solids	4.620	18.000
Turbidity, field	11.39	1.87
Vanadium	<1.10	<1.10
Zinc	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-38A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00
Arsenic	ug/L	<.75	<.75	<.75	20.80	<.75	<.75	<.53
Barium	ug/L	148.0	94.3	139.0	200.0	133.0	145.0	133.0
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.33
Cadmium	ug/L	<.051	<.051	<.055	<.055	<.055	<.055	<.100
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<.190 .249J	<.190	<.190	<.190	<.190	<.190	<.170 .181J
Copper	ug/L	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	ug/L	<.21	<.21	<.24	<.24	<.24	<.24	<.24
Nickel	ug/L	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90
Selenium	ug/L	<.96	<.96	<.96	<.96 2.77J	<.96	<.96	<1.40
Silver	ug/L	<.42	<.42	<.49	<.49	<.49	<.49	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	8.630	14.300	<1.700 2.670J	<.638 .875J	<.638	<.638 1.130J	9.120
Turbidity, field	NTU	11.36	29.12	2.49	.08	3.12	.00	6.34
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4

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

Table 9

Analytical Data Summary for MW-38A

Constituents	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.00	<1.00	<1.00
Arsenic	<.53	<.53	<.53
Barium	141.0	153.0	153.0
Beryllium	<.33	<.33	<.33
Cadmium	<.100	<.100	<.100
Chromium	<1.1	<1.2	<1.2
Cobalt	<.170	<.170	<.170
Copper	<1.8	<1.8	<1.8
Lead	<.24	<.26	<.26
Nickel	<1.90 2.01J	<2.10	<2.10
Selenium	<1.40	<1.40	<1.40
Silver	<.50	<.50	<.50
Thallium	<.26	<.57	<.57
Total suspended solids	3.500	3.130	3.000
Turbidity, field	1.10	1.62	15.68
Vanadium	<1.1	<1.1	<1.1
Zinc	<6.4	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-39A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00
Arsenic	ug/L	<.75	<.75	<.75	<.75	<.75	<.75	<.53
Barium	ug/L	156	146	144	152	136	149	138
Beryllium	ug/L	<.270	<.270	<.270	<.270	<.270	<.270	<.330
Cadmium	ug/L	<.051	<.051	<.055	<.055	<.055	<.055	<.100
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	.857	<.190 .382J	<.190	<.190	<.190	<.190 .199J	<.170 .345J
Copper	ug/L	<1.40	<1.40	<1.80	<1.80	<1.80	<1.80	<1.80
Lead	ug/L	<.210 .259J	<.210 .343J	<.240	<.240	<.240	<.240	<.240 .339J
Nickel	ug/L	<1.90 3.68J	<1.90 2.01J	<1.90	<1.90	<1.90	<1.90	<1.90
Selenium	ug/L	<.96	<.96	<.96	<.96	<.96	<.96	<1.40
Silver	ug/L	<.42	<.42	<.49	<.49	<.49	<.49	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	54.600	45.200	<1.700 3.670J	5.630	<.638 .750J	13.300	43.700
Turbidity, field	NTU	102.71	70.75	10.72	10.22	.51	20.65	71.92
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4

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

Table 9

Analytical Data Summary for MW-39A

Constituents	11/1/2023 11/20/2023	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	<1.00	<1.00		<1.00
Arsenic	<.53	<.53		<.53
Barium	145	152		156
Beryllium	<.330	<.330 .353J		<.330
Cadmium	<.100	<.100		<.100
Chromium	<1.1	<1.2		<1.2
Cobalt	<.170 .376J	<.170 .175J		.812
Copper	<1.80	<1.80		<1.80 2.08J
Lead	<.240 .252J	<.260		.589
Nickel	<1.90 2.54J	<2.10		<2.10 2.86J
Selenium	<1.40	<1.40		<1.40
Silver	<.50	<.50		<.50
Thallium	<.26	<.57		<.57
Total suspended solids	52.000	14.300	34.600	116.000
Turbidity, field	71.35	25.54	66.58	271.18
Vanadium	<1.1	<1.1		<1.1
Zinc	<6.4	68.3	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-4

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009
Antimony	ug/L	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000
Arsenic	ug/L	23.600	16.600	21.400	7.640	4.720	3.400	5.900
Barium	ug/L	742.0	603.0	793.0	544.0	514.0	549.0	623.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	1.210000	.834000	1.360000	<.500000	<.500000	<.500000	<.500000
Chromium	ug/L	<20.000	<20.000	28.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L							
Lead	ug/L	<4.0000	<4.0000	4.1500	<4.0000	<4.0000	<4.0000	<4.0000
Mercury	ug/L							
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L							
Turbidity, field	NTU							
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	69.099998	<20.000000	36.500000	<20.000000	21.100000	50.700001	52.599998

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

Table 9

Analytical Data Summary for MW-4

Constituents	2/25/2010	4/21/2010	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013
Antimony	<6.000	<6.000	<6.000	<6.000	<2.730	<1.450	<.120	3.740
Arsenic	7.850	6.440	8.540	6.570	4.050	2.100	2.460	16.400
Barium	564.0	580.0	529.0	542.0	513.0	533.0	710.0	774.0
Beryllium	<1.0000	<1.0000	<1.0000	<1.0000	<.0510	<.0790	.0600	<.0696
Cadmium	.530000	<.500000	<.500000	<.500000	.236000	<.229000	.410000	.430000
Chromium	<20.000	<20.000	<20.000	<20.000	<1.810	<1.810	.420	6.890
Cobalt	<20.0000	<20.0000	<20.0000	<20.0000	8.2700	5.8500	10.1000	10.0000
Copper	<20.000	<20.000	<20.000	23.600	12.000	<1.510	2.080	6.130
Cyanide		<10.00						
Lead	<4.0000	<4.0000	<4.0000	<4.0000	<1.0000	.9000	.7800	2.4500
Mercury		<.2000						
Nickel	<50.000	<50.000	<50.000	<50.000	14.000	13.300	12.800	18.200
Selenium	<5.000	<5.000	<5.000	<5.000	<1.690	<.700	<.297	1.640
Silver	<20.0000	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<.0270	<.0789
Thallium	<2.0000	<2.0000	<2.0000	<2.0000	<.8400	<.2880	.0100	.1480
Total suspended solids								
Turbidity, field								
Vanadium	<50.000	<50.000	<50.000	<50.000	<2.100	3.660	3.250	9.470
Zinc	<20.000000	41.000000	47.099998	<20.000000	<9.110000	14.200000	4.500000	13.600000

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

Table 9

Analytical Data Summary for MW-4

Constituents	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	12/19/2014 12/22/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016
Antimony	.108	.422	<.161		<.161	<.161	<.237	<.237
Arsenic	1.870	1.240	<.945		<.945	<.945	<.672	<.672
Barium	514.0	513.0	469.0		463.0	479.0	484.0	539.0
Beryllium	<.0696	<.0800	<.0390		<.0390	<.0390	<.2210	<.2210
Cadmium	.191000	.144000	.117000		.149000	.133000	.170000	.142000
Chromium	<.418	147.000	<1.240		<1.240	<1.240	<.355	<.355
Cobalt	4.3700	6.0900	.9670		.4480	.3300	.4110	.4410
Copper	2.390	4.710	.520		<.485	<.485	<1.220	<1.220
Cyanide		<3.10				<3.04		<3.52
Lead	.3240	<.1800	.1090		<.0967	<.0967	<.2110	<.2110
Mercury		<.0710				<.0926		<.1420
Nickel	15.800	105.000	5.990		5.630	4.310	5.700	4.280
Selenium	1.520	<.700	<3.340		<3.340	<3.340	<.630	<.630
Silver	<.0789	<.0330	<.0420		<.0420	<.0420	.1650	<.1530
Thallium	.0371	.0790	<.0325		<.0325	<.0325	.0310	.0280
Total suspended solids			4.830		<1.200	<1.200	<.581	<.581
Turbidity, field			10.5800	1.3090	.0997	1.0810	.1490	1.8430
Vanadium	.843	7.190	1.020		.695	.787	.785	.948
Zinc	<.625000	2.010000	<6.950000		<6.950000	<6.950000	<5.210000	<5.210000

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

Table 9

Analytical Data Summary for MW-4

Constituents	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019
Antimony	<.185	.691	<.420	<.420	<1.320
Arsenic	<.505	.784	<.570 .637J	<.570	<.232 .653J
Barium	482.0	40.6	530.0	464.0	451.0
Beryllium	<.1250	<.1250	<.1900	<.1900	<.5300
Cadmium	<.044100 .168000J	.273000	<.060000 .124000J	<.060000 .158000J	<.167000
Chromium	<.729	2.280	<.760	<.760	<1.140 1.680J
Cobalt	<.0453 .2420J	3.7500	1.4400	<.0610 .4580J	<.4020
Copper	<2.190	5.840	<4.533 *	<1.600	<.497 .966J
Cyanide		<3.46			
Lead	<.3240	<.3240	<.2500	<.2500	<.1860
Mercury		<.1120			
Nickel	<.929 3.220J	11.900	5.780	<1.000 3.990J	5.230
Selenium	<.928	31.600	<.900	<.900	<.982
Silver	<.1400	<.1400	<.3000	<.3000	<.1150
Thallium	<.0644 .1010J	<.0644	<.1700	<.1700	<.5700
Total suspended solids	2.880	1.880	2.500	2.750	<.638
Turbidity, field	8.7800	.7597	1.4180	7.7670	
Vanadium	<.840	1.070	<.520 .913J	<.520 1.230J	<2.150
Zinc	<11.500000	<11.500000	<10.000000	<10.000000	<6.920000

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

Table 9

Analytical Data Summary for MW-4

Constituents	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022
Antimony	<.530	<.510	<.510	<1.100	<1.100	<.690
Arsenic	<.750	<.880	<.880	<.750	<.750	<.750
Barium	191.0	421.0	409.0	475.0	482.0	503.0
Beryllium	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700
Cadmium	<.039000	.139000	.163000	.184000	.122000	.118000
Chromium	<.980	<1.100	<1.100	<1.100	<1.100	<1.100
Cobalt	<.0910	<.0910 .2640J	1.4800	.9370	1.0700	1.4400
Copper	<2.000	<1.500	<1.500	<1.400	<1.400	<1.800
Cyanide						
Lead	<.2700	<.1100	<.1100	<.2100	<.2100	<.2400
Mercury						
Nickel	<1.700	<1.900 3.580J	11.900	5.360	5.050	7.470
Selenium	<1.000	<1.000	<1.000	<.960	<.960	<.960
Silver	<.3700	<.3700	<.3700	<.4200	<.4200	<.4900
Thallium	<.2700	<.2600	<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638 .750J	<.638 .750J	<.638	<.638 1.000J	<.638 1.380J	<1.700
Turbidity, field	.4900	1.2500	.0000		3.8100	.0000
Vanadium	<.820 1.230J	<.850 .892J	<.850 1.060J	<1.100	<1.100	<1.100
Zinc	<10.000000	<10.000000	<10.000000	<10.000000	<10.000000	<10.000000

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

Table 9

Analytical Data Summary for MW-4

Constituents	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024	2/14/2025
Antimony	<.690	<1.000	<1.000	<1.000	<1.000	
Arsenic	<.750 .762J	<.530	<.530 1.150J	<.530 .792J	<.530 1.050J	
Barium	536.0	134.0	514.0	485.0	518.0	
Beryllium	<.2700	<.3300	<.3300	<.3300	<.3300	
Cadmium	<.055000 .076000J	<.100000	<.100000	<.100000	.254000	<.100000
Chromium	<1.100	<1.100	<1.100	<1.200	<1.200	
Cobalt	1.6100	<.1700	1.5400	1.8500	2.0400	
Copper	<1.800	<1.800	<1.800	<1.800	<1.800	
Cyanide		<4.30				
Lead	<.2400	<.2400	<.2400	<.2600 .2700J	<.2600	
Mercury		<.1400				
Nickel	7.160	<1.900	5.360	6.270	6.170	
Selenium	<.960	<1.400	<1.400	<1.400	<1.400	
Silver	<.4900	<.5000	<.5000	1.2100	<.5000	
Thallium	<.2600	<.2600	<.2600	<.5700	<.5700	
Total suspended solids	<.638 1.630J	<.638 1.380J	8.500	2.250	2.450	
Turbidity, field	.0000	1.1500	1.1400	.8800	1.1700	.8400
Vanadium	<1.100	<1.100	<1.100	<1.100	<1.100	
Zinc	<10.000000	<6.400000	<6.400000	<9.700001	<9.700000	

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

Table 9

Analytical Data Summary for MW-40A

Constituents	Units	9/21/2021 9/29/2021	12/14/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023
Antimony	ug/L	<1.10	<1.10	<.69	<.69	<.69	<.69	<1.00
Arsenic	ug/L	<.750	<.750 .759J	<.750	<.750	<.750	<.750	<.530
Barium	ug/L	279	278	260	257	162	238	216
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.33
Cadmium	ug/L	<.051	<.051	<.055	<.055	<.055 .064J	<.055	<.100 .163J
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	3.220	1.060	1.170	.807	1.470	2.190	1.510
Copper	ug/L	<1.40 2.64J	<1.40	<1.80	<1.80	<1.80 2.08J	<1.80	7.71
Cyanide	ug/L							
Lead	ug/L	<.210 .379J	<.210 .271J	<.240	<.240	<.240 .272J	<.240	<.240
Mercury	ug/L							
Nickel	ug/L	17.00	7.32	11.00	7.85	10.20	12.70	19.00
Selenium	ug/L	<.96 1.55J	<.96	<.96	<.96	<.96	<.96	<1.40
Silver	ug/L	<.42	<.42	<.49	<.49	<.49	<.49	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	81.50	33.00	12.30	21.40	47.70	24.50	6.75
Turbidity, field	NTU	100.92	26.96	40.36	17.09	98.21	13.86	5.58
Vanadium	ug/L	<1.10	<1.10	<1.10 1.12J	<1.10	<1.10 1.69J	<1.10	<1.10 1.91J
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<6.4

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

Table 9

Analytical Data Summary for MW-40A

Constituents	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.00	<1.00	<1.00
Arsenic	<.530 .558J	<.530	<.530
Barium	228	210	215
Beryllium	<.33	<.33	<.33
Cadmium	<.100	<.100	<.100
Chromium	<1.1	<1.2	<1.2
Cobalt	1.860	1.690	2.140
Copper	<1.80	<1.80	<1.80
Cyanide	<4.3	<3.5	
Lead	<.240	<.260	<.260 .282J
Mercury	<.14	<.11	
Nickel	17.40	11.10	16.80
Selenium	<1.40	<1.40	<1.40
Silver	<.50	<.50	<.50
Thallium	<.26	<.57	<.57
Total suspended solids	8.25	7.13	22.30
Turbidity, field	20.13	12.07	42.50
Vanadium	<1.10	<1.10	<1.10
Zinc	<6.4	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-41A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024
Antimony	ug/L	<.690 .761J	<.690	<1.000	<1.000	<1.000	
Arsenic	ug/L	<.750	<.750	<.530 .708J	<.530 .866J	<.530	
Barium	ug/L	154	143	145	141	169	
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33	
Cadmium	ug/L	<.055	<.055	<.100	<.100	<.100	
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	
Cobalt	ug/L	.647	<.190 .415J	.710	.541	1.010	<.170
Copper	ug/L	<1.8	<1.8	<1.8	<1.8	<1.8	
Lead	ug/L	<.24	<.24	<.24	<.24	<.24	
Nickel	ug/L	<1.9	<1.9	<1.9	<1.9	<1.9	
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40	
Silver	ug/L	<.49	<.49	<.50	<.50	<.50	
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26	
Total suspended solids	mg/L	4.380	3.130	4.130	3.630	<.638 1.500J	<.638 1.750J
Turbidity, field	NTU	12.37	2.00	1.78	4.40	.57	.98
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	
Zinc	ug/L	<10.0	<10.0	<6.4	<6.4	<6.4	

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

Table 9

Analytical Data Summary for MW-41A

Constituents	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.000	<1.000
Arsenic	<.530 .595J	<.530 .967J
Barium	125	159
Beryllium	<.33	<.33
Cadmium	<.100	<.100
Chromium	<1.2	<1.2
Cobalt	<.170 .215J	<.170 .211J
Copper	<1.8	<1.8
Lead	<.26	<.26
Nickel	<2.1	<2.1
Selenium	<1.40	<1.40
Silver	<.50	<.50
Thallium	<.57	<.57
Total suspended solids	2.630	6.000
Turbidity, field	1.73	12.99
Vanadium	<1.1	<1.1
Zinc	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-42A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	ug/L	<.69	<.69	<1.00	<1.00	<1.00	<1.00	<1.00
Arsenic	ug/L	<.750	2.960	<.530	<.530 .560J	<.530 .541J	<.530	<.530 .547J
Barium	ug/L	281.0	119.0	83.4	125.0	101.0	128.0	177.0
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33	<.33	<.33
Cadmium	ug/L	.281	<.055	<.100	<.100	<.100	<.100	<.100
Chromium	ug/L	<1.10 1.95J	<1.10	<1.10	<1.10	<1.10	<1.20	<1.20
Cobalt	ug/L	3.980	3.310	.518	2.460	2.560	2.560	2.770
Copper	ug/L	9.67	<1.80	<1.80	<1.80	<1.80	<1.80	<1.80 2.00J
Cyanide	ug/L						<3.5	
Lead	ug/L	<.24 .41J	<.24	<.24	<.24	<.24	<.26	<.26
Mercury	ug/L						<.11	
Nickel	ug/L	37.20	14.70	8.62	19.30	14.80	16.60	27.60
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40	<1.40	<1.40
Silver	ug/L	<.49	<.49	<.50	<.50	<.50	<.50	<.50
Thallium	ug/L	<.260 .385J	<.260	<.260	<.260	<.260	<.570	<.570
Total suspended solids	mg/L	6.25	13.30	18.60	7.00	8.00	4.38	14.10
Turbidity, field	NTU	18.52	6.50	17.27	3.57	8.67	9.00	33.63
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0	<10.0	<6.4	<6.4	<6.4	<9.7	<9.7

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

Table 9

Analytical Data Summary for MW-42A

Constituents	2/14/2025
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Copper	
Cyanide	
Lead	
Mercury	
Nickel	23.50
Selenium	
Silver	
Thallium	
Total suspended solids	
Turbidity, field	4.29
Vanadium	
Zinc	

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

Table 9

Analytical Data Summary for MW-43A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023
Antimony	ug/L	<.69	<.69	<1.00	<4.00	<1.00
Arsenic	ug/L	8.06	7.34	8.28	8.85	9.81
Barium	ug/L	157	167	180	250	274
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33
Cadmium	ug/L	<.055000	<.055000	<.100000	<.100000	<.100000
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	12.0
Cobalt	ug/L	3.68	3.27	4.51	4.93	4.75
Copper	ug/L	<1.8	<1.8	<1.8	<1.8	6.4
Cyanide	ug/L					
Lead	ug/L	<.24	<.24	<.24	<.24	<.24
Nickel	ug/L	24.4	25.6	31.0	41.5	36.4
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40
Silver	ug/L	<.49	<.49	<.50	<.50	<.50
Thallium	ug/L	<.26	<.26	<.26	<.26	<.26
Total suspended solids	mg/L	31.5	26.0	30.3	39.0	37.0
Turbidity, field	NTU	22.75	26.61	67.20	14.62	5.00
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.000000	<10.000000	<6.400000	<6.400000 8.740000J	<6.400000 7.360000J

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

Table 9

Analytical Data Summary for MW-43A

Constituents	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	<1.00		<1.00
Arsenic	6.28		6.32
Barium	163		214
Beryllium	<.33		<.33
Cadmium	<.100000		<.100000
Chromium	<1.2		<1.2
Cobalt	3.49		3.83
Copper	<1.8		<1.8
Cyanide	<3.5		
Lead	<.26		<.26
Nickel	17.3		25.9
Selenium	<1.40		<1.40
Silver	9.36	<.50	<.50
Thallium	<.57		<.57
Total suspended solids	22.0	28.5	29.0
Turbidity, field	3.89	11.63	12.02
Vanadium	<1.1		<1.1
Zinc	<9.700001		<9.700000 12.800000J

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

Table 9

Analytical Data Summary for MW-44A

Constituents	Units	8/16/2022 9/13/2022	12/6/2022 12/7/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024
Antimony	ug/L	<.69	<.69	<1.00	<1.00	<1.00	<1.00
Arsenic	ug/L	<.750	<.750	<.530	<.530	<.530 .666J	<.530 .663J
Barium	ug/L	168	212	157	239	253	137
Beryllium	ug/L	<.27	<.27	<.33	<.33	<.33	<.33
Cadmium	ug/L	<.055	<.055 .082J	.306	.416	.795	.389
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2
Cobalt	ug/L	.530	.583	<.170 .251J	.603	<.170 .327J	<.170 .423J
Copper	ug/L	<1.80	<1.80	<1.80	<1.80	<1.80 2.58J	<1.80 9.56J
Cyanide	ug/L						<3.5
Lead	ug/L	<.240	<.240	<.240	<.240	<.240	<.260 .313J
Mercury	ug/L						<.11
Nickel	ug/L	21.7	51.8	28.7	70.2	66.6	21.6
Selenium	ug/L	<.96	<.96	<1.40	<1.40	<1.40	<1.40 1.99J
Silver	ug/L	<.49	<.49	<.50	<.50	<.50	1.01
Thallium	ug/L	<.260	<.260	<.260	<.260	<.260	<.570 .748J
Total suspended solids	mg/L	8.000	2.880	<.638 1.130J	<.638 1.500J	<.638 .875J	1.880
Turbidity, field	NTU	1.79	2.06	10.04	1.56	.38	2.63
Vanadium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Zinc	ug/L	<10.0 13.4J	21.3	<6.4 18.1J	27.3	26.0	<9.7 13.8J

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

Table 9

Analytical Data Summary for MW-44A

Constituents	11/19/2024 12/18/2024
Antimony	<1.00
Arsenic	<.530
Barium	159
Beryllium	<.33
Cadmium	<.100 .181J
Chromium	<1.2
Cobalt	<.170 .435J
Copper	<1.80
Cyanide	
Lead	<.260
Mercury	
Nickel	34.2
Selenium	<1.40
Silver	<.50
Thallium	<.570
Total suspended solids	7.670
Turbidity, field	9.13
Vanadium	<1.1
Zinc	<9.7 19.5J

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

Table 9

Analytical Data Summary for MW-45A

Constituents	Units	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	ug/L	<1	<1	<1	<1	<1
Arsenic	ug/L	<.53	<.53	<.53	<.53	<.53
Barium	ug/L	218	137	103	118	128
Beryllium	ug/L	<.33	<.33	<.33	<.33	<.33
Cadmium	ug/L	<.100	<.100	<.100	<.100 .194J	<.100 .132J
Chromium	ug/L	<1.10 2.02J	<1.10	<1.20	<1.20	<1.20
Cobalt	ug/L	<.170 .394J	<.170 .263J	<.170 .257J	<.170 .389J	<.170 .296J
Copper	ug/L	<1.8	<1.8	<1.8	<1.8	<1.8
Lead	ug/L	<.240	<.240	<.260	<.260 .265J	<.260
Nickel	ug/L	<1.9	<1.9	<2.1	<2.1	<2.1
Selenium	ug/L	<1.4	<1.4	<1.4	<1.4	<1.4
Silver	ug/L	<.5	<.5	<.5	<.5	<.5
Thallium	ug/L	<.26	<.26	<.57	<.57	<.57
Total suspended solids	mg/L	2.500	<.638 1.130J	<1.390	2.630	3.250
Turbidity, field	NTU	1.87	.00	.67	2.16	6.59
Vanadium	ug/L	<1.10 1.13J	<1.10	<1.10	<1.10	<1.10
Zinc	ug/L	<6.40	<6.40 8.46J	<9.70	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-46A

Constituents	Units	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	ug/L	<1	<1	<1	<1	<1
Arsenic	ug/L	<.530 .780J	<.530 .984J	<.530 .714J	<.530 .770J	<.530 .805J
Barium	ug/L	262	275	213	236	262
Beryllium	ug/L	<.33	<.33	<.33	<.33	<.33
Cadmium	ug/L	<.100000	<.100000 .123000J	<.100000	<.100000	<.100000 .115000J
Chromium	ug/L	<1.10	<1.10 1.12J	<1.20	<1.20	<1.20
Cobalt	ug/L	<.170 .405J	<.170 .253J	<.170	<.170 .241J	<.170 .288J
Copper	ug/L	<1.80	<1.80 2.39J	<1.80	<1.80 1.99J	<1.80 1.99J
Lead	ug/L	<.240	<.240 .393J	<.260	<.260 .386J	<.260 .307J
Nickel	ug/L	33.8	35.0	26.6	26.6	28.2
Selenium	ug/L	<1.4	<1.4	<1.4	<1.4	<1.4
Silver	ug/L	<.50	<.50	9.06	<.50	<.50
Thallium	ug/L	<.26	<.26	<.57	<.57	<.57
Total suspended solids	mg/L	11.5	36.1	10.3	26.3	19.6
Turbidity, field	NTU	79.73	173.01	12.22	68.05	103.12
Vanadium	ug/L	<1.10	<1.10 2.14J	<1.10	<1.10 1.17J	<1.10 1.35J
Zinc	ug/L	<6.400000	<6.400000 7.190000J	<9.700001	<9.700000	<9.700000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009
Antimony	ug/L	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000	<6.000
Arsenic	ug/L	<1.000	2.260	<1.000	<1.000	<1.000	2.290	1.450
Barium	ug/L	344	358	337	264	343	447	372
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.500000	<.500000	<.500000	<.500000	<.500000	<.500000	<.500000
Chromium	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L							
Lead	ug/L	<4.0000	<4.0000	<4.0000	<4.0000	<4.0000	7.6800	<4.0000
Mercury	ug/L							
Nickel	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L							
Turbidity, field	NTU							
Vanadium	ug/L	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	52.200001	<20.000000	26.200001	<20.000000	<20.000000	36.299999	31.700001

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

Table 9

Analytical Data Summary for MW-4B

Constituents	2/25/2010	4/21/2010	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013
Antimony	10.600	<6.000	<6.000	<6.000	<2.730	<1.450	.220	.698
Arsenic	2.340	<1.000	<1.000	<1.000	1.140	2.530	14.100	15.300
Barium	441	339	346	211	404	540	920	644
Beryllium	<1.0000	<1.0000	<1.0000	<1.0000	<.0510	<.0790	.1200	.1090
Cadmium	<.500000	<.500000	<.500000	<.500000	<.124000	<.229000	.250000	.189000
Chromium	<20.000	<20.000	<20.000	<20.000	3.500	4.470	8.600	36.000
Cobalt	<20.0000	<20.0000	<20.0000	<20.0000	4.4300	8.7000	18.7000	15.1000
Copper	<20.000	<20.000	<20.000	<20.000	11.800	<1.510	11.800	12.100
Cyanide	<10.00							
Lead	<4.0000	13.8000	5.3200	<4.0000	<1.0000	.9100	3.6800	3.9700
Mercury	<.2000							
Nickel	<50.000	<50.000	<50.000	<50.000	24.400	38.700	57.600	62.400
Selenium	<5.000	<5.000	<5.000	<5.000	<1.690	<.700	<.297	1.740
Silver	<20.0000	<20.0000	<20.0000	<20.0000	<1.7000	<1.7000	<.0270	<.0789
Thallium	<2.0000	<2.0000	<2.0000	<2.0000	<.8400	<.2880	.0100	.1550
Total suspended solids								
Turbidity, field								
Vanadium	<50.000	<50.000	<50.000	<50.000	<2.100	<2.100	8.180	11.300
Zinc	<20.000000	27.100000	22.000000	<20.000000	<9.110000	10.800000	7.010000	13.300000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	11/5/2013 11/7/2013	5/1/2014 5/8/2014	10/31/2014 11/10/2014	12/19/2014 12/22/2014	5/1/2015 5/12/2015	7/1/2015	9/14/2015 9/22/2015	12/9/2015
Antimony	.256	.994	<.161		<.161		<.161	
Arsenic	1.190	1.190	<.945		<.945		<.945	
Barium	333	462	144		307		237	
Beryllium	<.0696	.1140	<.0390		<.0390		.0520	
Cadmium	.137000	<.100000	<.112000		<.112000		<.112000	
Chromium	<.418	.650	<1.240		<1.240		<1.240	
Cobalt	4.6700	6.7900	.9680		2.0500		1.7700	
Copper	3.760	2.390	4.110		1.670		.618	
Cyanide			<3100.00				<3.04	
Lead	5.5500	<.1800	.1170		<.0967		.1410	
Mercury			<71.0000				<.0926	
Nickel	16.000	22.300	2.510		9.830		4.500	
Selenium	2.240	<.700	<3.340		<3.340		<3.340	
Silver	<.0789	<.0330	<.0420		.0530		<.0420	
Thallium	.0384	.3080	<.0325		<.0325		<.0325	
Total suspended solids			2.130		6.830	15.500	6.000	37.000
Turbidity, field			10.8700	1.3560	.8004	1.1470	9.4000	3.7900
Vanadium	1.550	.783	1.110		.782		.707	
Zinc	<.625000	3.490000	<6.950000		<6.950000		<6.950000	

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

Table 9

Analytical Data Summary for MW-4B

Constituents	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019
Antimony	<.237	<.237	<.185	<.185	<.420	<.420 .503J	<1.320
Arsenic	1.170	<.672	<.505	<.505	<.570	<.570	<.232 .547J
Barium	396	205	213	217	305	206	187
Beryllium	<.2210	<.2210	<.1250	<.1250	<.1900	<.1900	<.5300
Cadmium	.121000	<.035100	<.044100	<.044100	<.060000	<.060000	<.167000
Chromium	.400	.451	<.729	<.729	<.760	<.760 1.040J	<1.140 2.130J
Cobalt	6.0500	.0350	<.0453 .0590J	.3620	.8340	<.0610 .0680J	<.4020
Copper	1.880	<1.220	<2.190	<2.190	<3.800 *	<1.600	2.090
Cyanide		<3.52		<3.46			
Lead	<.2110	<.2110	<.3240	<.3240	<.2500	<.2500	<.1860
Mercury		<.1420		<.1120			
Nickel	13.400	<1.530	<.929	2.910	5.110	<1.000	<.625 1.570J
Selenium	<.630	.884	<.928	1.030	<.900	<.900	<.982
Silver	.1730	<.1530	<.1400	<.1400	<.3000	<.3000	<.1150
Thallium	.0300	<.0255	<.0644 .0710J	<.0644	<.1700	<.1700	<.5700
Total suspended solids	14.400	<.581	<.581	1.380	5.370	<.638 1.000J	<.638 1.250J
Turbidity, field	75.6900	1.5710	1.3420	9.3110	7.8590	9.4300	
Vanadium	.709	1.060	<.840 1.090J	1.010	<.520 .990J	<.520 1.360J	<2.150
Zinc	<5.210000	<5.210000	<11.500000	<11.500000	<10.000000	<10.000000	<6.920000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021
Antimony	<.530		<.510	<.510	<1.100	<1.100
Arsenic	<.750		<.880	<.880	<.750	<.750
Barium	455	168	180	178	176	189
Beryllium	<.2700		<.2700	<.2700	<.2700	<.2700
Cadmium	.135000	<.039000	<.049000	<.049000	<.051000	<.051000
Chromium	<.980		<1.100	<1.100	<1.100	<1.100
Cobalt	<.0910 .2210J		<.0910	<.0910 .1490J	<.0910	<.1900
Copper	<2.000		<1.500	<1.500	<1.400	<1.400
Cyanide						
Lead	<.2700		<.1100	<.1100	<.2100	<.2100
Mercury						
Nickel	<1.700 3.570J		<1.900	<1.900	<1.900	<1.900
Selenium	<1.000		<1.000	<1.000	<.960	<.960
Silver	<.3700		<.3700	<.3700	<.4200	<.4200
Thallium	<.2700		<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638	<.638 .875J	<.638 1.250J	<.638 .750J	<.638	<.638 1.130J
Turbidity, field	.8900	1.6700	.8200	3.9800		5.1500
Vanadium	<.820 .956J		<.850 1.060J	<.850 1.410J	<1.100 1.140J	<1.100
Zinc	<10.000000		<10.000000	<10.000000	<10.000000	<10.000000

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

Table 9

Analytical Data Summary for MW-4B

Constituents	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	8/27/2024 9/5/2024
Antimony	<.690	<.690	<1.000	<1.000		<1.000	
Arsenic	<.750	<.750	<.530	<.530		<.530	
Barium	184	209	183	267	413	184	
Beryllium	<.2700	<.2700	<.3300	<.3300		<.3300	
Cadmium	<.055000	<.055000	<.100000	<.100000		<.100000	
Chromium	<1.100 1.670J	<1.100	<1.100	<1.100		<1.200	
Cobalt	<.1900	<.1900	<.1700	<.1700 .2130J		<.1700	
Copper	<1.800	<1.800	<1.800	<1.800		<1.800	
Cyanide							
Lead	<.2400	<.2400	<.2400	<.2400		<.2600	
Mercury							
Nickel	<1.900	<1.900	<1.900	<1.900 3.500J		<2.100	
Selenium	<.960	<.960	<1.400	<1.400		<1.400	
Silver	<.4900	<.4900	<.5000	<.5000		5.3700	<.5000
Thallium	<.2600	<.2600	<.2600	<.2600		<.5700	
Total suspended solids	<1.700	<.638	<.638 .750J	<.638 1.750J	2.130	<1.390	<1.390
Turbidity, field	.0600	.0000	.6700	1.9500	.8700	1.7500	2.3700
Vanadium	<1.100	<1.100 1.150J	<1.100	<1.100 1.500J		<1.100	
Zinc	<10.000000	<10.000000	<6.400000	<6.400000		<9.700001	

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

Table 9

Analytical Data Summary for MW-4B

Constituents	11/19/2024 12/18/2024
Antimony	<1.000
Arsenic	<.530
Barium	225
Beryllium	<.3300
Cadmium	<.100000
Chromium	<1.200
Cobalt	<.1700
Copper	<1.800
Cyanide	
Lead	<.2600
Mercury	
Nickel	<2.100
Selenium	<1.400
Silver	<.5000
Thallium	<.5700
Total suspended solids	<1.430
Turbidity, field	1.1400
Vanadium	<1.100
Zinc	<9.700000

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

Table 9

Analytical Data Summary for MW-7A

Constituents	Units	10/12/2007 10/13/2007	1/9/2008	4/8/2008	7/16/2008	10/23/2008	4/8/2009 4/13/2009	10/5/2009	4/21/2010
Antimony	ug/L	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000	<6.0000
Arsenic	ug/L	<1.000	1.450	1.150	<1.000	2.230	<1.000	<1.000	<2.000
Barium	ug/L	191.0	202.0	301.0	185.0	381.0	195.0	220.0	181.0
Beryllium	ug/L	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000	<1.0000
Cadmium	ug/L	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000	<.5000
Chromium	ug/L	<20.000	<20.000	64.500	<20.000	<20.000	<20.000	<20.000	<20.000
Cobalt	ug/L	<20.0000	<20.0000	21.4000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Copper	ug/L	<20.000	<20.000	50.700	<20.000	<20.000	<20.000	<20.000	<20.000
Cyanide	ug/L								
Lead	ug/L	<4.0000	<4.0000	4.1600	<4.0000	9.4600	<4.0000	<4.0000	<4.0000
Mercury	ug/L								
Nickel	ug/L	<50.000	<50.000	53.600	<50.000	<50.000	<50.000	<50.000	<50.000
Selenium	ug/L	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
Silver	ug/L	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000	<20.0000
Thallium	ug/L	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000	<2.0000
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<50.000	<50.000	75.600	<50.000	<50.000	<50.000	<50.000	<50.000
Zinc	ug/L	45.800	<20.000	94.900	<20.000	67.000	35.000	41.800	25.900

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

Table 9

Analytical Data Summary for MW-7A

Constituents	10/14/2010	4/13/2011	10/18/2011	4/24/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013	5/1/2014 5/8/2014
Antimony	<6.0000	<6.0000	<2.7300	1.8400	<.1200	.4350	.0751	.9880
Arsenic	<1.000	<1.000	<.600	.876	.810	.970	<.544	<.330
Barium	263.0	197.0	319.0	307.0	316.0	155.0	326.0	149.0
Beryllium	<1.0000	<1.0000	.1590	.7820	.0600	<.0696	<.0696	<.0800
Cadmium	<.5000	<.5000	<.1240	<.2290	.0800	<.1060	<.1060	<.1000
Chromium	<20.000	<20.000	1.990	4.530	.520	6.590	.771	4.600
Cobalt	<20.0000	<20.0000	3.6800	7.5100	1.0300	.6610	.6040	.1500
Copper	<20.000	<20.000	18.700	16.600	2.250	4.700	1.860	.579
Cyanide								
Lead	5.4100	<4.0000	4.7200	8.9600	.8400	1.5200	.2110	.2240
Mercury								
Nickel	<50.000	<50.000	9.700	9.510	7.270	3.350	6.390	.459
Selenium	<5.000	<5.000	<1.690	<.700	<.297	<1.460	<1.460	<.700
Silver	<20.0000	<20.0000	<1.7000	<1.7000	<.0270	<.0789	<.0789	<.0330
Thallium	<2.0000	<2.0000	<.8400	<.2880	.0100	.0840	<.0267	.1510
Total suspended solids								
Turbidity, field								
Vanadium	<50.000	<50.000	2.140	11.500	1.440	1.630	<.833	1.200
Zinc	38.600	<20.000	15.200	17.600	2.420	8.060	<.625	3.260

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

Table 9

Analytical Data Summary for MW-7A

Constituents	10/31/2014 11/10/2014	5/1/2015 5/12/2015	9/14/2015 9/22/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	.1640	<.1610	<.1610	<.2370	<.2370	<.1850	<.1850
Arsenic	<.945	<.945	<.945	<.672	<.672	<.505	<.505
Barium	184.0	152.0	240.0	165.0	315.0	150.0	172.0
Beryllium	<.0390	<.0390	<.0390	<.2210	<.2210	<.1250	<.1250
Cadmium	<.1120	<.1120	<.1120	<.0351	<.0351	<.0441	<.0441
Chromium	4.200	3.750	<1.240	4.020	.425	<.729 2.450J	3.220
Cobalt	<.0528	<.0528	.0780	<.0274	.0290	<.0453	<.0453
Copper	<.485	<.485	<.485	<1.220	<1.220	<2.190	<2.190
Cyanide							
Lead	.1130	<.0967	.8000	<.2110	<.2110	<.3240	<.3240
Mercury							
Nickel	.586	<.581	3.600	<1.530	6.700	<.929 1.110J	<.929
Selenium	<3.340	<3.340	<3.340	.821	<.630	<.928	<.928
Silver	<.0420	<.0420	<.0420	<.1530	<.1530	<.1400	<.1400
Thallium	<.0325	<.0325	<.0325	<.0255	.0500	<.0644	<.0644
Total suspended solids	<1.410	<1.130	<1.200	.750	.875	<.581 1.130J	.750
Turbidity, field	.7996	.6573	1.0020	.5112	.6005	5.6610	1.1160
Vanadium	.727	.459	.666	.429	.377	<.840	.917
Zinc	7.010	<6.950	26.500	<5.210	<5.210	<11.500	<11.500

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

Table 9

Analytical Data Summary for MW-7A

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020
Antimony	<.4200	<.4200	<1.3200	<.5300		<.5100
Arsenic	<.570	<.570	<.232 .430J	<.750		<.880
Barium	166.0	171.0	160.0	185.0	174.0	139.0
Beryllium	<.1900	<.1900	<.5300	<.2700		<.2700
Cadmium	<.0600	<.0600	<.1670	<.0390 .0610J		<.0490
Chromium	5.260	<.760 3.270J	<1.140 4.920J	<.980 2.950J		<1.100 2.120J
Cobalt	<.0610 .0660J	<.0610	<.4020	<.0910		<.0910
Copper	<3.800 *	<1.600	<.497 1.020J	<2.000		<1.500
Cyanide						
Lead	<.2500	<.2500	<.1860	<.2700		<.1100
Mercury						
Nickel	<1.000 1.680J	<1.000	2.070	<1.700		<1.900
Selenium	<.900	<.900	<.982	<1.000		<1.000
Silver	<.3000	<.3000	<.1150	<.3700		<.3700
Thallium	<.1700	<.1700	<.5700	<.2700		<.2600
Total suspended solids	<.638 1.250J	2.500	<.638	2.630	<.638	2.500
Turbidity, field	.3710	4.2110		1.0400	.0000	4.4100
Vanadium	<.520 .603J	<.520 .673J	<2.150	<.820 .862J		<.850
Zinc	<10.000	<10.000	<6.920 6.990J	35.800	<10.000	<10.000

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

Table 9

Analytical Data Summary for MW-7A

Constituents	11/3/2020 11/23/2020	2/3/2021 2/24/2021	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022
Antimony	1.6700	<1.1000	<1.1000	<1.1000	<.6900	<.6900
Arsenic	<.880		<.750	<.750	<.750	<.750
Barium	160.0		166.0	156.0	143.0	71.9
Beryllium	<.2700		<.2700	<.2700	<.2700	<.2700
Cadmium	<.0490 .0580J		<.0510	<.0510	<.0550	<.0550
Chromium	<1.100 2.390J		<1.100 3.290J	<1.100 3.380J	<1.100 3.010J	<1.100
Cobalt	<.0910		<.0910	<.1900	<.1900	<.1900 .3390J
Copper	<1.500		<1.400	<1.400	<1.800	<1.800
Cyanide						
Lead	<.1100		<.2100	<.2100	<.2400	<.2400
Mercury						
Nickel	<1.900		<1.900	<1.900	<1.900	<1.900
Selenium	<1.000		<.960	<.960	<.960	<.960
Silver	<.3700		<.4200	<.4200	<.4900	<.4900
Thallium	<.2600		<.2600	<.2600	<.2600	<.2600
Total suspended solids	<.638 1.000J	<.638 .875J	<.638	<.638 1.000J	<.638	1.880
Turbidity, field	.7600	.5100		3.3200	.0000	2.2400
Vanadium	<.850		<1.100	<1.100	<1.100 1.210J	<1.100
Zinc	<10.000		<10.000	<10.000	<10.000	<10.000

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

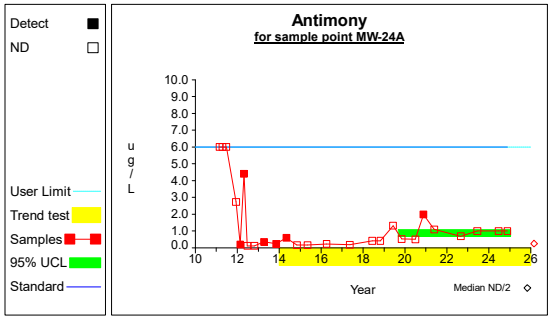
Table 9

Analytical Data Summary for MW-7A

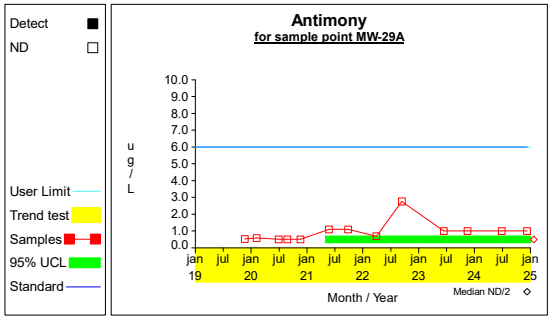
Constituents	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024	2/14/2025
Antimony	<1.0000		<1.0000	<1.0000	<1.0000	
Arsenic	<.530		<.530	<.530	<.530	
Barium	323.0	366.0	451.0	190.0	425.0	196.0
Beryllium	<.3300		<.3300	<.3300	<.3300	
Cadmium	<.1000		<.1000	<.1000	<.1000	
Chromium	<1.100		<1.100	<1.200 3.340J	<1.200	
Cobalt	<.1700		<.1700 .2570J	<.1700	<.1700	
Copper	<1.800		<1.800	<1.800	<1.800	
Cyanide				<3.5		
Lead	<.2400		<.2400	<.2600	<.2600	
Mercury				<.11		
Nickel	5.110		12.800	<2.100	8.810	
Selenium	<1.400		<1.400	<1.400	<1.400	
Silver	<.5000		<.5000	<.5000	<.5000	
Thallium	<.2600		<.2600	<.5700	<.5700	
Total suspended solids	<.638	5.130	3.130	<1.390	<1.540	
Turbidity, field	.8400	1.1100	1.4200	1.8300	.2200	.7500
Vanadium	<1.100		<1.100	<1.100	<1.100	
Zinc	<6.400		<6.400	<9.700	<9.700	

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

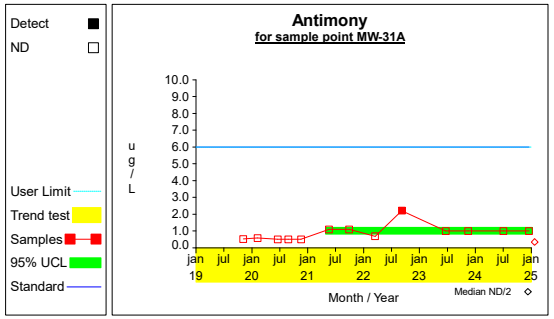
Confidence Limits (Assessment)



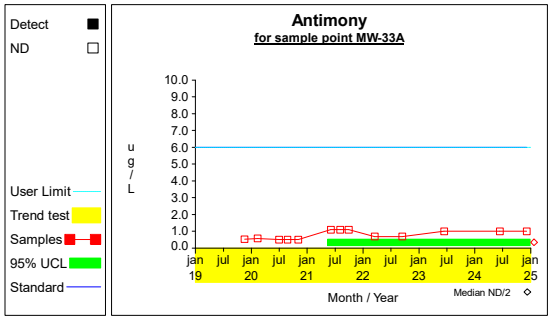
Graph 1



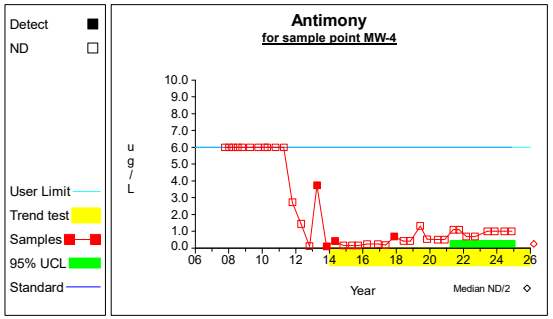
Graph 2



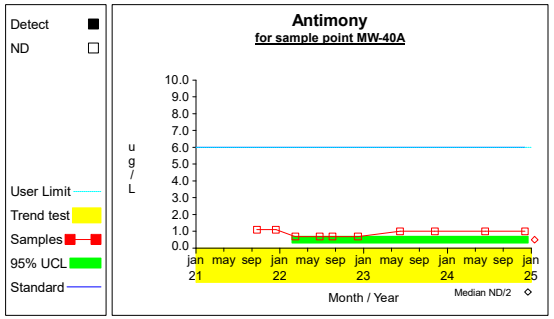
Graph 3



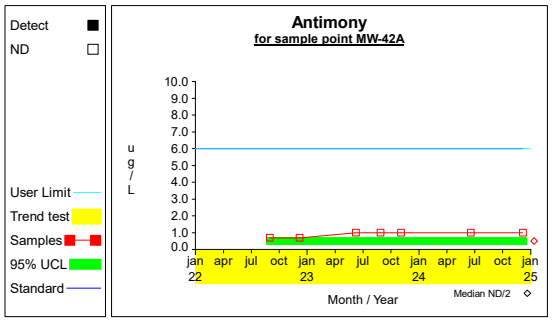
Graph 4



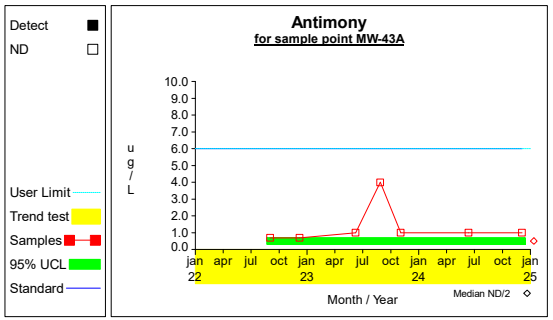
Graph 5



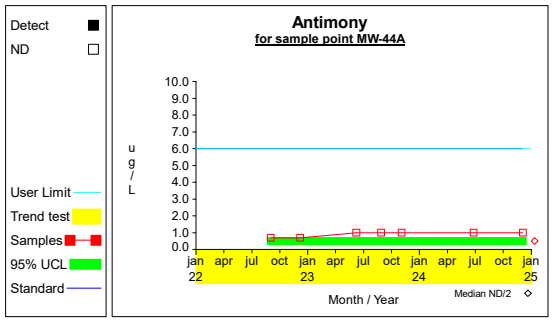
Graph 6



Graph 7

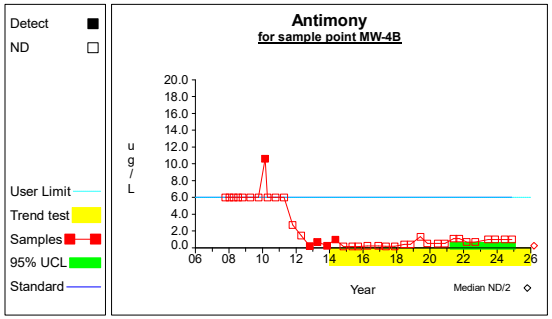


Graph 8

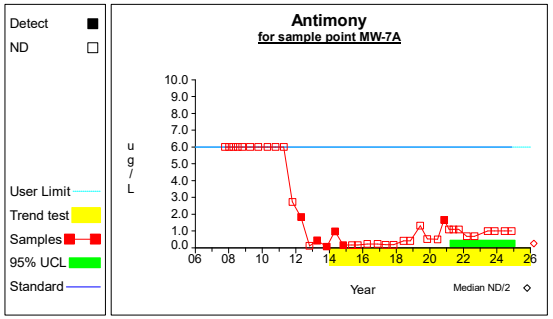


Graph 9

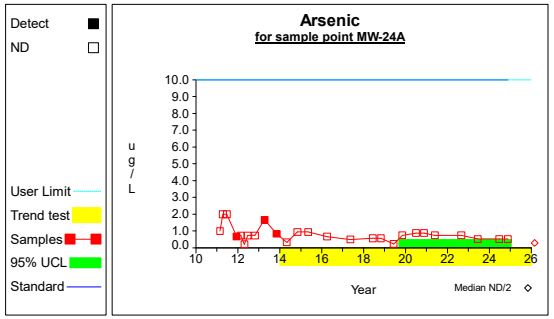
Confidence Limits (Assessment)



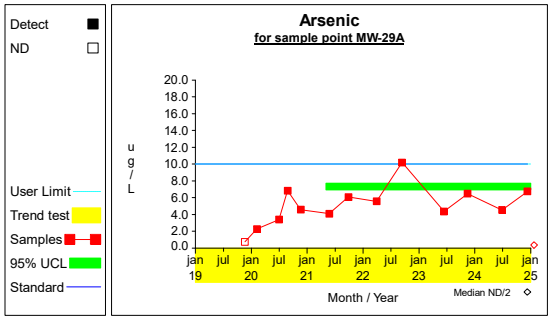
Graph 10



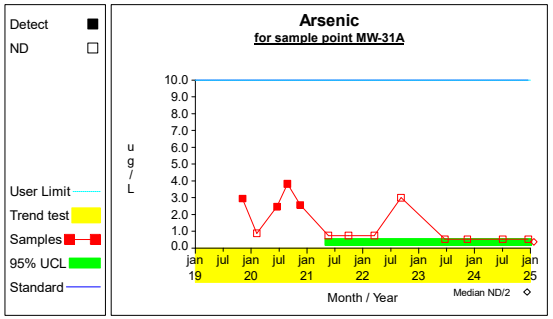
Graph 11



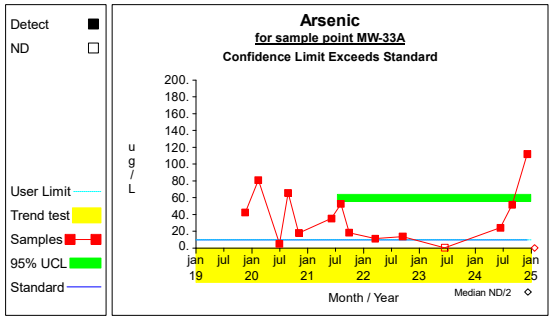
Graph 12



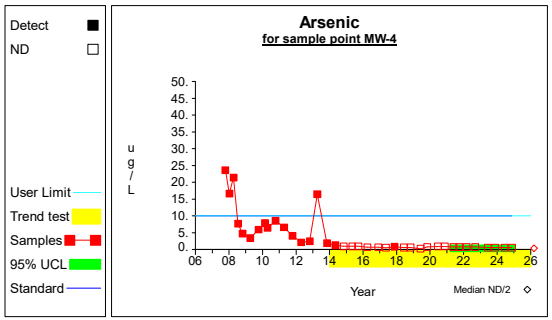
Graph 13



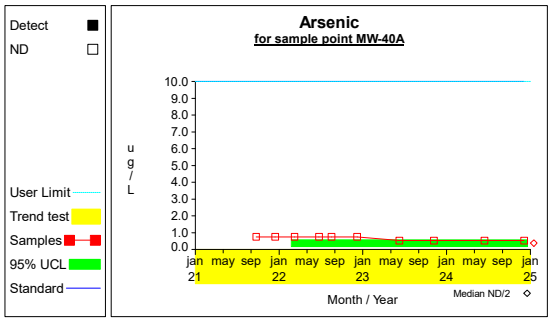
Graph 14



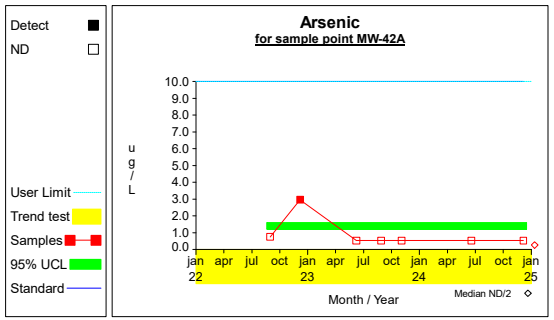
Graph 15



Graph 16

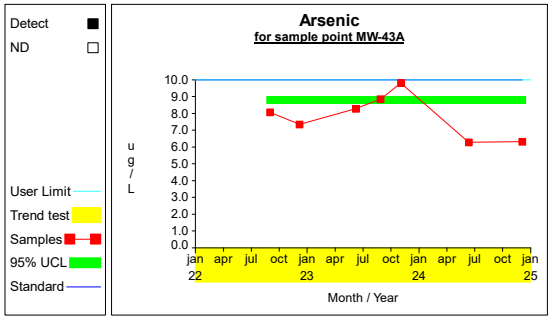


Graph 17

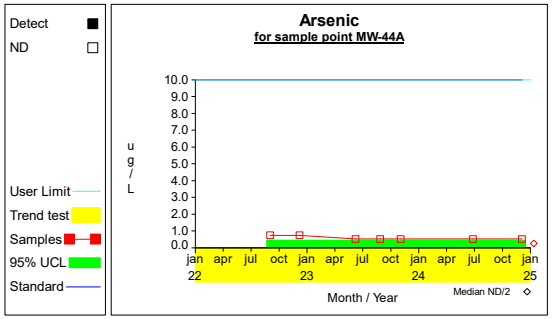


Graph 18

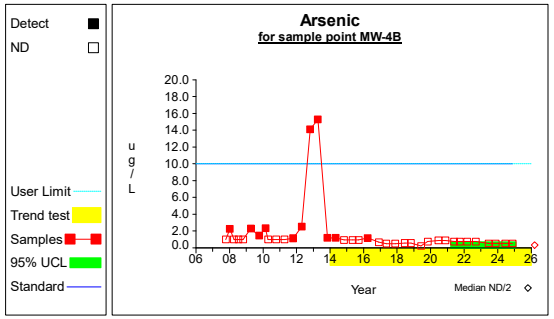
Confidence Limits (Assessment)



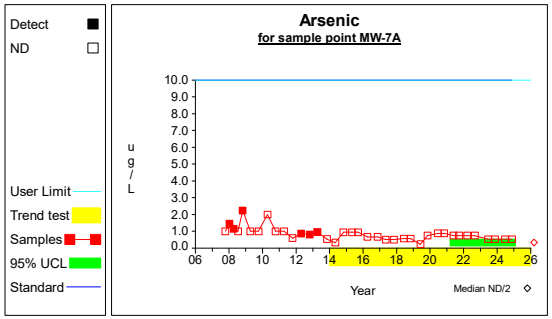
Graph 19



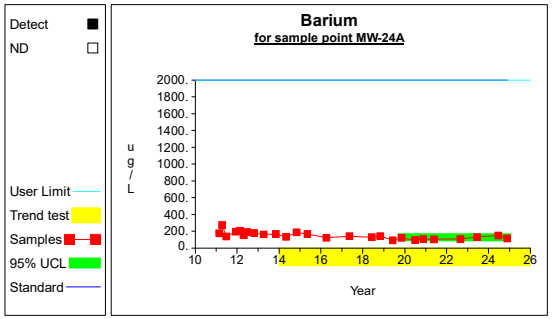
Graph 20



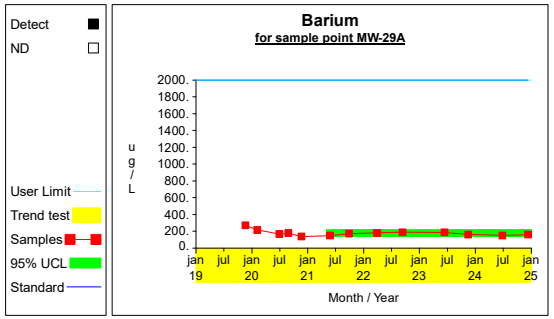
Graph 21



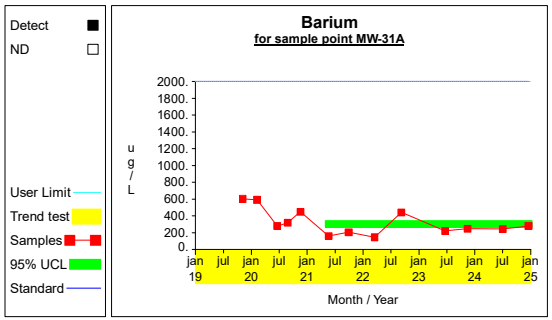
Graph 22



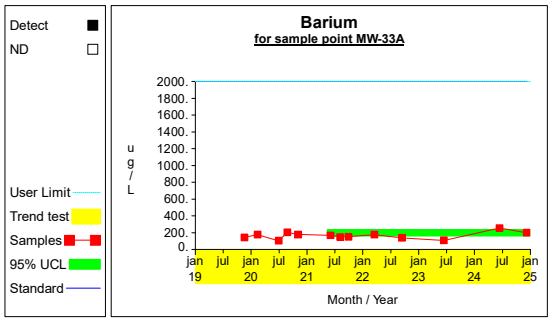
Graph 23



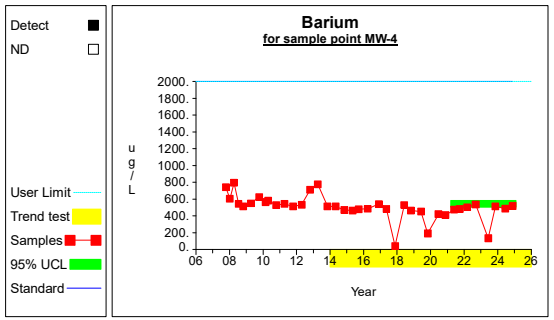
Graph 24



Graph 25

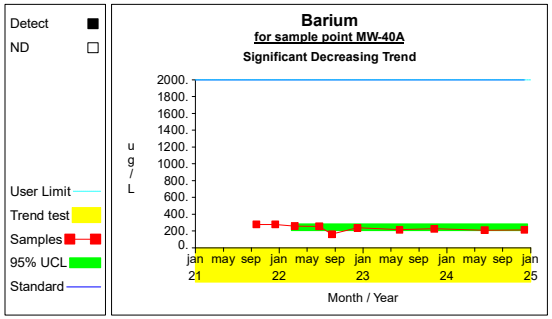


Graph 26

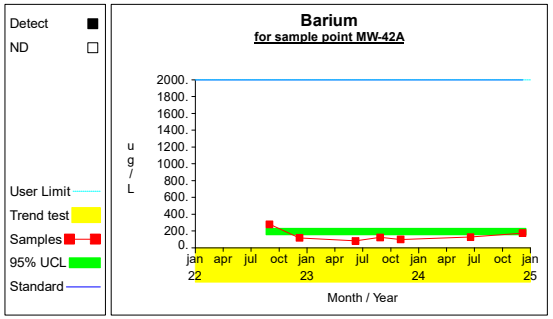


Graph 27

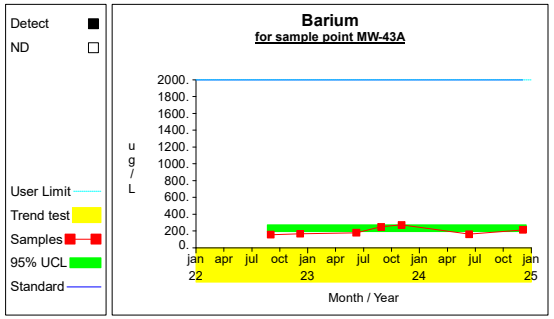
Confidence Limits (Assessment)



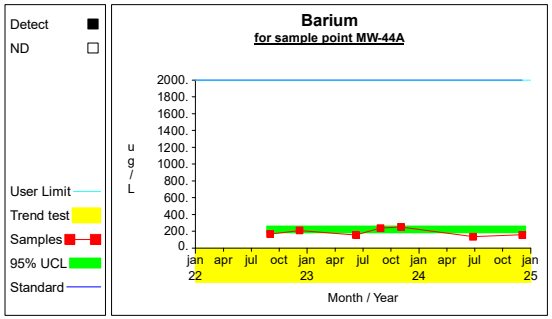
Graph 28



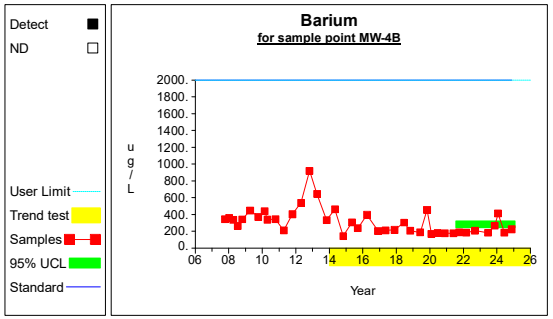
Graph 29



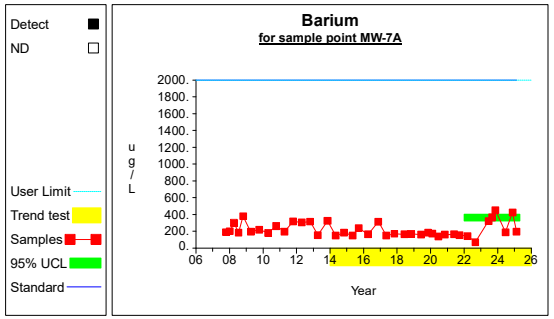
Graph 30



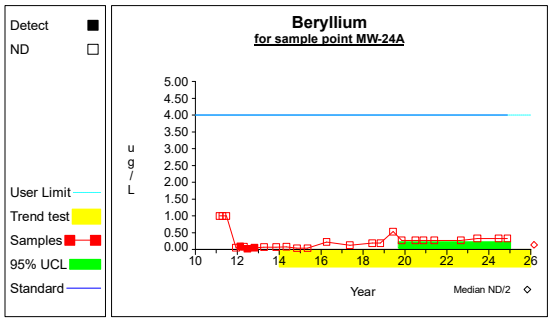
Graph 31



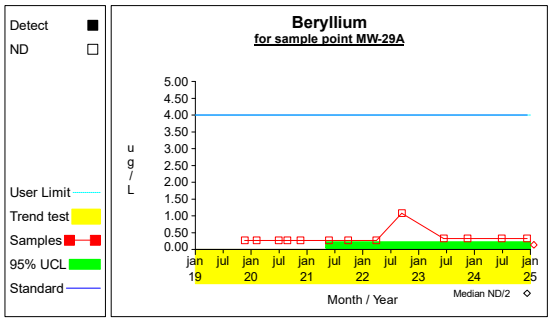
Graph 32



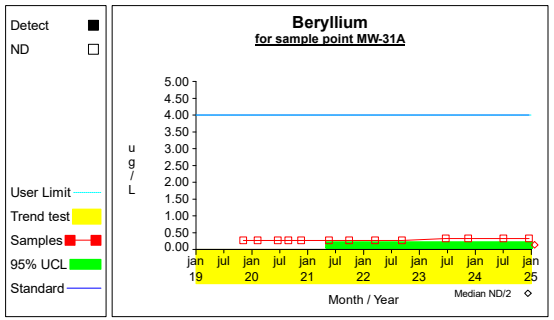
Graph 33



Graph 34

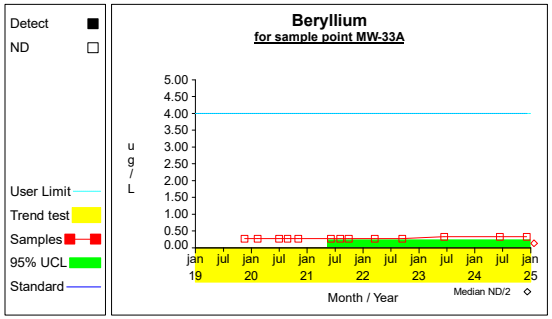


Graph 35

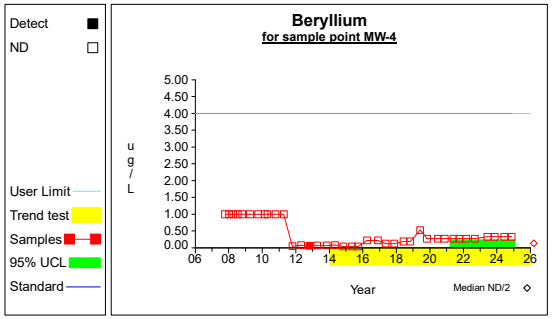


Graph 36

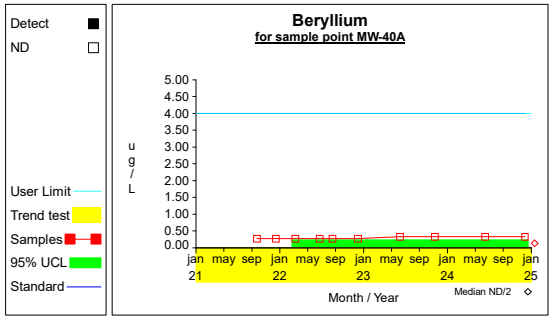
Confidence Limits (Assessment)



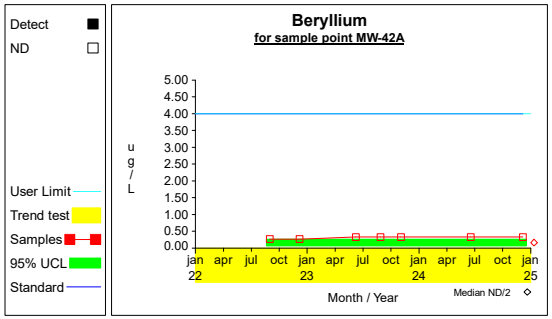
Graph 37



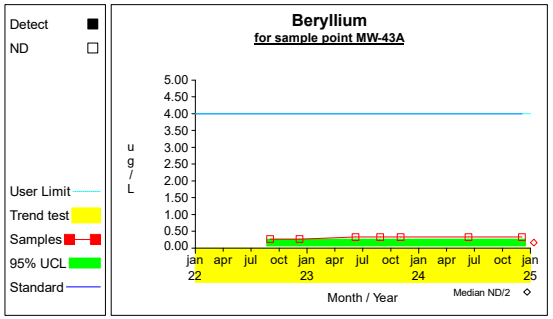
Graph 38



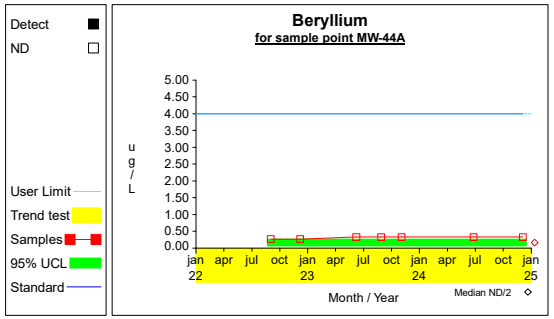
Graph 39



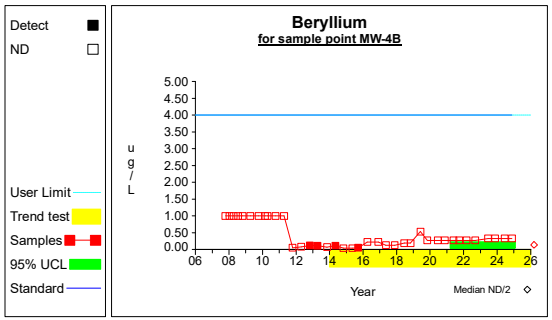
Graph 40



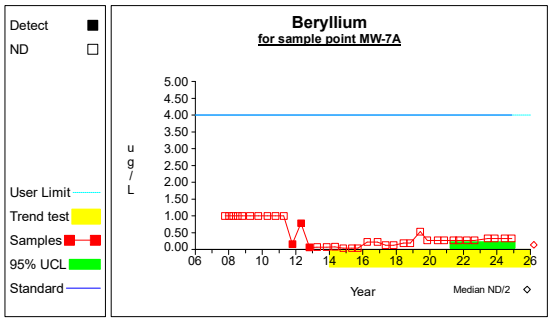
Graph 41



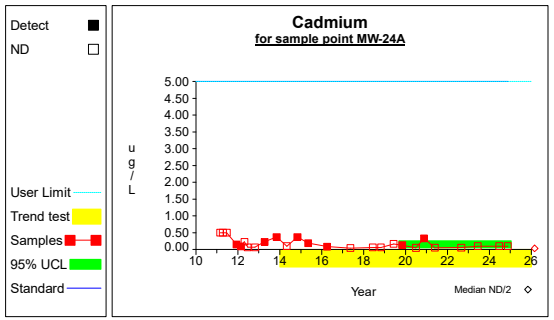
Graph 42



Graph 43

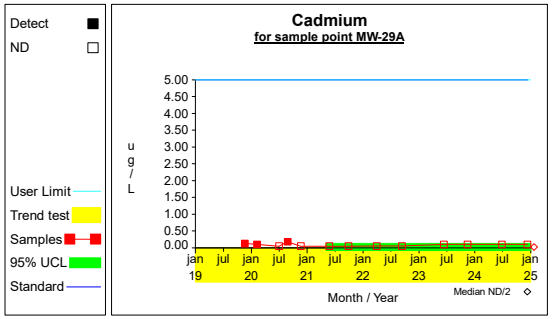


Graph 44

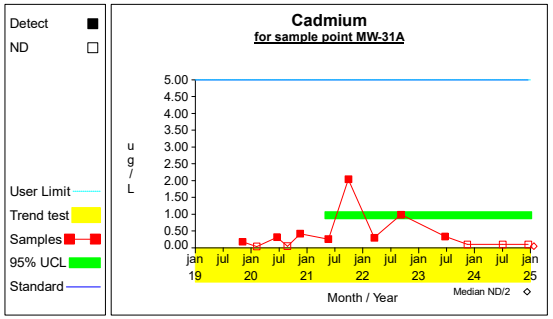


Graph 45

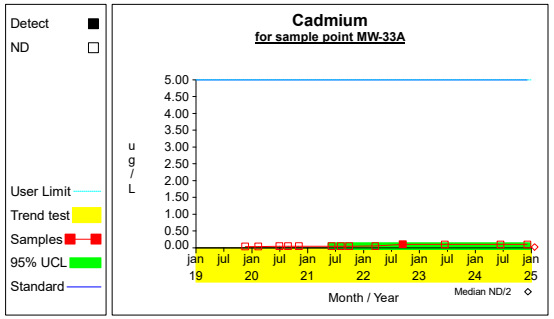
Confidence Limits (Assessment)



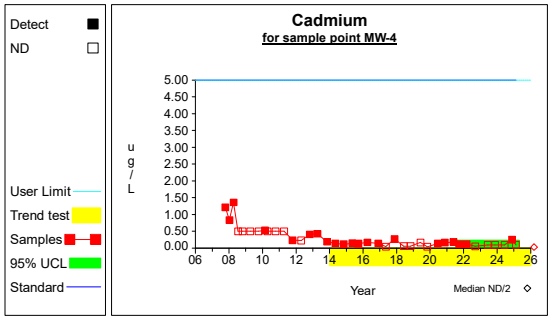
Graph 46



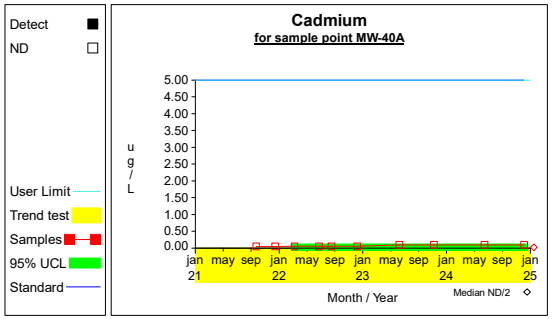
Graph 47



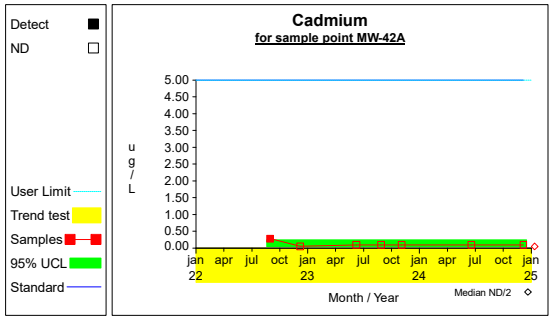
Graph 48



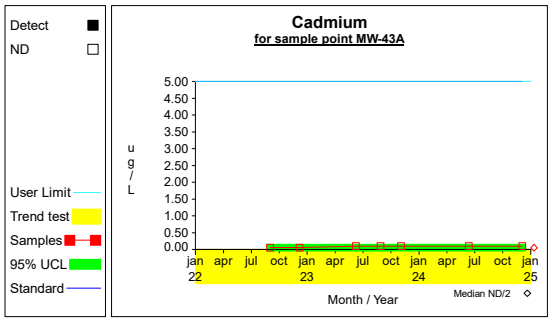
Graph 49



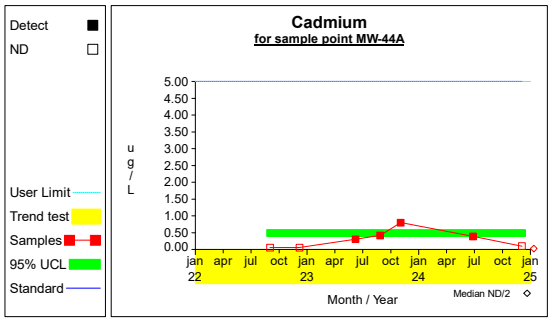
Graph 50



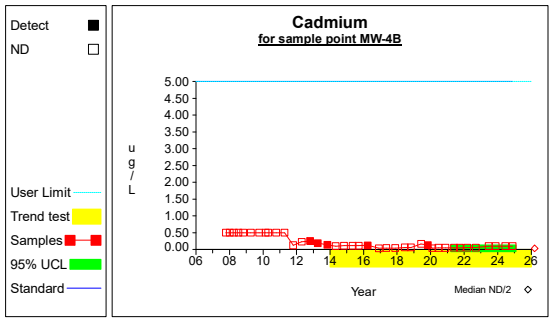
Graph 51



Graph 52

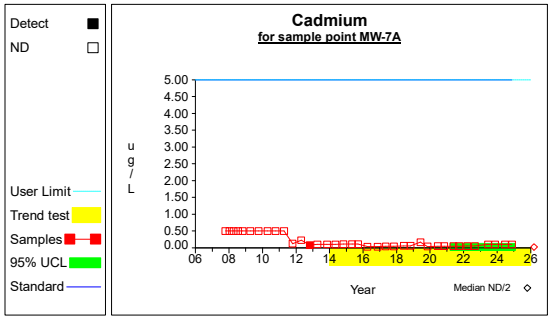


Graph 53

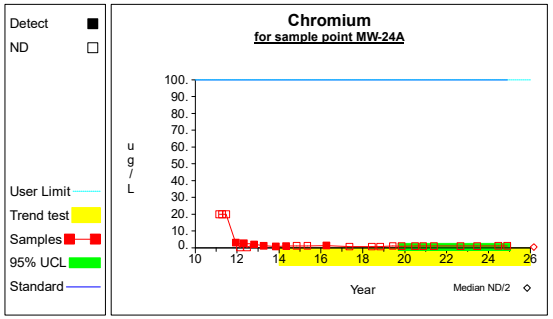


Graph 54

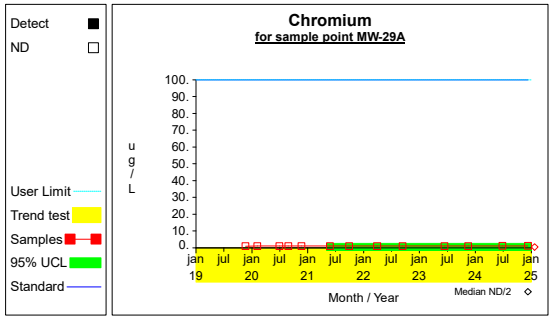
Confidence Limits (Assessment)



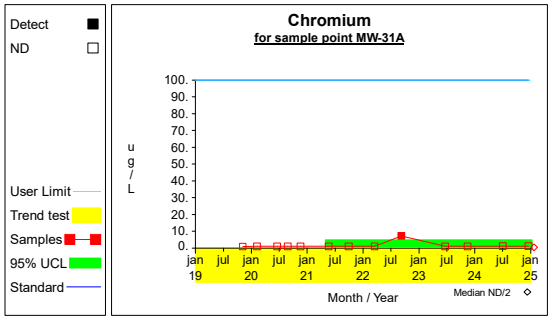
Graph 55



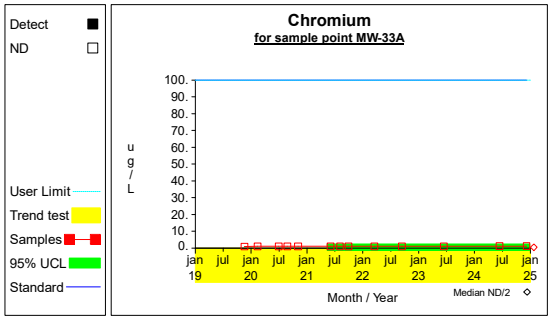
Graph 56



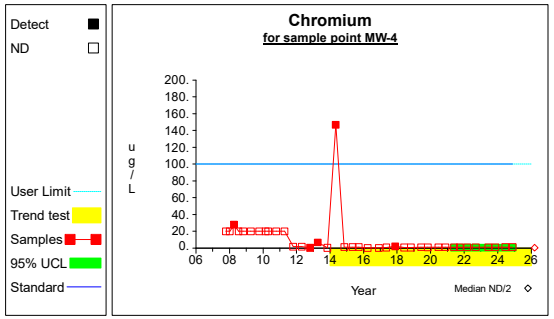
Graph 57



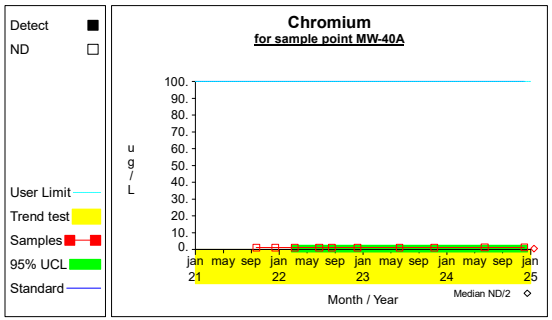
Graph 58



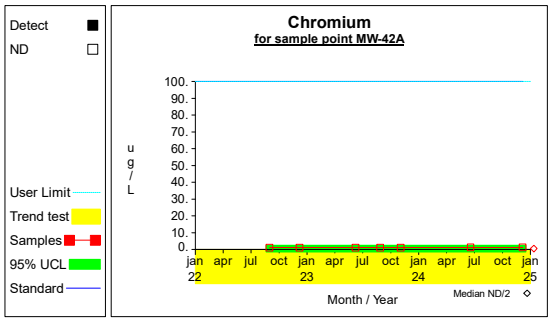
Graph 59



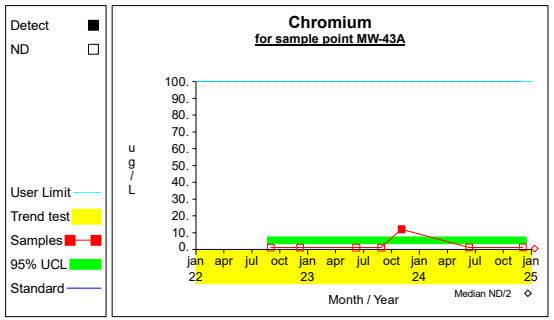
Graph 60



Graph 61

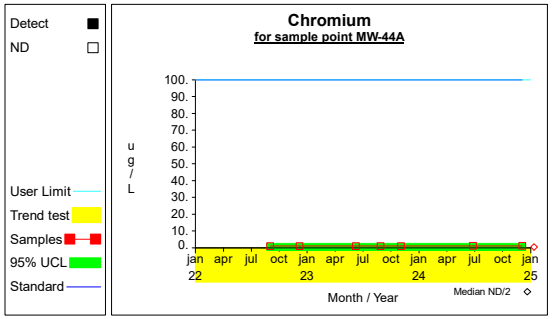


Graph 62

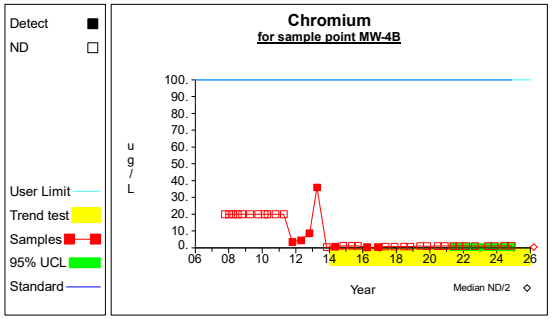


Graph 63

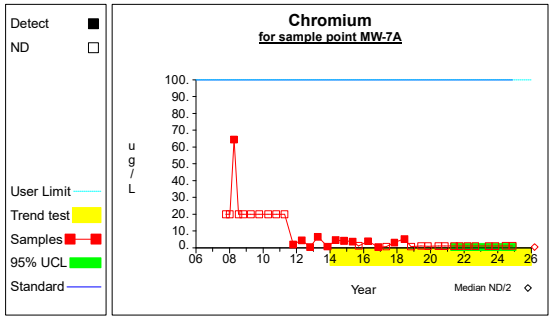
Confidence Limits (Assessment)



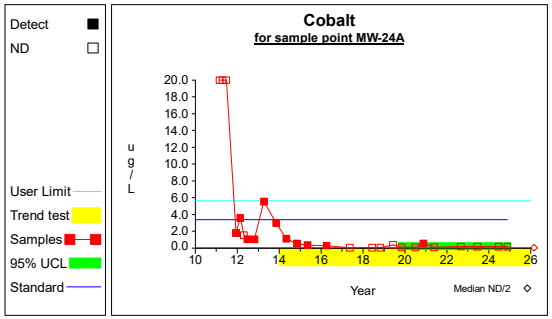
Graph 64



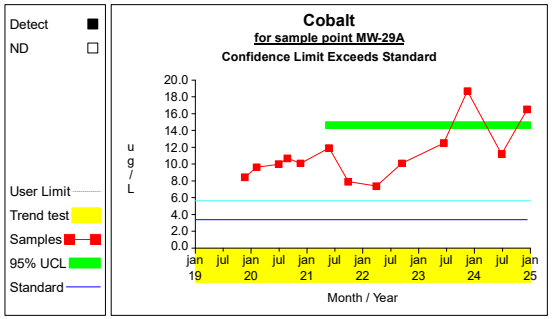
Graph 65



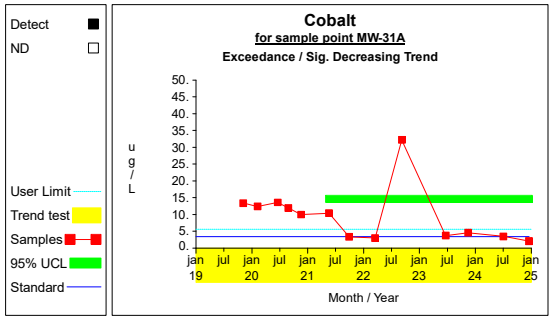
Graph 66



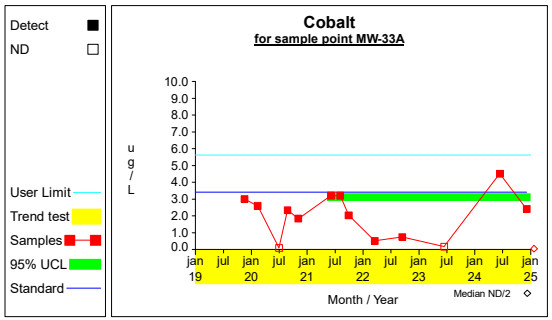
Graph 67



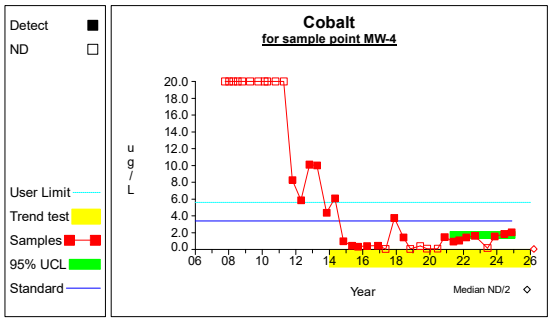
Graph 68



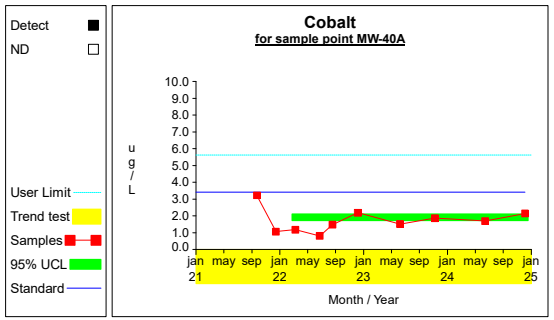
Graph 69



Graph 70

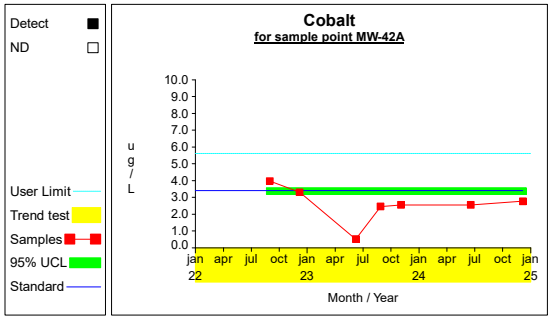


Graph 71

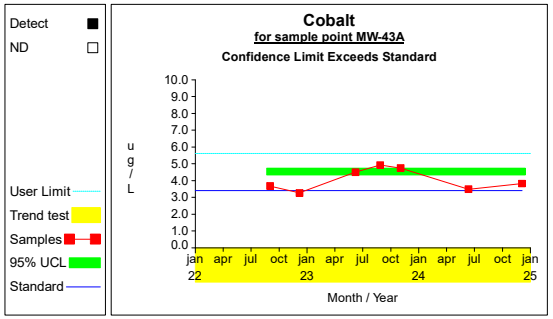


Graph 72

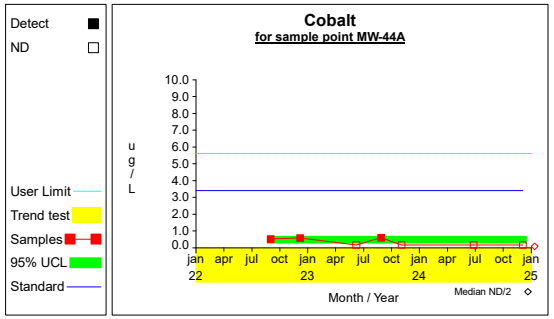
Confidence Limits (Assessment)



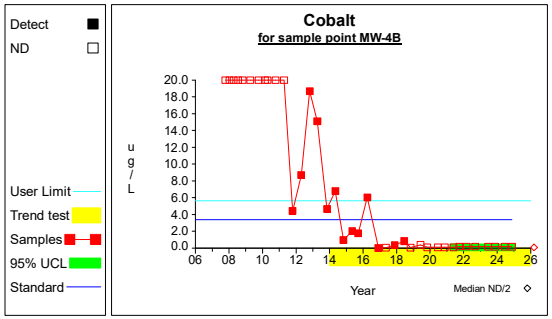
Graph 73



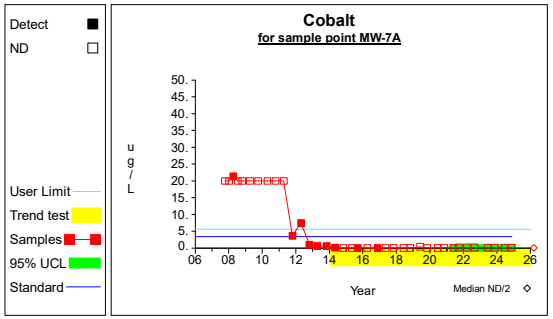
Graph 74



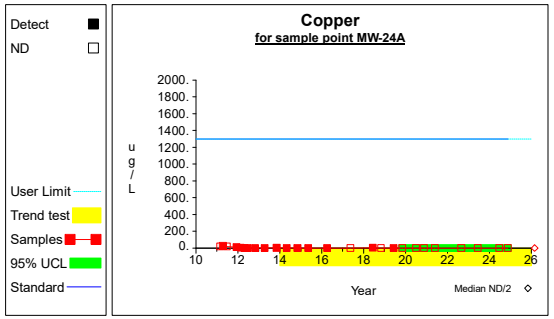
Graph 75



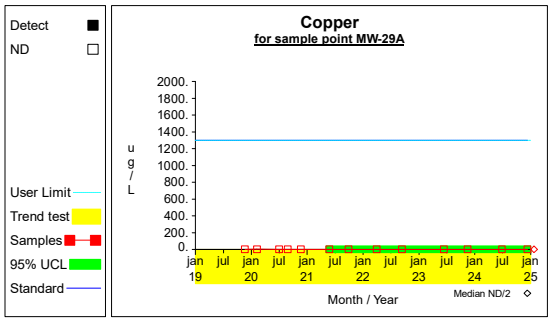
Graph 76



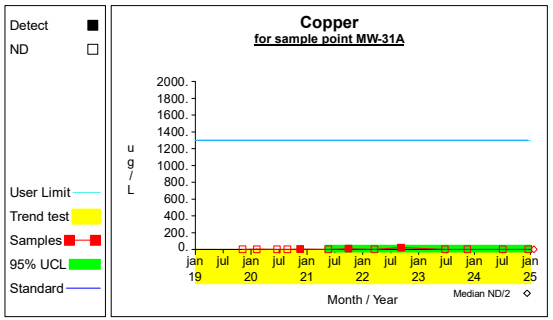
Graph 77



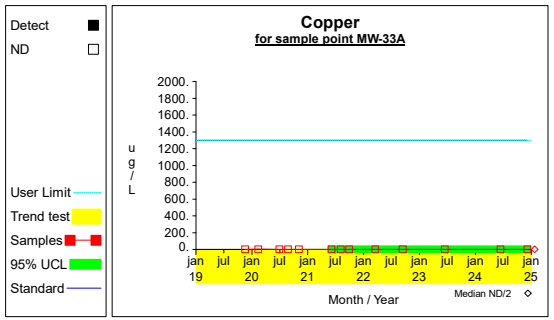
Graph 78



Graph 79

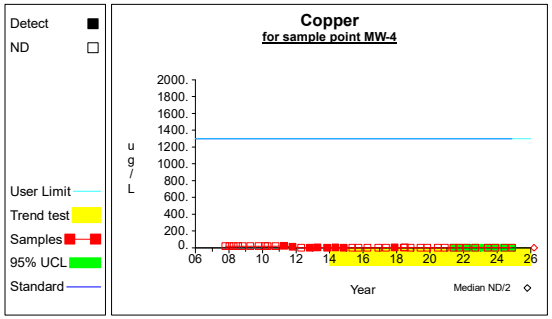


Graph 80

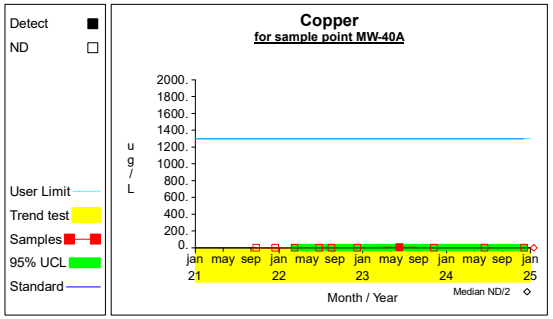


Graph 81

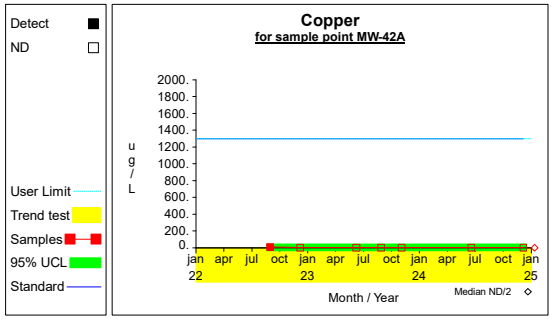
Confidence Limits (Assessment)



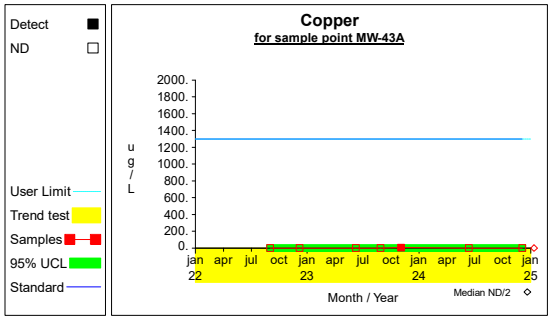
Graph 82



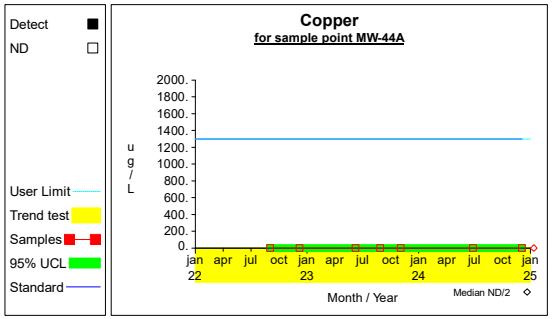
Graph 83



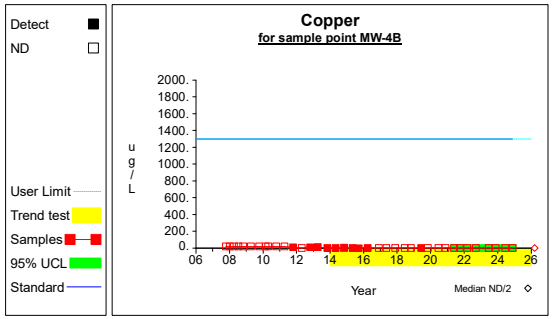
Graph 84



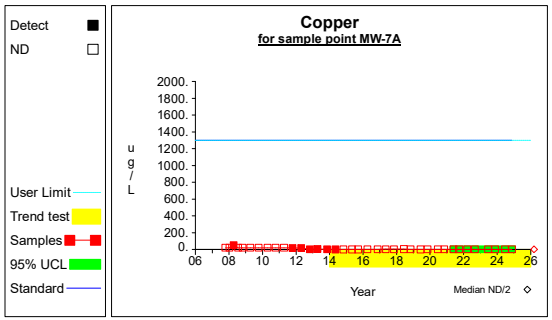
Graph 85



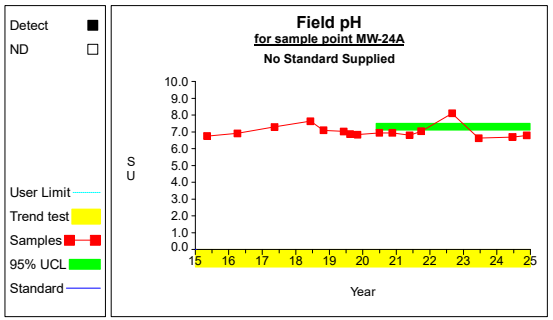
Graph 86



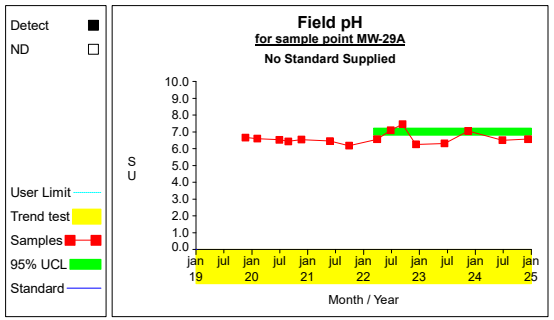
Graph 87



Graph 88

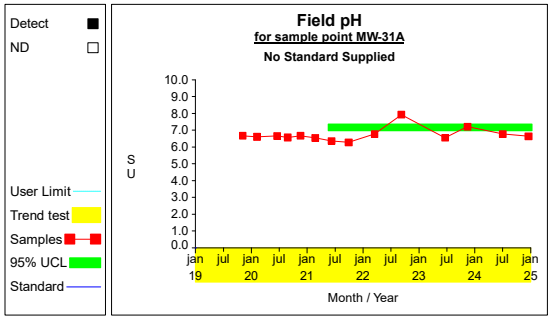


Graph 89

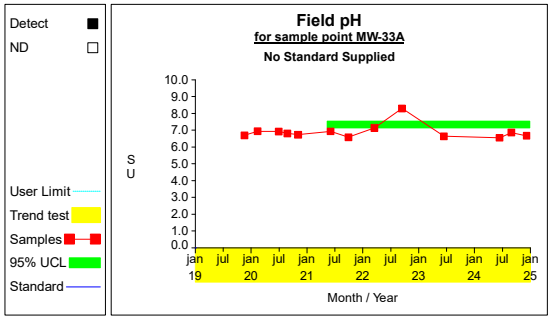


Graph 90

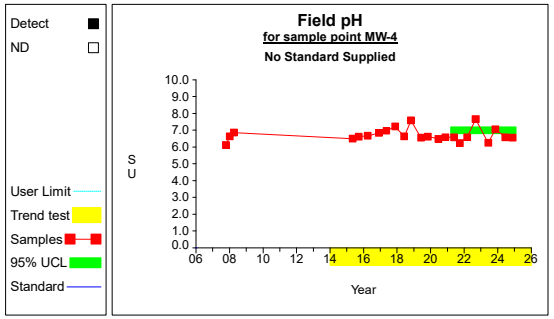
Confidence Limits (Assessment)



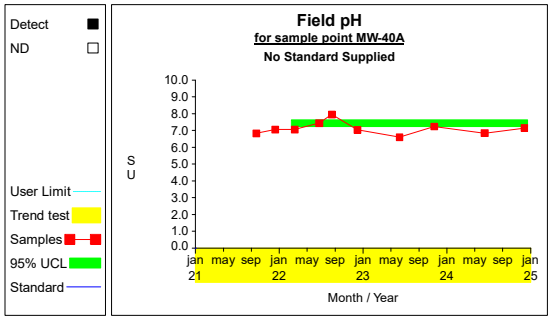
Graph 91



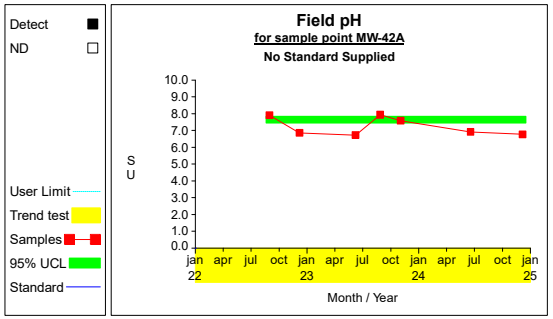
Graph 92



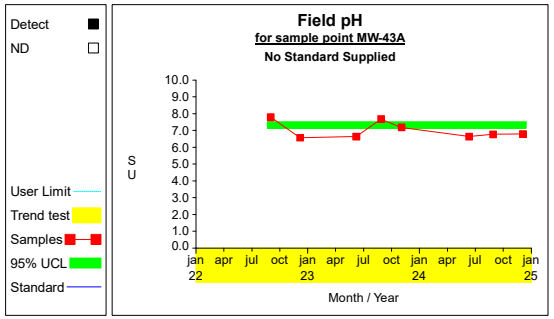
Graph 93



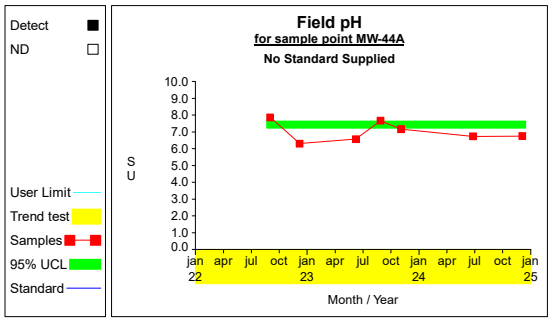
Graph 94



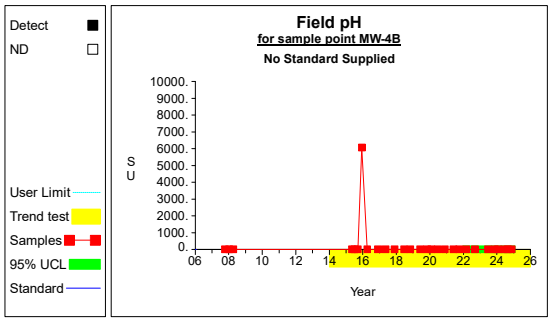
Graph 95



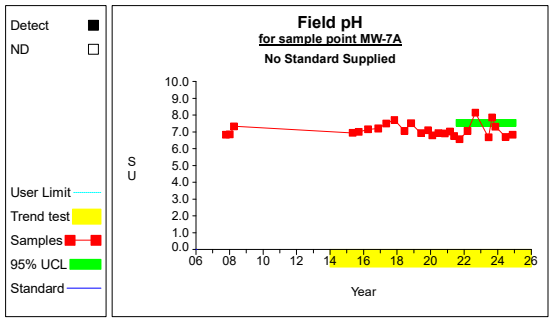
Graph 96



Graph 97

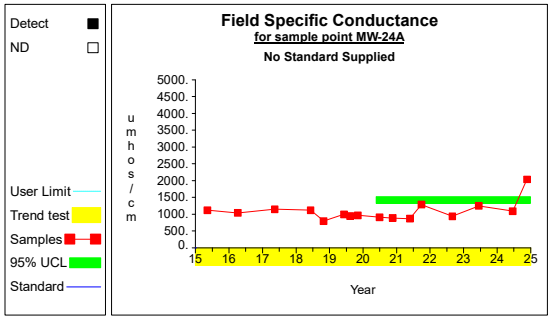


Graph 98

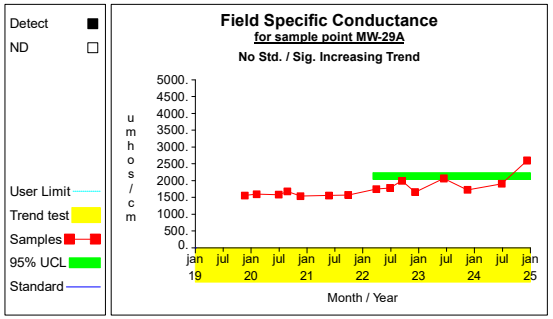


Graph 99

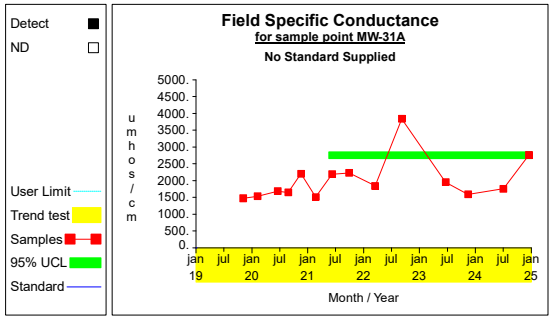
Confidence Limits (Assessment)



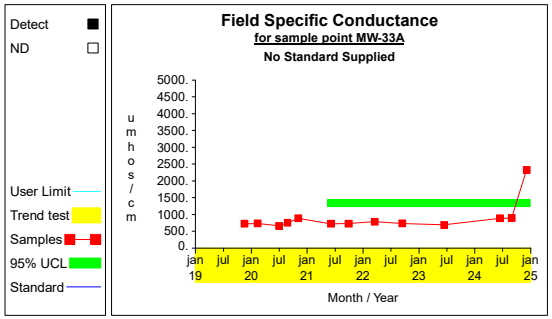
Graph 100



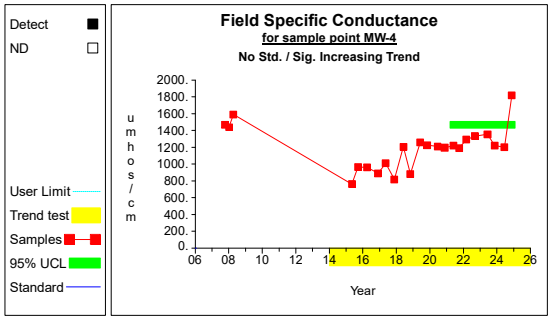
Graph 101



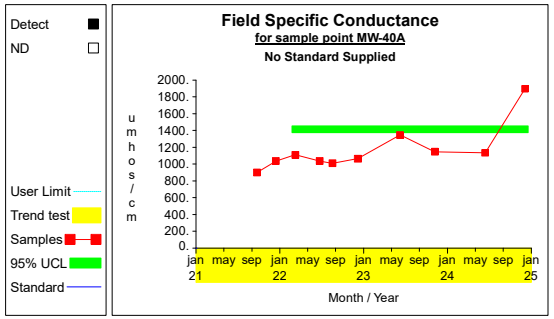
Graph 102



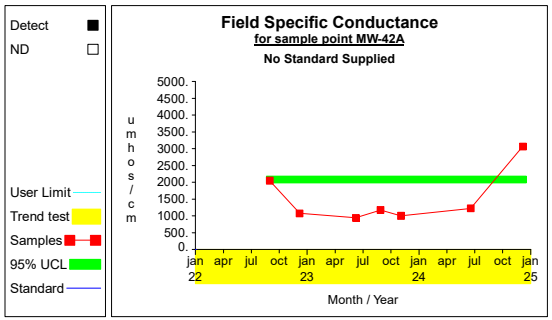
Graph 103



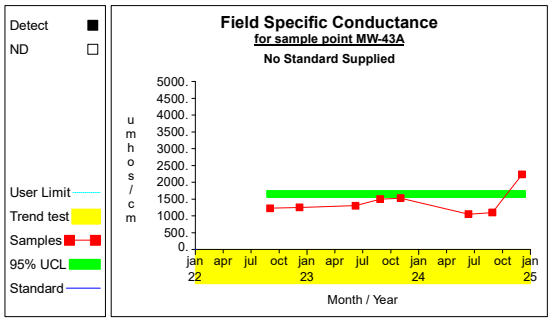
Graph 104



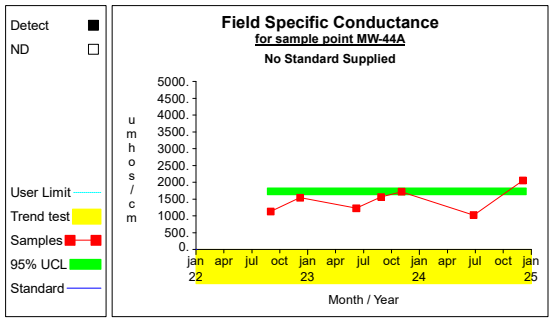
Graph 105



Graph 106

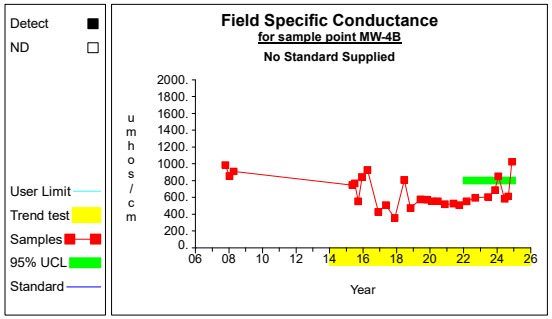


Graph 107

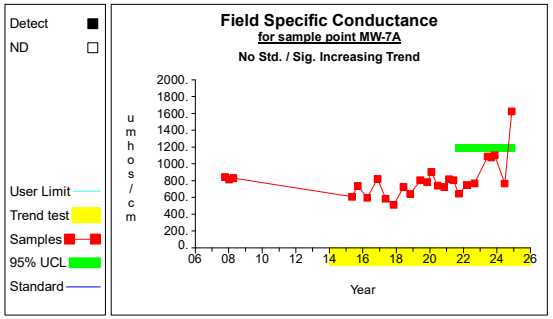


Graph 108

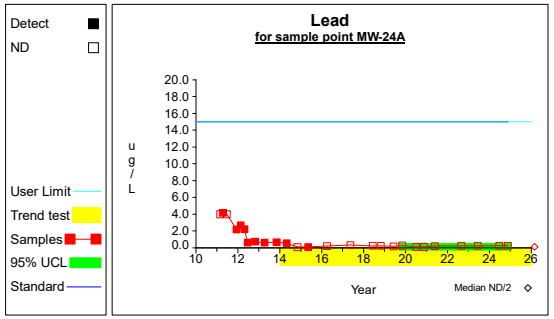
Confidence Limits (Assessment)



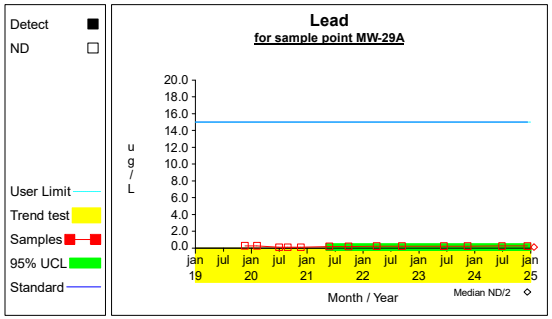
Graph 109



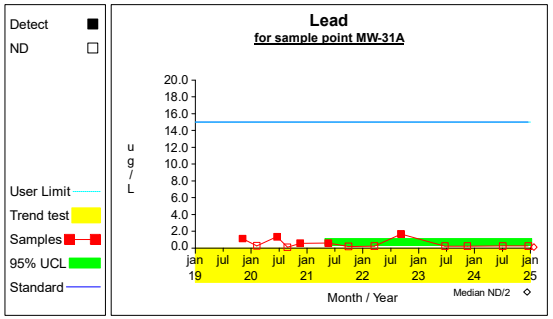
Graph 110



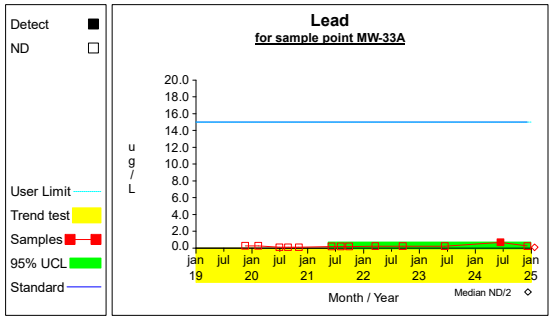
Graph 111



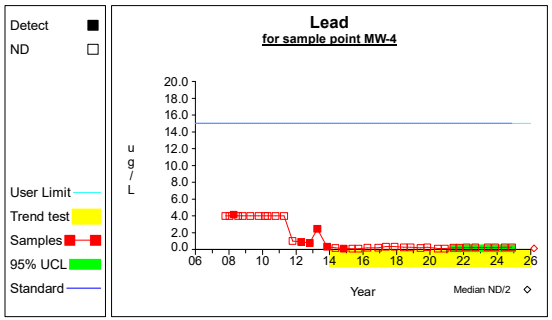
Graph 112



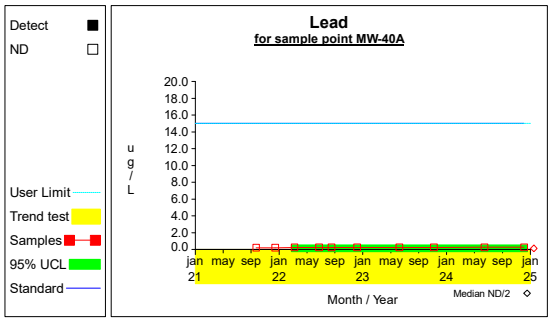
Graph 113



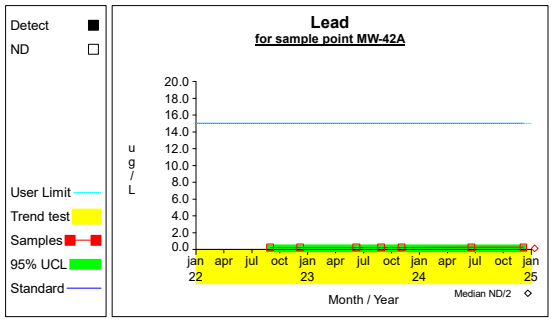
Graph 114



Graph 115

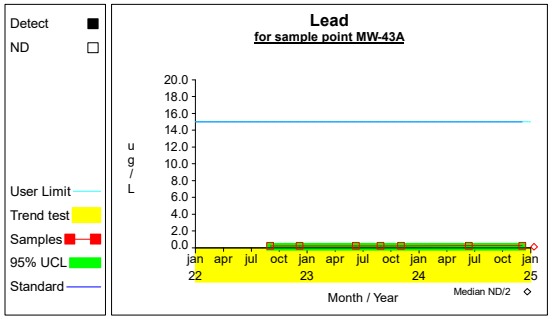


Graph 116

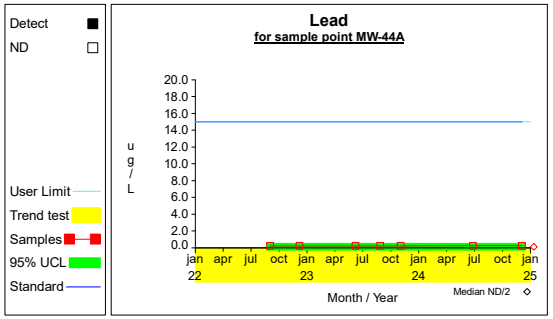


Graph 117

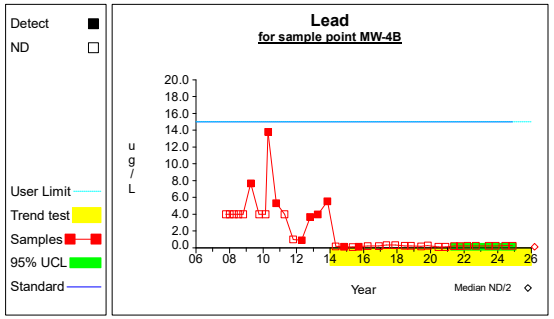
Confidence Limits (Assessment)



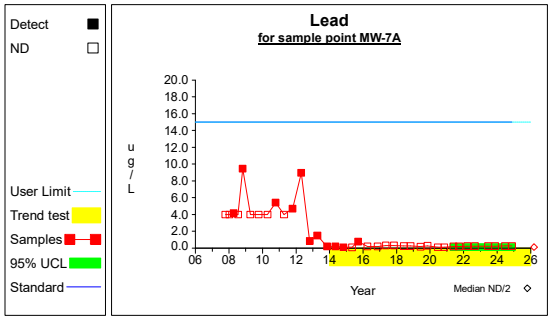
Graph 118



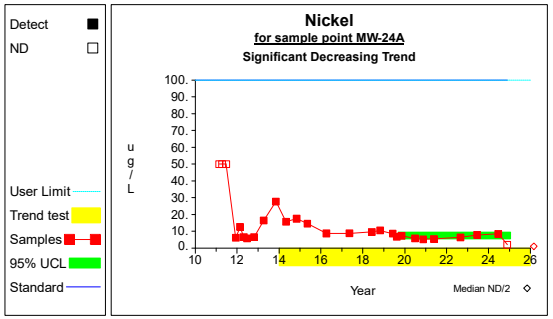
Graph 119



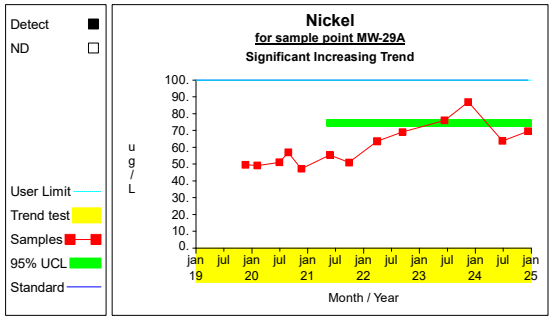
Graph 120



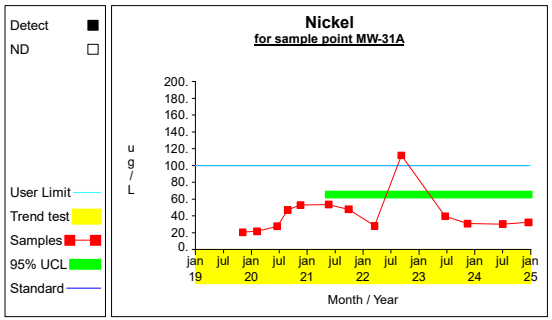
Graph 121



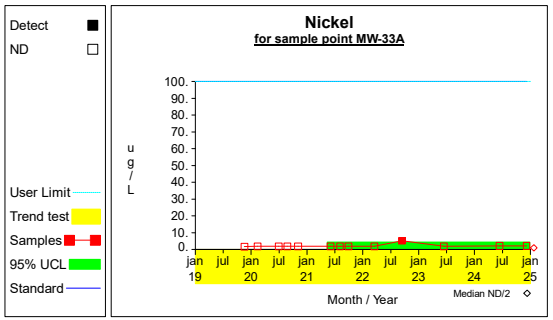
Graph 122



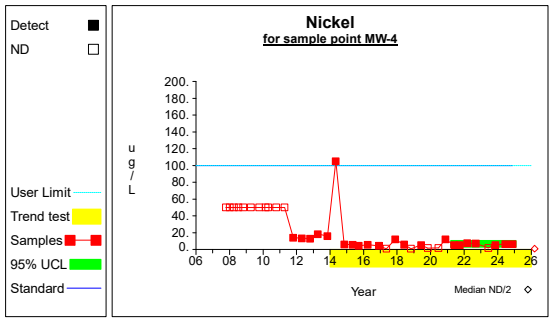
Graph 123



Graph 124

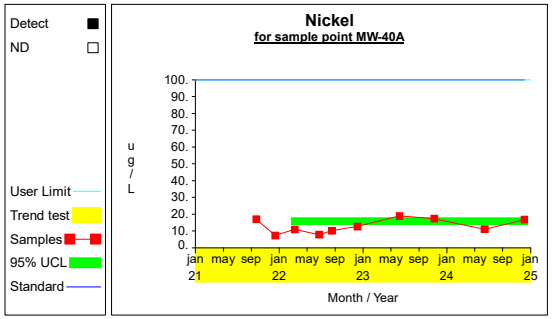


Graph 125

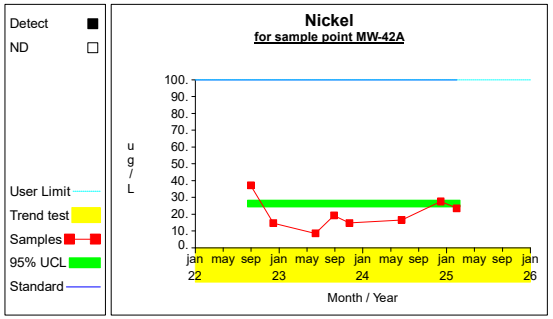


Graph 126

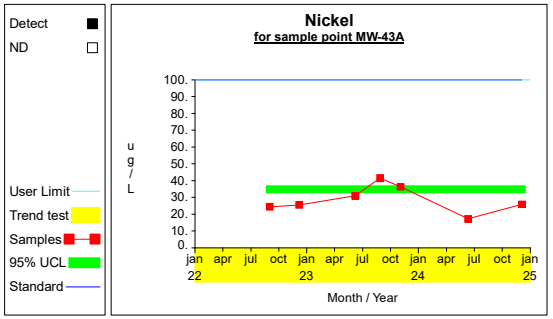
Confidence Limits (Assessment)



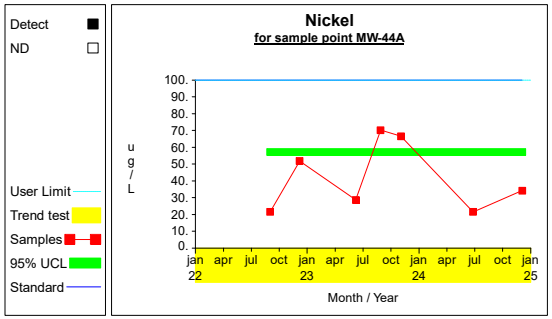
Graph 127



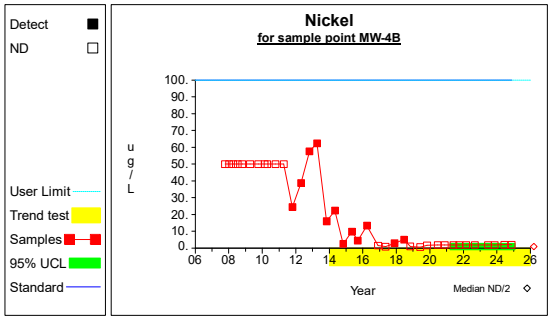
Graph 128



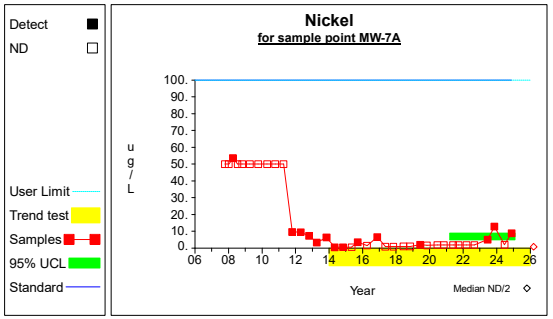
Graph 129



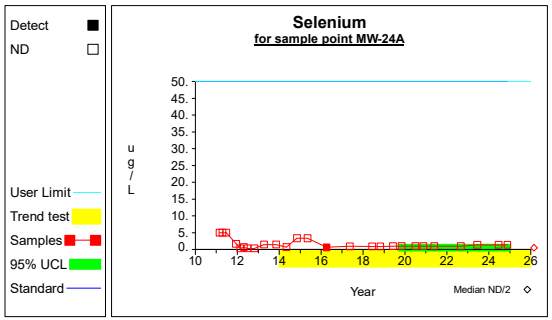
Graph 130



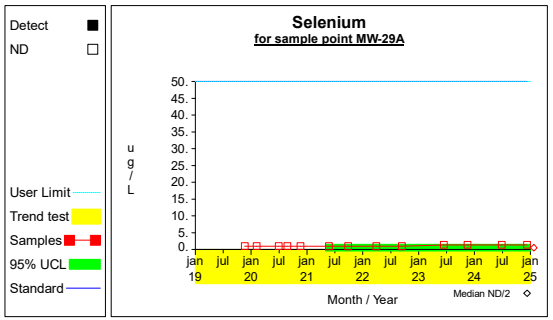
Graph 131



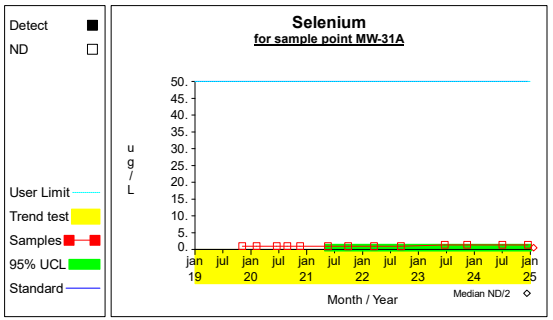
Graph 132



Graph 133

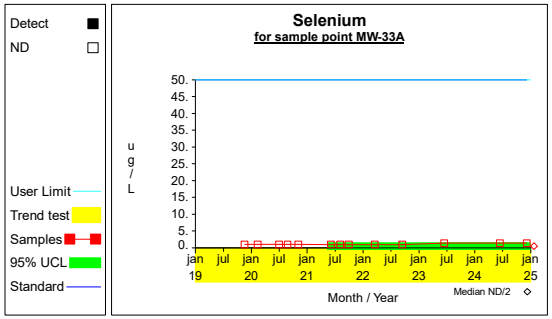


Graph 134

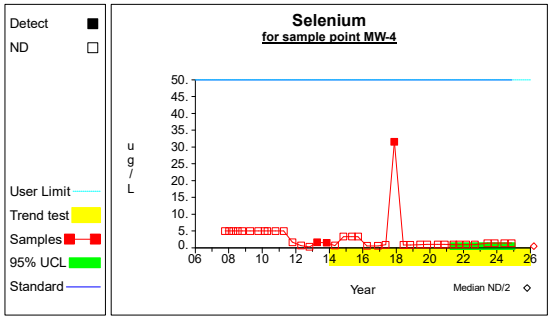


Graph 135

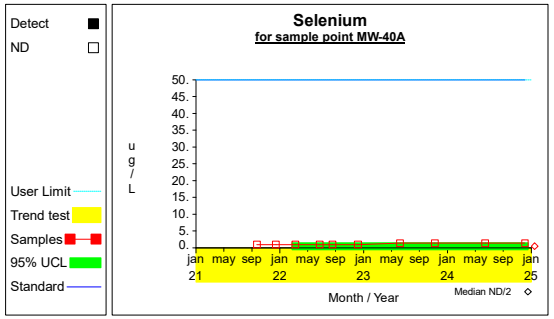
Confidence Limits (Assessment)



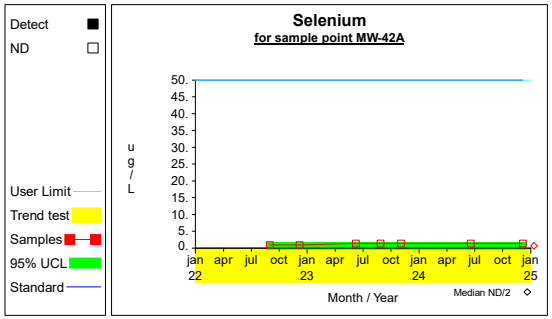
Graph 136



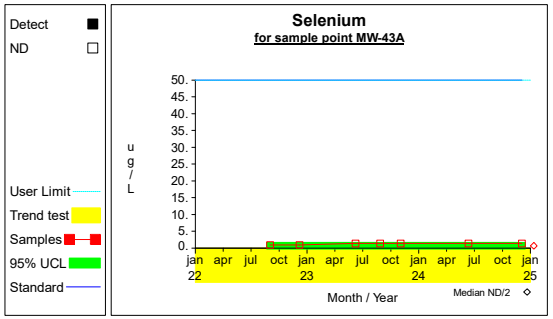
Graph 137



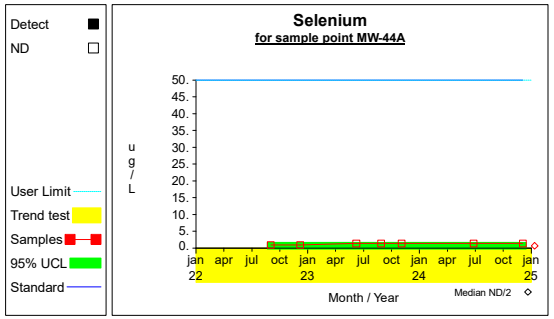
Graph 138



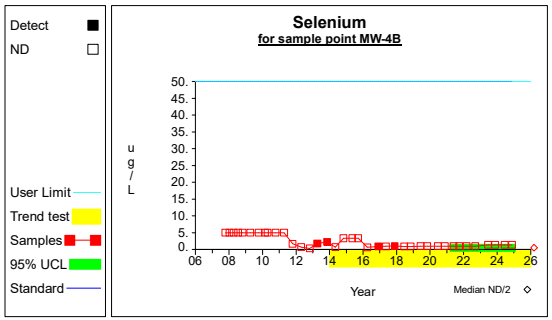
Graph 139



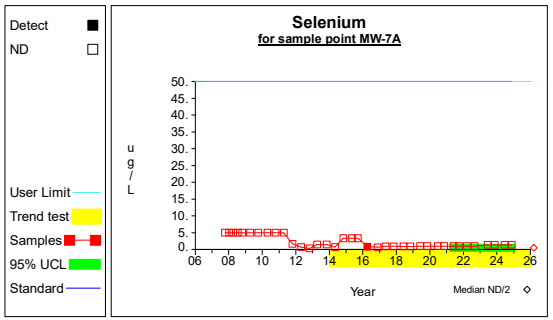
Graph 140



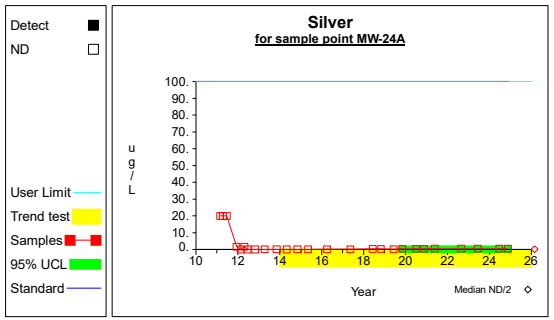
Graph 141



Graph 142

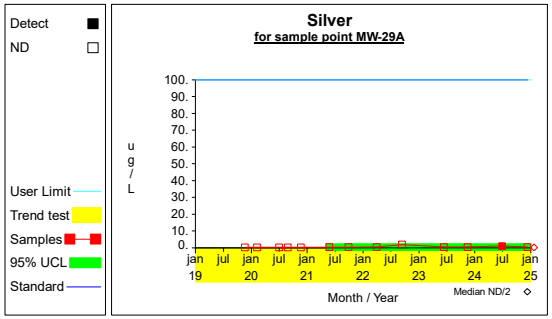


Graph 143

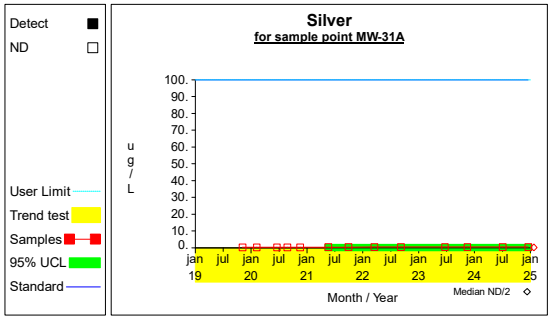


Graph 144

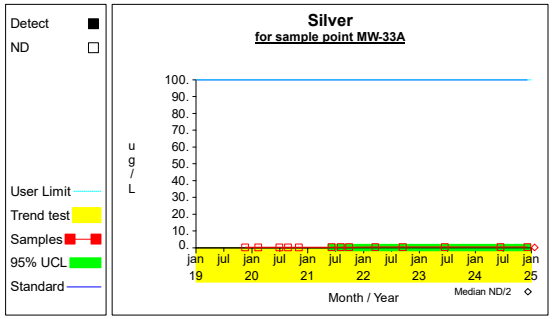
Confidence Limits (Assessment)



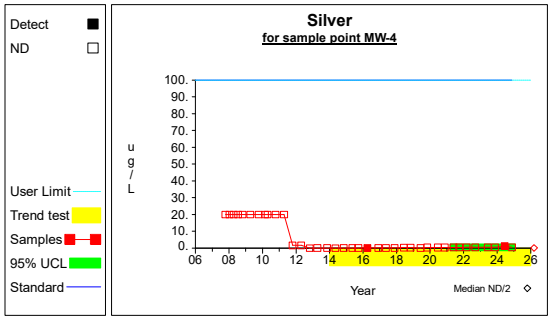
Graph 145



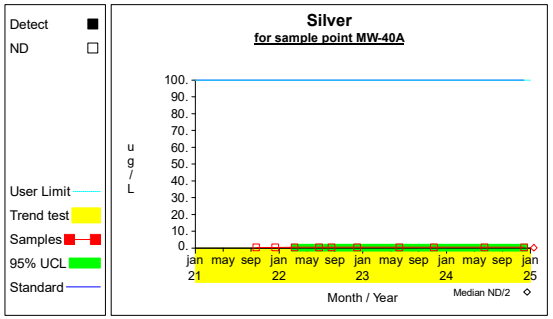
Graph 146



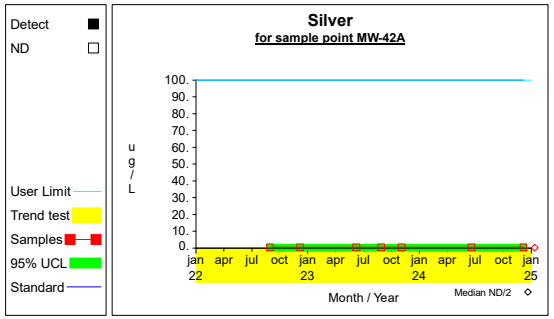
Graph 147



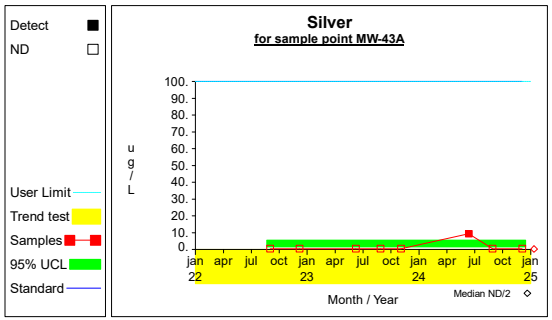
Graph 148



Graph 149



Graph 150



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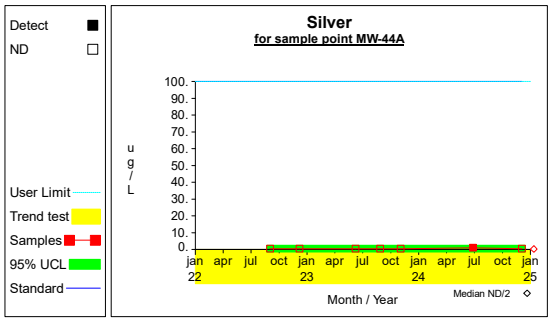
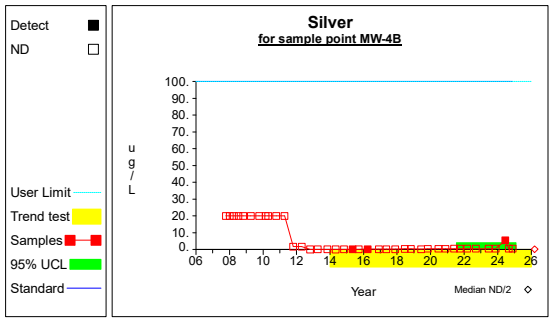
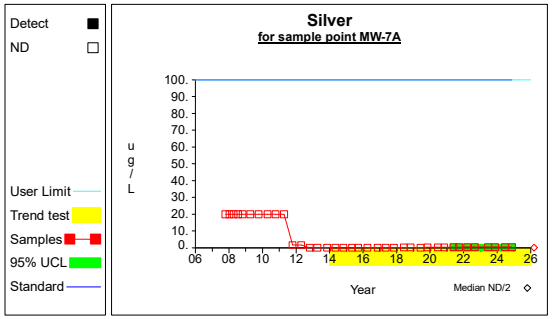


Graph 152

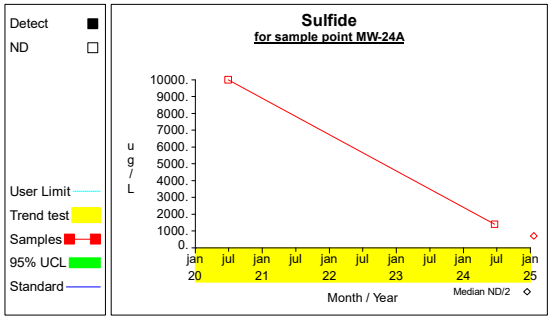


Graph 153

Confidence Limits (Assessment)



Graph 154



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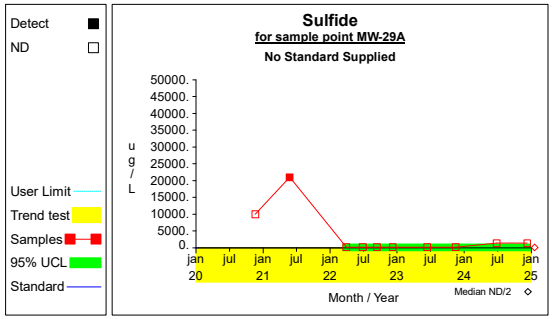

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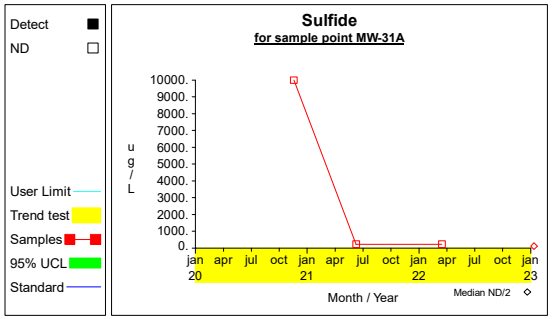

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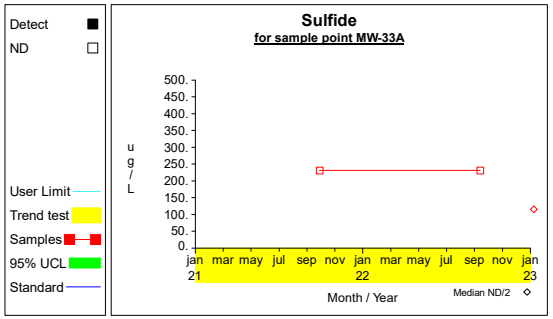
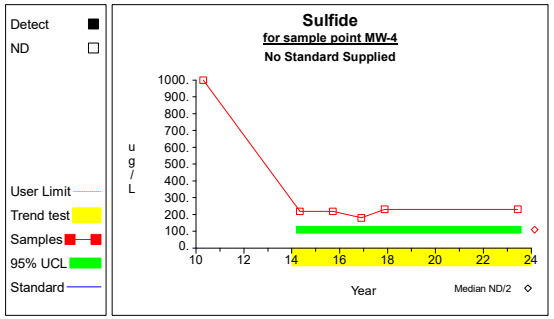
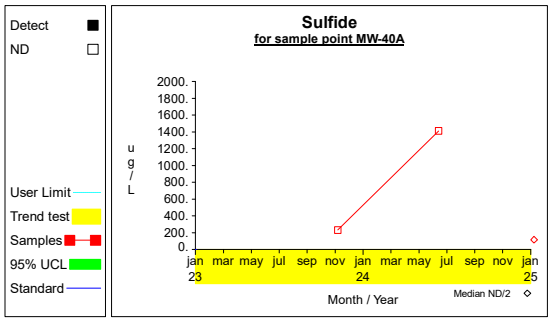


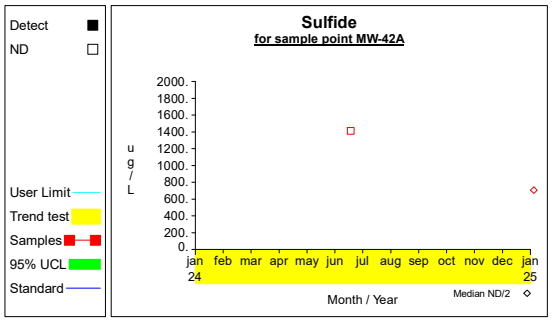
Graph 158



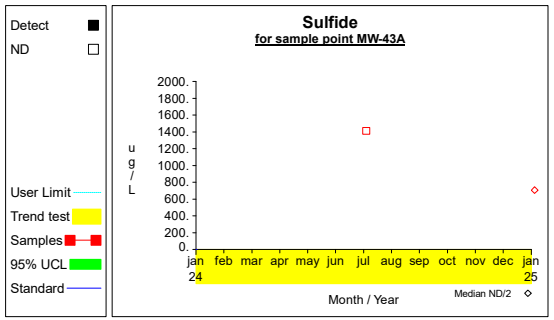
Graph 159



Graph 160

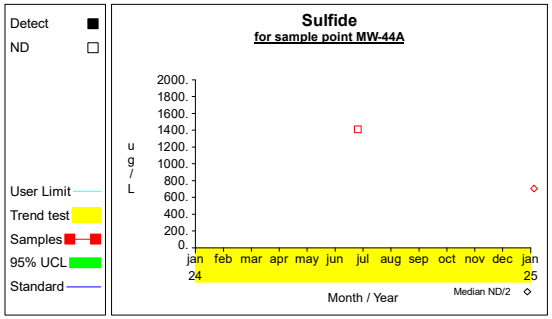


Graph 161

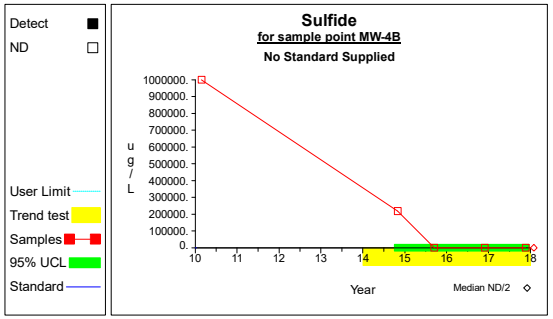


Graph 162

Confidence Limits (Assessment)



Graph 163



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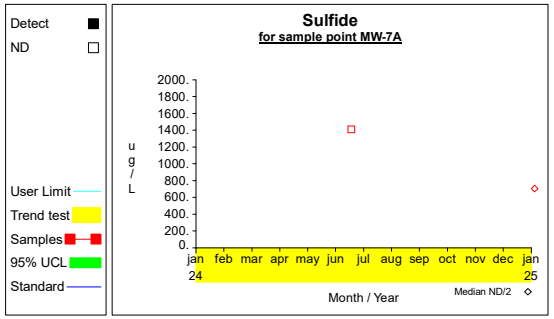

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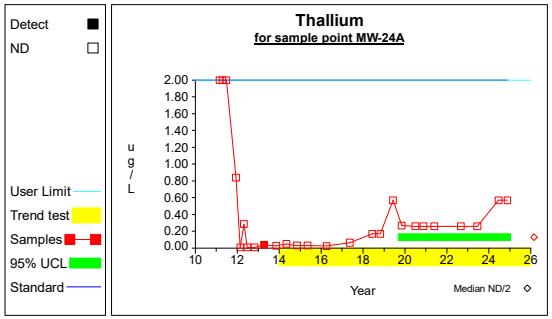
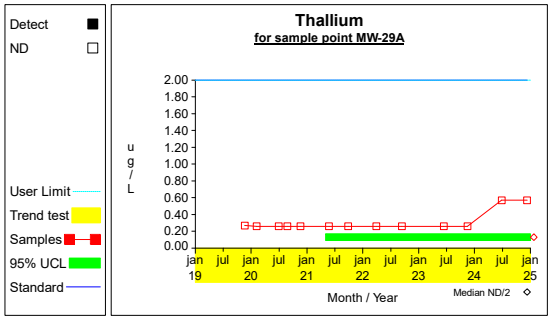
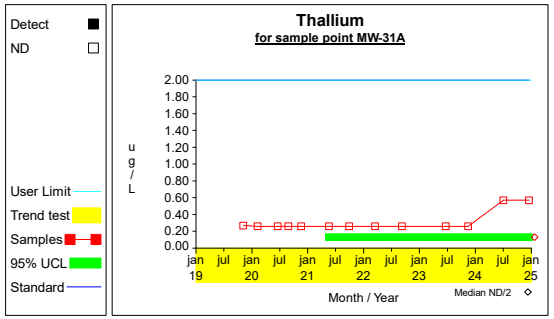


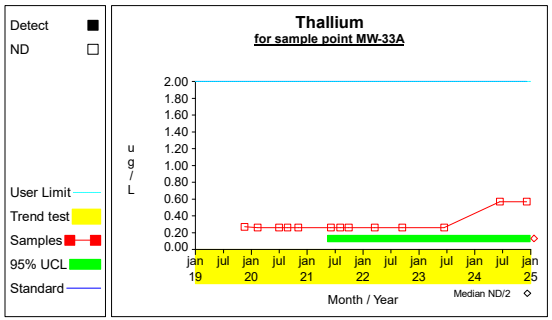
Graph 166



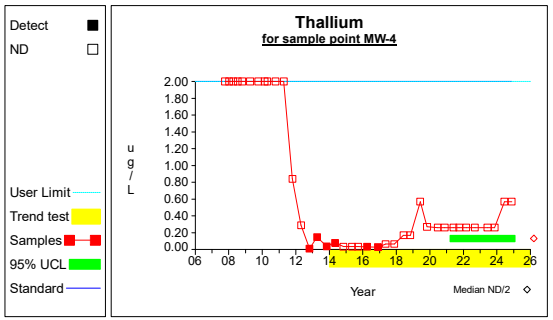
Graph 167



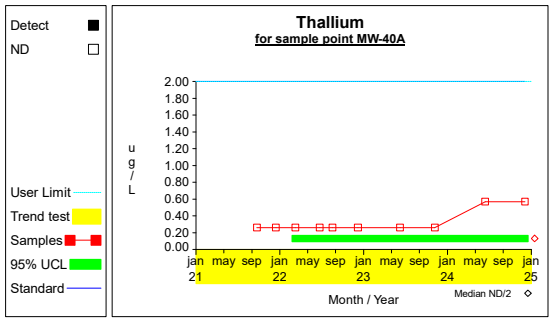
Graph 168



Graph 169

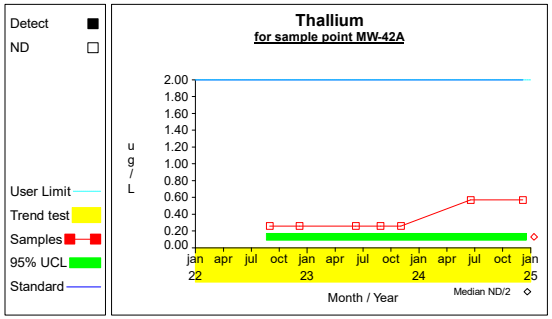


Graph 170

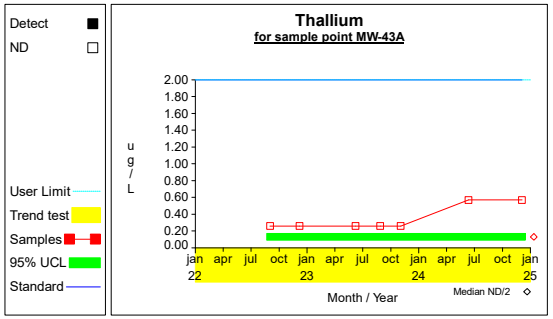


Graph 171

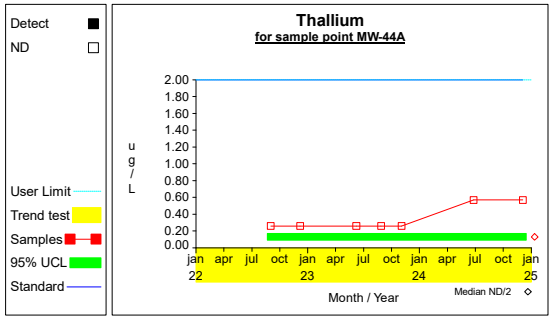
Confidence Limits (Assessment)



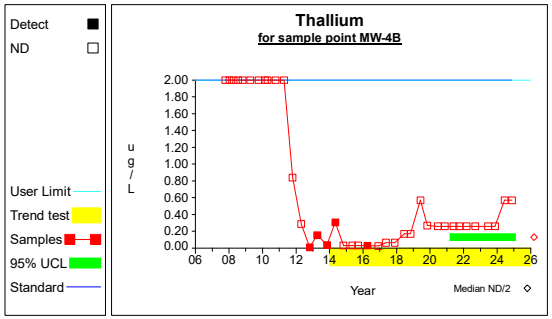
Graph 172



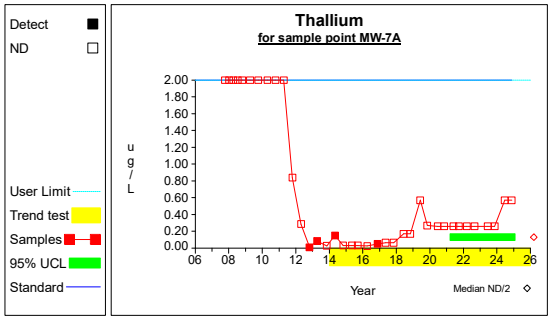
Graph 173



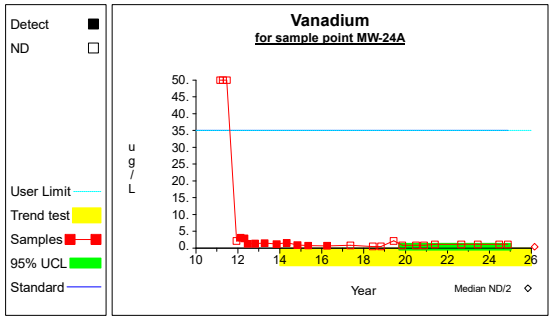
Graph 174



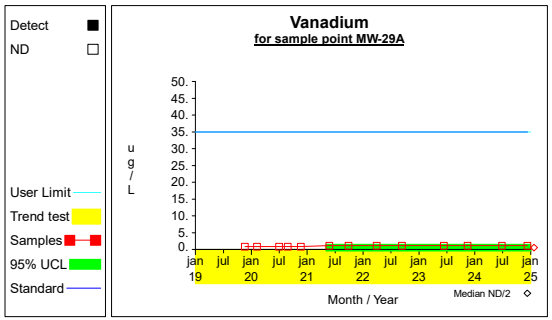
Graph 175



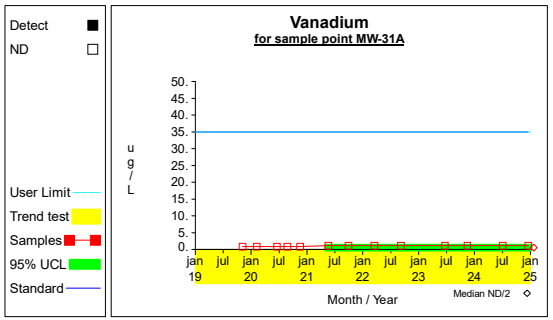
Graph 176



Graph 177



Graph 178



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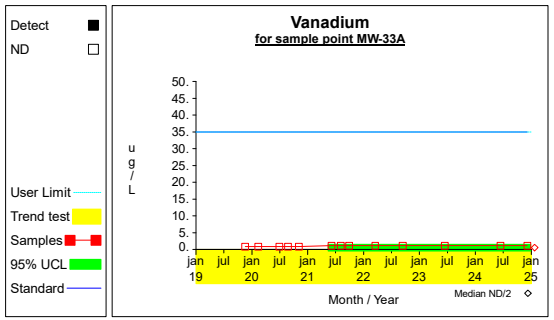
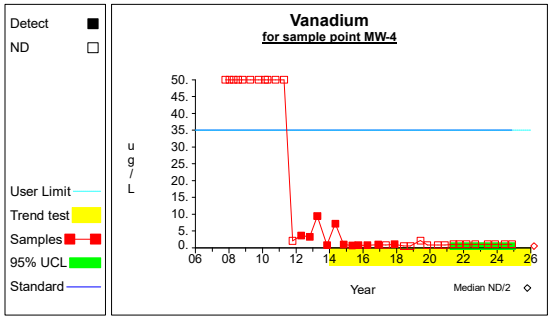
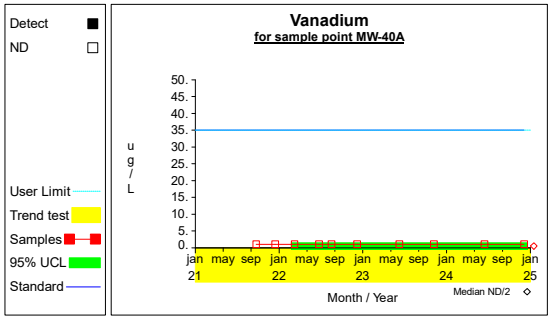


Graph 180

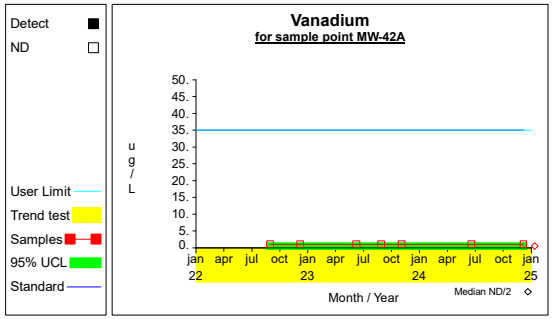
Confidence Limits (Assessment)



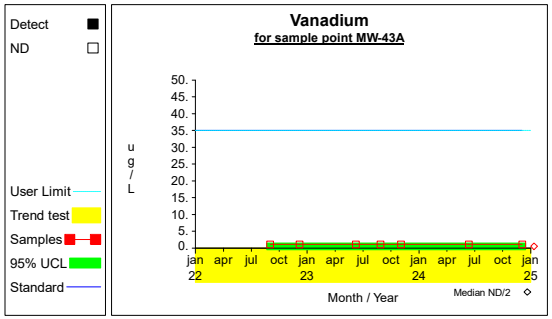
Graph 181



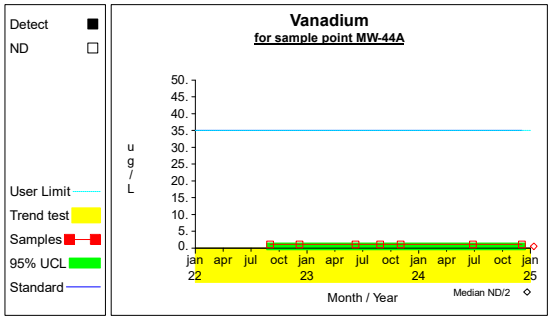
Graph 182



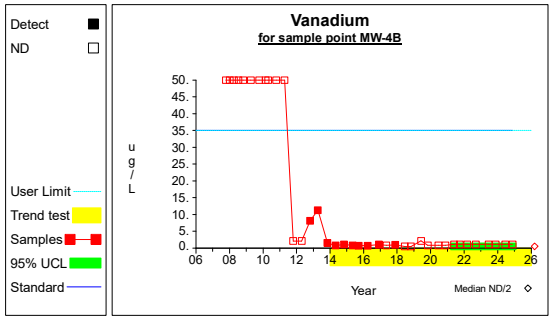
Graph 183



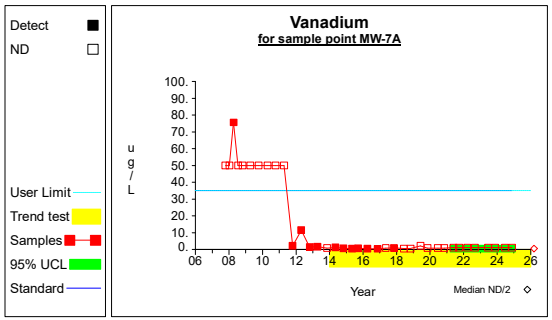
Graph 184



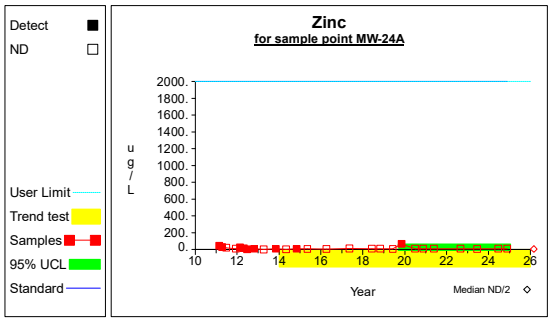
Graph 185



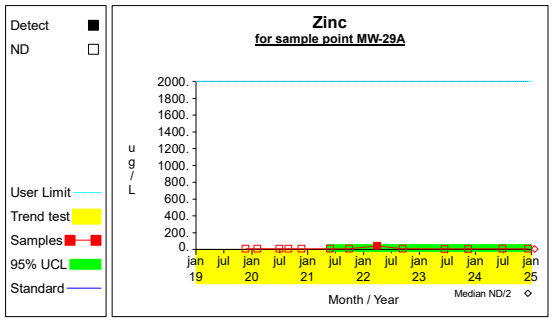
Graph 186



Graph 187

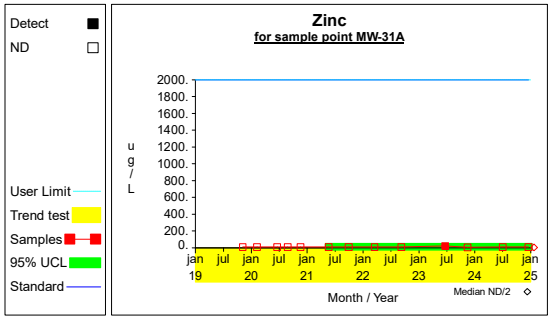


Graph 188

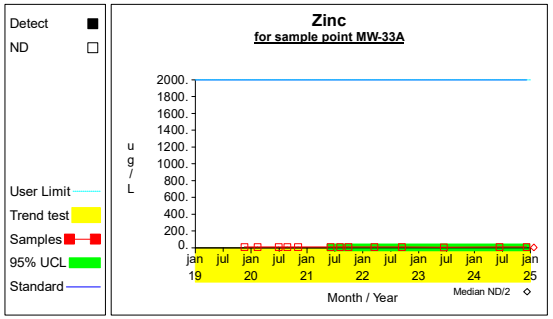


Graph 189

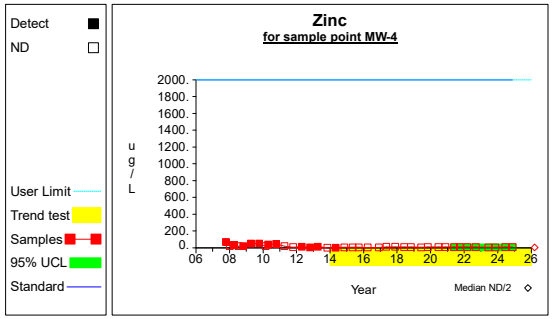
Confidence Limits (Assessment)



Graph 190



Graph 191



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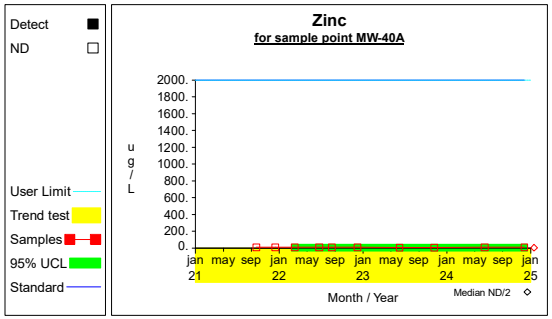

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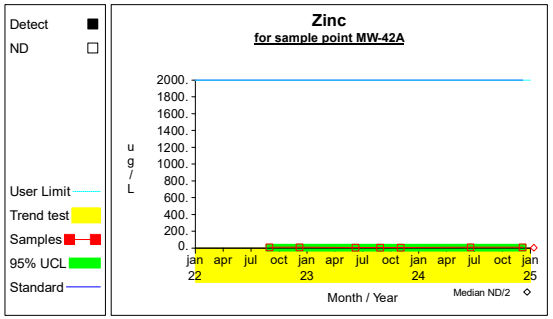
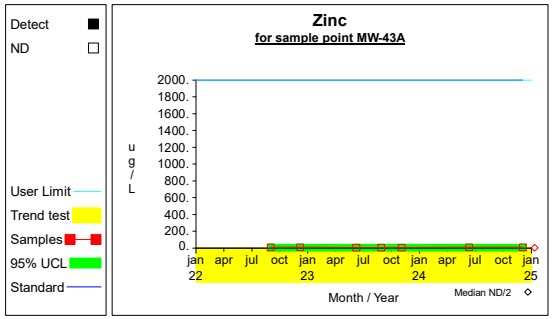
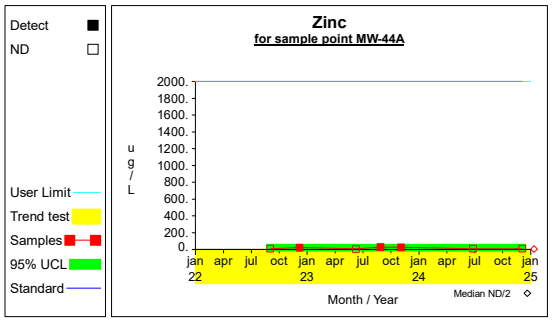


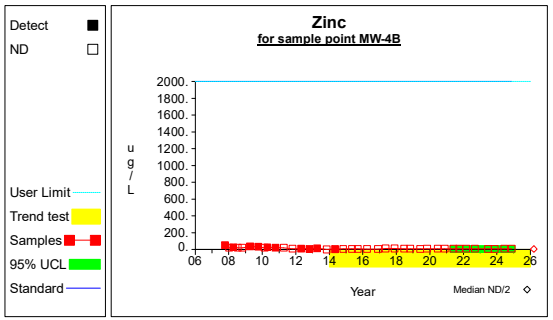
Graph 194



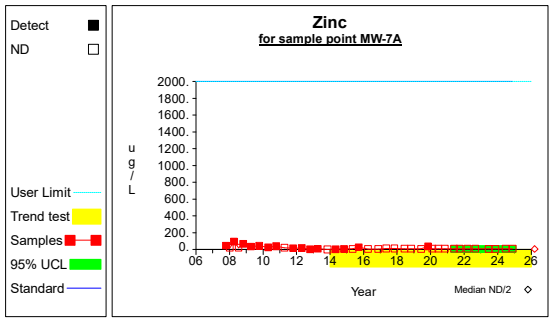
Graph 195



Graph 196



Graph 197



Graph 198

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Antimony	ug/L	MW-24A	8	0.472	0.613	0.670	0.061	0.883	6.000	
Antimony	ug/L	MW-29A	8	0.500	0.000	0.670	0.500	0.500	6.000	
Antimony	ug/L	MW-31A	8	0.579	0.663	0.670	0.135	1.023	6.000	
Antimony	ug/L	MW-33A	8	0.345	0.000	0.670	0.345	0.345	6.000	
Antimony	ug/L	MW-4	8	0.255	0.000	0.670	0.255	0.255	6.000	
Antimony	ug/L	MW-40A	8	0.500	0.000	0.670	0.500	0.500	6.000	
Antimony	ug/L	MW-42A	7	0.500	0.000	0.734	0.500	0.500	6.000	
Antimony	ug/L	MW-43A	7	0.500	0.000	0.734	0.500	0.500	6.000	
Antimony	ug/L	MW-44A	7	0.500	0.000	0.734	0.500	0.500	6.000	
Antimony	ug/L	MW-4B	8	0.255	0.000	0.670	0.255	0.255	6.000	
Antimony	ug/L	MW-7A	8	0.265	0.000	0.670	0.265	0.265	6.000	
Arsenic	ug/L	MW-24A	8	0.285	0.000	0.670	0.285	0.285	10.000	
Arsenic	ug/L	MW-29A	8	6.013	1.967	0.670	4.695	7.330	10.000	
Arsenic	ug/L	MW-31A	8	0.375	0.000	0.670	0.375	0.375	10.000	
Arsenic	ug/L	MW-33A	8	35.571	36.114	0.670	11.381	59.760	10.000	
Arsenic	ug/L	MW-4	8	0.336	0.000	0.670	0.336	0.336	10.000	
Arsenic	ug/L	MW-40A	8	0.375	0.000	0.670	0.375	0.375	10.000	
Arsenic	ug/L	MW-42A	7	0.650	1.019	0.734	0.000	1.398	10.000	
Arsenic	ug/L	MW-43A	7	7.849	1.300	0.734	6.894	8.803	10.000	
Arsenic	ug/L	MW-44A	7	0.265	0.000	0.734	0.265	0.265	10.000	
Arsenic	ug/L	MW-4B	8	0.336	0.000	0.670	0.336	0.336	10.000	
Arsenic	ug/L	MW-7A	8	0.336	0.000	0.670	0.336	0.336	10.000	
Barium	ug/L	MW-24A	8	117.850	17.431	0.670	106.175	129.525	2000.000	
Barium	ug/L	MW-29A	8	169.750	15.917	0.670	159.088	180.412	2000.000	

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Antimony	
Antimony	
Antimony	
Antimony	
Antimony	
Antimony	
Antimony	
Antimony	
Antimony	
Antimony	
Arsenic	
Arsenic	
Arsenic	
Arsenic	**
Arsenic	
Arsenic	
Arsenic	
Arsenic	
Arsenic	
Arsenic	
Arsenic	
Barium	
Barium	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Barium	ug/L	MW-31A	8	242.500	91.792	0.670	181.017	303.983	2000.000	
Barium	ug/L	MW-33A	8	168.125	44.257	0.670	138.481	197.769	2000.000	
Barium	ug/L	MW-4	8	455.875	131.681	0.670	367.673	544.077	2000.000	
Barium	ug/L	MW-40A	8	223.250	31.116	0.670	202.408	244.092	2000.000	dec
Barium	ug/L	MW-42A	7	144.914	66.603	0.734	96.021	193.808	2000.000	
Barium	ug/L	MW-43A	7	200.714	46.324	0.734	166.708	234.721	2000.000	
Barium	ug/L	MW-44A	7	189.286	45.080	0.734	156.192	222.380	2000.000	
Barium	ug/L	MW-4B	8	231.750	78.760	0.670	178.996	284.504	2000.000	
Barium	ug/L	MW-7A	8	270.738	139.415	0.670	177.356	364.119	2000.000	
Beryllium	ug/L	MW-24A	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-29A	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-31A	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-33A	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-4	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-40A	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-42A	7	0.165	0.000	0.734	0.165	0.165	4.000	
Beryllium	ug/L	MW-43A	7	0.165	0.000	0.734	0.165	0.165	4.000	
Beryllium	ug/L	MW-44A	7	0.165	0.000	0.734	0.165	0.165	4.000	
Beryllium	ug/L	MW-4B	8	0.135	0.000	0.670	0.135	0.135	4.000	
Beryllium	ug/L	MW-7A	8	0.135	0.000	0.670	0.135	0.135	4.000	
Cadmium	ug/L	MW-24A	8	0.080	0.108	0.670	0.008	0.152	5.000	
Cadmium	ug/L	MW-29A	8	0.028	0.000	0.670	0.028	0.028	5.000	
Cadmium	ug/L	MW-31A	8	0.509	0.690	0.670	0.047	0.972	5.000	
Cadmium	ug/L	MW-33A	8	0.036	0.029	0.670	0.016	0.055	5.000	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Barium Barium Barium Barium Barium Barium Barium Barium Barium	
Beryllium Beryllium Beryllium Beryllium Beryllium Beryllium Beryllium Beryllium Beryllium Beryllium	
Cadmium Cadmium Cadmium Cadmium	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Cadmium	ug/L	MW-4	8	0.081	0.081	0.670	0.026	0.135	5.000	
Cadmium	ug/L	MW-40A	8	0.028	0.000	0.670	0.028	0.028	5.000	
Cadmium	ug/L	MW-42A	7	0.083	0.087	0.734	0.019	0.147	5.000	
Cadmium	ug/L	MW-43A	7	0.050	0.000	0.734	0.050	0.050	5.000	
Cadmium	ug/L	MW-44A	7	0.284	0.285	0.734	0.075	0.493	5.000	
Cadmium	ug/L	MW-4B	8	0.030	0.000	0.670	0.030	0.030	5.000	
Cadmium	ug/L	MW-7A	8	0.028	0.000	0.670	0.028	0.028	5.000	
Chromium	ug/L	MW-24A	8	0.550	0.000	0.670	0.550	0.550	100.000	
Chromium	ug/L	MW-29A	8	0.550	0.000	0.670	0.550	0.550	100.000	
Chromium	ug/L	MW-31A	8	1.395	2.390	0.670	0.000	2.996	100.000	
Chromium	ug/L	MW-33A	8	0.550	0.000	0.670	0.550	0.550	100.000	
Chromium	ug/L	MW-4	8	0.550	0.000	0.670	0.550	0.550	100.000	
Chromium	ug/L	MW-40A	8	0.550	0.000	0.670	0.550	0.550	100.000	
Chromium	ug/L	MW-42A	7	0.550	0.000	0.734	0.550	0.550	100.000	
Chromium	ug/L	MW-43A	7	2.186	4.328	0.734	0.000	5.363	100.000	
Chromium	ug/L	MW-44A	7	0.550	0.000	0.734	0.550	0.550	100.000	
Chromium	ug/L	MW-4B	8	0.550	0.000	0.670	0.550	0.550	100.000	
Chromium	ug/L	MW-7A	8	0.550	0.000	0.670	0.550	0.550	100.000	
Cobalt	ug/L	MW-24A	8	0.111	0.185	0.670	0.000	0.235	3.400	
Cobalt	ug/L	MW-29A	8	12.023	3.924	0.670	9.394	14.651	3.400	
Cobalt	ug/L	MW-31A	8	7.865	10.159	0.670	1.060	14.670	3.400	dec
Cobalt	ug/L	MW-33A	8	2.079	1.555	0.670	1.037	3.121	3.400	
Cobalt	ug/L	MW-4	8	1.317	0.630	0.670	0.894	1.739	3.400	
Cobalt	ug/L	MW-40A	8	1.605	0.471	0.670	1.289	1.920	3.400	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Cadmium	
Cadmium	
Cadmium	
Cadmium	
Cadmium	
Cadmium	
Cadmium	
Chromium	
Chromium	
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Chromium	
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Chromium	
Chromium	
Chromium	
Cobalt	
Cobalt	**
Cobalt	**
Cobalt	
Cobalt	
Cobalt	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Cobalt	ug/L	MW-42A	7	2.594	1.064	0.734	1.813	3.375	3.400	
Cobalt	ug/L	MW-43A	7	4.066	0.656	0.734	3.584	4.547	3.400	
Cobalt	ug/L	MW-44A	7	0.294	0.261	0.734	0.102	0.485	3.400	
Cobalt	ug/L	MW-4B	8	0.085	0.000	0.670	0.085	0.085	3.400	
Cobalt	ug/L	MW-7A	8	0.045	0.000	0.670	0.045	0.046	3.400	
Copper	ug/L	MW-24A	8	0.900	0.000	0.670	0.900	0.900	1300.000	
Copper	ug/L	MW-29A	8	0.900	0.000	0.670	0.900	0.900	1300.000	
Copper	ug/L	MW-31A	8	4.567	7.450	0.670	0.000	9.557	1300.000	
Copper	ug/L	MW-33A	8	0.900	0.000	0.670	0.900	0.900	1300.000	
Copper	ug/L	MW-4	8	0.800	0.000	0.670	0.800	0.800	1300.000	
Copper	ug/L	MW-40A	8	1.751	2.408	0.670	0.139	3.364	1300.000	
Copper	ug/L	MW-42A	7	2.153	3.315	0.734	0.000	4.586	1300.000	
Copper	ug/L	MW-43A	7	1.686	2.079	0.734	0.160	3.212	1300.000	
Copper	ug/L	MW-44A	7	0.900	0.000	0.734	0.900	0.900	1300.000	
Copper	ug/L	MW-4B	8	0.900	0.000	0.670	0.900	0.900	1300.000	
Copper	ug/L	MW-7A	8	0.800	0.000	0.670	0.800	0.800	1300.000	
Field pH	SU	MW-24A	8	6.989	0.470	0.670	6.674	7.304		
Field pH	SU	MW-29A	8	6.724	0.426	0.670	6.438	7.009		
Field pH	SU	MW-31A	8	6.814	0.534	0.670	6.456	7.172		
Field pH	SU	MW-33A	8	6.959	0.578	0.670	6.572	7.346		
Field pH	SU	MW-4	8	6.690	0.467	0.670	6.377	7.003		
Field pH	SU	MW-40A	8	7.165	0.405	0.670	6.894	7.436		
Field pH	SU	MW-42A	7	7.247	0.545	0.734	6.847	7.647		
Field pH	SU	MW-43A	8	7.009	0.486	0.670	6.683	7.334		

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Cobalt	
Cobalt	**
Cobalt	
Cobalt	
Cobalt	
Copper	
Copper	
Copper	
Copper	
Copper	
Copper	
Copper	
Copper	
Copper	
Copper	
Field pH	
Field pH	
Field pH	
Field pH	
Field pH	
Field pH	
Field pH	
Field pH	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Field pH	SU	MW-44A	7	7.004	0.579	0.734	6.579	7.429		
Field pH	SU	MW-4B	8	6.941	0.465	0.670	6.630	7.253		
Field pH	SU	MW-7A	8	7.140	0.583	0.670	6.750	7.530		
Field Specific Conductance	umhos/cm	MW-24A	8	1159.845	391.046	0.670	897.917	1421.773		
Field Specific Conductance	umhos/cm	MW-29A	8	1935.613	302.012	0.670	1733.321	2137.904		inc
Field Specific Conductance	umhos/cm	MW-31A	8	2271.938	728.405	0.670	1784.042	2759.833		
Field Specific Conductance	umhos/cm	MW-33A	8	973.610	552.844	0.670	603.308	1343.912		
Field Specific Conductance	umhos/cm	MW-4	8	1329.163	206.789	0.670	1190.653	1467.672		inc
Field Specific Conductance	umhos/cm	MW-40A	8	1218.663	292.646	0.670	1022.644	1414.681		
Field Specific Conductance	umhos/cm	MW-42A	7	1502.973	781.654	0.734	929.155	2076.791		
Field Specific Conductance	umhos/cm	MW-43A	8	1398.088	377.295	0.670	1145.370	1650.805		
Field Specific Conductance	umhos/cm	MW-44A	7	1463.571	362.641	0.734	1197.354	1729.789		
Field Specific Conductance	umhos/cm	MW-4B	8	690.099	164.706	0.670	579.777	800.421		
Field Specific Conductance	umhos/cm	MW-7A	8	977.389	318.808	0.670	763.847	1190.930		inc
Lead	ug/L	MW-24A	8	0.120	0.000	0.670	0.120	0.120	15.000	
Lead	ug/L	MW-29A	8	0.120	0.000	0.670	0.120	0.120	15.000	
Lead	ug/L	MW-31A	8	0.376	0.554	0.670	0.005	0.747	15.000	
Lead	ug/L	MW-33A	8	0.178	0.208	0.670	0.039	0.317	15.000	
Lead	ug/L	MW-4	8	0.120	0.000	0.670	0.120	0.120	15.000	
Lead	ug/L	MW-40A	8	0.120	0.000	0.670	0.120	0.120	15.000	
Lead	ug/L	MW-42A	7	0.120	0.000	0.734	0.120	0.120	15.000	
Lead	ug/L	MW-43A	7	0.120	0.000	0.734	0.120	0.120	15.000	
Lead	ug/L	MW-44A	7	0.120	0.000	0.734	0.120	0.120	15.000	
Lead	ug/L	MW-4B	8	0.120	0.000	0.670	0.120	0.120	15.000	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Field pH Field pH Field pH	
Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance Field Specific Conductance	
Lead Lead Lead Lead Lead Lead Lead Lead Lead Lead	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Lead	ug/L	MW-7A	8	0.120	0.000	0.670	0.120	0.120	15.000	
Nickel	ug/L	MW-24A	8	5.980	2.306	0.670	4.435	7.525	100.000	dec
Nickel	ug/L	MW-29A	8	66.962	11.349	0.670	59.361	74.564	100.000	inc
Nickel	ug/L	MW-31A	8	46.788	27.862	0.670	28.125	65.450	100.000	
Nickel	ug/L	MW-33A	8	1.476	1.488	0.670	0.479	2.473	100.000	
Nickel	ug/L	MW-4	8	5.461	2.054	0.670	4.085	6.837	100.000	
Nickel	ug/L	MW-40A	8	13.256	3.988	0.670	10.585	15.928	100.000	
Nickel	ug/L	MW-42A	8	20.290	8.959	0.670	14.289	26.291	100.000	
Nickel	ug/L	MW-43A	7	28.871	8.105	0.734	22.922	34.821	100.000	
Nickel	ug/L	MW-44A	7	42.114	20.665	0.734	26.944	57.285	100.000	
Nickel	ug/L	MW-4B	8	0.950	0.000	0.670	0.950	0.950	100.000	
Nickel	ug/L	MW-7A	8	3.871	4.649	0.670	0.757	6.985	100.000	
Selenium	ug/L	MW-24A	8	0.500	0.000	0.670	0.500	0.500	50.000	
Selenium	ug/L	MW-29A	8	0.500	0.000	0.670	0.500	0.500	50.000	
Selenium	ug/L	MW-31A	8	0.500	0.000	0.670	0.500	0.500	50.000	
Selenium	ug/L	MW-33A	8	0.500	0.000	0.670	0.500	0.500	50.000	
Selenium	ug/L	MW-4	8	0.491	0.000	0.670	0.491	0.491	50.000	
Selenium	ug/L	MW-40A	8	0.480	0.000	0.670	0.480	0.480	50.000	
Selenium	ug/L	MW-42A	7	0.700	0.000	0.734	0.700	0.700	50.000	
Selenium	ug/L	MW-43A	7	0.700	0.000	0.734	0.700	0.700	50.000	
Selenium	ug/L	MW-44A	7	0.700	0.000	0.734	0.700	0.700	50.000	
Selenium	ug/L	MW-4B	8	0.491	0.000	0.670	0.491	0.491	50.000	
Selenium	ug/L	MW-7A	8	0.491	0.000	0.670	0.491	0.491	50.000	
Silver	ug/L	MW-24A	8	0.150	0.000	0.670	0.150	0.150	100.000	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Lead	
Nickel Nickel Nickel Nickel Nickel Nickel Nickel Nickel Nickel Nickel Nickel	
Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium	
Silver	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Silver	ug/L	MW-29A	8	0.321	0.315	0.670	0.110	0.532	100.000	
Silver	ug/L	MW-31A	8	0.210	0.000	0.670	0.210	0.210	100.000	
Silver	ug/L	MW-33A	8	0.210	0.000	0.670	0.210	0.210	100.000	
Silver	ug/L	MW-4	8	0.283	0.375	0.670	0.031	0.534	100.000	
Silver	ug/L	MW-40A	8	0.245	0.000	0.670	0.245	0.245	100.000	
Silver	ug/L	MW-42A	7	0.250	0.000	0.734	0.250	0.250	100.000	
Silver	ug/L	MW-43A	8	1.389	3.221	0.670	0.000	3.546	100.000	
Silver	ug/L	MW-44A	7	0.359	0.287	0.734	0.148	0.569	100.000	
Silver	ug/L	MW-4B	8	0.833	1.833	0.670	0.000	2.061	100.000	
Silver	ug/L	MW-7A	8	0.150	0.000	0.670	0.150	0.150	100.000	
Sulfide	ug/L	MW-24A	2							
Sulfide	ug/L	MW-29A	8	115.500	0.000	0.670	115.500	115.500		
Sulfide	ug/L	MW-31A	3							
Sulfide	ug/L	MW-33A	2							
Sulfide	ug/L	MW-4	5	109.500	0.000	0.953	109.500	109.500		
Sulfide	ug/L	MW-40A	2							
Sulfide	ug/L	MW-42A	1							
Sulfide	ug/L	MW-43A	1							
Sulfide	ug/L	MW-44A	1							
Sulfide	ug/L	MW-4B	4	109.500	0.000	1.176	109.500	109.500		
Sulfide	ug/L	MW-7A	1							
Thallium	ug/L	MW-24A	8	0.130	0.000	0.670	0.130	0.130	2.000	
Thallium	ug/L	MW-29A	8	0.130	0.000	0.670	0.130	0.130	2.000	
Thallium	ug/L	MW-31A	8	0.130	0.000	0.670	0.130	0.130	2.000	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Silver	
Silver	
Silver	
Silver	
Silver	
Silver	
Silver	
Silver	
Silver	
Silver	
Sulfide	*
Sulfide	
Sulfide	*
Sulfide	*
Sulfide	
Sulfide	*
Sulfide	*
Sulfide	*
Sulfide	*
Sulfide	
Sulfide	*
Thallium	
Thallium	
Thallium	

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Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Thallium	ug/L	MW-33A	8	0.130	0.000	0.670	0.130	0.130	2.000	
Thallium	ug/L	MW-4	8	0.130	0.000	0.670	0.130	0.130	2.000	
Thallium	ug/L	MW-40A	8	0.130	0.000	0.670	0.130	0.130	2.000	
Thallium	ug/L	MW-42A	7	0.130	0.000	0.734	0.130	0.130	2.000	
Thallium	ug/L	MW-43A	7	0.130	0.000	0.734	0.130	0.130	2.000	
Thallium	ug/L	MW-44A	7	0.130	0.000	0.734	0.130	0.130	2.000	
Thallium	ug/L	MW-4B	8	0.130	0.000	0.670	0.130	0.130	2.000	
Thallium	ug/L	MW-7A	8	0.130	0.000	0.670	0.130	0.130	2.000	
Vanadium	ug/L	MW-24A	8	0.425	0.000	0.670	0.425	0.425	35.000	
Vanadium	ug/L	MW-29A	8	0.550	0.000	0.670	0.550	0.550	35.000	
Vanadium	ug/L	MW-31A	8	0.550	0.000	0.670	0.550	0.550	35.000	
Vanadium	ug/L	MW-33A	8	0.550	0.000	0.670	0.550	0.550	35.000	
Vanadium	ug/L	MW-4	8	0.550	0.000	0.670	0.550	0.550	35.000	
Vanadium	ug/L	MW-40A	8	0.550	0.000	0.670	0.550	0.550	35.000	
Vanadium	ug/L	MW-42A	7	0.550	0.000	0.734	0.550	0.550	35.000	
Vanadium	ug/L	MW-43A	7	0.550	0.000	0.734	0.550	0.550	35.000	
Vanadium	ug/L	MW-44A	7	0.550	0.000	0.734	0.550	0.550	35.000	
Vanadium	ug/L	MW-4B	8	0.550	0.000	0.670	0.550	0.550	35.000	
Vanadium	ug/L	MW-7A	8	0.550	0.000	0.670	0.550	0.550	35.000	
Zinc	ug/L	MW-24A	8	12.419	21.408	0.670	0.000	26.758	2000.000	
Zinc	ug/L	MW-29A	8	9.638	13.117	0.670	0.852	18.423	2000.000	
Zinc	ug/L	MW-31A	8	7.313	6.541	0.670	2.931	11.694	2000.000	
Zinc	ug/L	MW-33A	8	5.000	0.000	0.670	5.000	5.000	2000.000	
Zinc	ug/L	MW-4	8	5.000	0.000	0.670	5.000	5.000	2000.000	

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	
Thallium Thallium Thallium Thallium Thallium Thallium Thallium Thallium	
Vanadium Vanadium Vanadium Vanadium Vanadium Vanadium Vanadium Vanadium Vanadium Vanadium	
Zinc Zinc Zinc Zinc Zinc	

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Zinc	ug/L	MW-40A	8	5.000	0.000	0.670	5.000	5.000	2000.000	
Zinc	ug/L	MW-42A	7	4.850	0.000	0.734	4.850	4.850	2000.000	
Zinc	ug/L	MW-43A	7	4.850	0.000	0.734	4.850	4.850	2000.000	
Zinc	ug/L	MW-44A	7	13.429	10.853	0.734	5.461	21.396	2000.000	
Zinc	ug/L	MW-4B	8	5.000	0.000	0.670	5.000	5.000	2000.000	
Zinc	ug/L	MW-7A	8	5.000	0.000	0.670	5.000	5.000	2000.000	

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

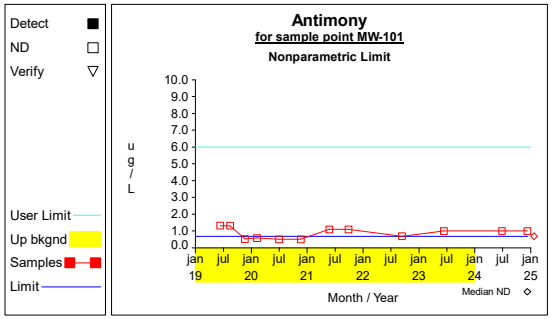
Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

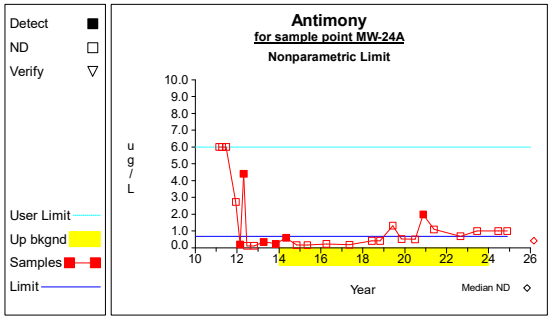
Constituent	
Zinc	
Zinc	
Zinc	
Zinc	
Zinc	
Zinc	

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

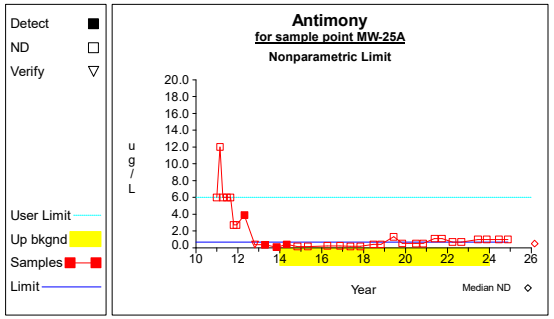
Up vs. Down Prediction Limits



Graph 1



Graph 2



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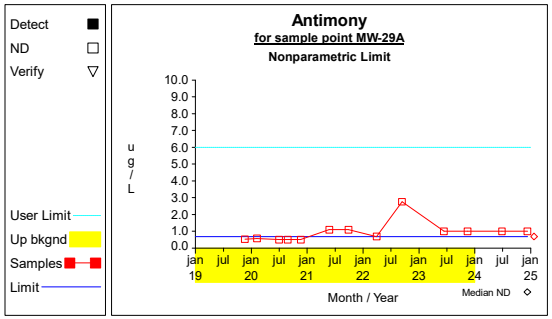
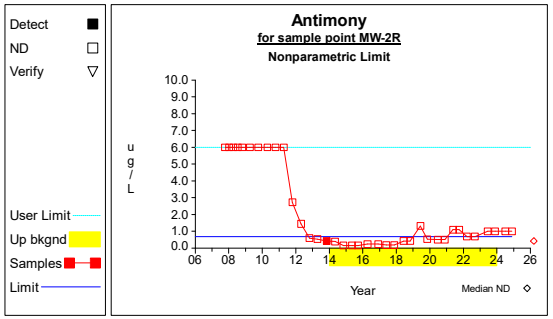


Graph 4



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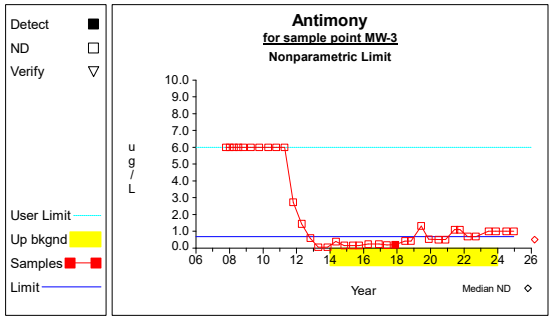

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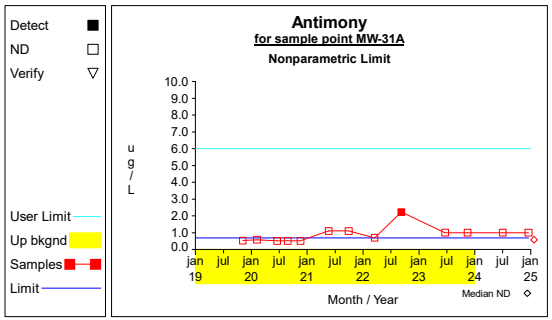

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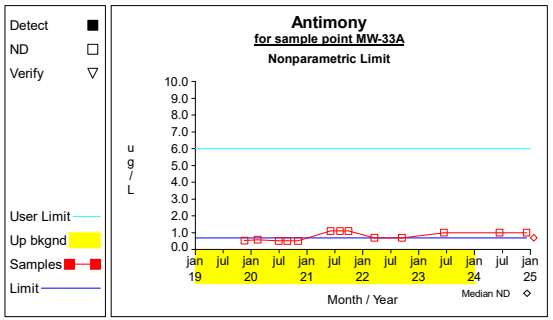

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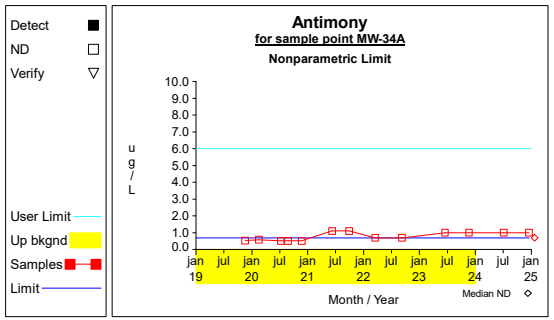
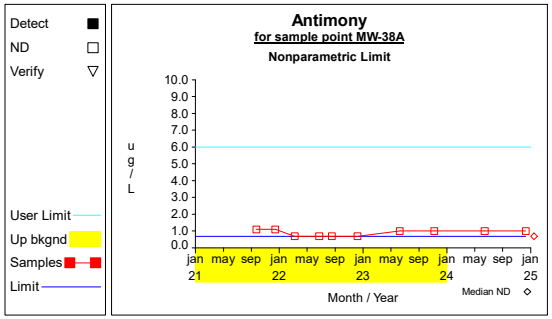


Graph 9

Up vs. Down Prediction Limits



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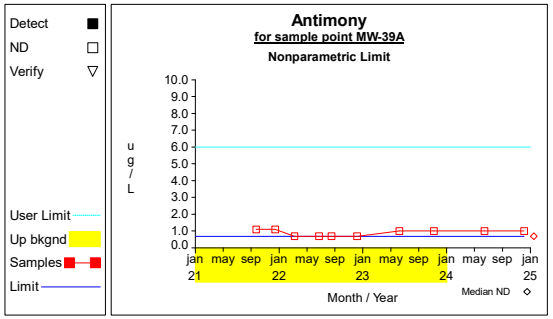

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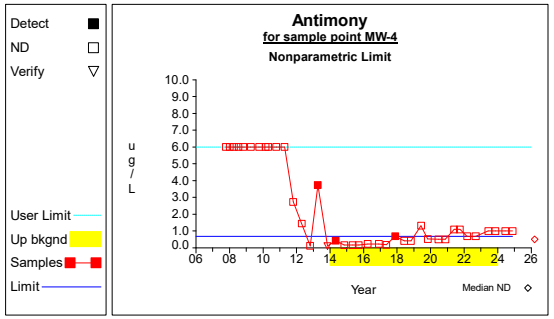

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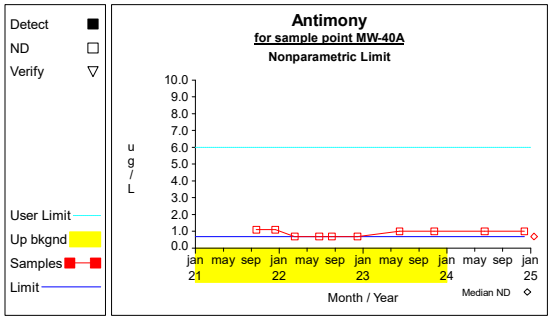

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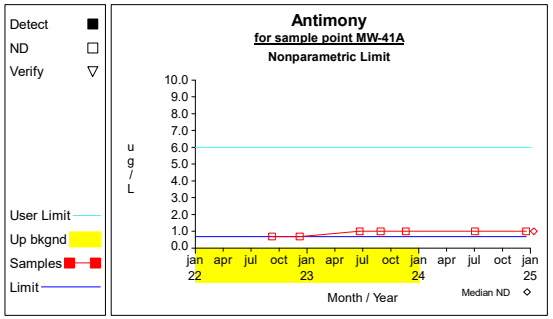

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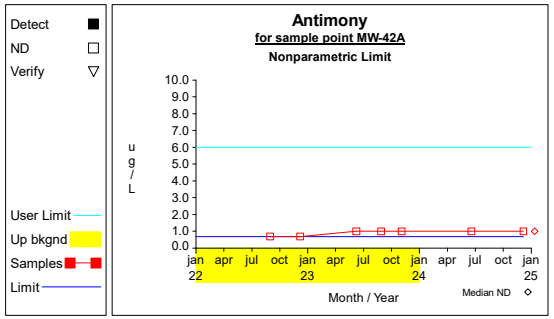

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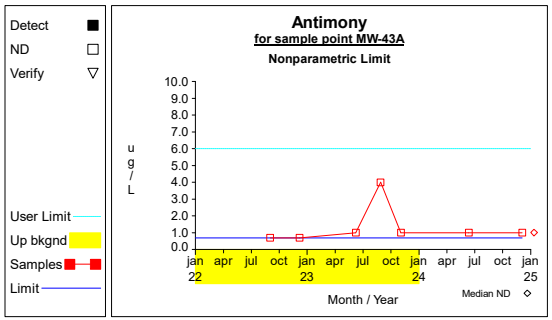

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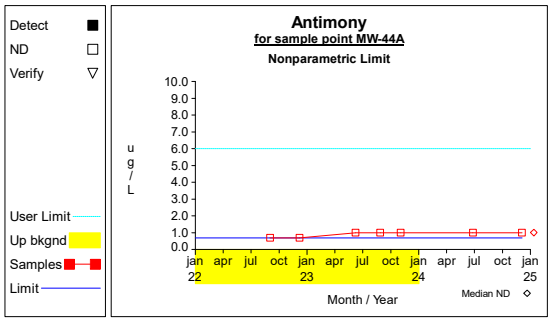

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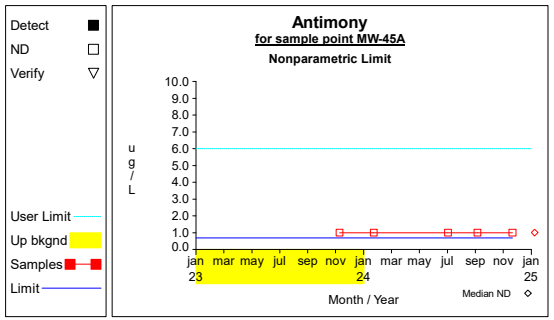
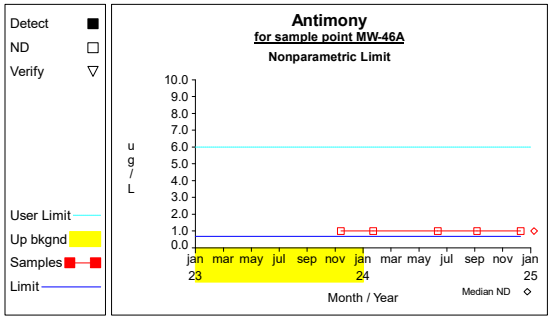


Graph 18

Up vs. Down Prediction Limits



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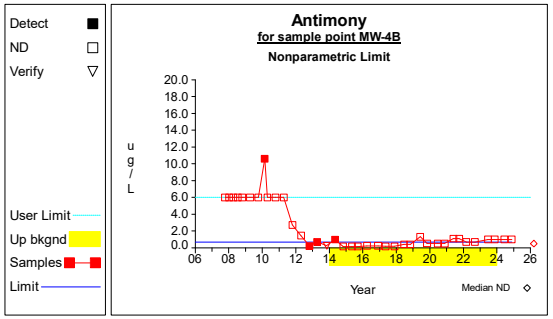

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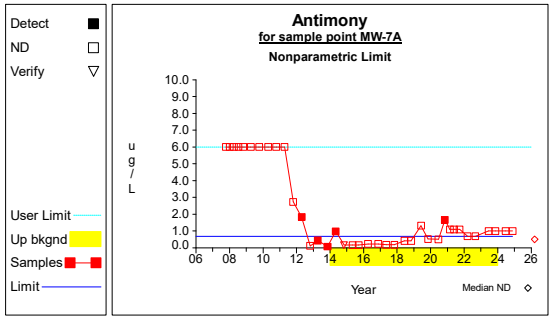

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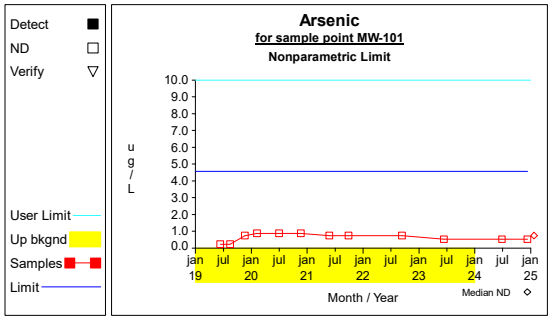

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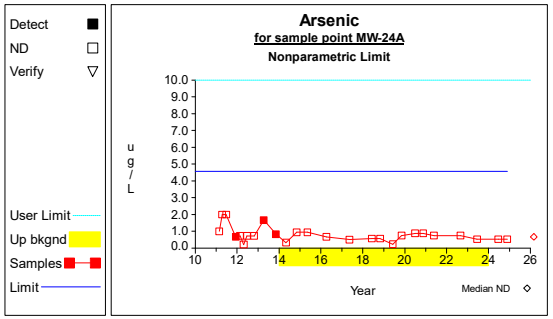

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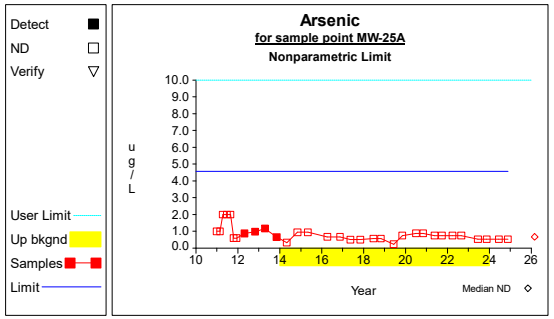

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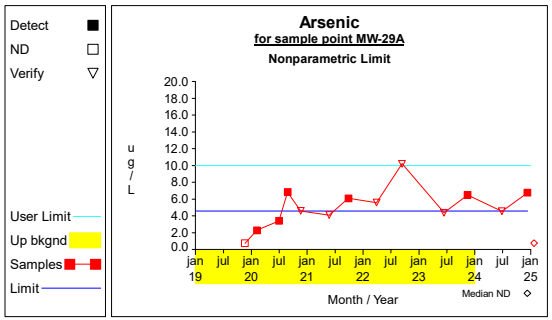

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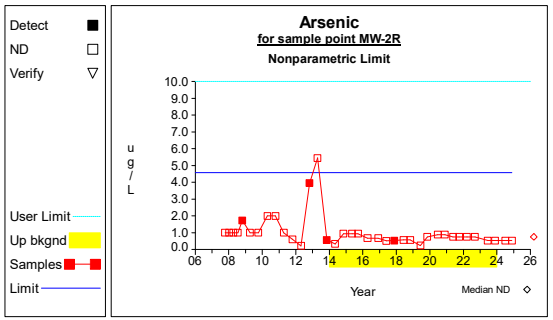

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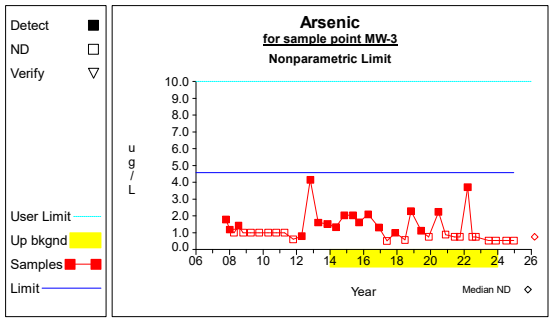
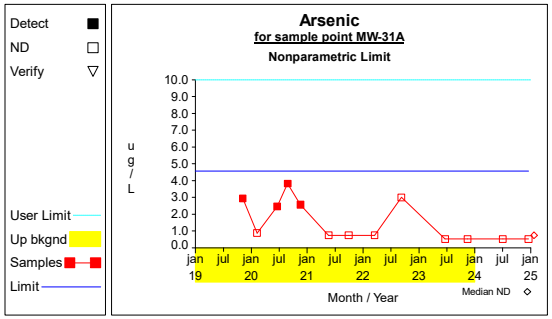
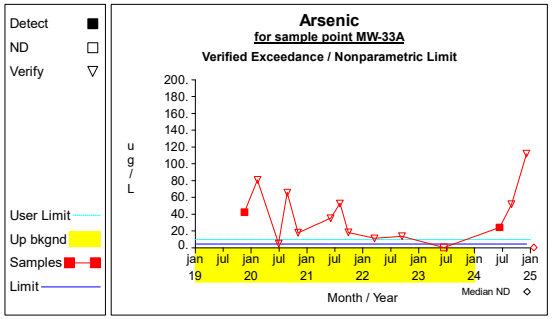


Graph 27

Up vs. Down Prediction Limits



Graph 28



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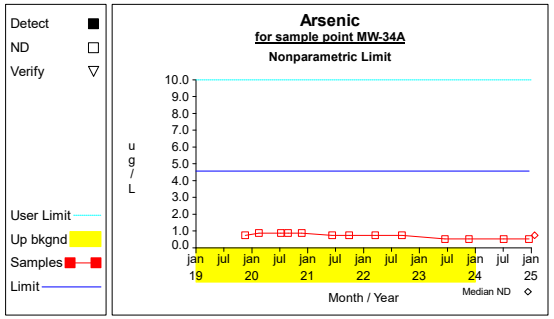

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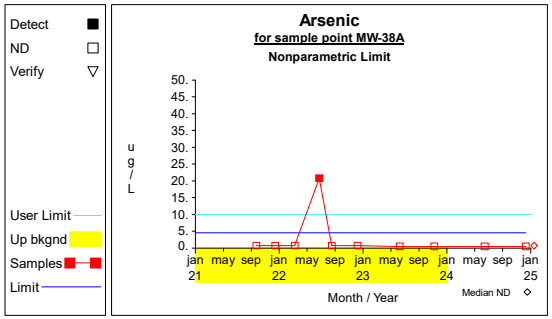

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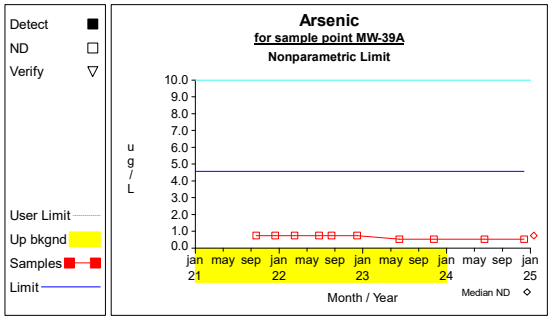

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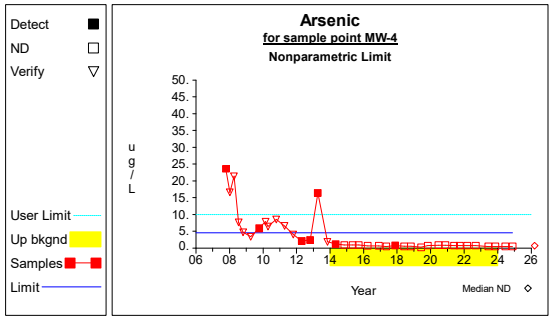

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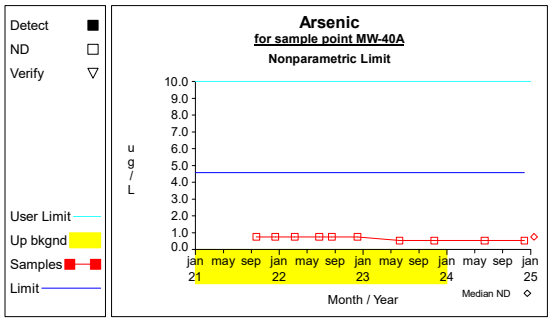

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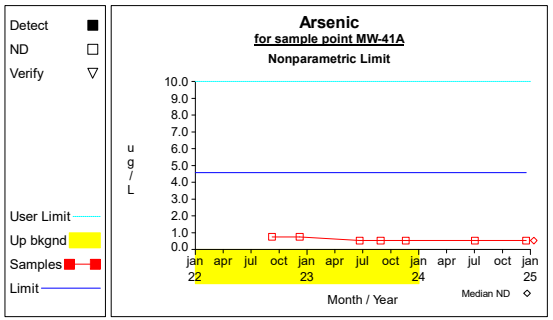

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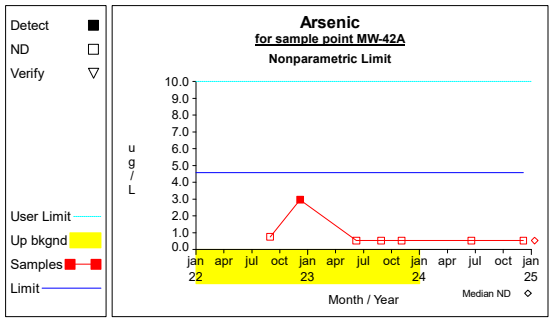
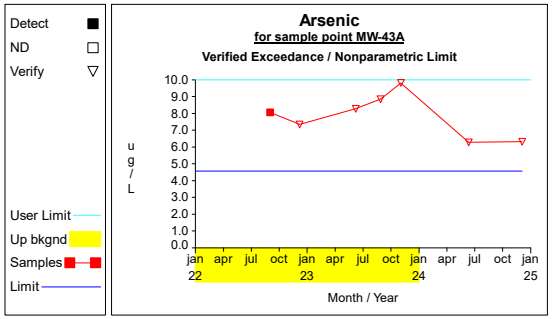


Graph 36

Up vs. Down Prediction Limits



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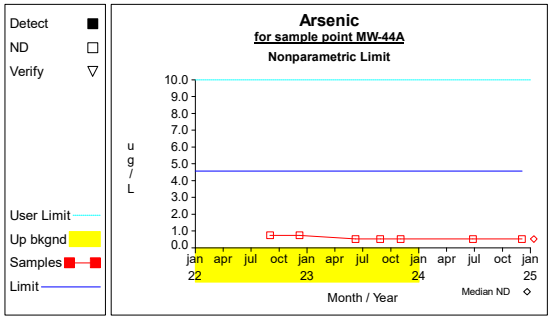

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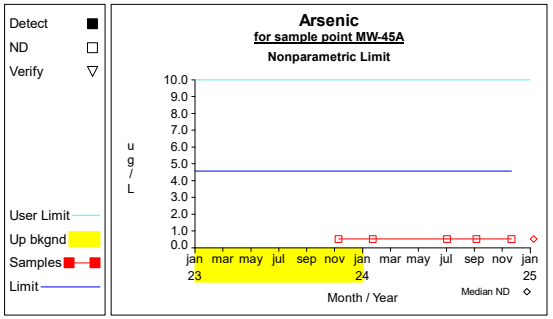

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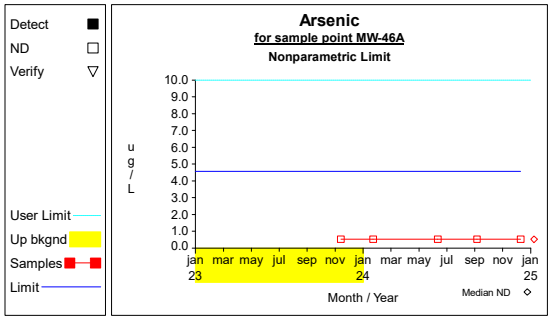

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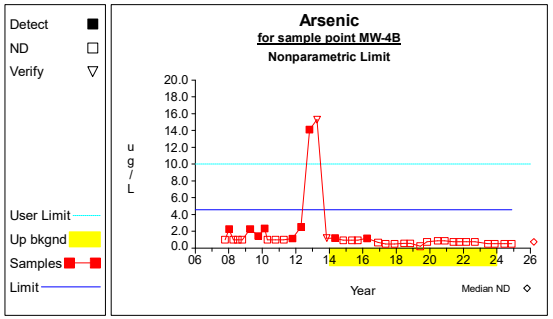

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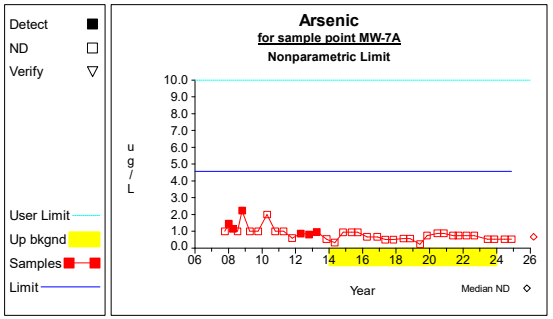

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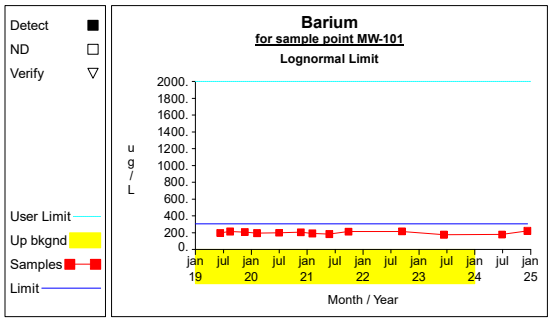

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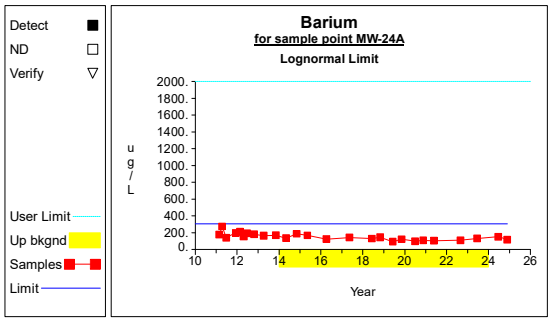

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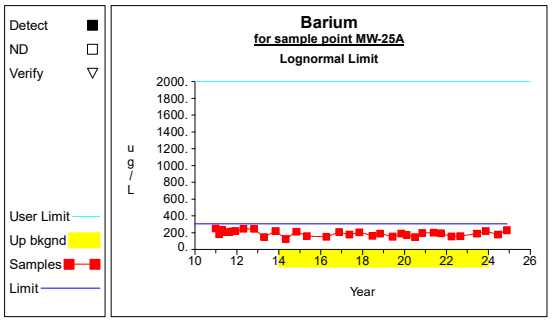
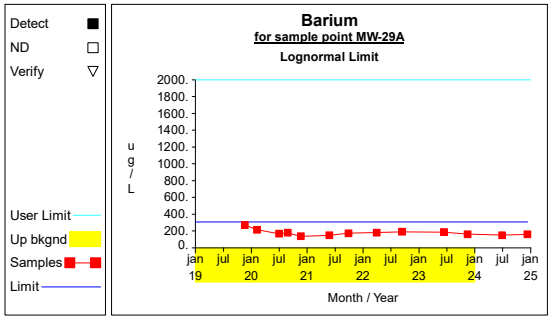


Graph 45

Up vs. Down Prediction Limits



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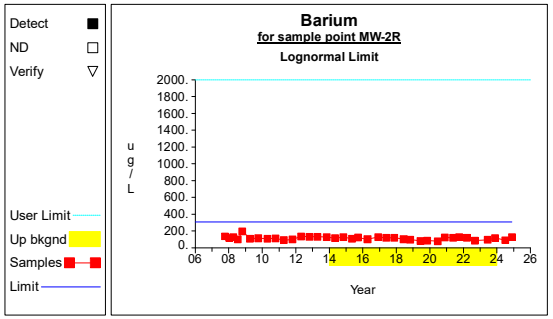
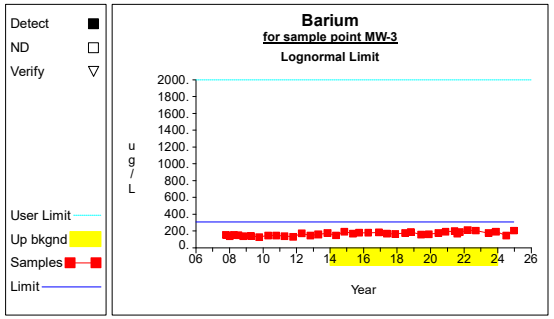


Graph 47



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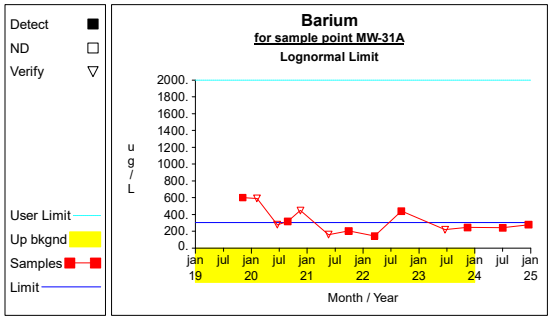
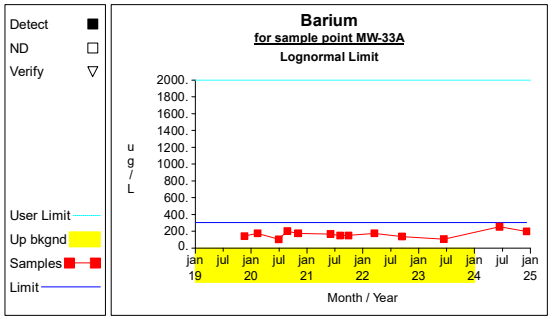
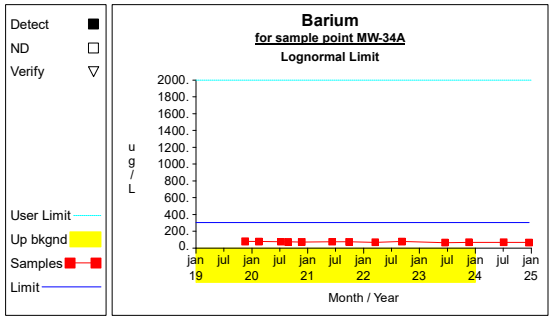


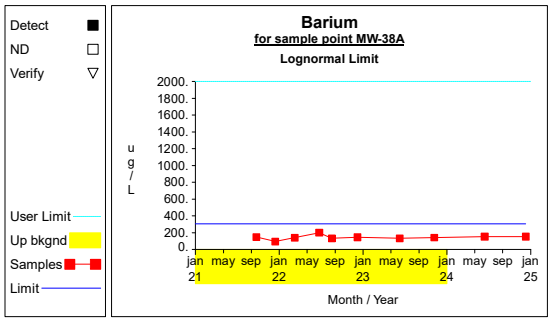
Graph 49



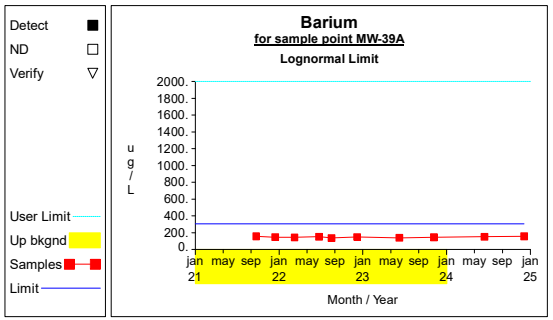
Graph 50



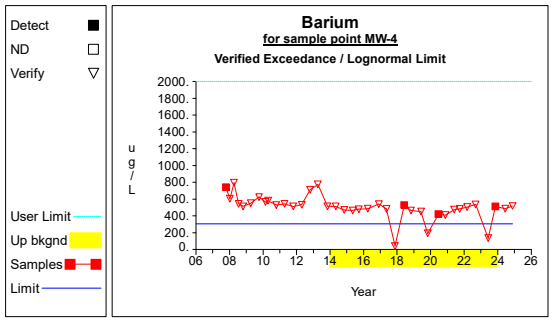
Graph 51



Graph 52

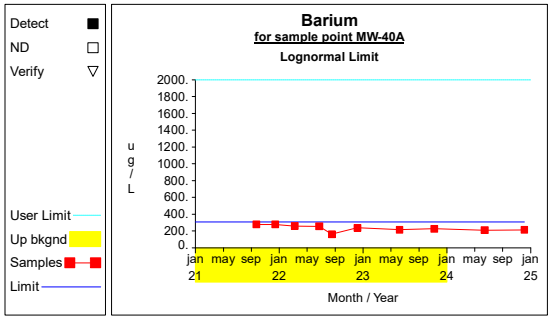


Graph 53

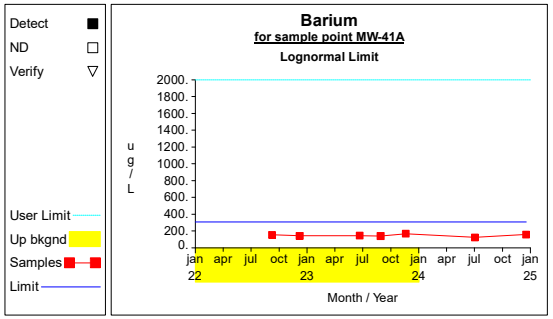


Graph 54

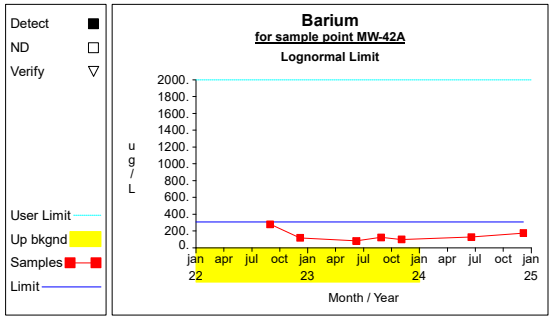
Up vs. Down Prediction Limits



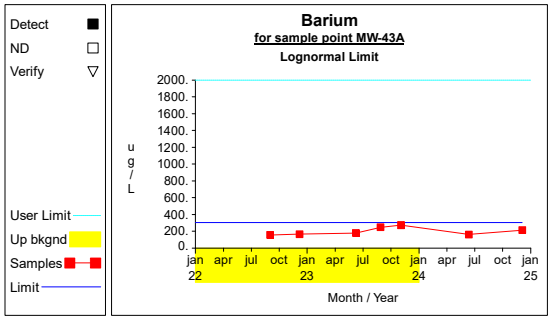
Graph 55



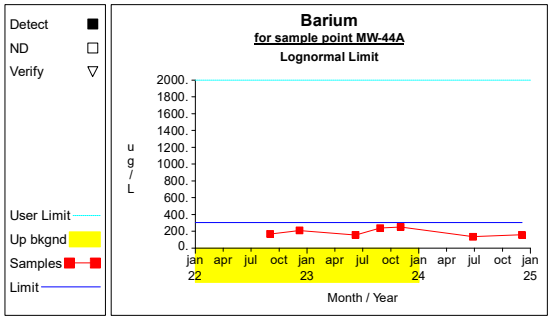
Graph 56



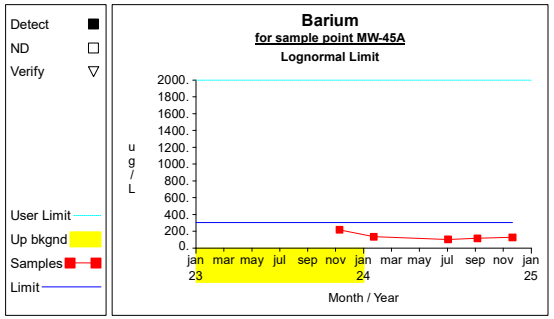
Graph 57



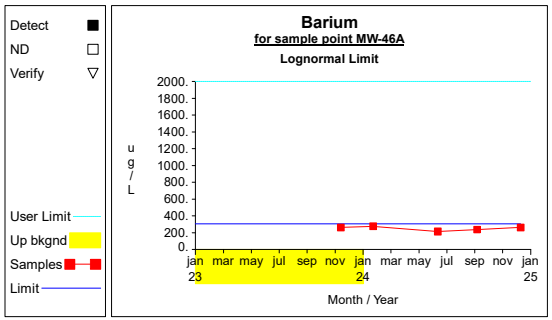
Graph 58



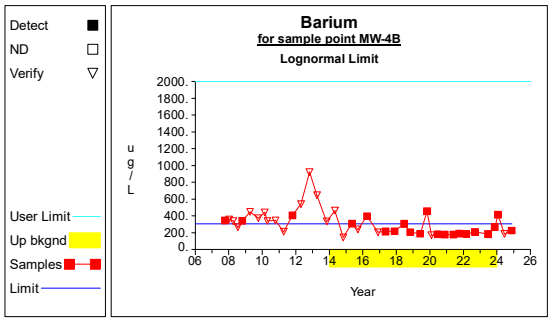
Graph 59



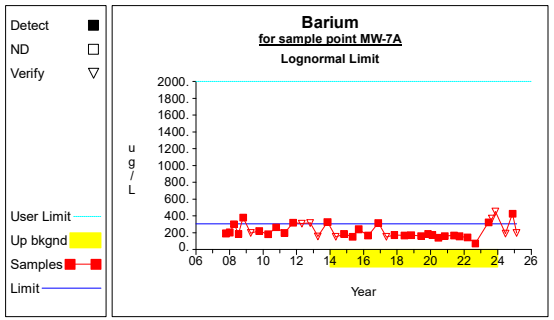
Graph 60



Graph 61

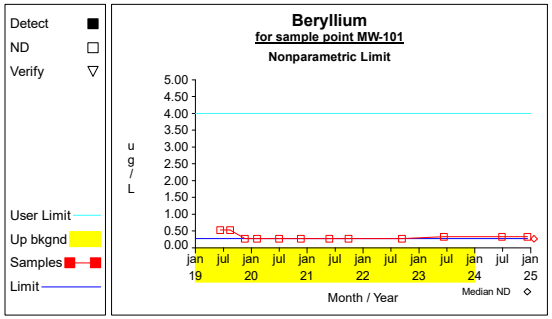


Graph 62

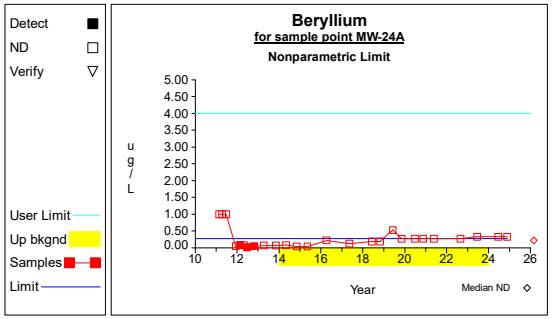


Graph 63

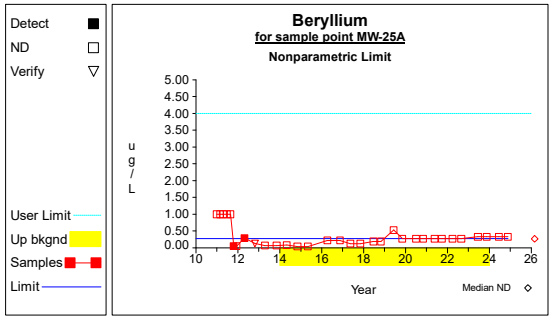
Up vs. Down Prediction Limits



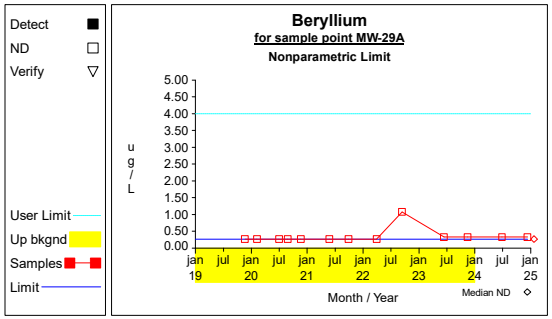
Graph 64



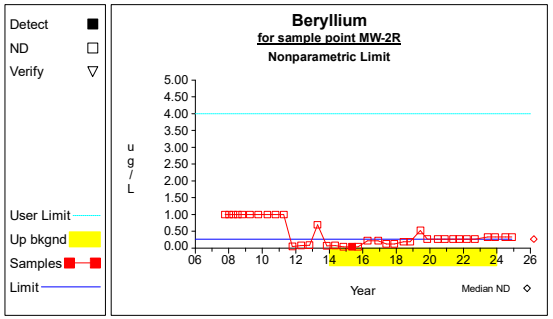
Graph 65



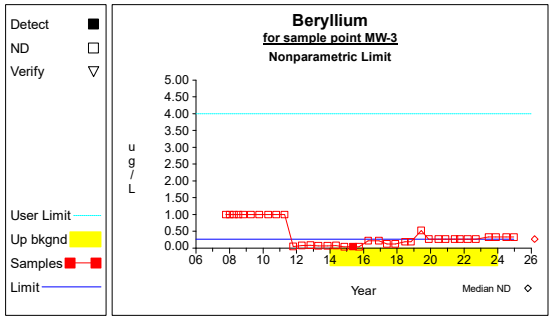
Graph 66



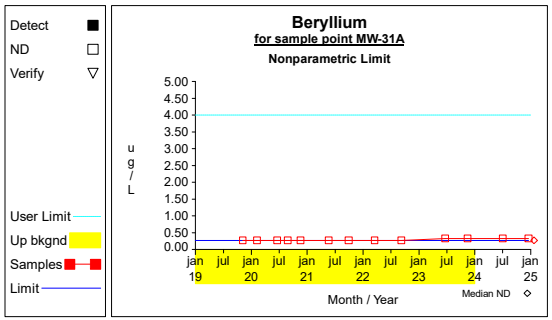
Graph 67



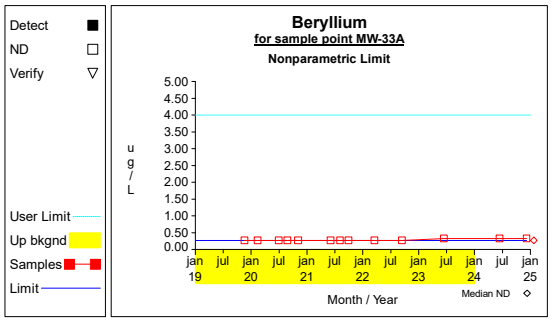
Graph 68



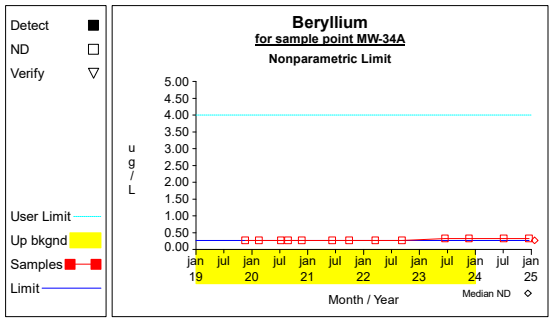
Graph 69



Graph 70

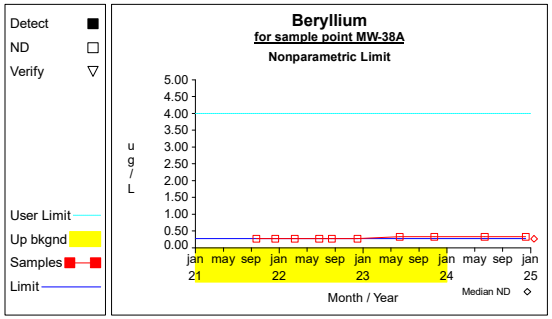


Graph 71

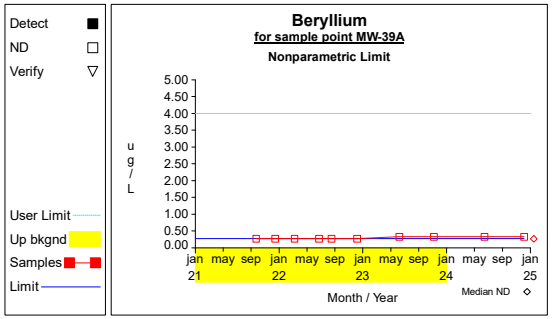


Graph 72

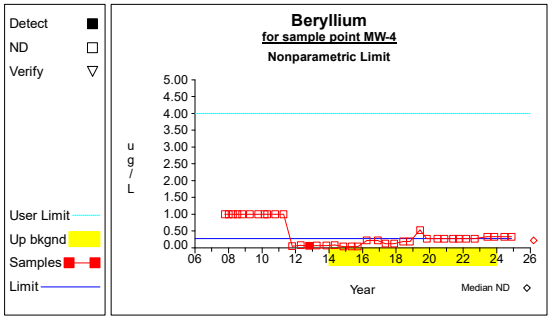
Up vs. Down Prediction Limits



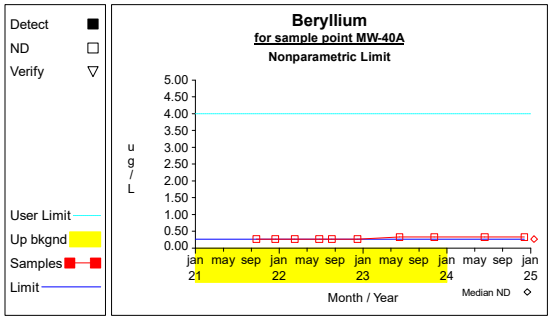
Graph 73



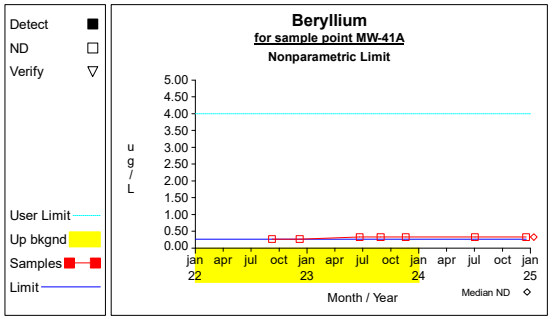
Graph 74



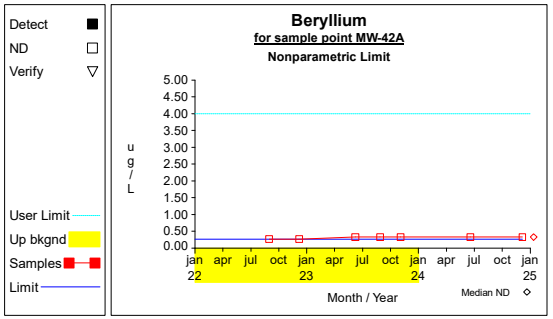
Graph 75



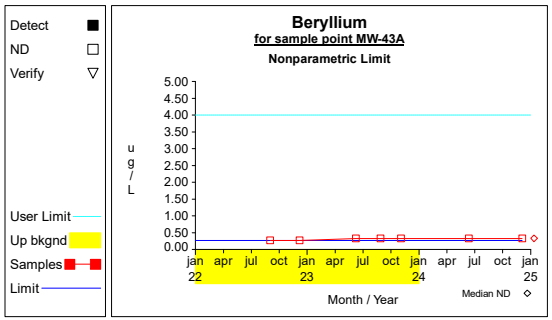
Graph 76



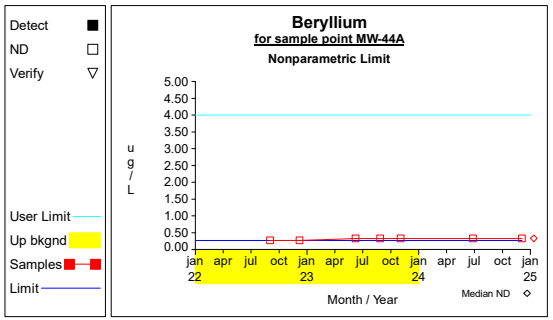
Graph 77



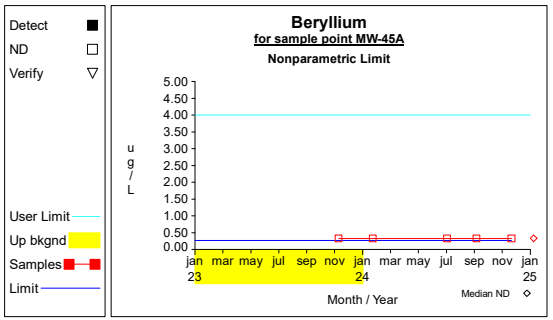
Graph 78



Graph 79

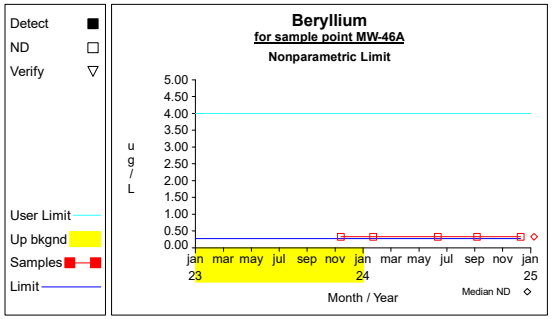


Graph 80

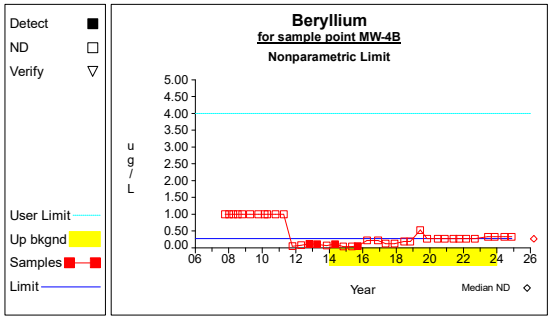


Graph 81

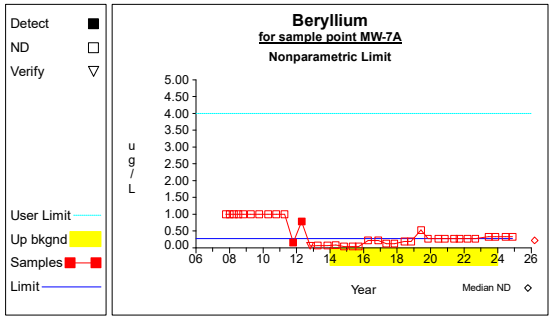
Up vs. Down Prediction Limits



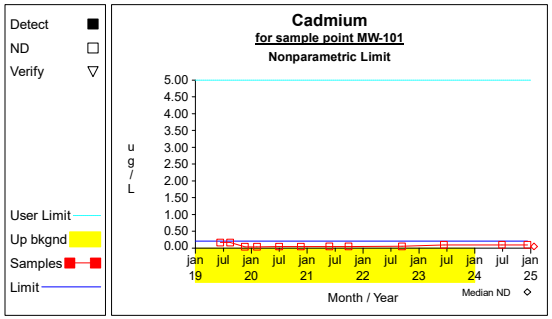
Graph 82



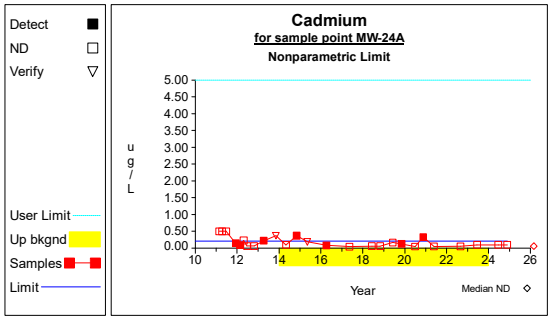
Graph 83



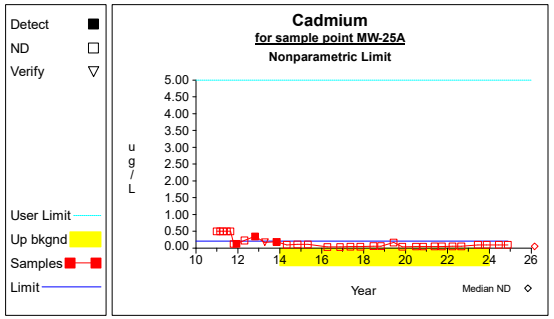
Graph 84



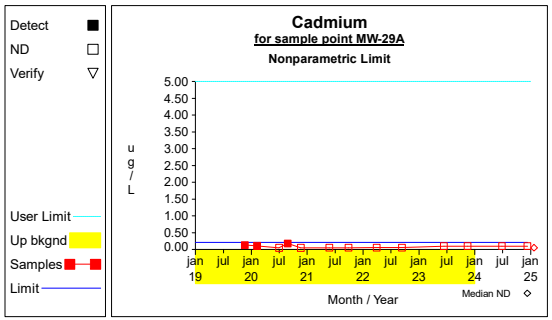
Graph 85



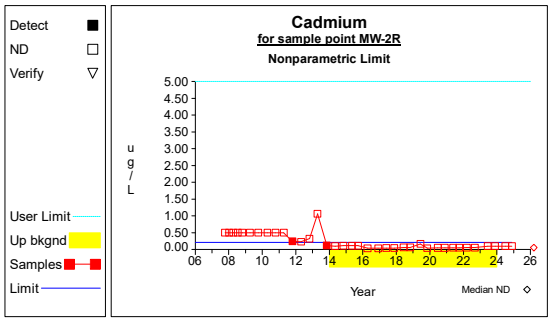
Graph 86



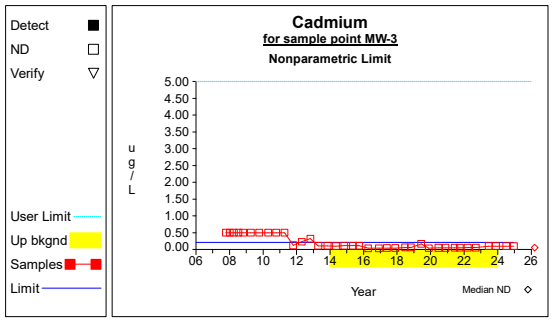
Graph 87



Graph 88

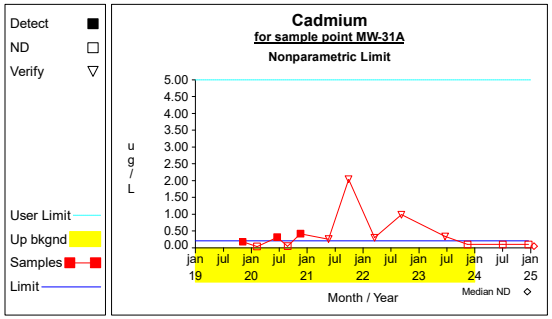


Graph 89

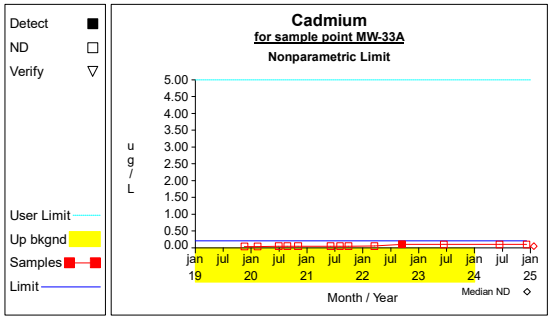


Graph 90

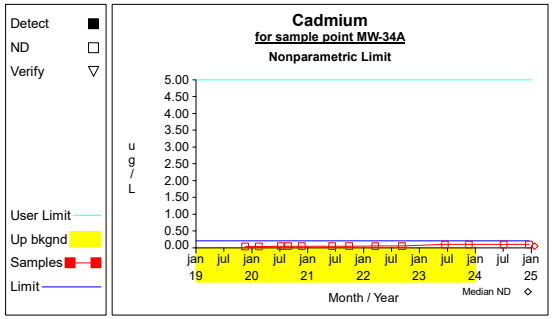
Up vs. Down Prediction Limits



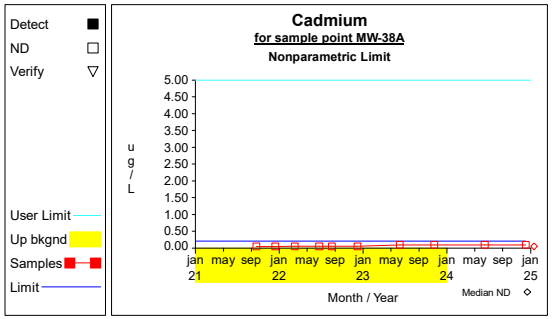
Graph 91



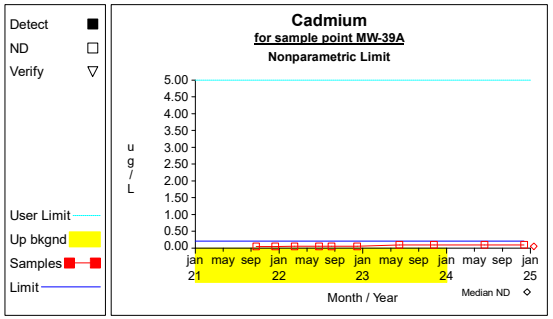
Graph 92



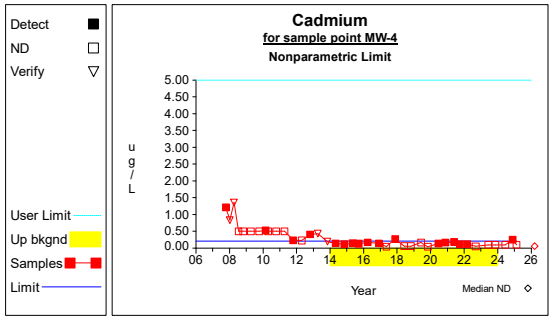
Graph 93



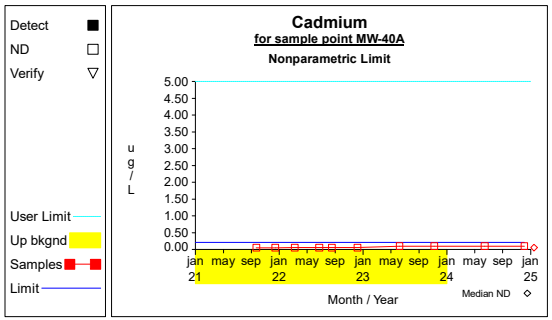
Graph 94



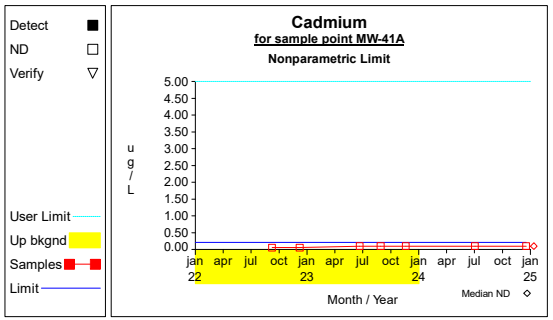
Graph 95



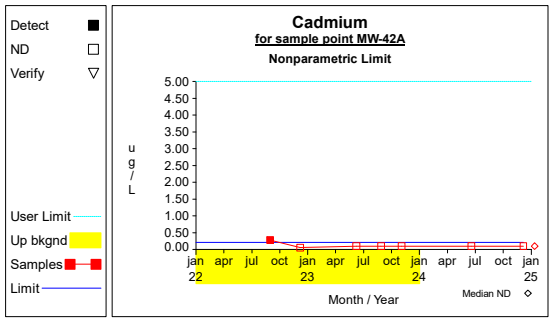
Graph 96



Graph 97

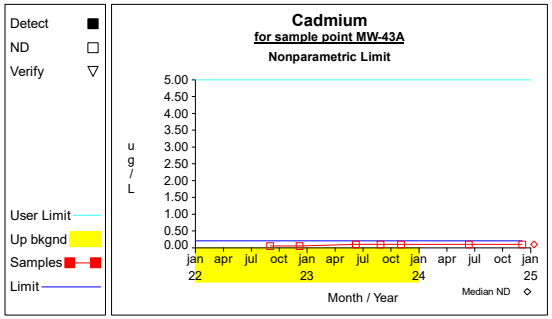


Graph 98

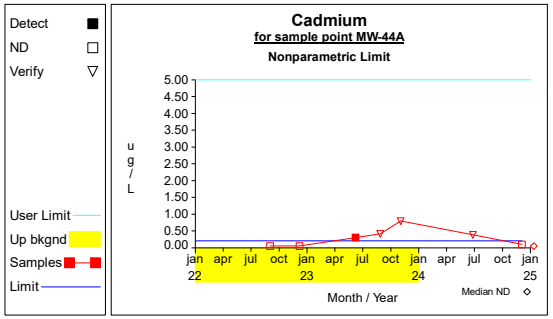


Graph 99

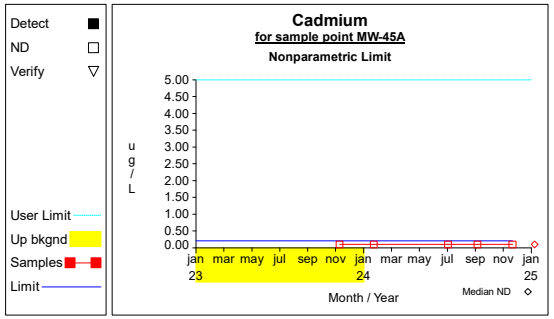
Up vs. Down Prediction Limits



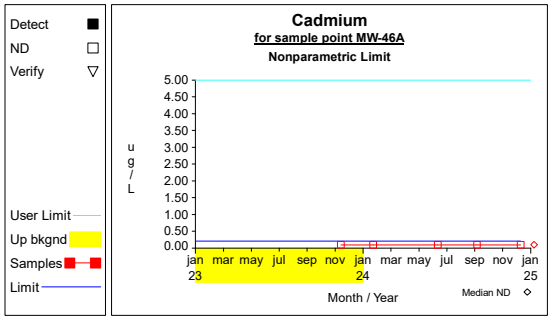
Graph 100



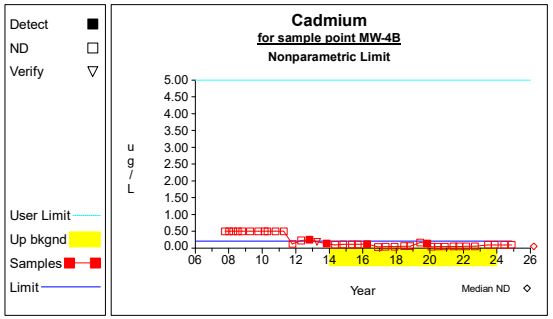
Graph 101



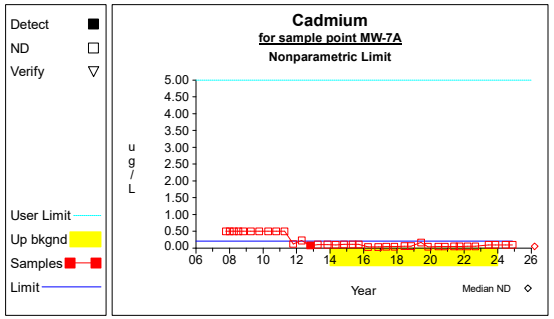
Graph 102



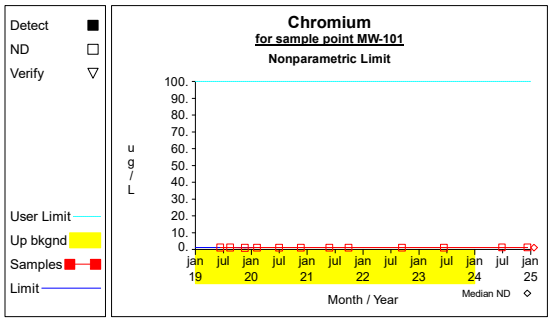
Graph 103



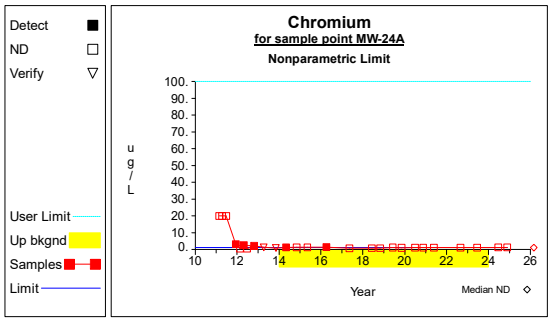
Graph 104



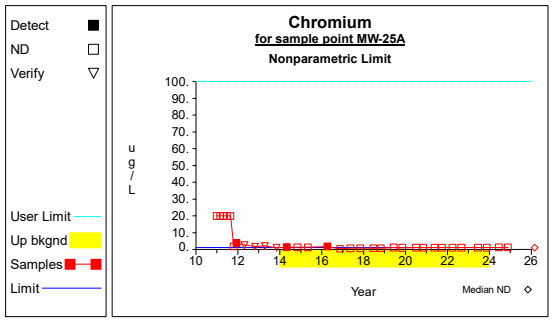
Graph 105



Graph 106

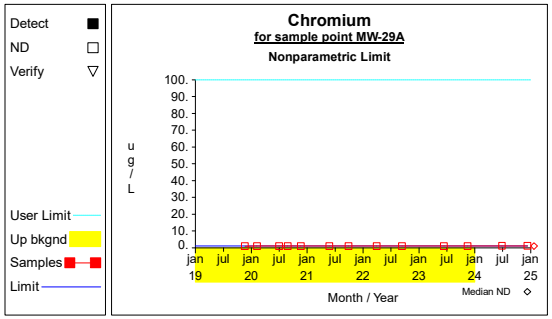


Graph 107

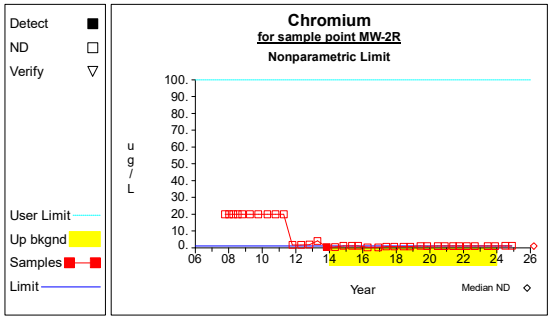


Graph 108

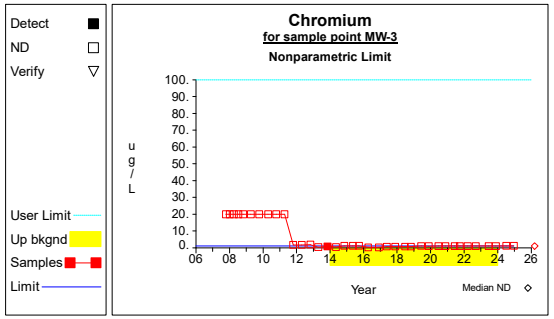
Up vs. Down Prediction Limits



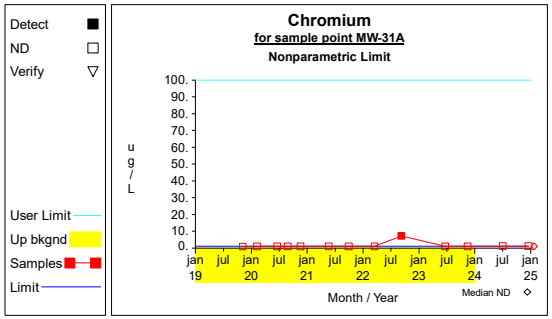
Graph 109



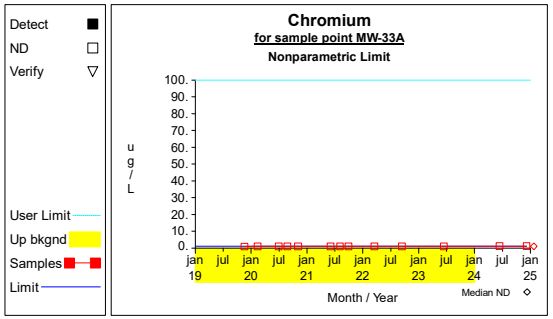
Graph 110



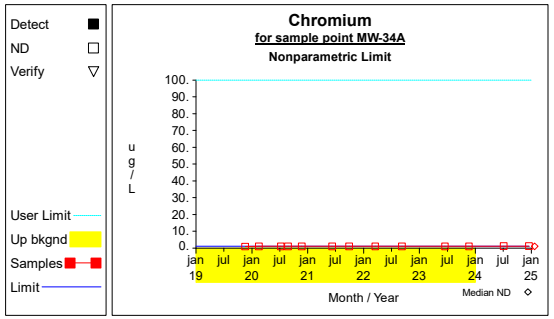
Graph 111



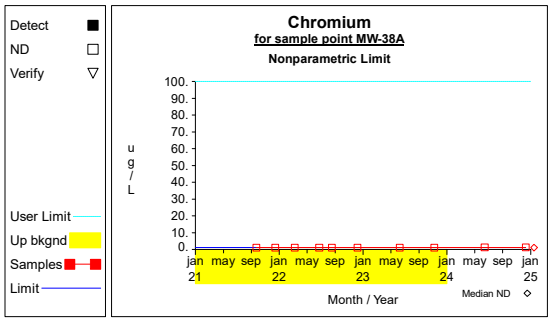
Graph 112



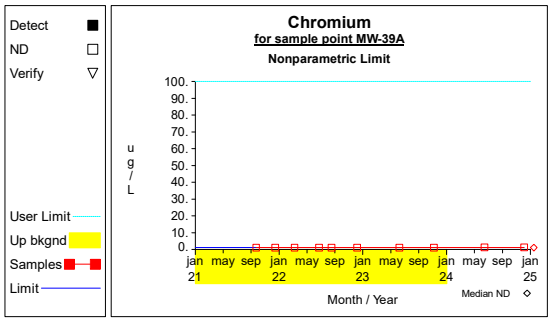
Graph 113



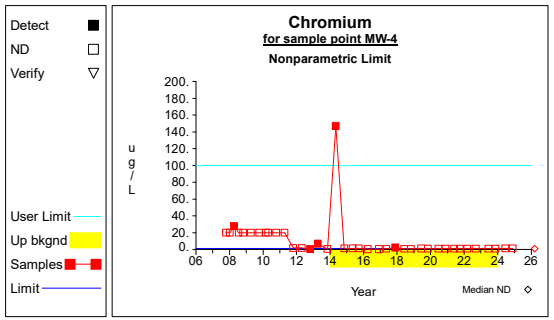
Graph 114



Graph 115

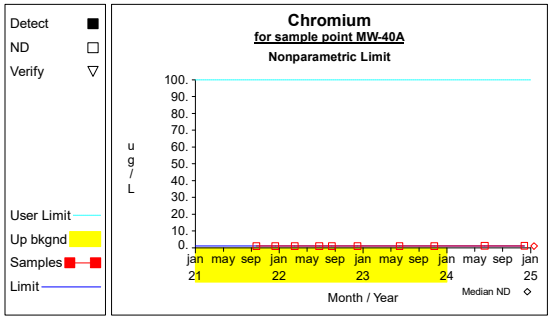


Graph 116

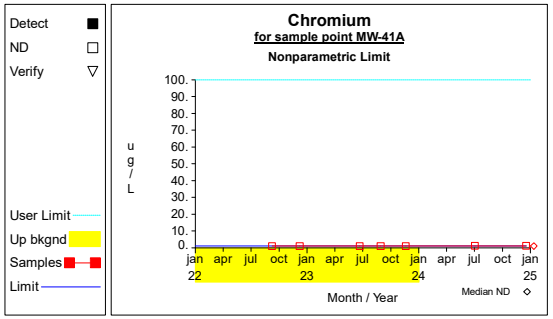


Graph 117

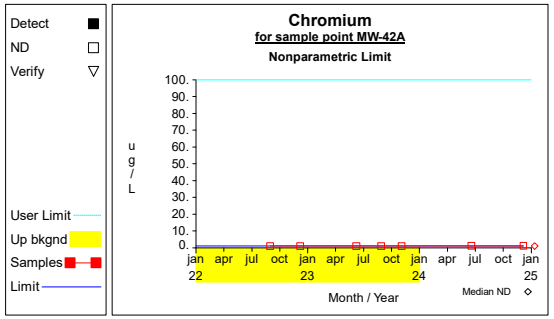
Up vs. Down Prediction Limits



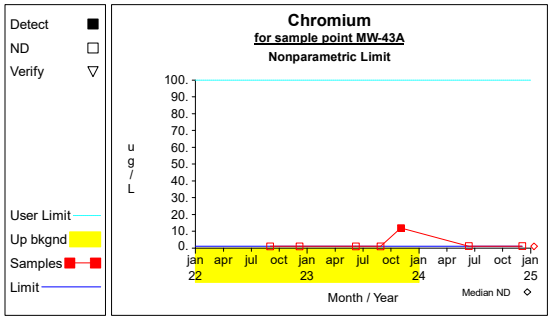
Graph 118



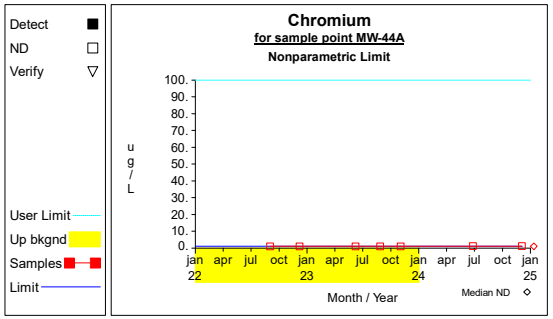
Graph 119



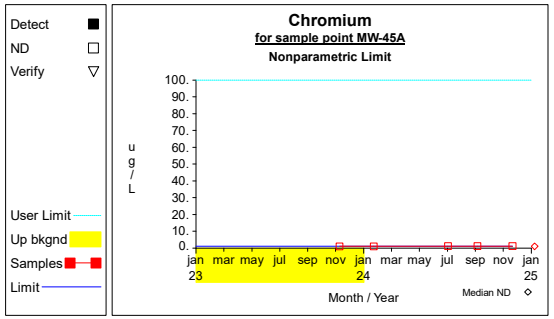
Graph 120



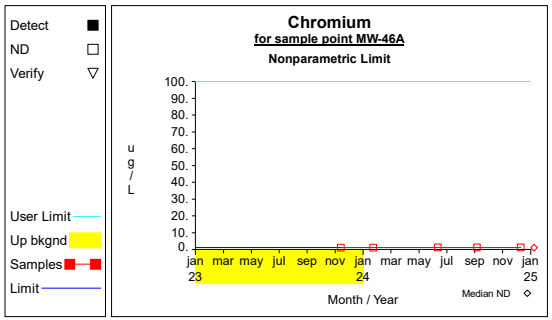
Graph 121



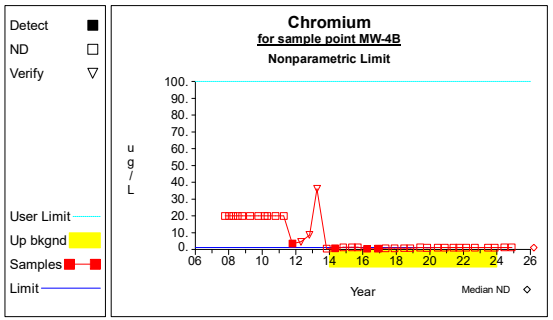
Graph 122



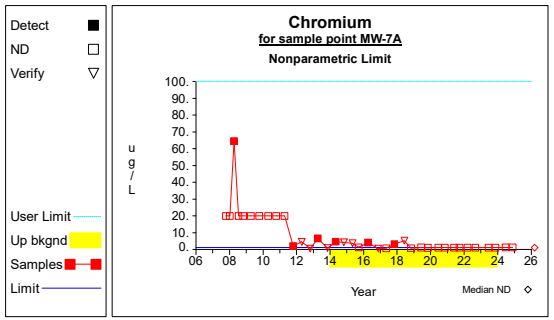
Graph 123



Graph 124

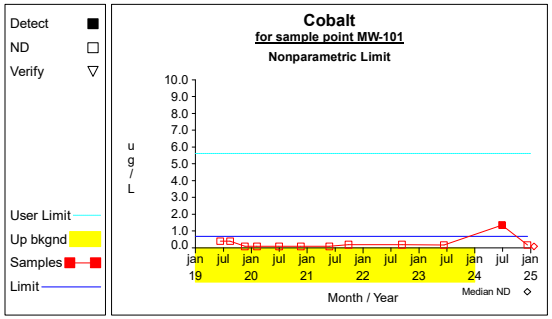


Graph 125

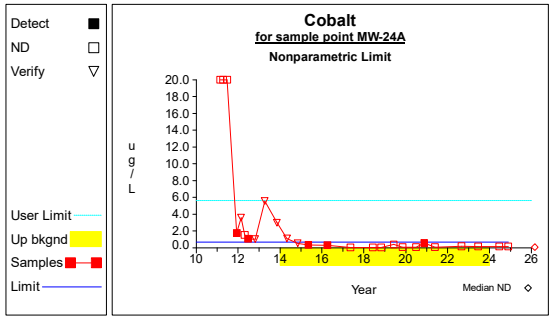


Graph 126

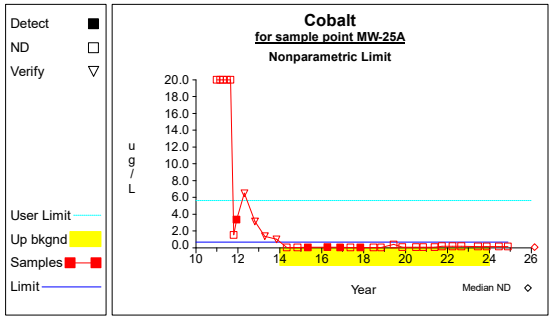
Up vs. Down Prediction Limits



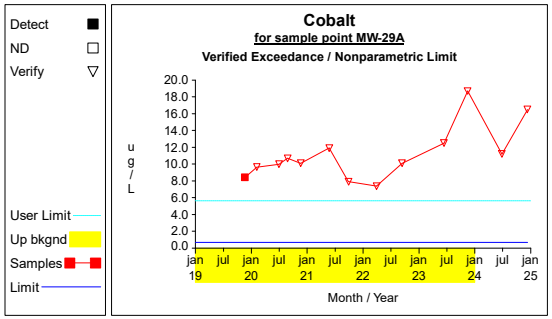
Graph 127



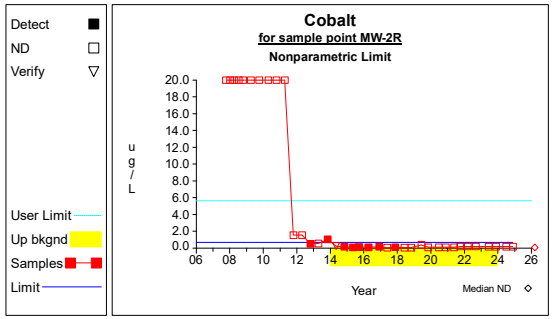
Graph 128



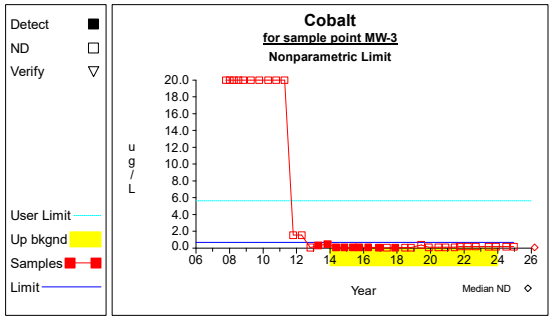
Graph 129



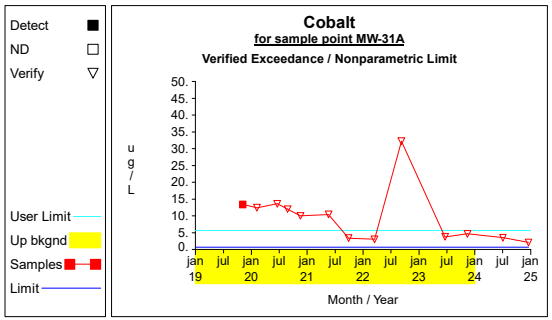
Graph 130



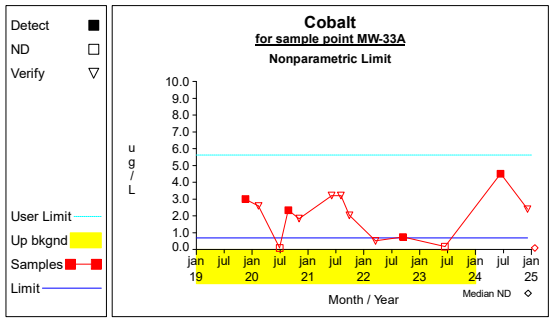
Graph 131



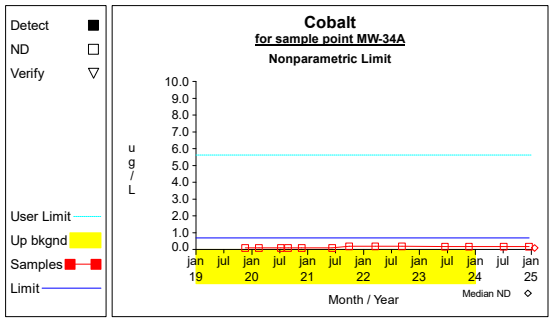
Graph 132



Graph 133

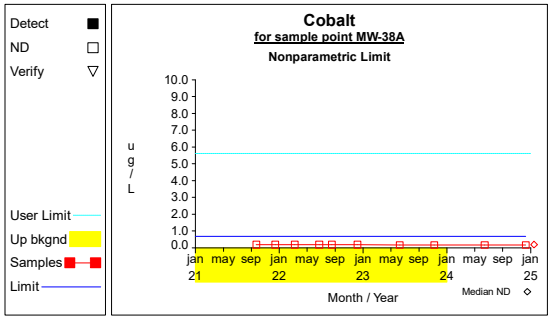


Graph 134

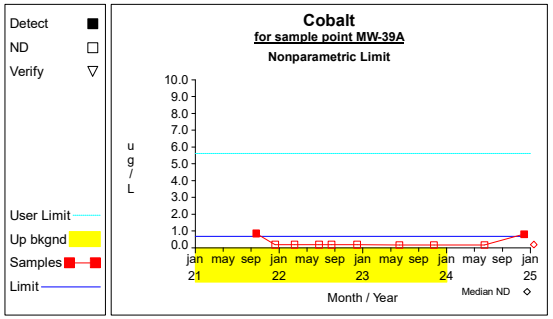


Graph 135

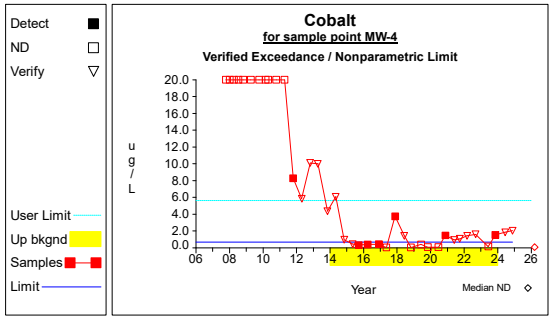
Up vs. Down Prediction Limits



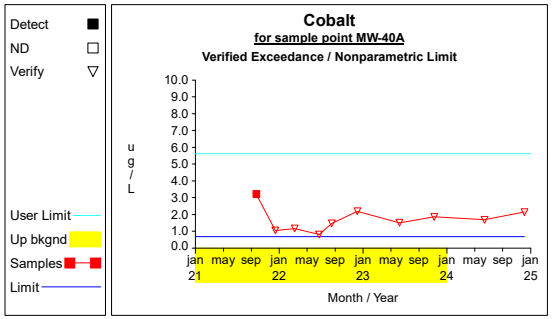
Graph 136



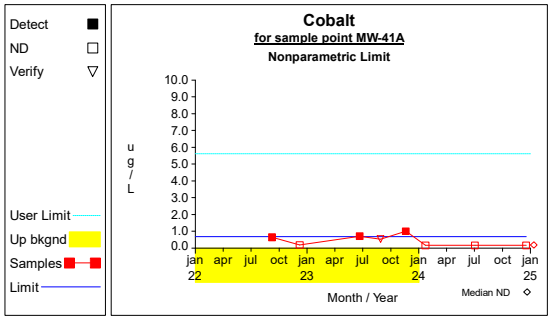
Graph 137



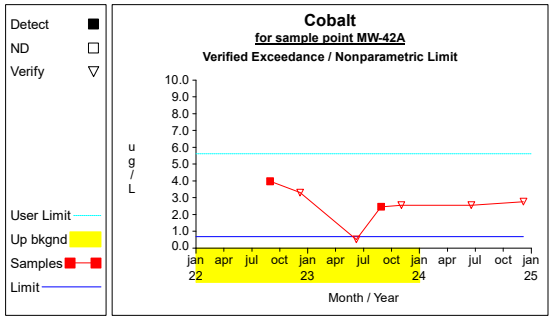
Graph 138



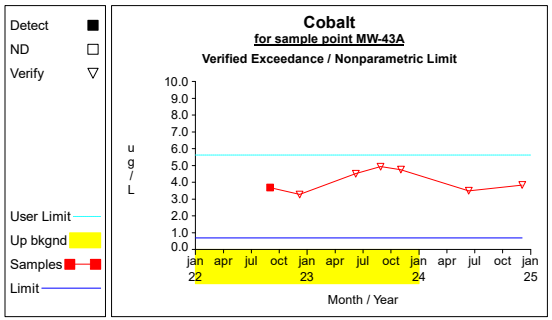
Graph 139



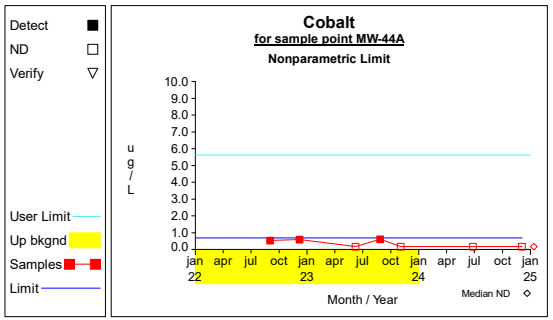
Graph 140



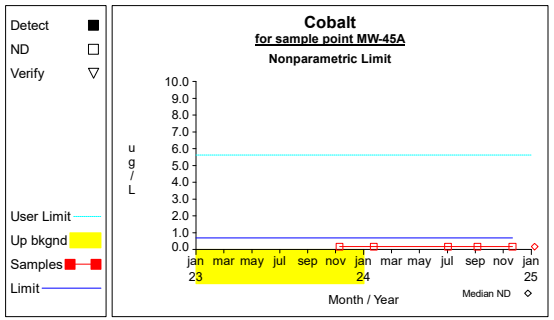
Graph 141



Graph 142

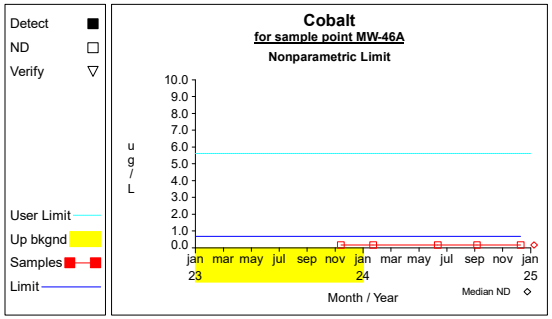


Graph 143

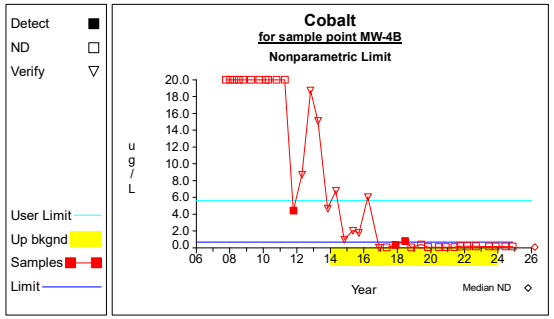


Graph 144

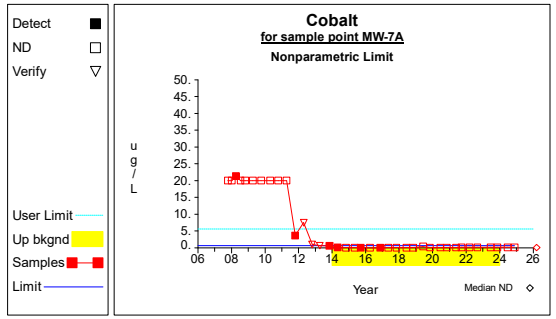
Up vs. Down Prediction Limits



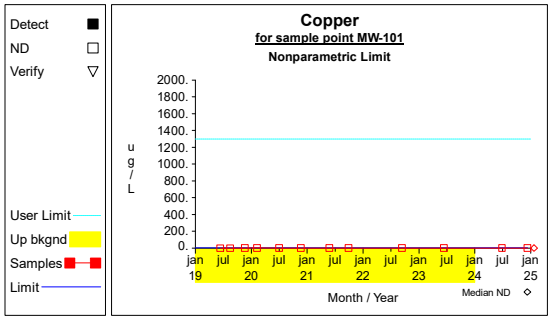
Graph 145



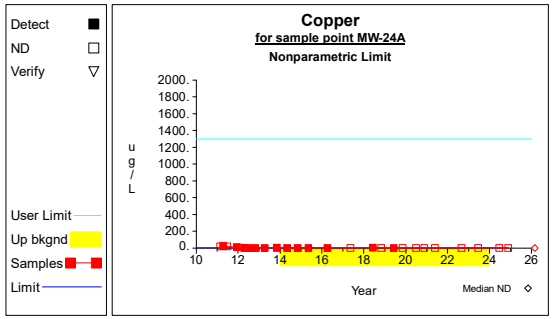
Graph 146



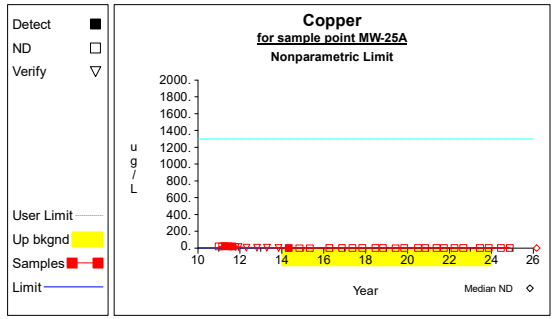
Graph 147



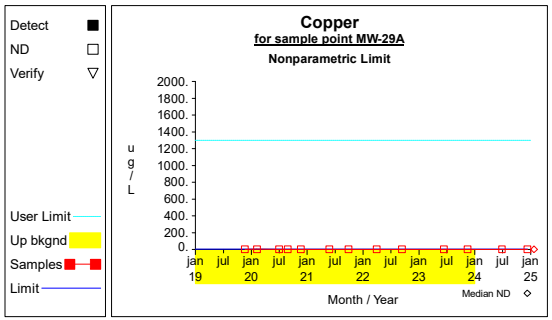
Graph 148



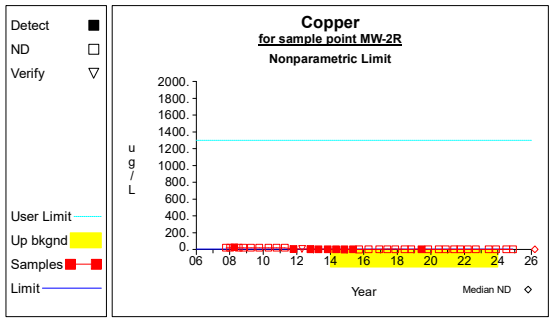
Graph 149



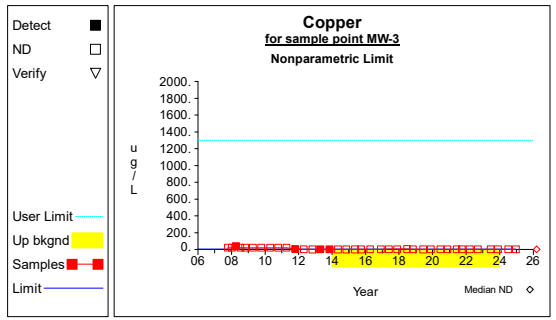
Graph 150



Graph 151

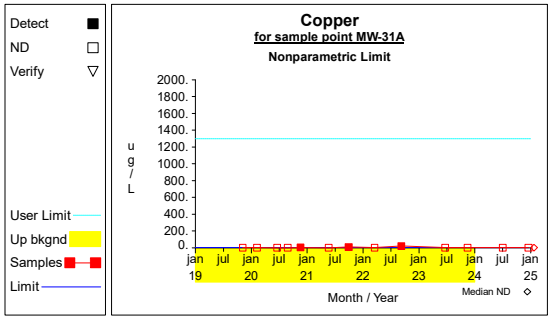


Graph 152

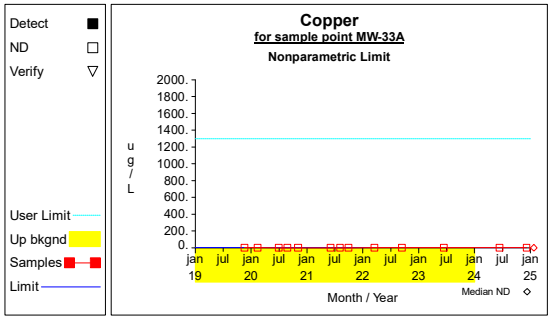


Graph 153

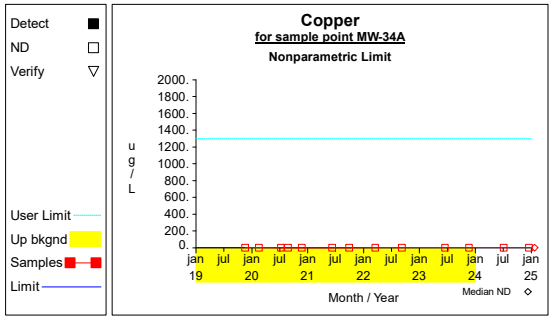
Up vs. Down Prediction Limits



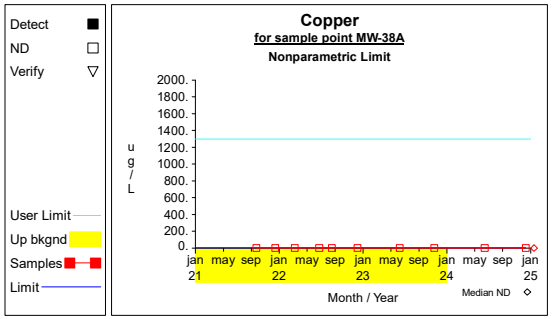
Graph 154



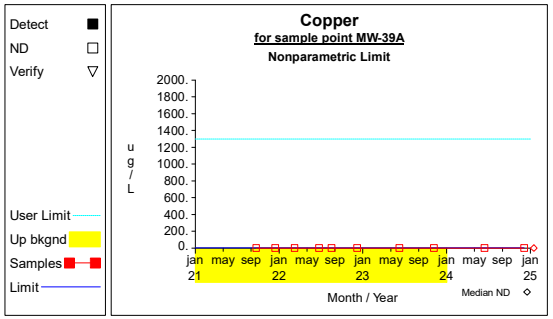
Graph 155



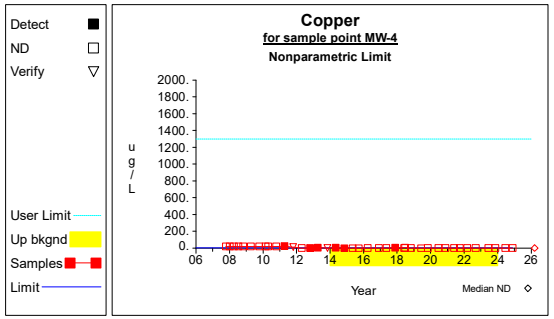
Graph 156



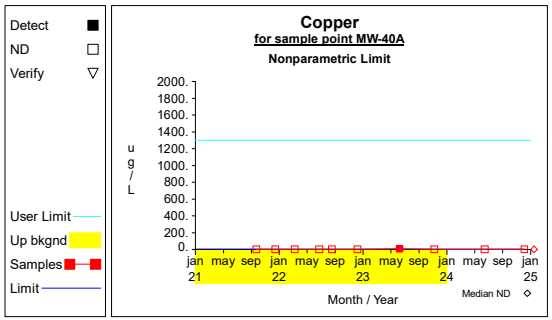
Graph 157



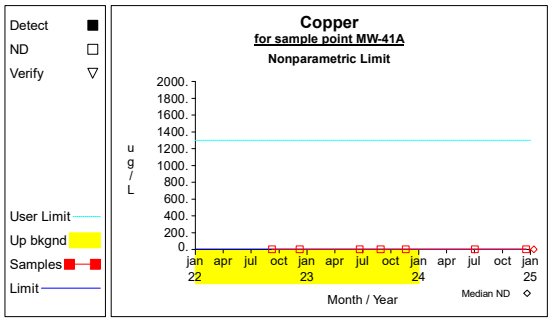
Graph 158



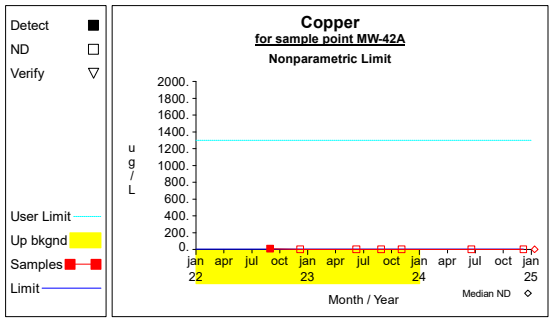
Graph 159



Graph 160

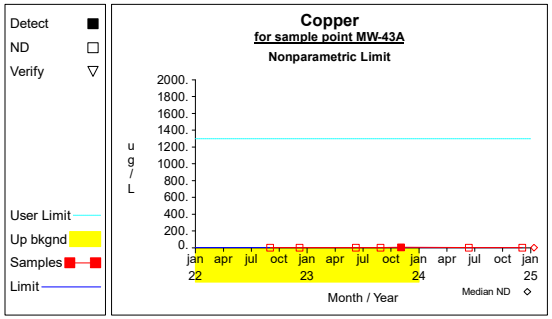


Graph 161

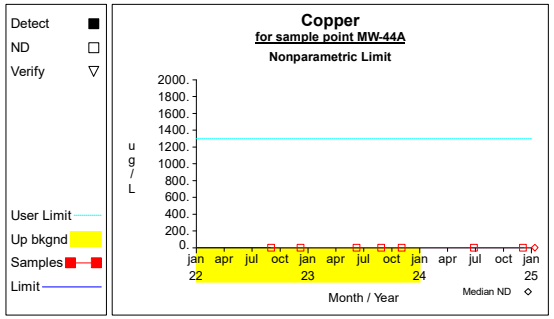


Graph 162

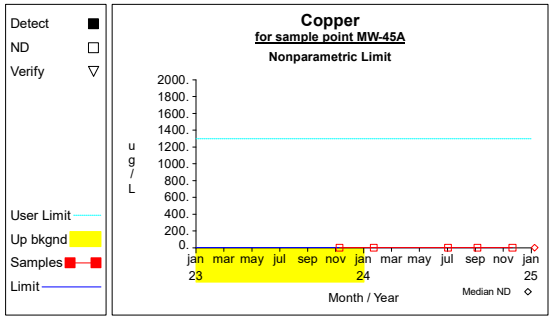
Up vs. Down Prediction Limits



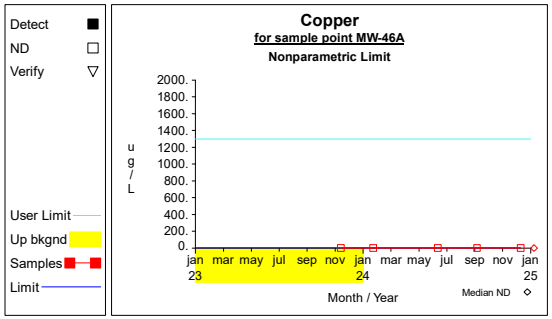
Graph 163



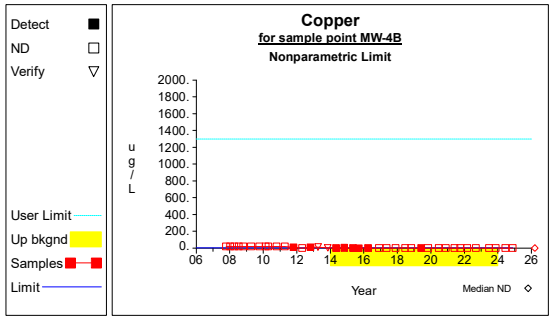
Graph 164



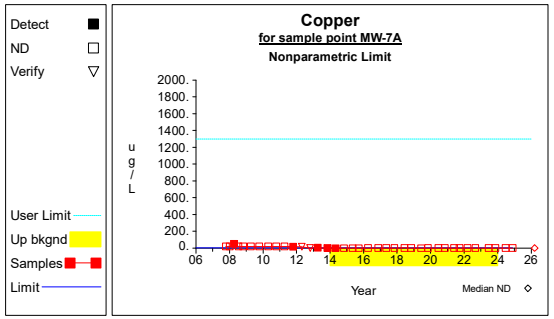
Graph 165



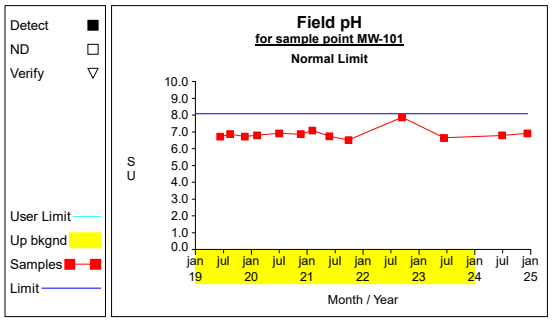
Graph 166



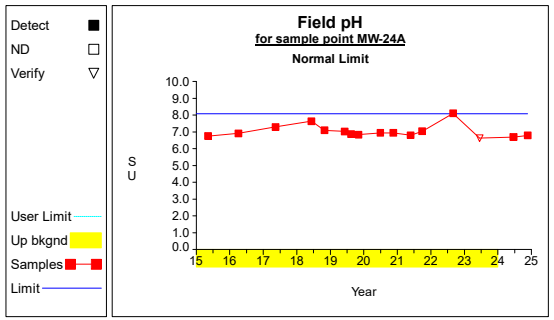
Graph 167



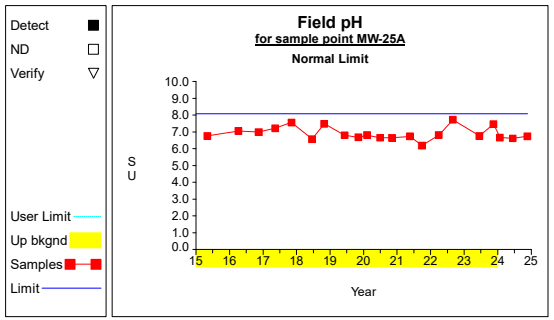
Graph 168



Graph 169

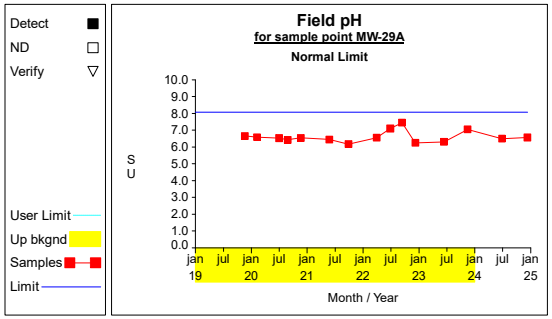


Graph 170

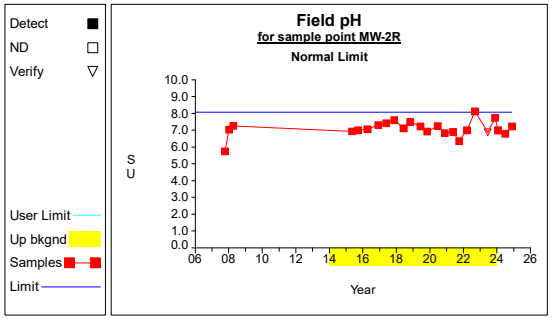


Graph 171

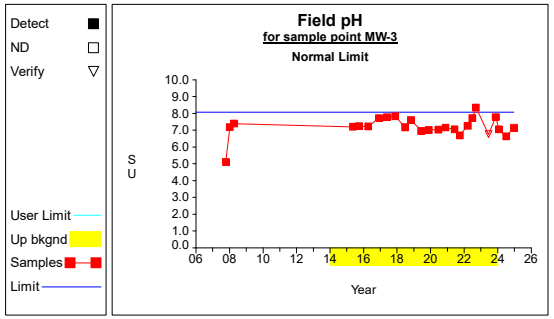
Up vs. Down Prediction Limits



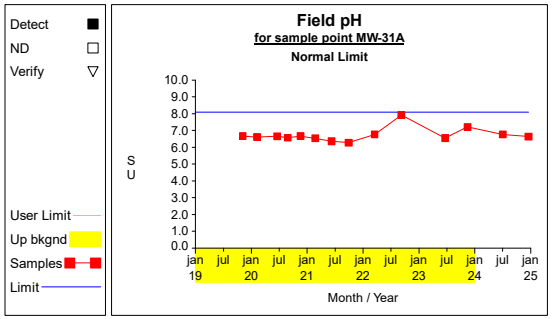
Graph 172



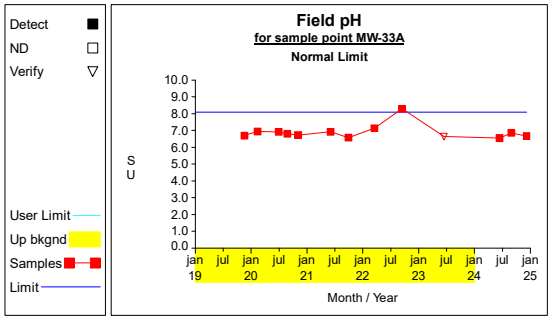
Graph 173



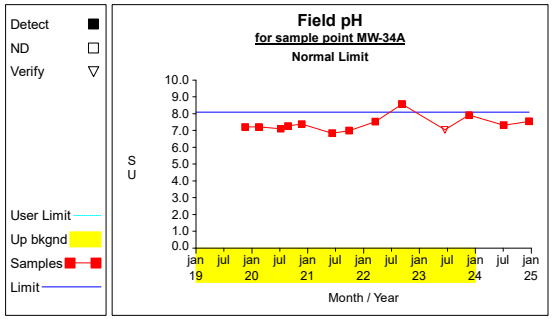
Graph 174



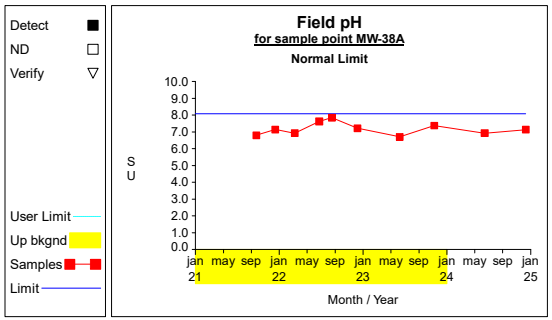
Graph 175



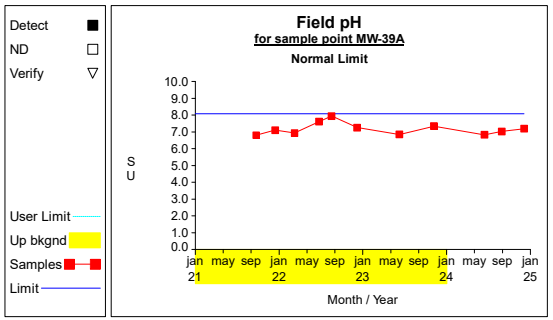
Graph 176



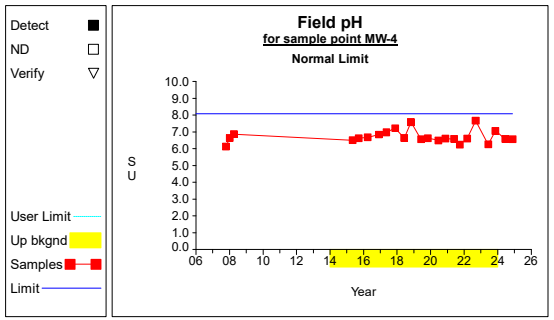
Graph 177



Graph 178

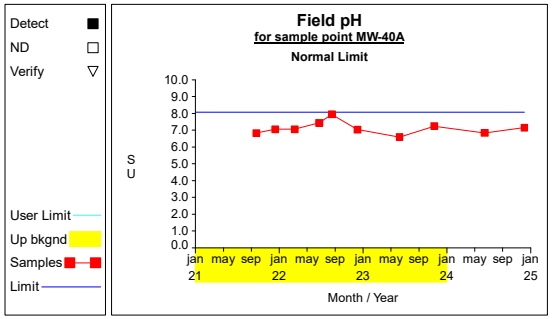


Graph 179

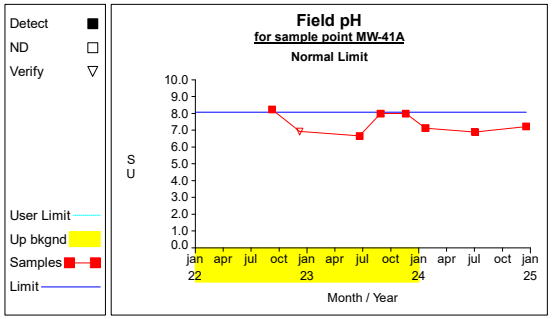


Graph 180

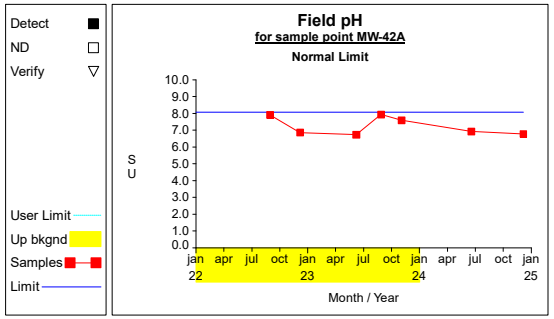
Up vs. Down Prediction Limits



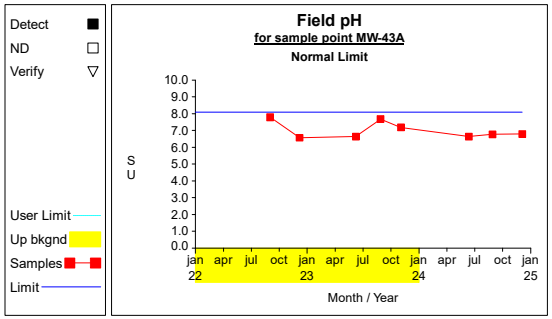
Graph 181



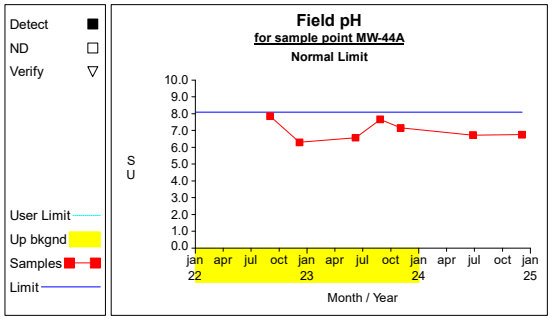
Graph 182



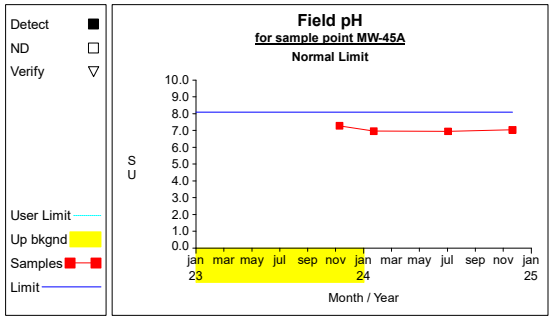
Graph 183



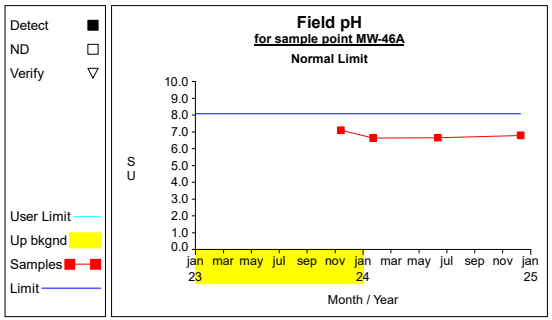
Graph 184



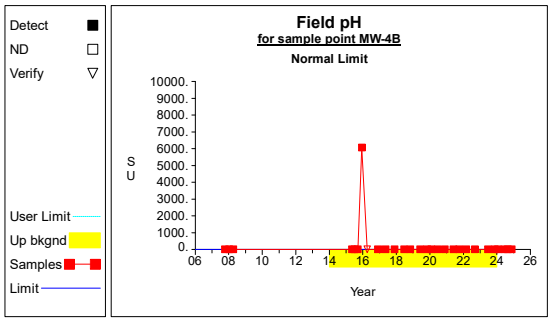
Graph 185



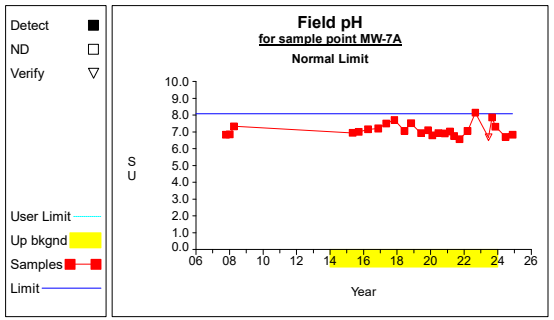
Graph 186



Graph 187

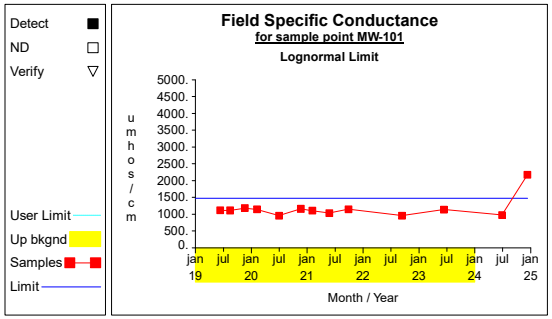


Graph 188

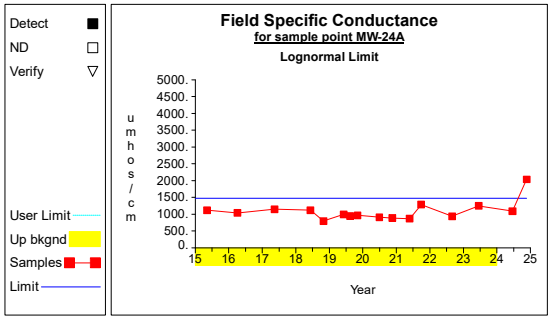


Graph 189

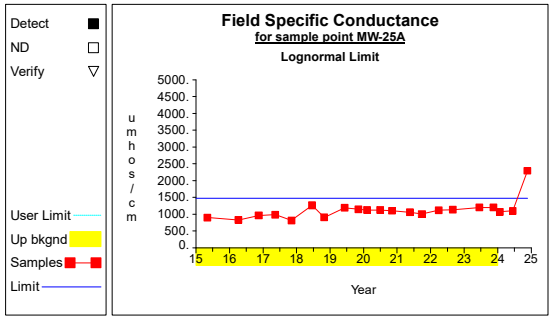
Up vs. Down Prediction Limits



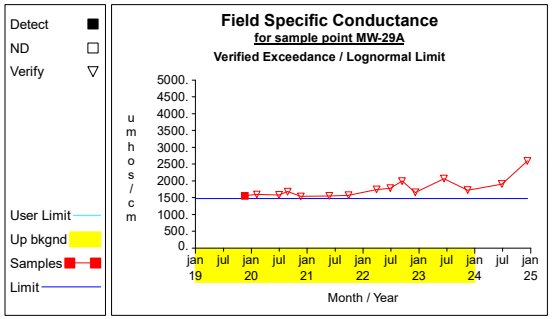
Graph 190



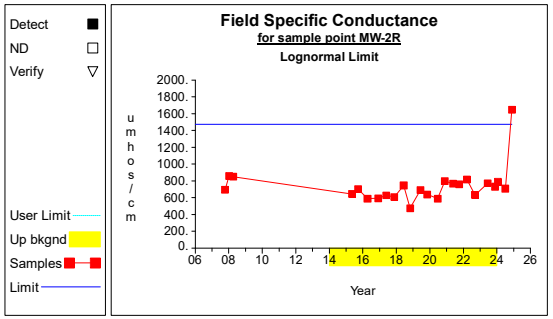
Graph 191



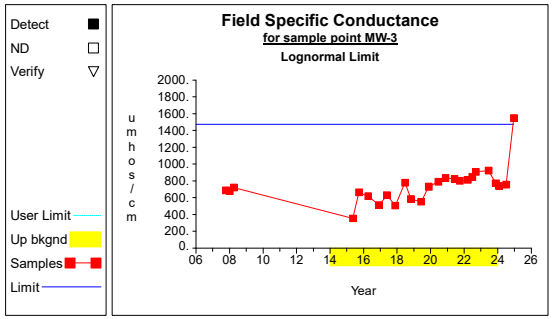
Graph 192



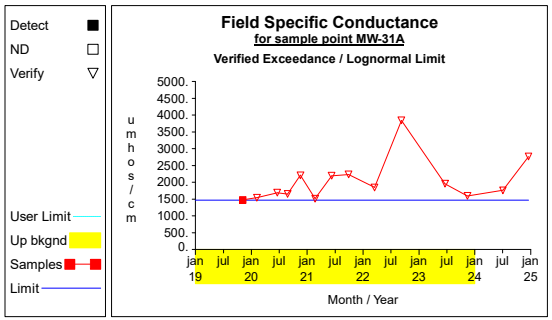
Graph 193



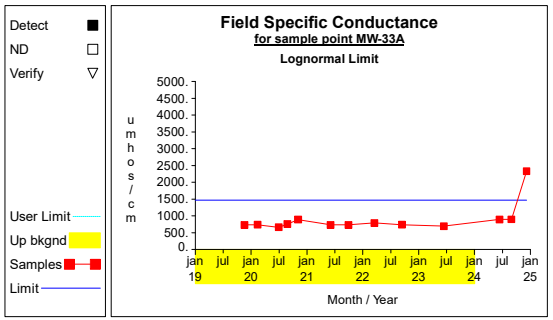
Graph 194



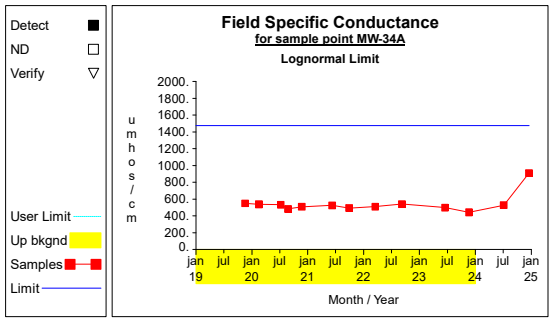
Graph 195



Graph 196

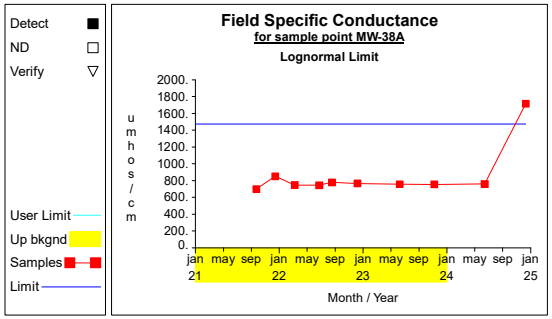


Graph 197

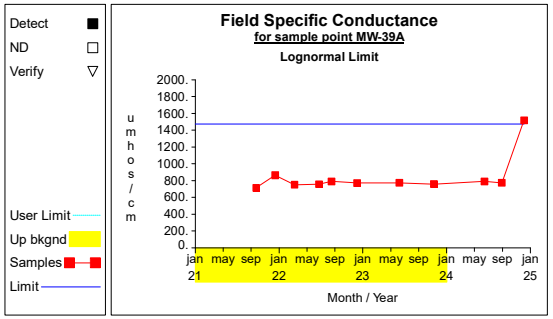


Graph 198

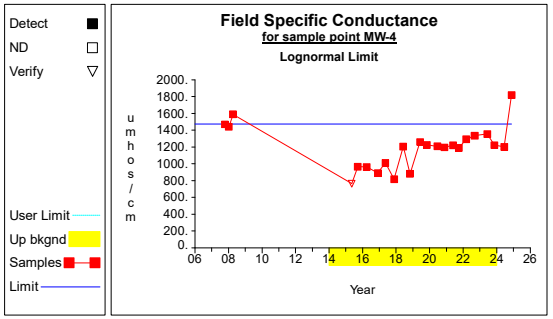
Up vs. Down Prediction Limits



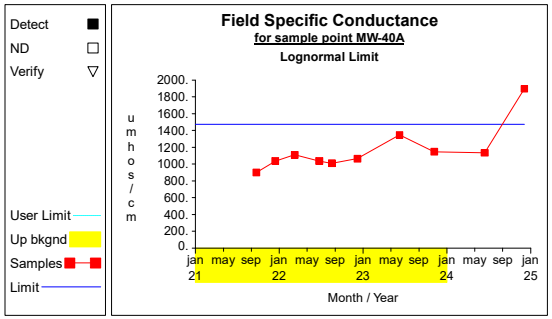
Graph 199



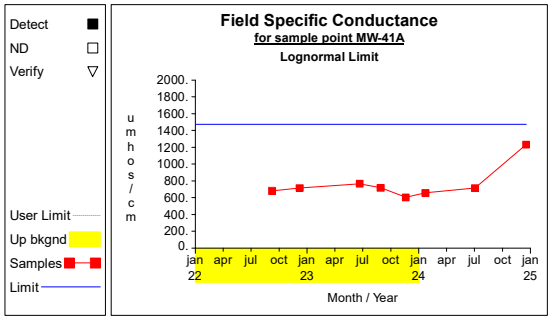
Graph 200



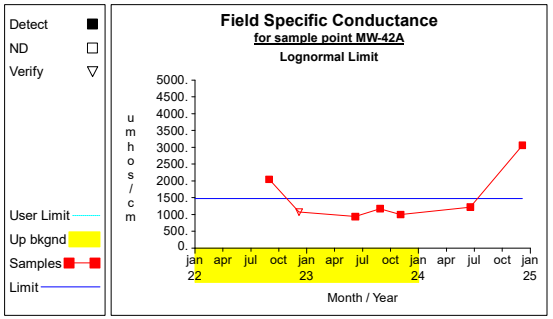
Graph 201



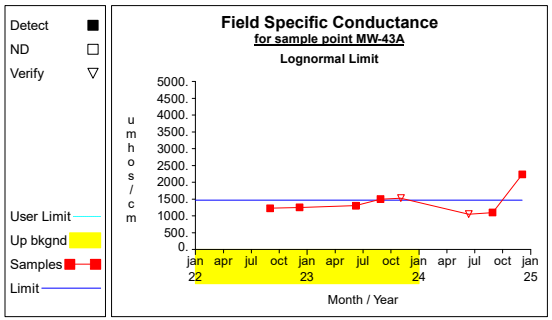
Graph 202



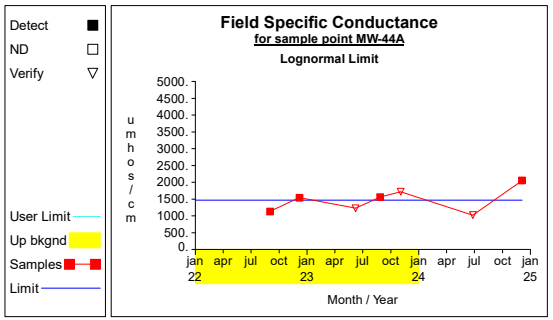
Graph 203



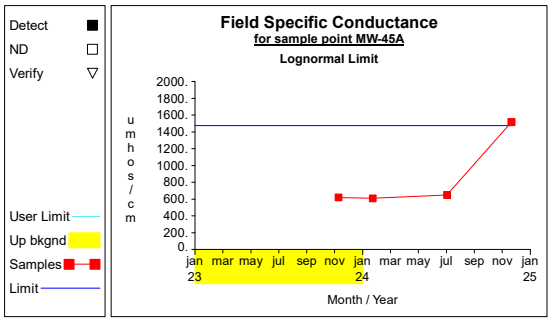
Graph 204



Graph 205

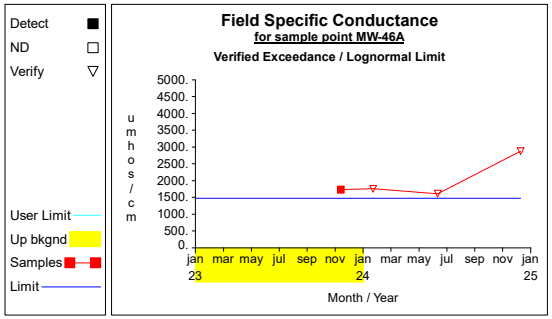


Graph 206

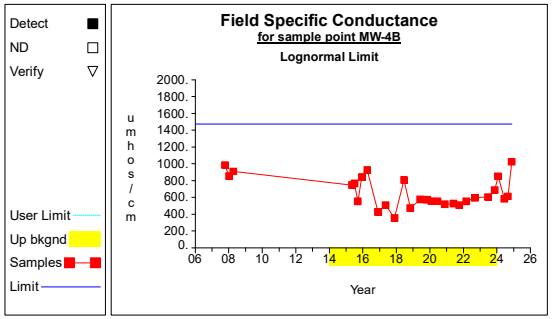


Graph 207

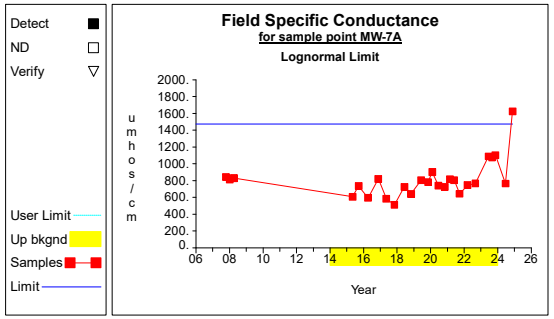
Up vs. Down Prediction Limits



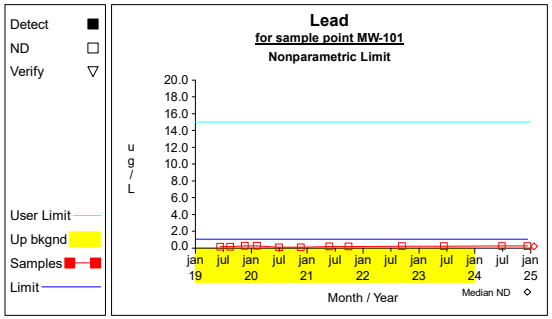
Graph 208



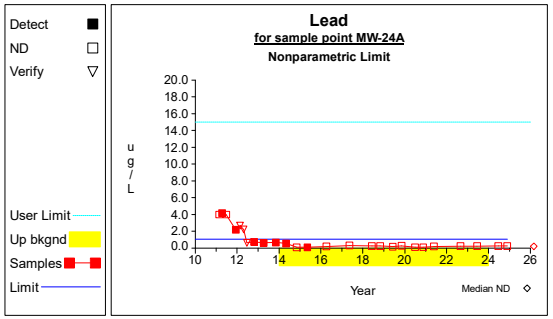
Graph 209



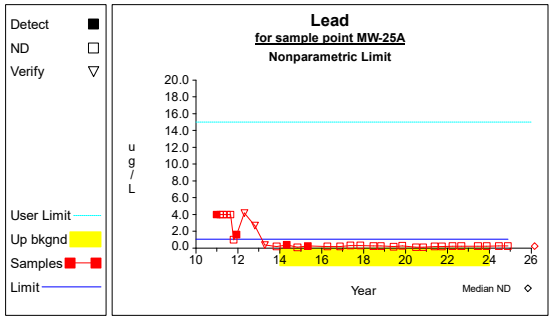
Graph 210



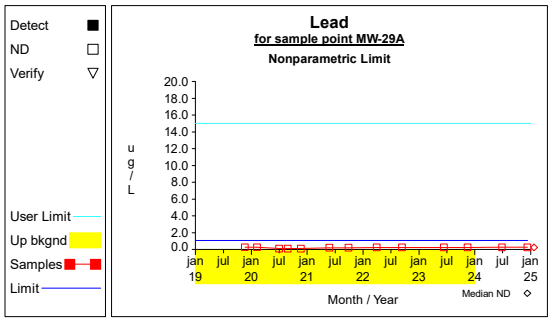
Graph 211



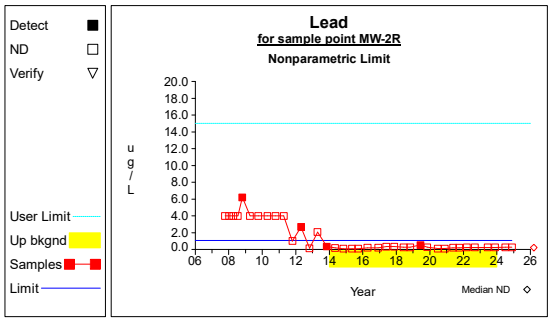
Graph 212



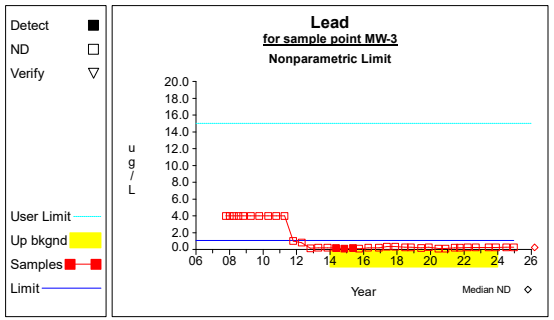
Graph 213



Graph 214

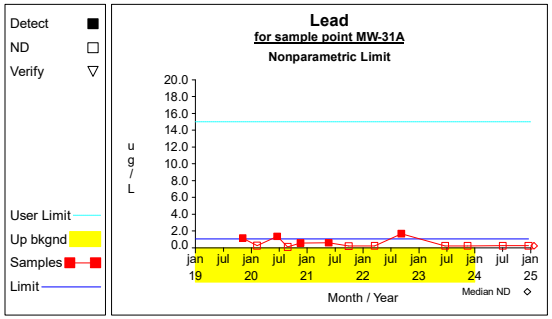


Graph 215

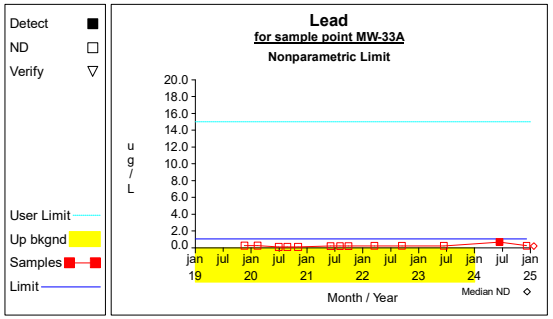


Graph 216

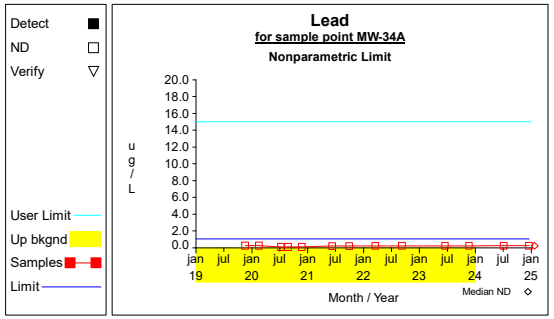
Up vs. Down Prediction Limits



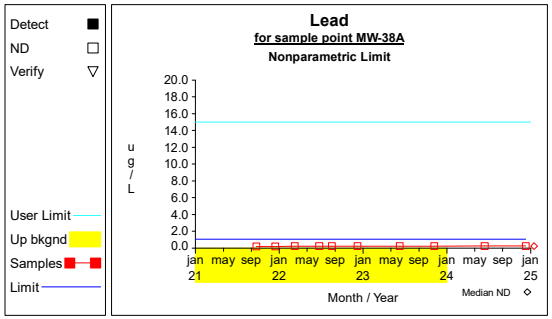
Graph 217



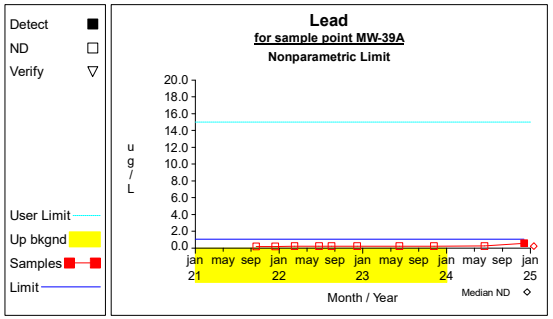
Graph 218



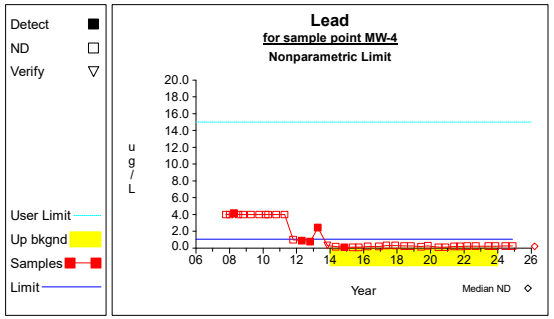
Graph 219



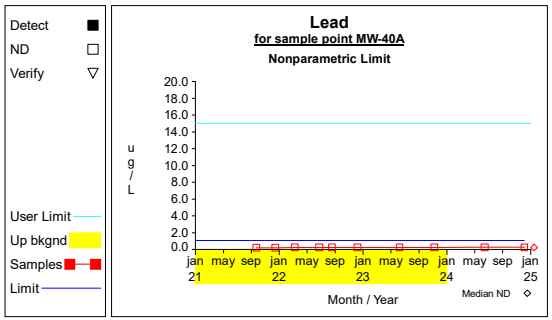
Graph 220



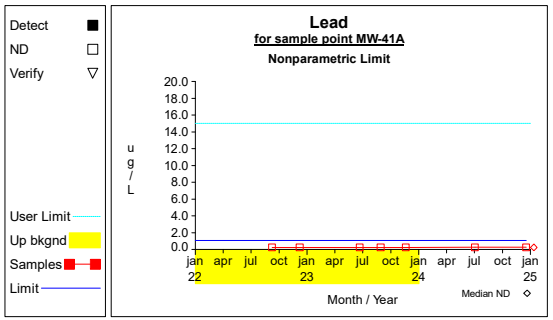
Graph 221



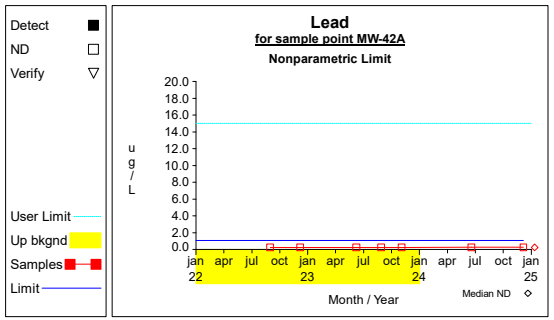
Graph 222



Graph 223

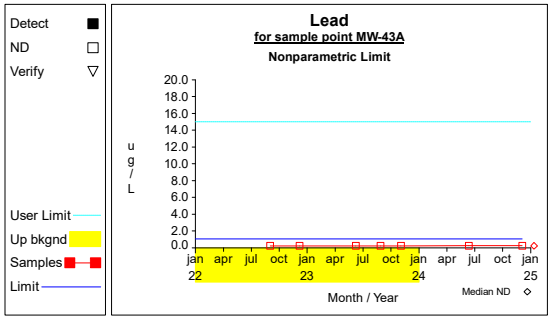


Graph 224

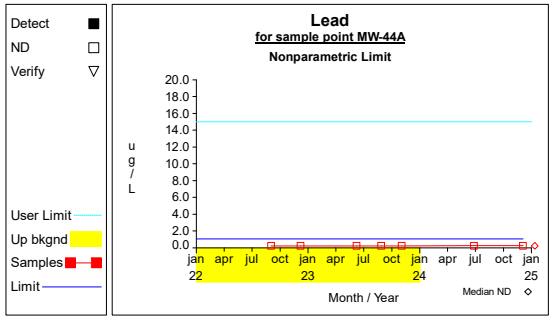


Graph 225

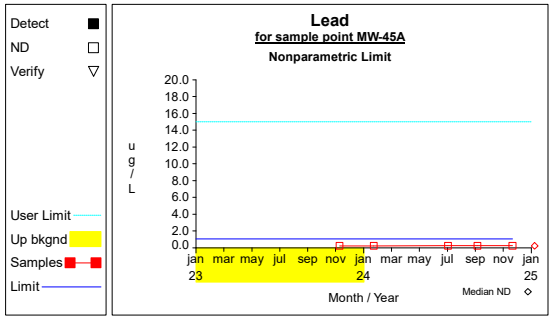
Up vs. Down Prediction Limits



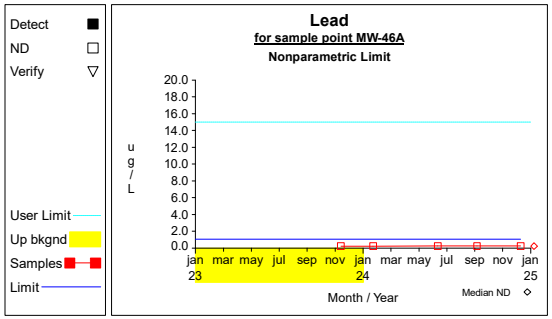
Graph 226



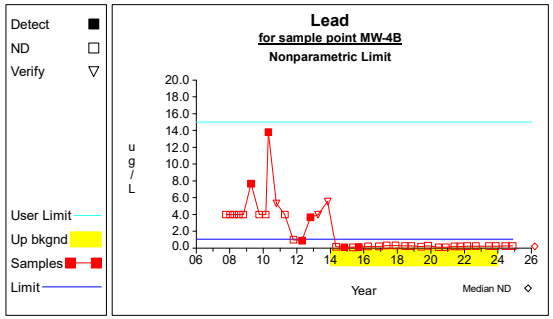
Graph 227



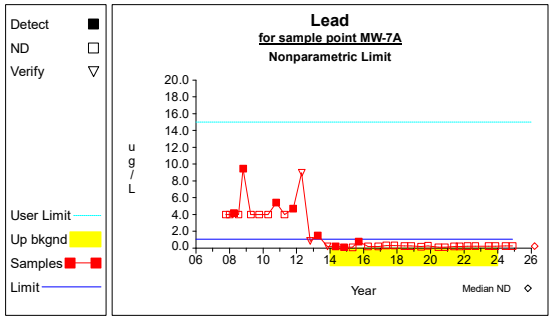
Graph 228



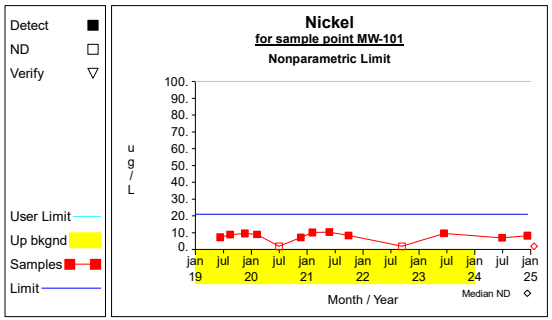
Graph 229



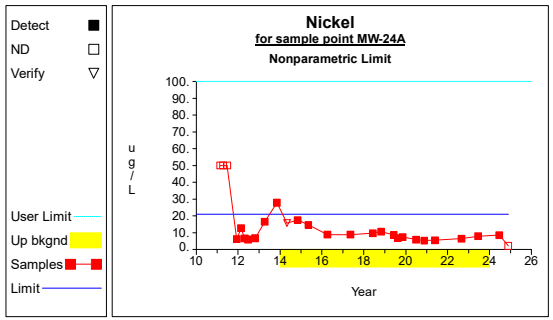
Graph 230



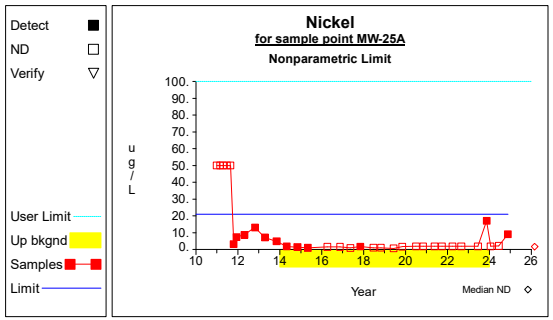
Graph 231



Graph 232

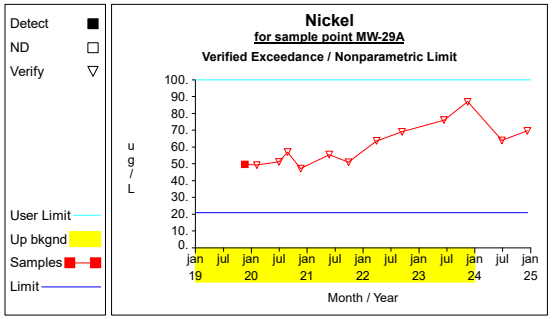


Graph 233

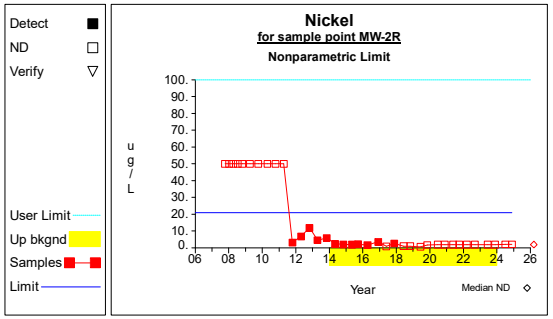


Graph 234

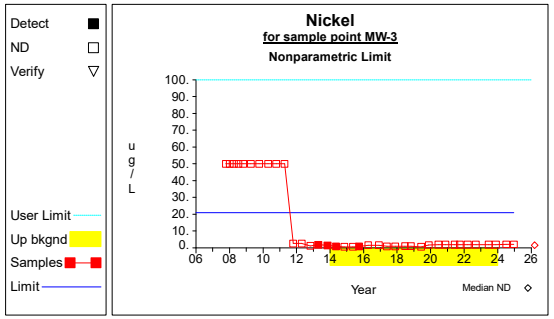
Up vs. Down Prediction Limits



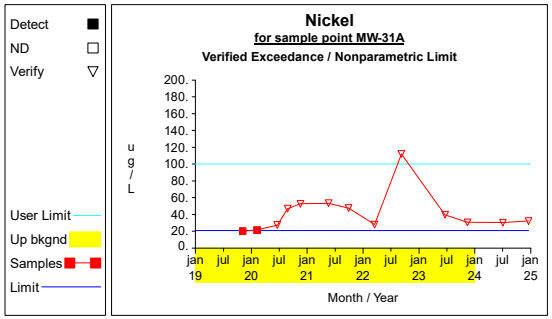
Graph 235



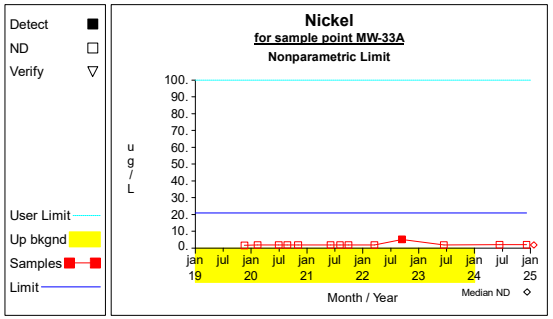
Graph 236



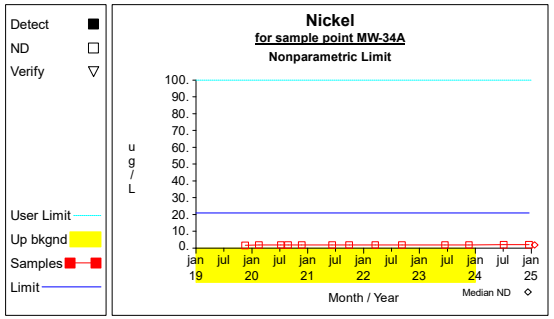
Graph 237



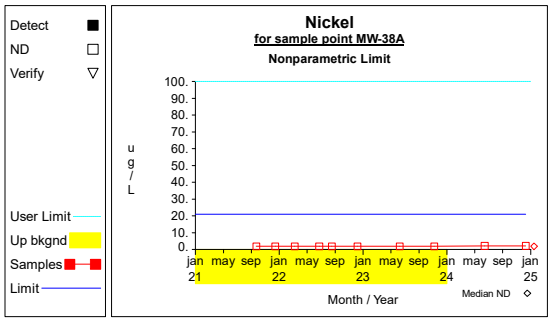
Graph 238



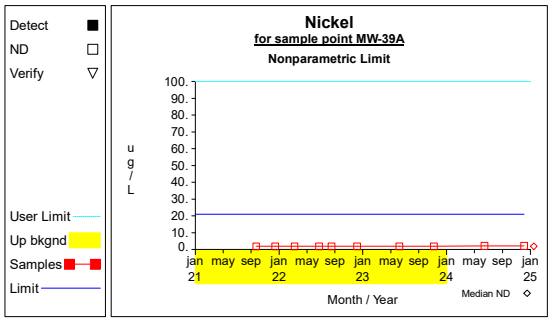
Graph 239



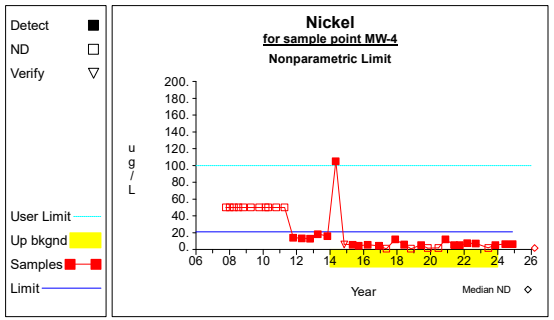
Graph 240



Graph 241

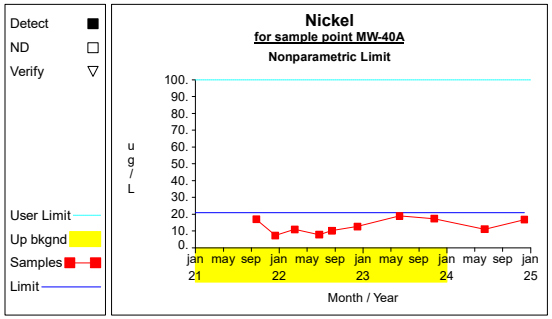


Graph 242

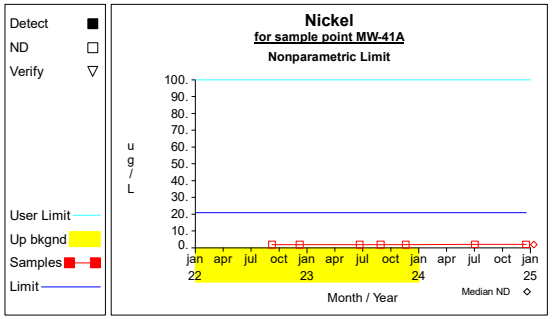


Graph 243

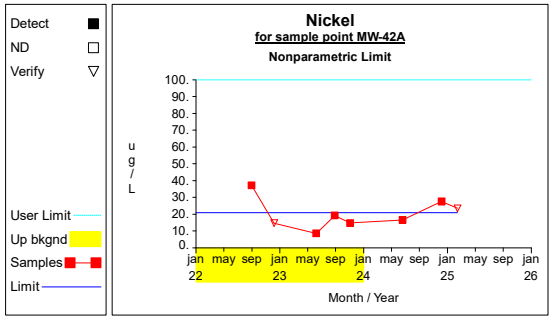
Up vs. Down Prediction Limits



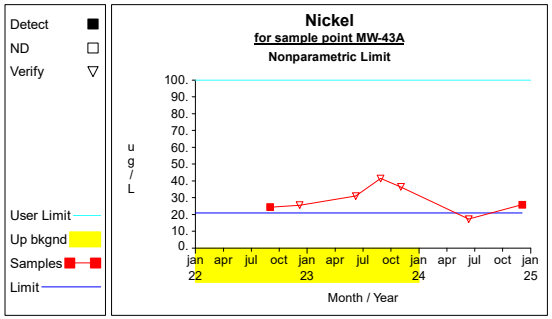
Graph 244



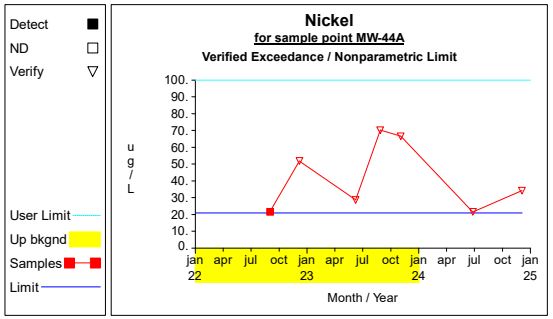
Graph 245



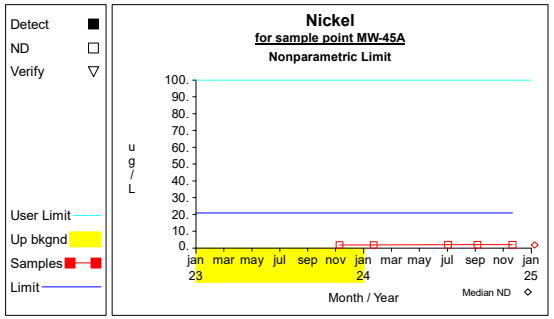
Graph 246



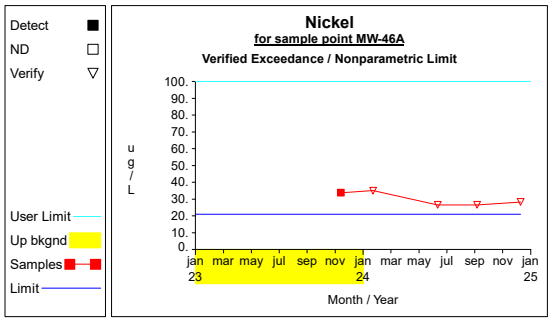
Graph 247



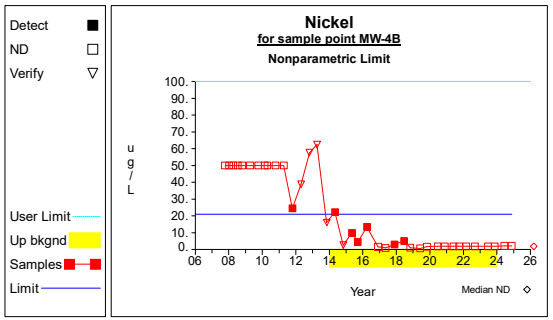
Graph 248



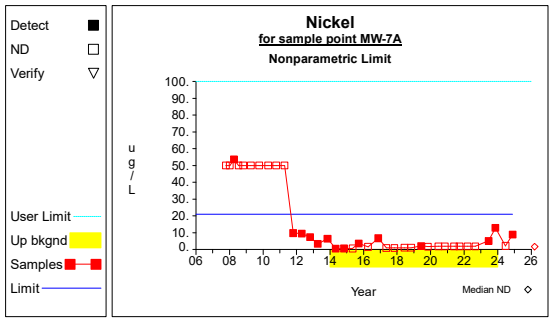
Graph 249



Graph 250

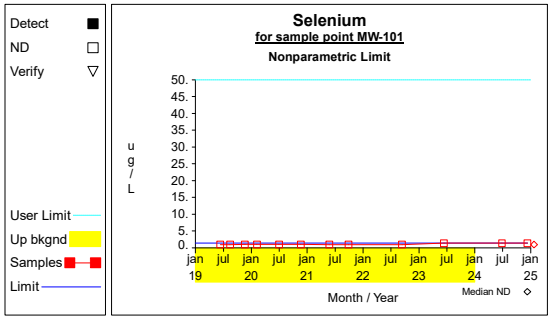


Graph 251

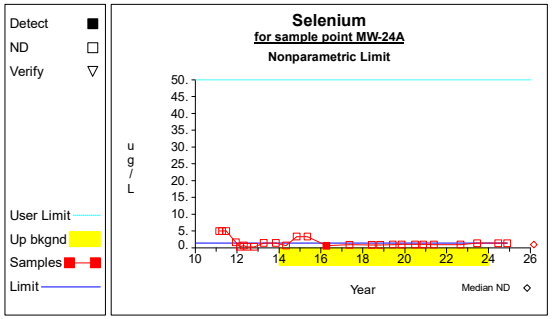


Graph 252

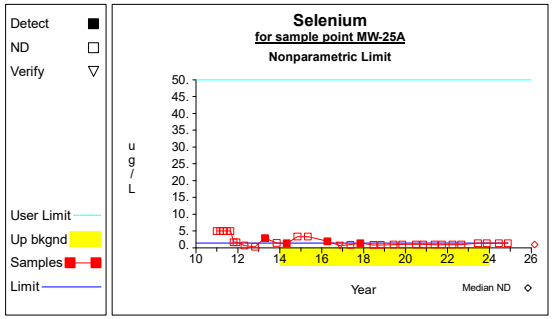
Up vs. Down Prediction Limits



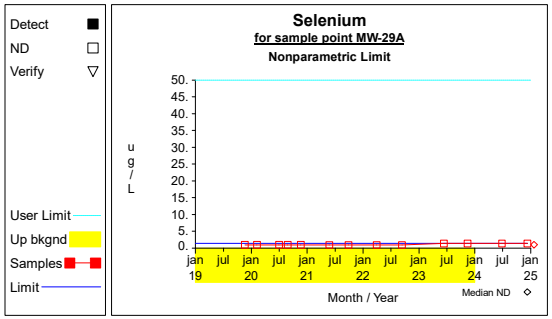
Graph 253



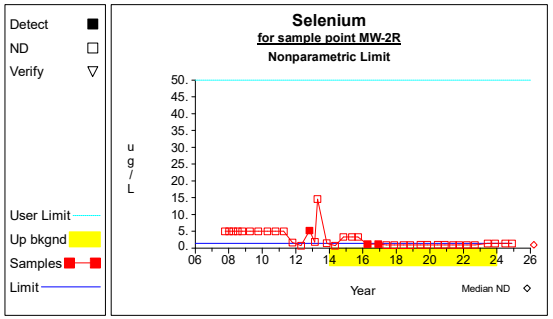
Graph 254



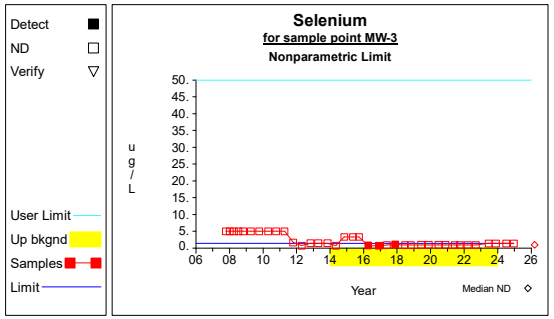
Graph 255



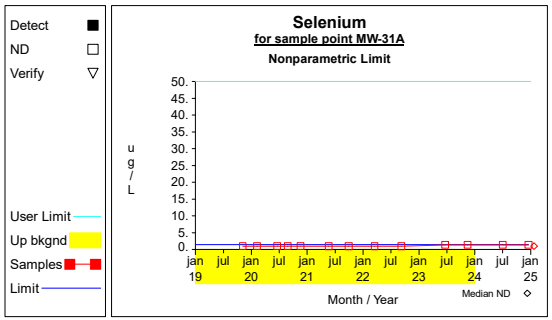
Graph 256



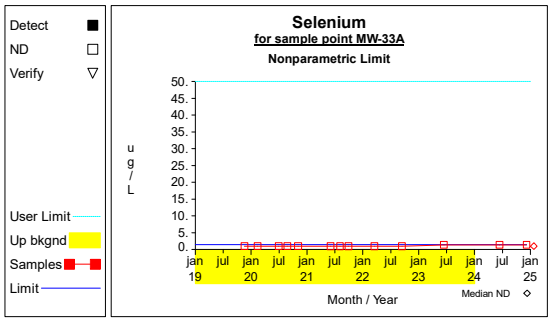
Graph 257



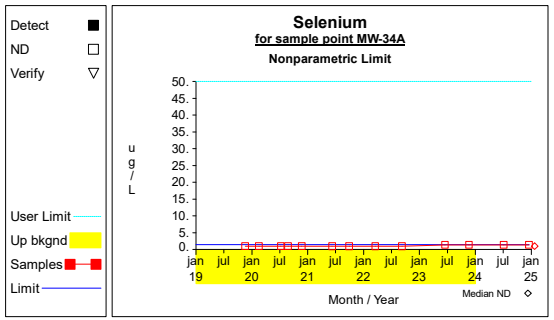
Graph 258



Graph 259

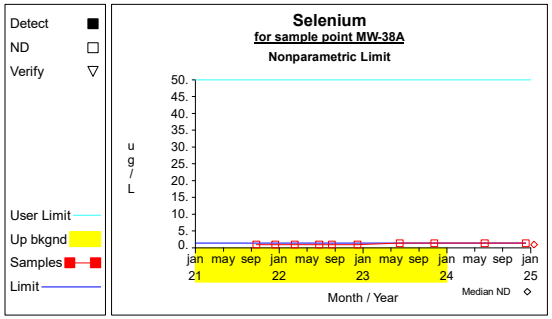


Graph 260

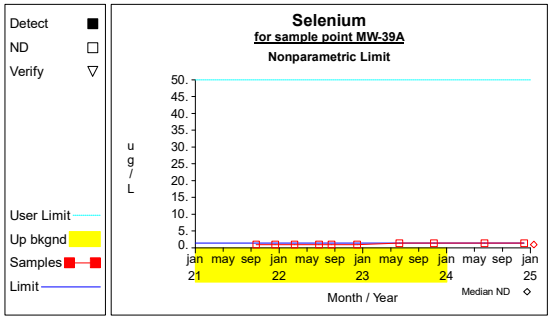


Graph 261

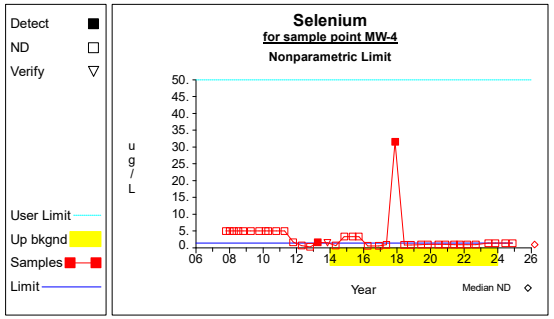
Up vs. Down Prediction Limits



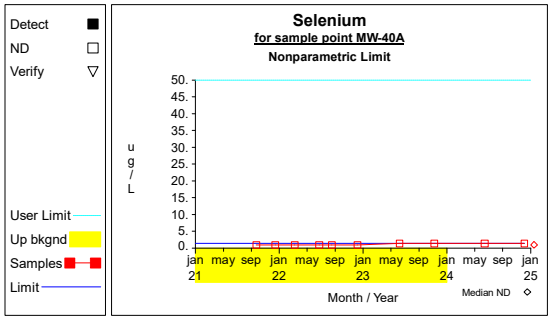
Graph 262



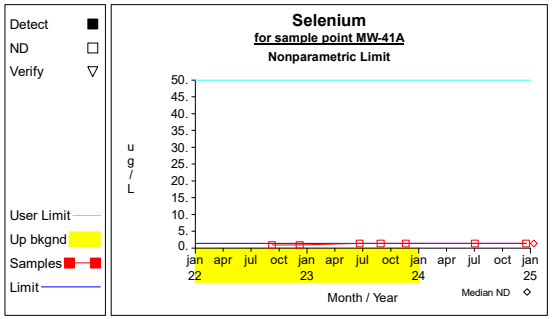
Graph 263



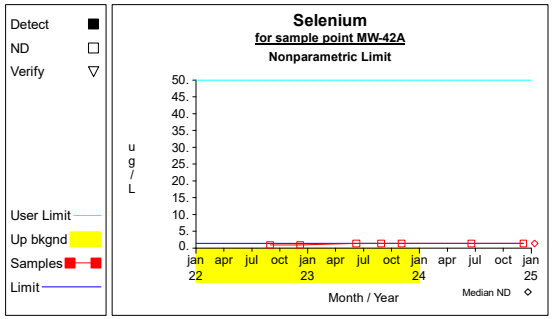
Graph 264



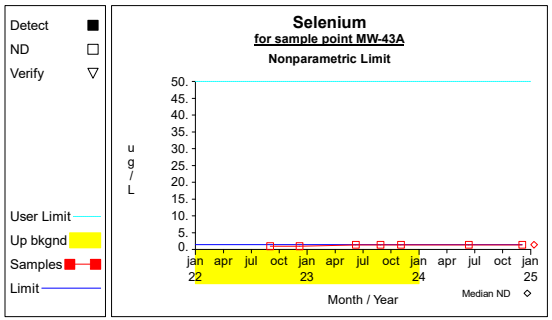
Graph 265



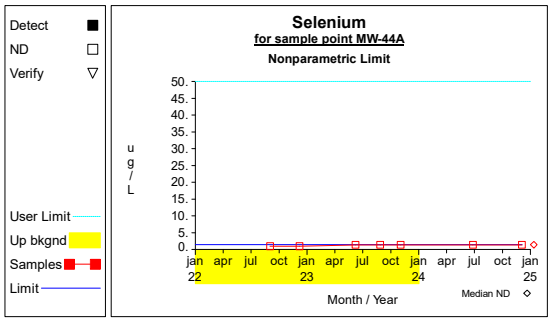
Graph 266



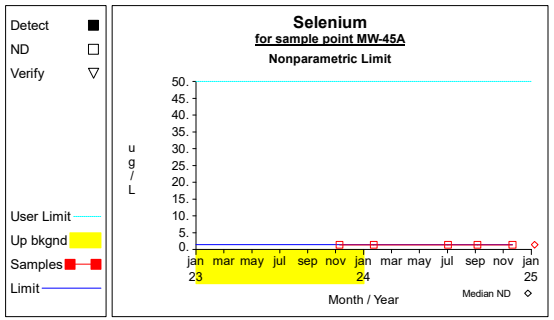
Graph 267



Graph 268

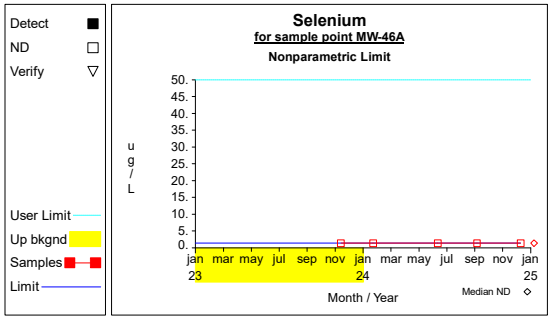


Graph 269

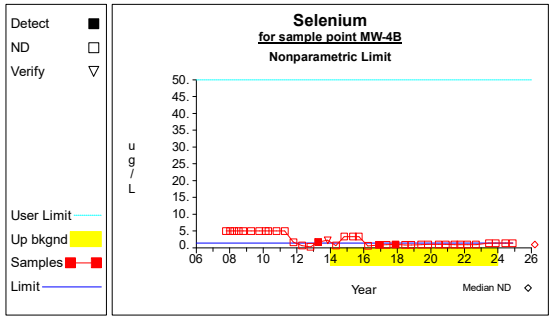


Graph 270

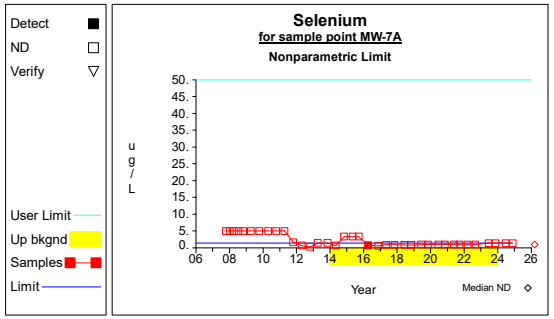
Up vs. Down Prediction Limits



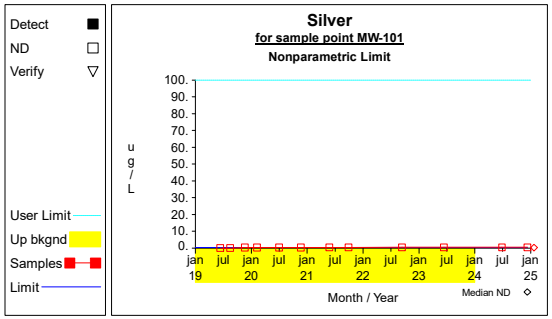
Graph 271



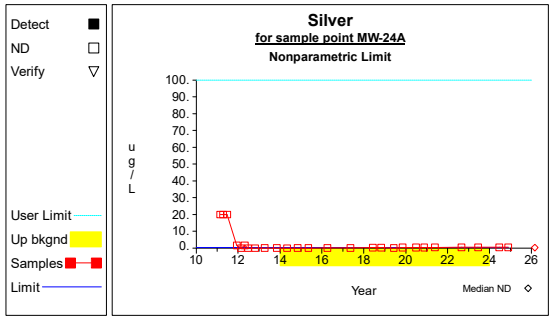
Graph 272



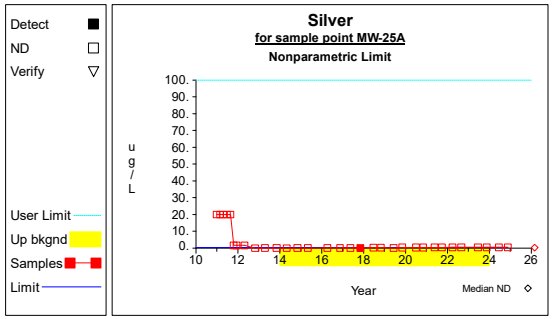
Graph 273



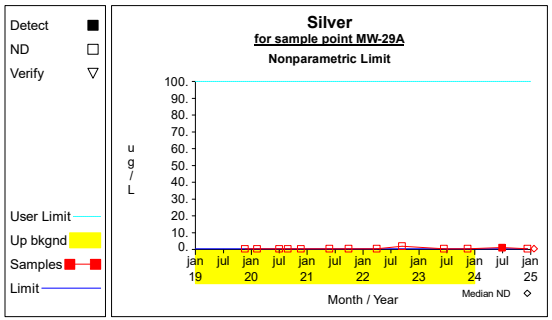
Graph 274



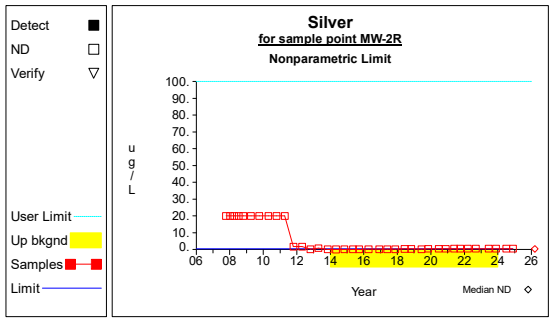
Graph 275



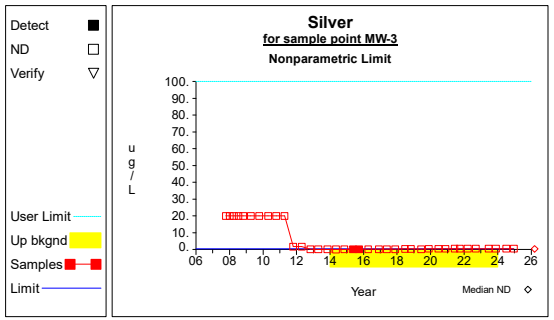
Graph 276



Graph 277

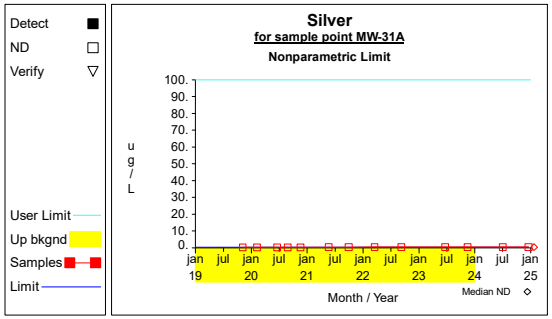


Graph 278

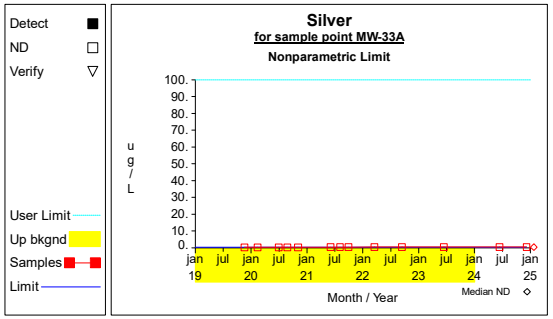


Graph 279

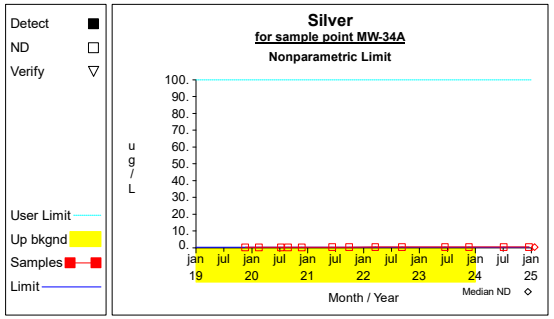
Up vs. Down Prediction Limits



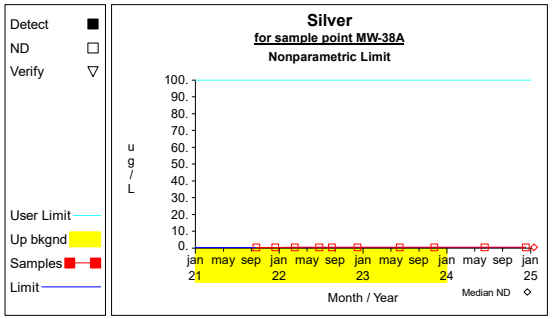
Graph 280



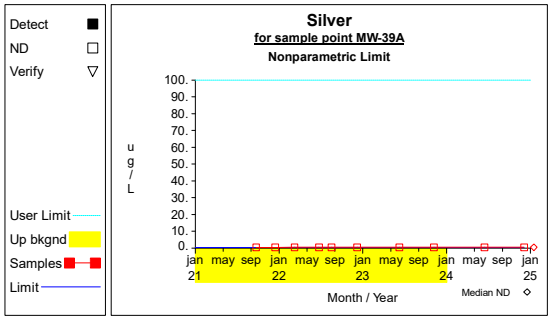
Graph 281



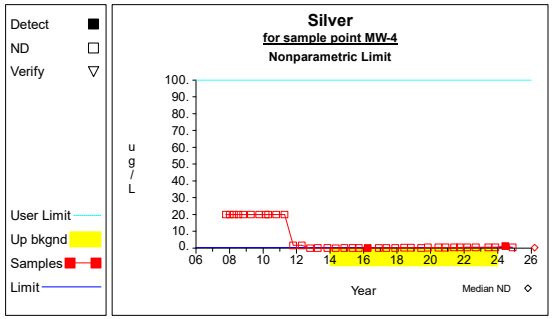
Graph 282



Graph 283



Graph 284



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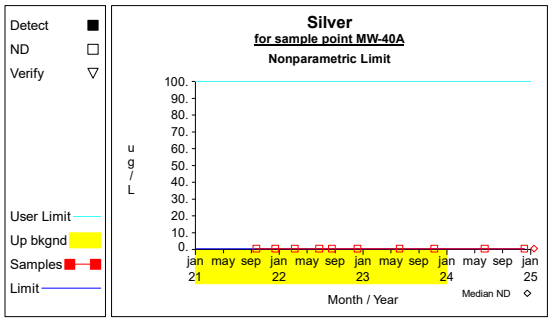
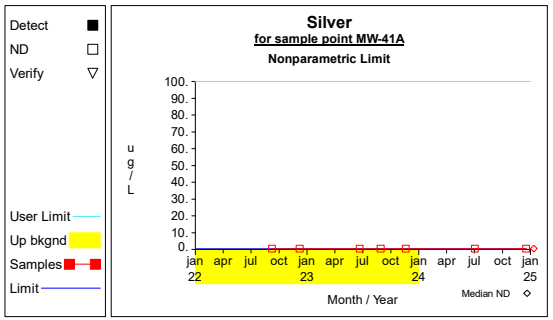
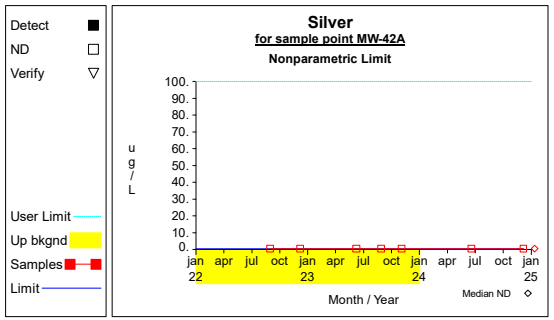


Graph 286

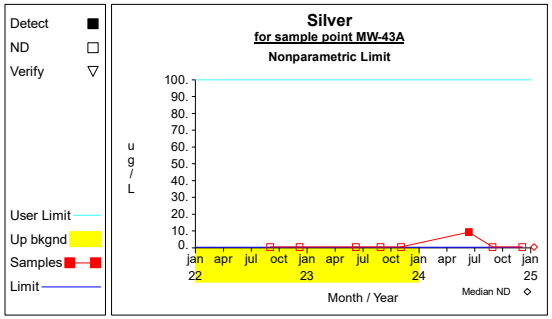


Graph 287

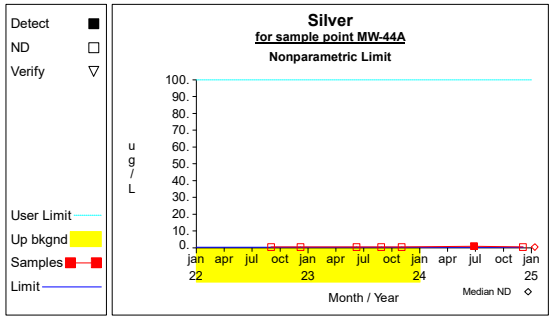


Graph 288

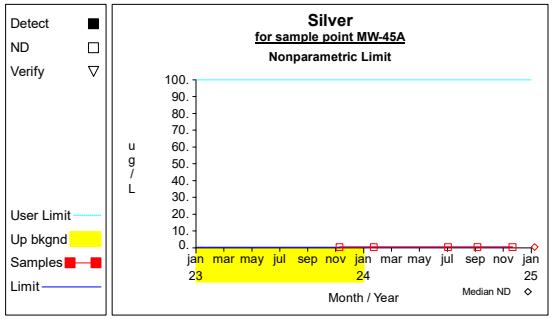
Up vs. Down Prediction Limits



Graph 289



Graph 290



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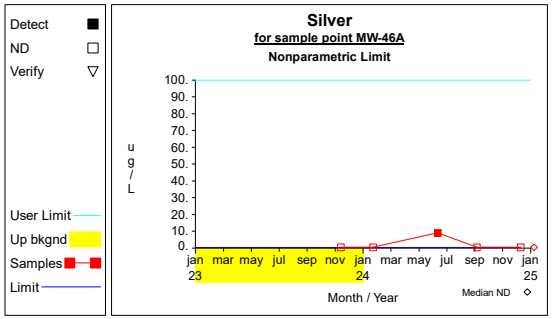
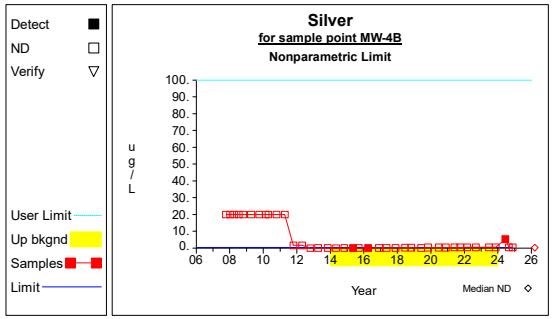
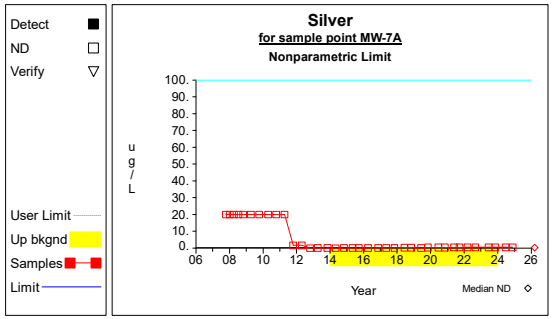


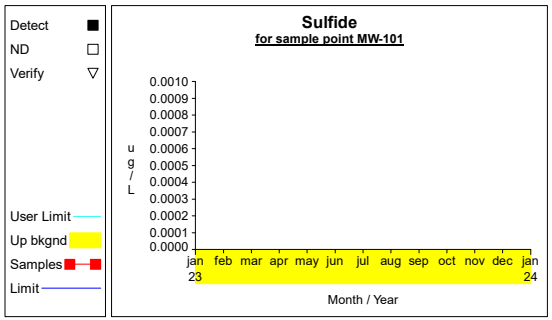
Graph 292



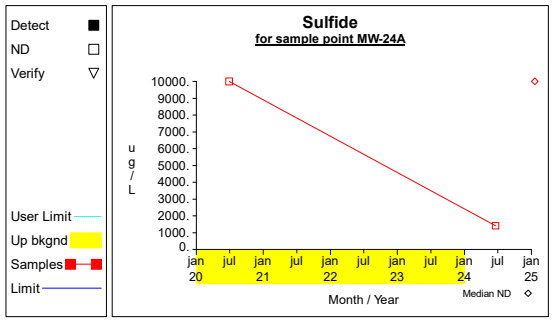
Graph 293



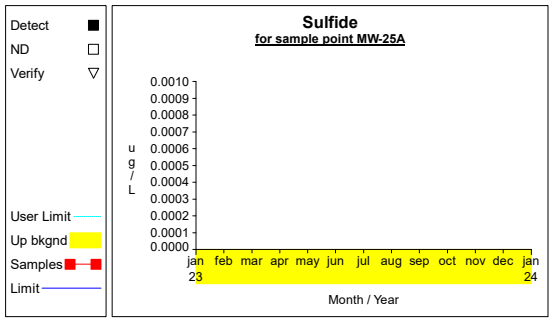
Graph 294



Graph 295

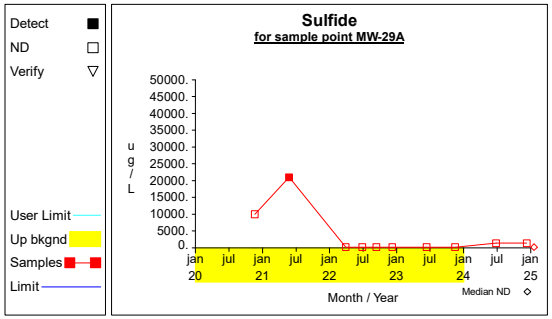


Graph 296

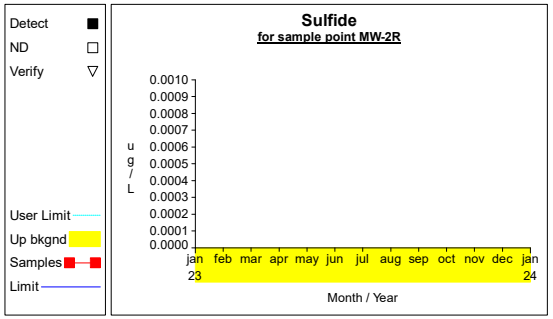


Graph 297

Up vs. Down Prediction Limits



Graph 298



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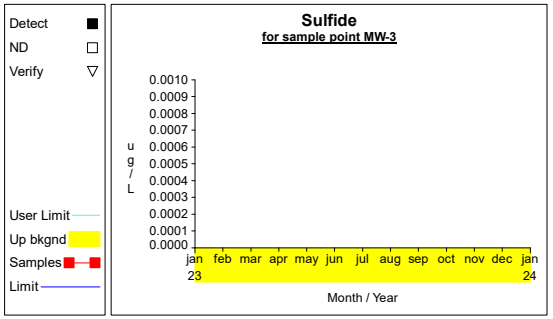
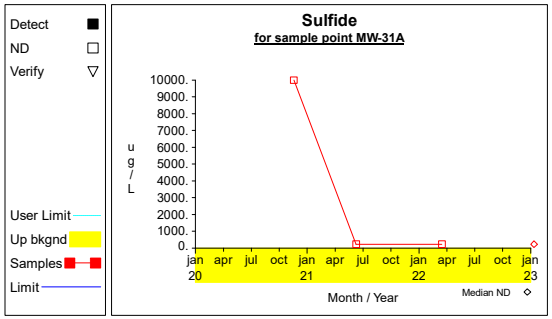
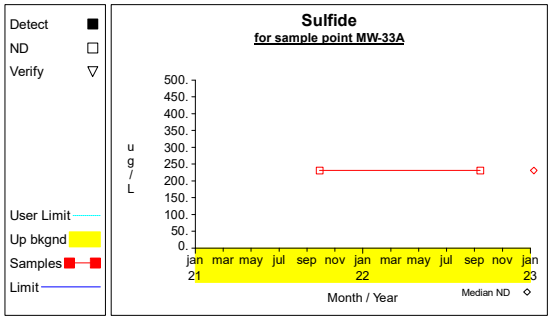


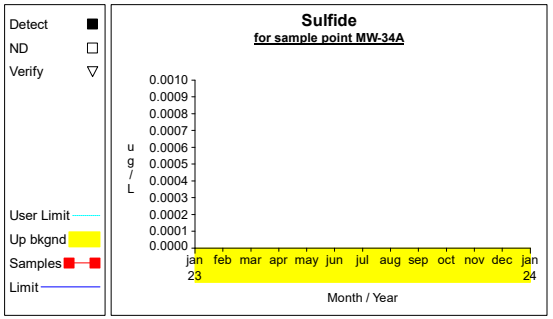
Graph 300



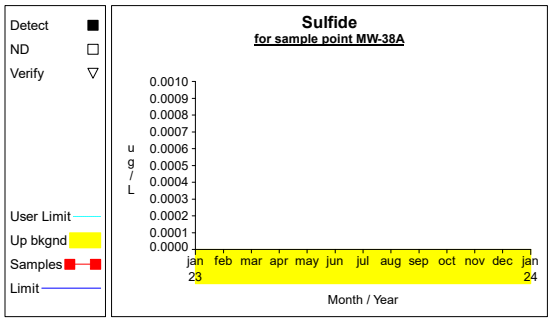
Graph 301



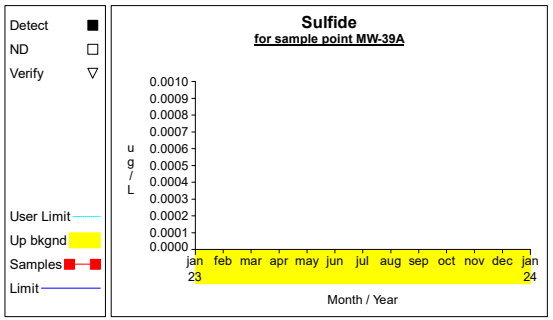
Graph 302



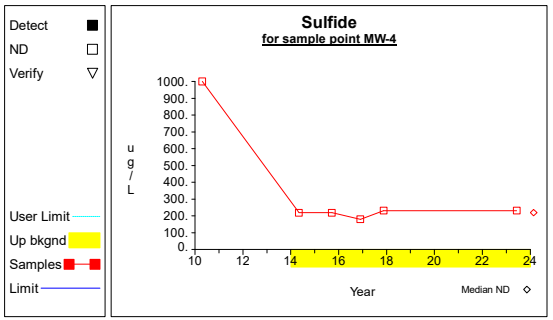
Graph 303



Graph 304

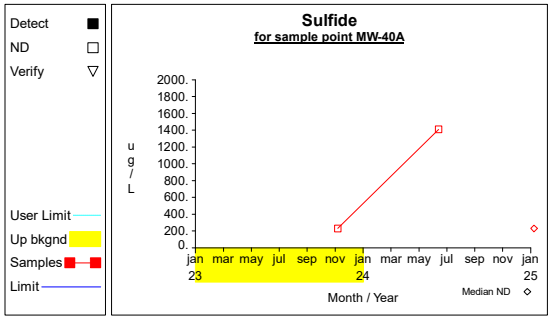


Graph 305

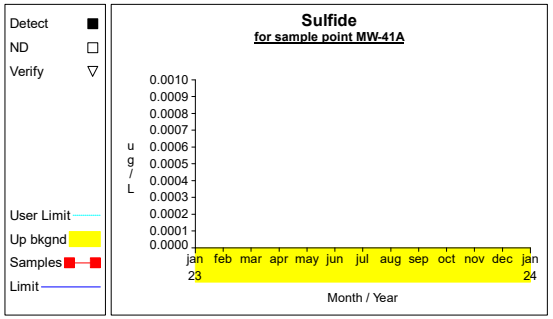


Graph 306

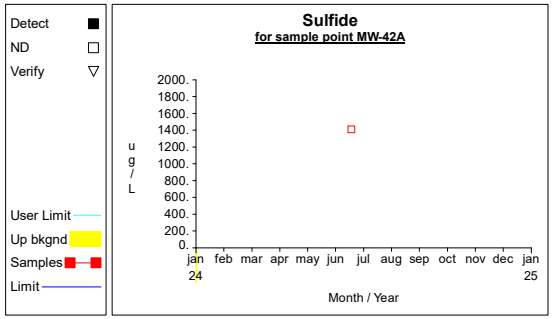
Up vs. Down Prediction Limits



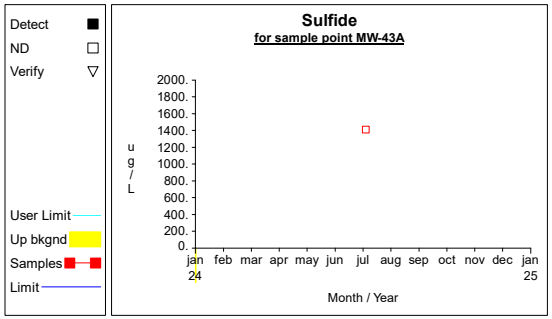
Graph 307



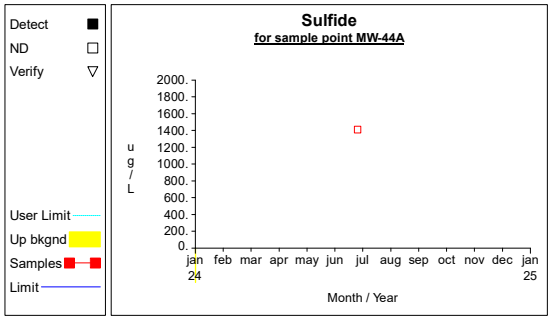
Graph 308



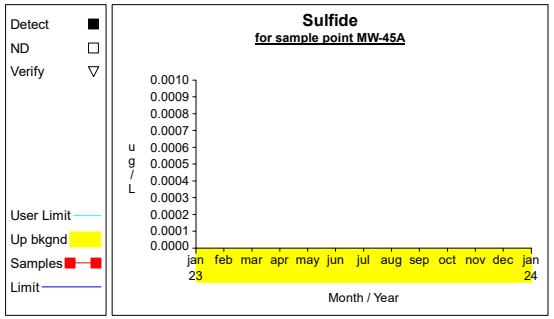
Graph 309



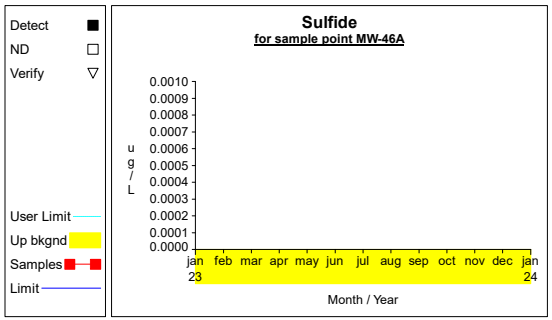
Graph 310



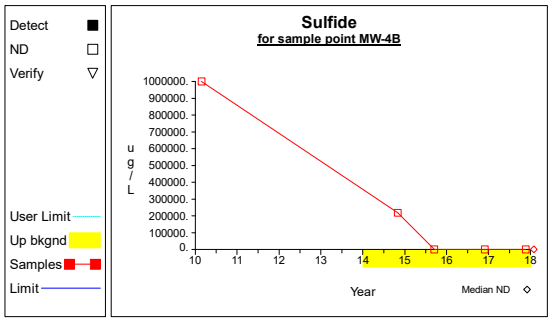
Graph 311



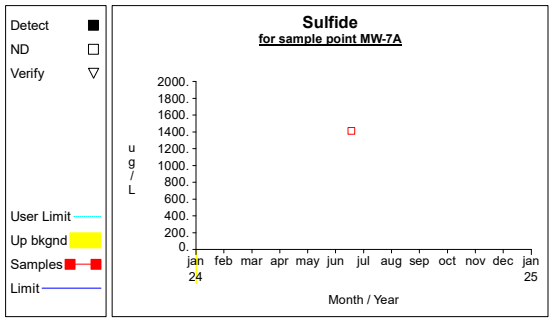
Graph 312



Graph 313

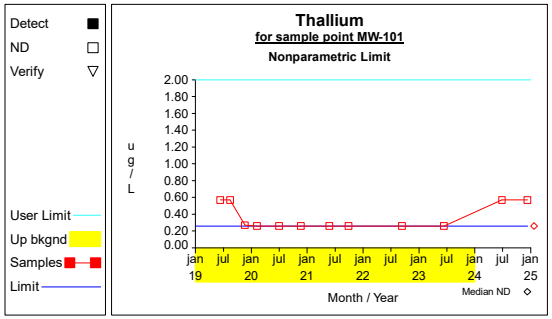


Graph 314

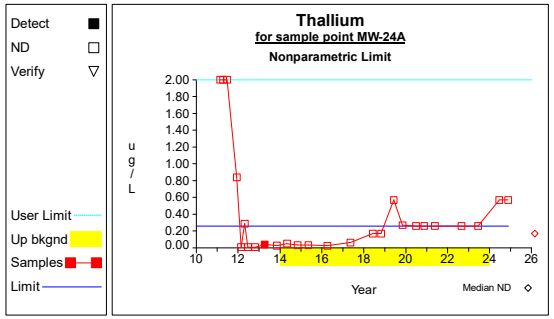


Graph 315

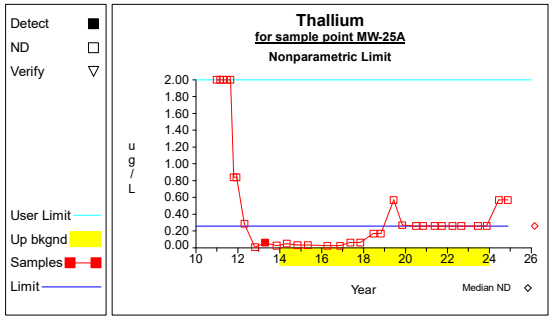
Up vs. Down Prediction Limits



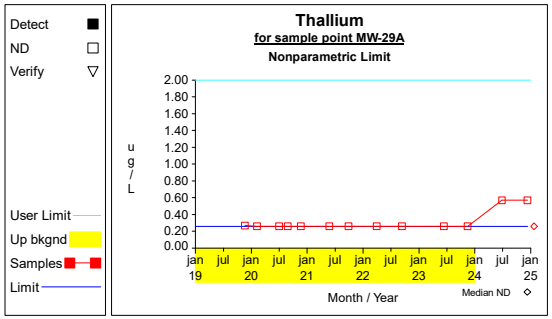
Graph 316



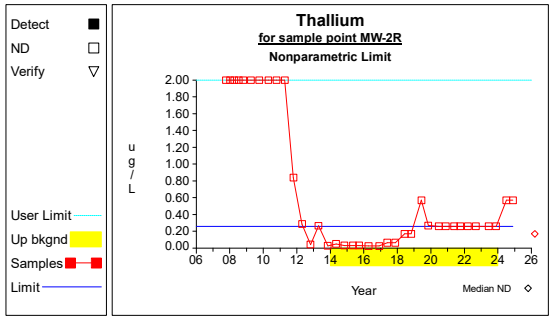
Graph 317



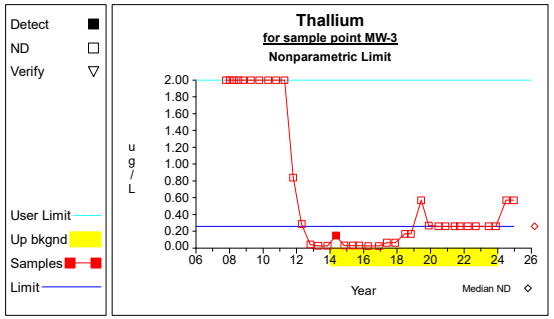
Graph 318



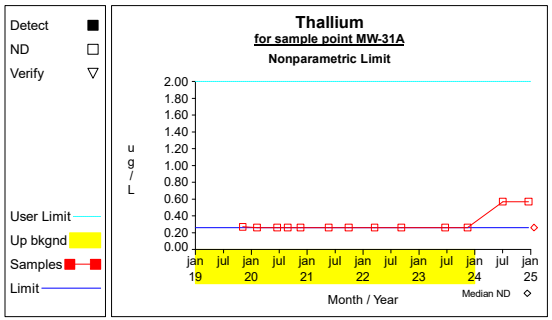
Graph 319



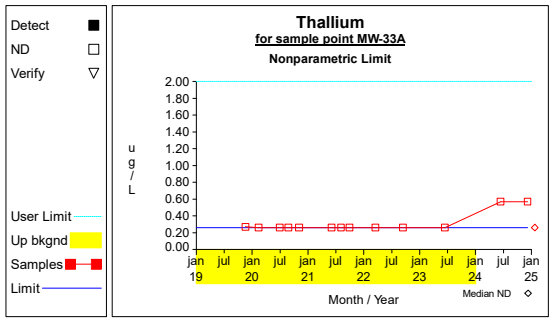
Graph 320



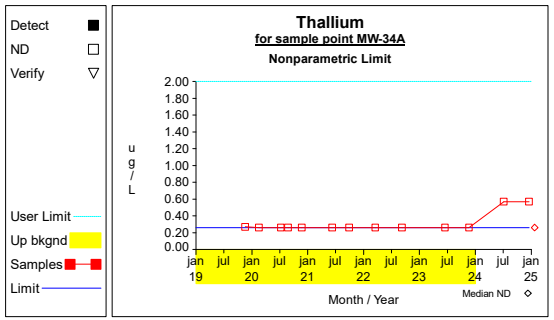
Graph 321



Graph 322

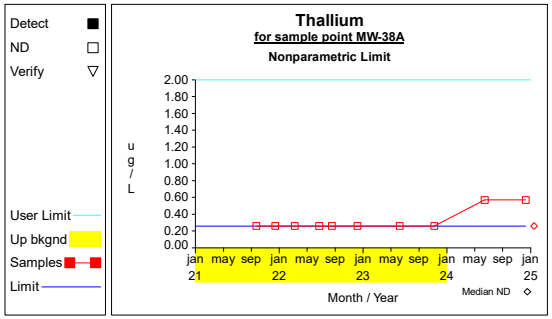


Graph 323

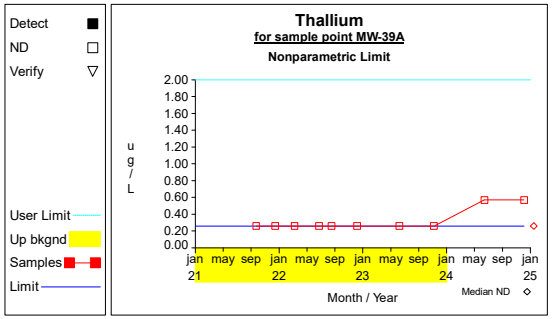


Graph 324

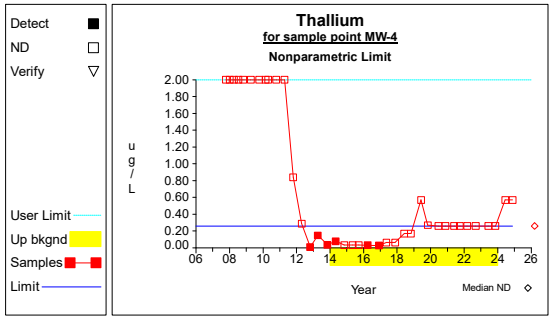
Up vs. Down Prediction Limits



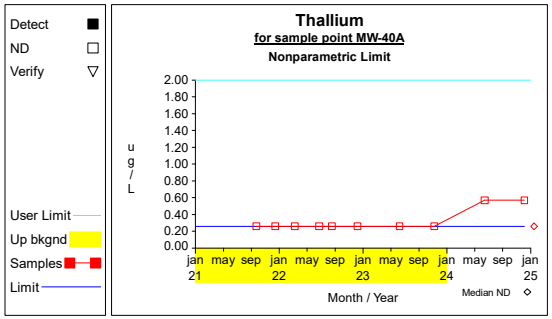
Graph 325



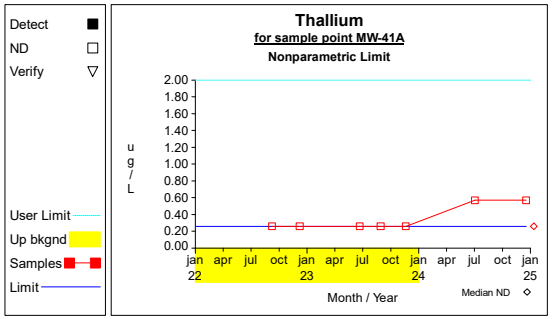
Graph 326



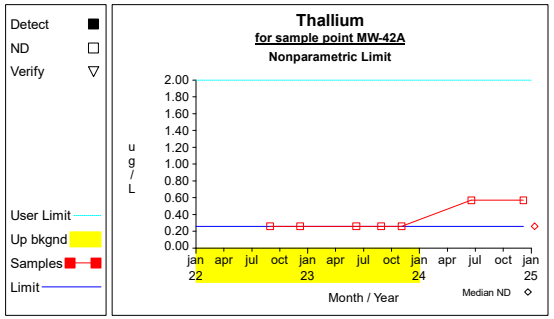
Graph 327



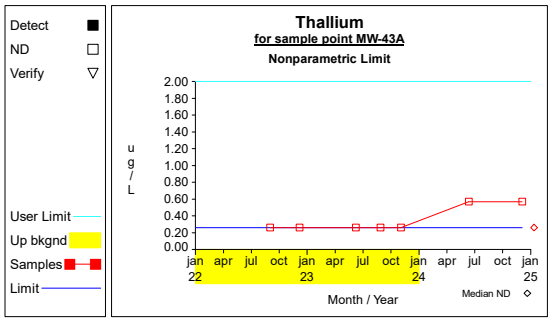
Graph 328



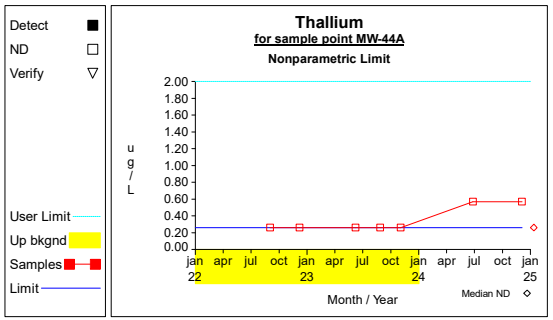
Graph 329



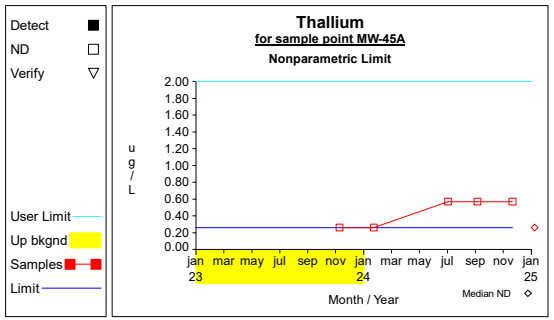
Graph 330



Graph 331

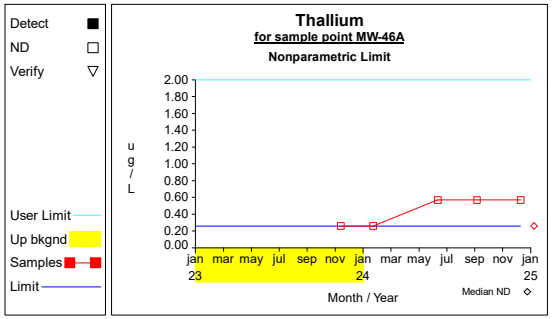


Graph 332

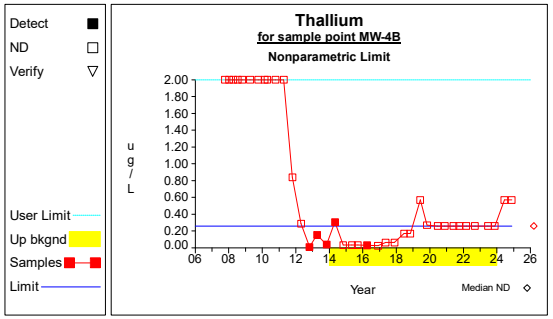


Graph 333

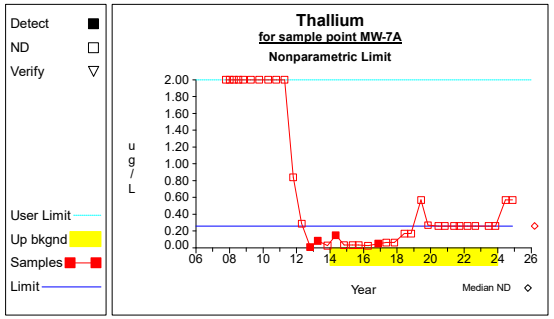
Up vs. Down Prediction Limits



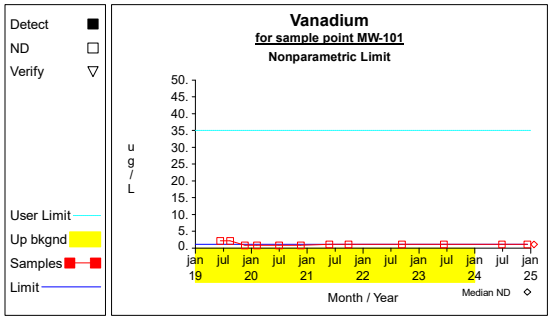
Graph 334



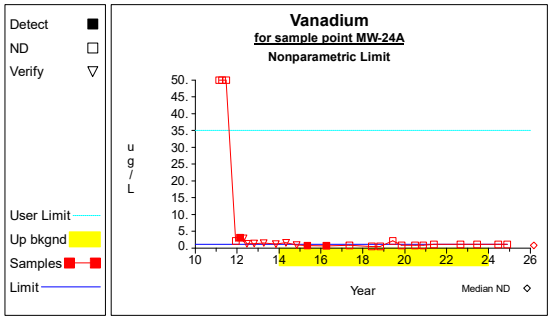
Graph 335



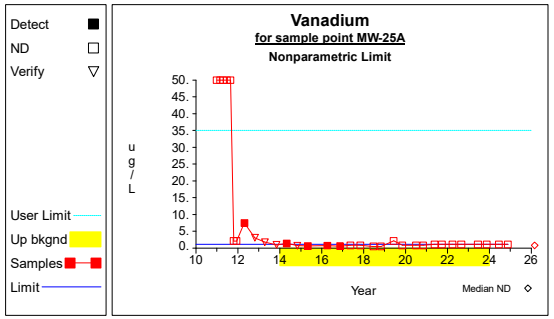
Graph 336



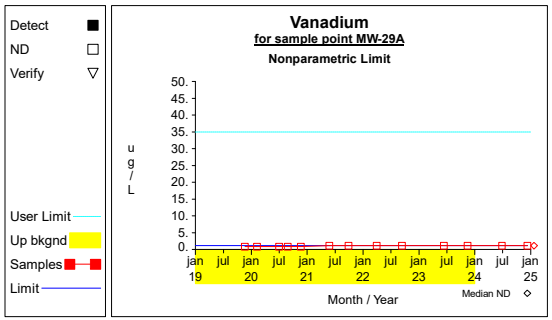
Graph 337



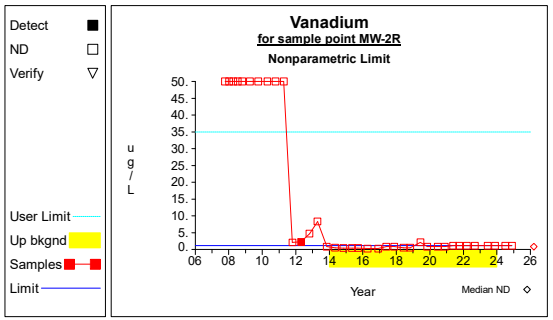
Graph 338



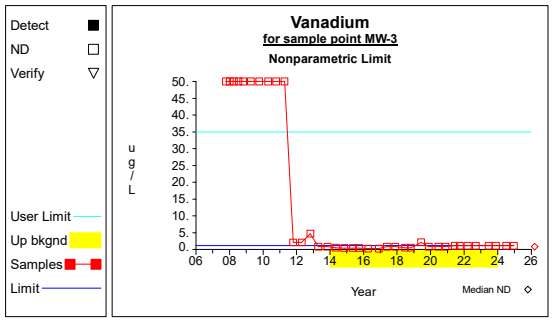
Graph 339



Graph 340

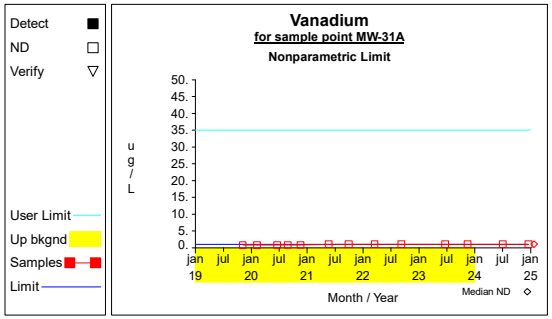


Graph 341

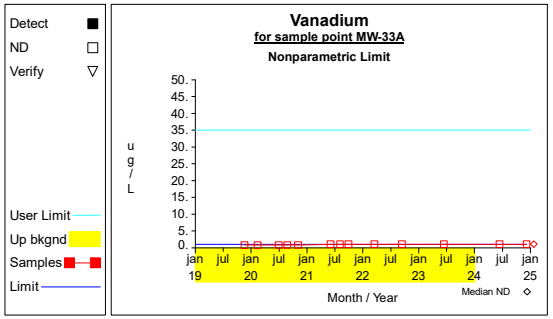


Graph 342

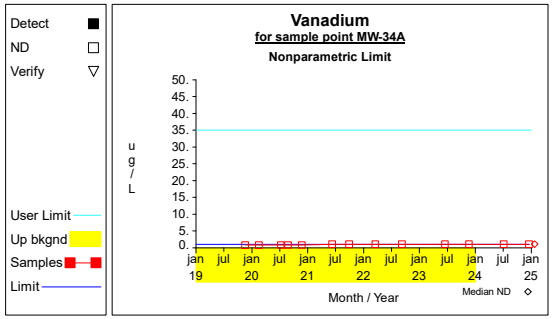
Up vs. Down Prediction Limits



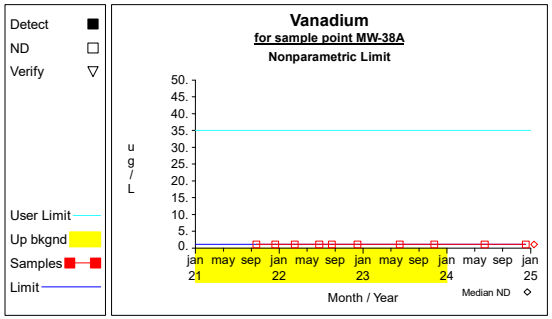
Graph 343



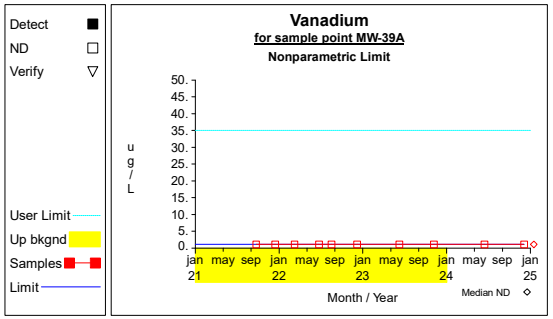
Graph 344



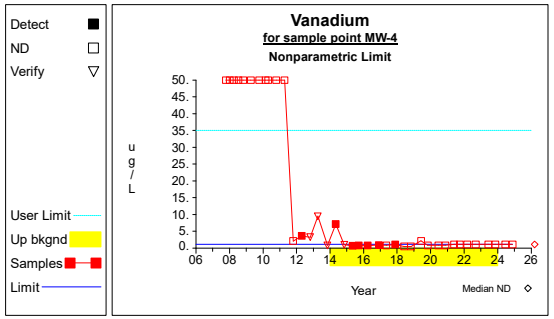
Graph 345



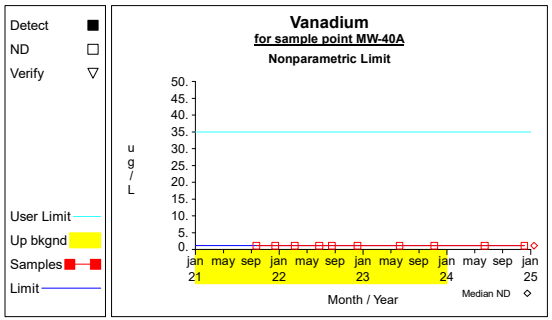
Graph 346



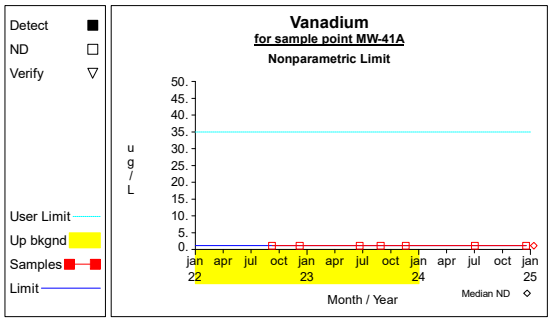
Graph 347



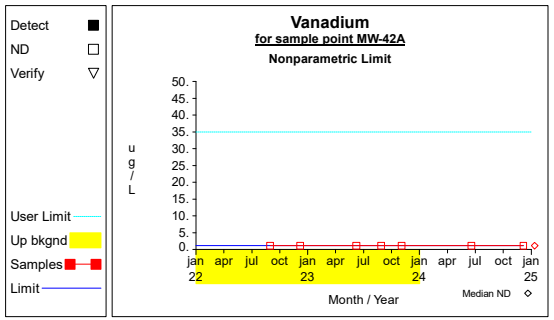
Graph 348



Graph 349

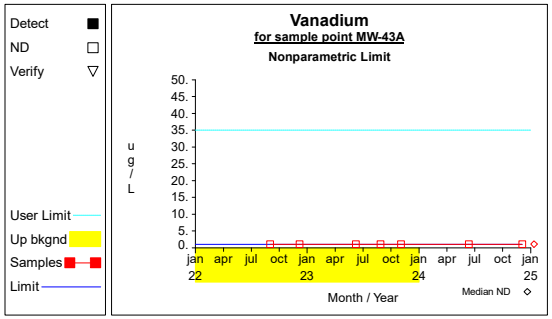


Graph 350

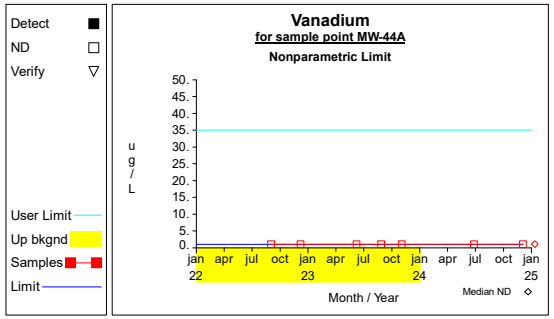


Graph 351

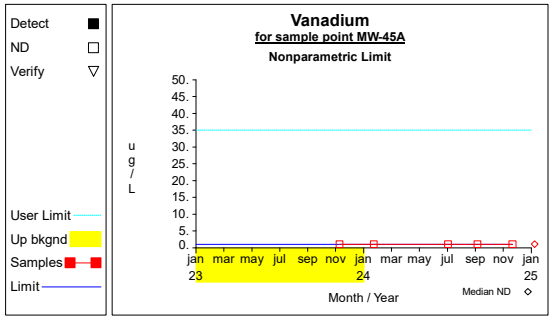
Up vs. Down Prediction Limits



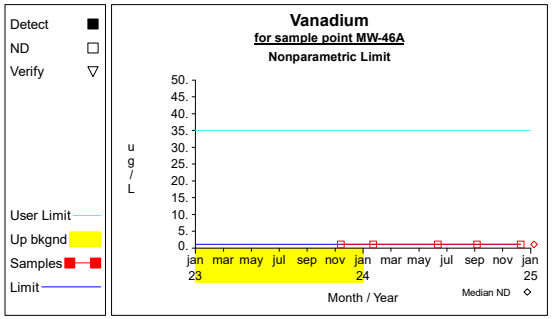
Graph 352



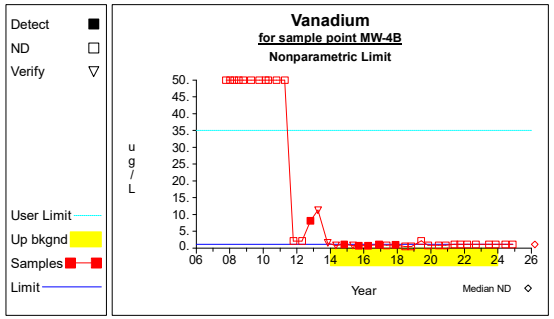
Graph 353



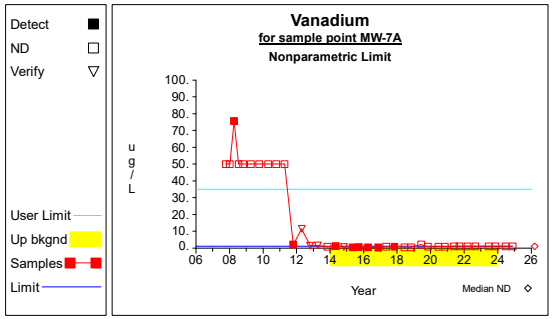
Graph 354



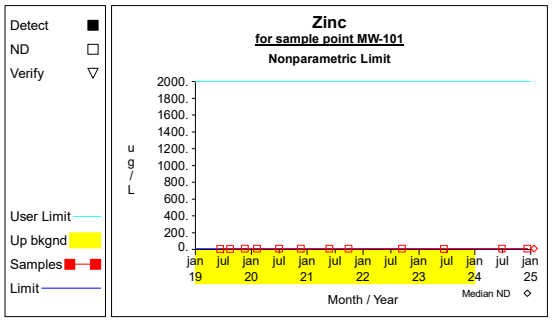
Graph 355



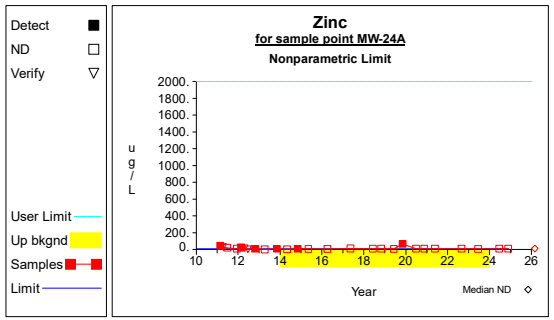
Graph 356



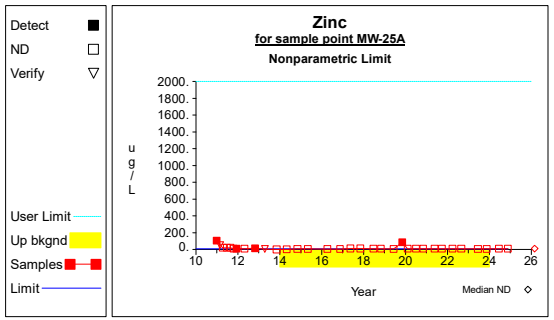
Graph 357



Graph 358

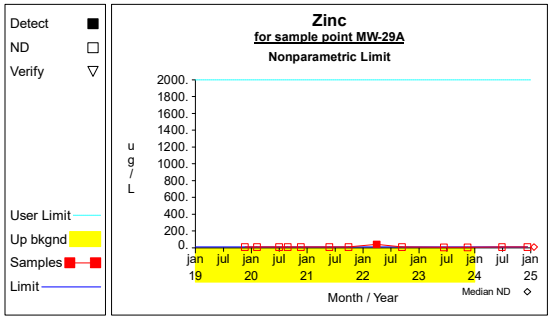


Graph 359

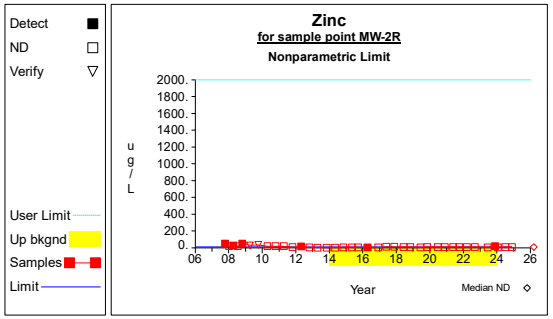


Graph 360

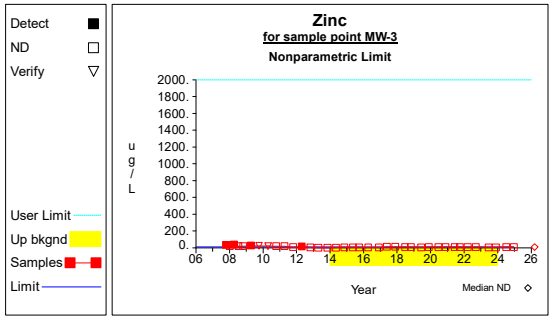
Up vs. Down Prediction Limits



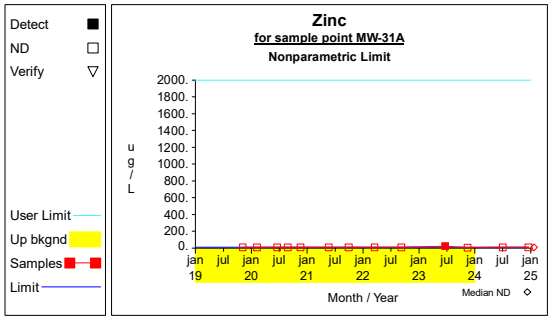
Graph 361



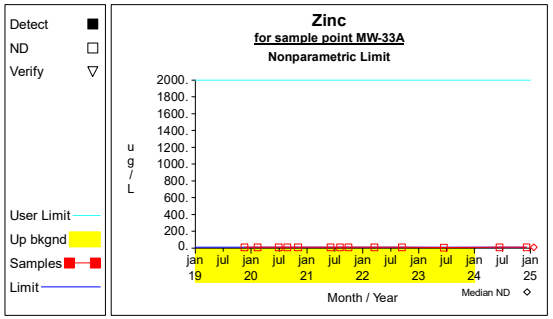
Graph 362



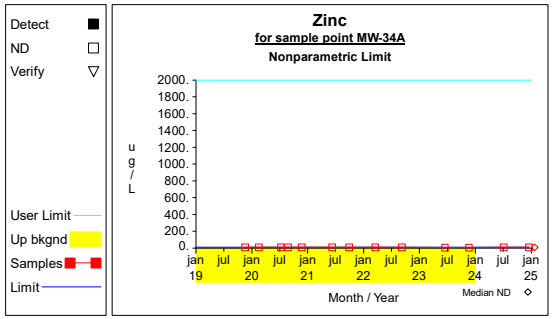
Graph 363



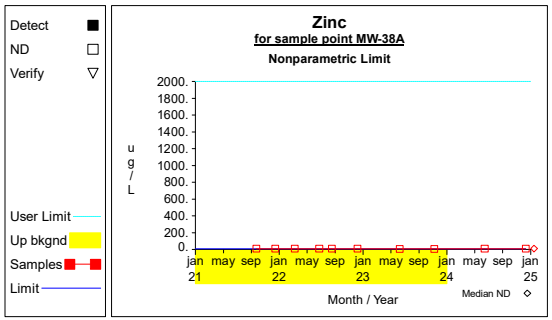
Graph 364



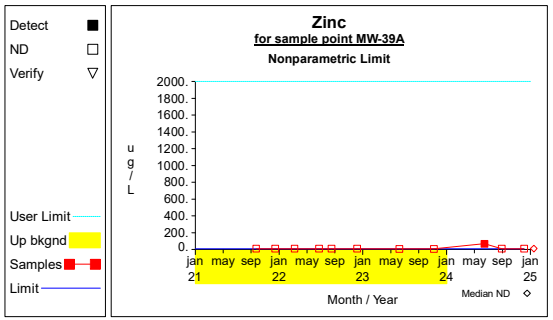
Graph 365



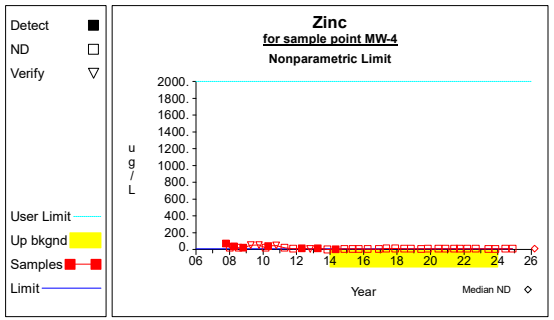
Graph 366



Graph 367

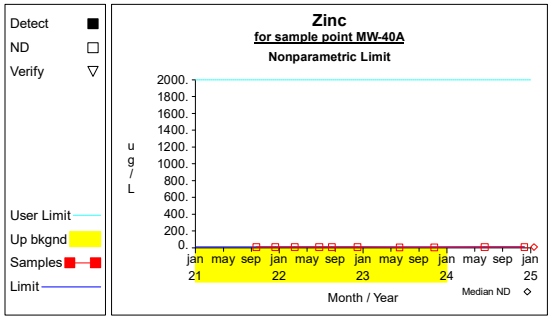


Graph 368

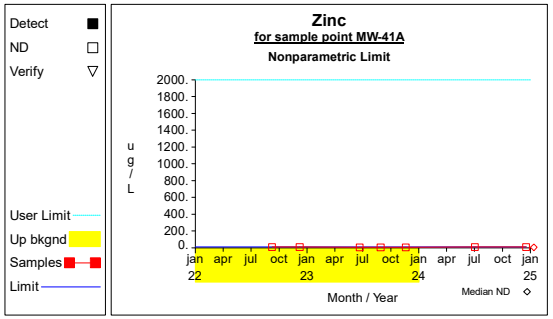


Graph 369

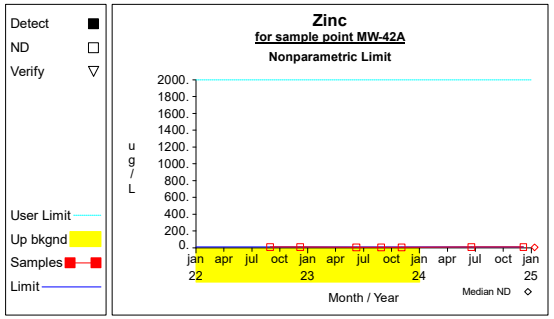
Up vs. Down Prediction Limits



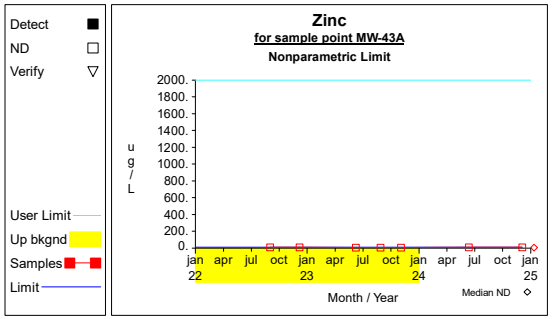
Graph 370



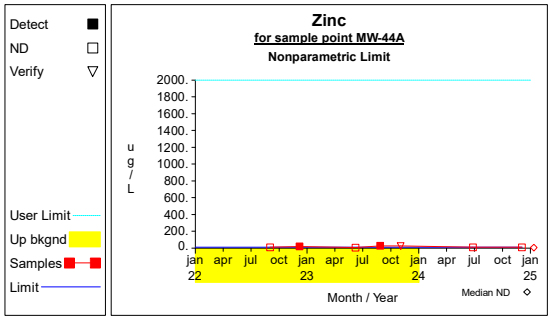
Graph 371



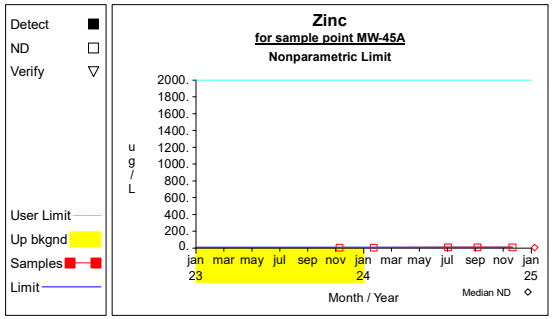
Graph 372



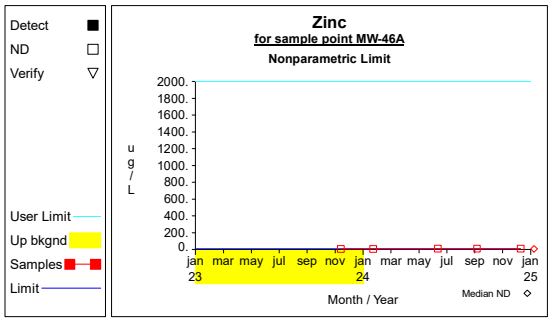
Graph 373



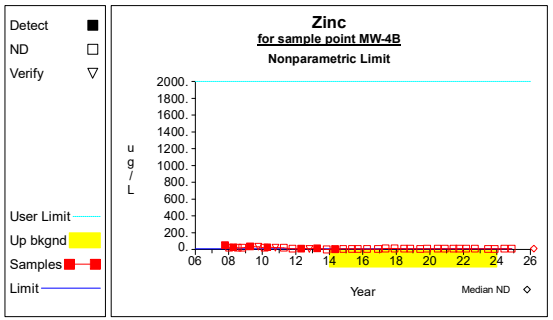
Graph 374



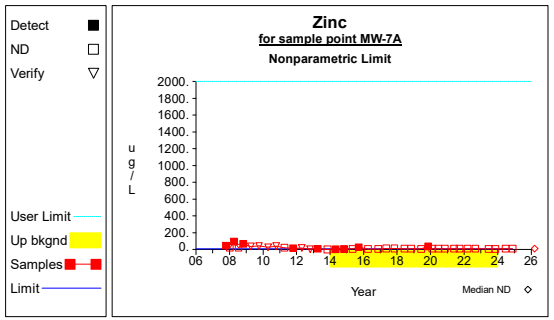
Graph 375



Graph 376



Graph 377



Graph 378

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

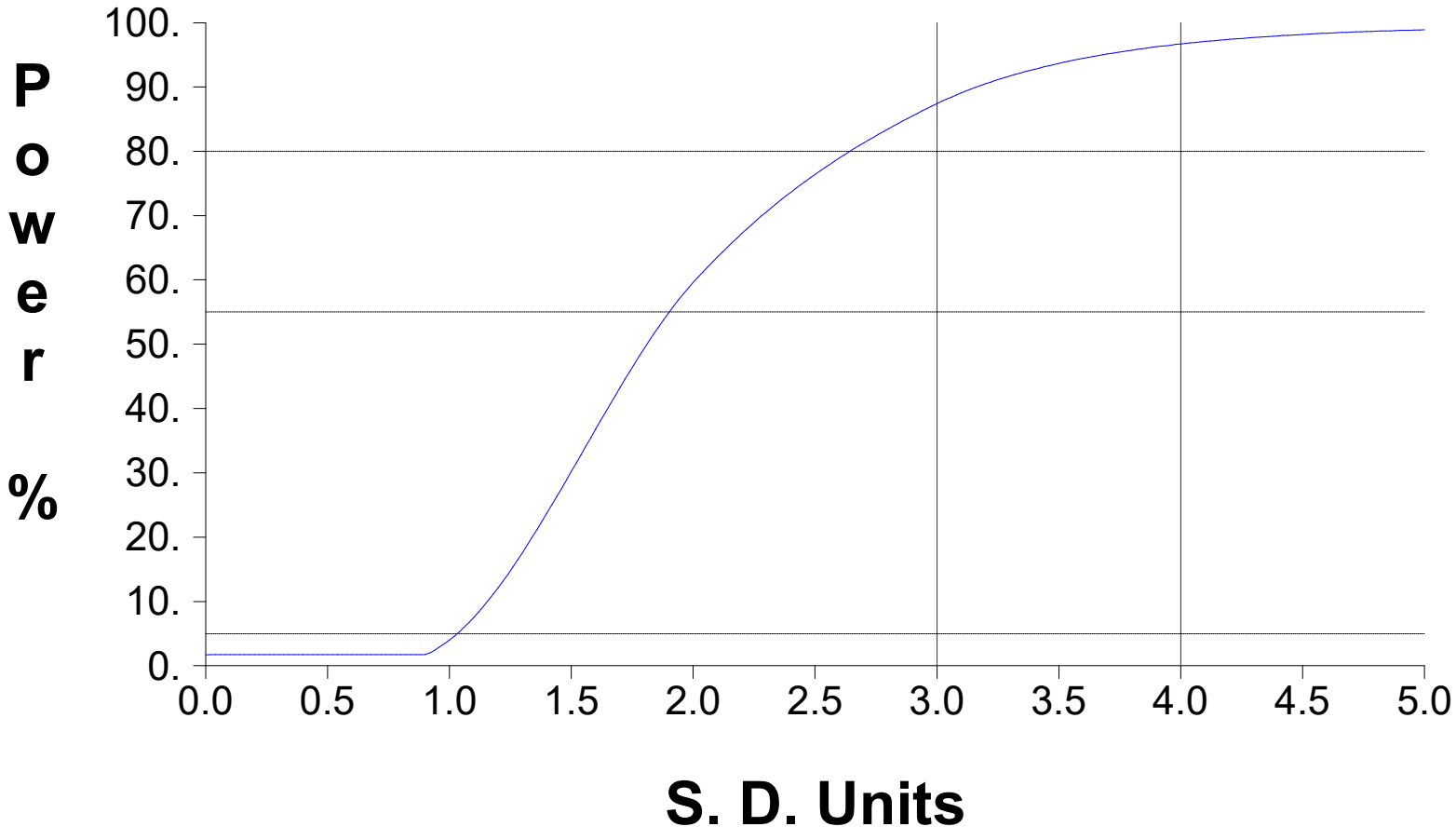


Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	MW-1	05/05/2014	ND	0.4000	0.6900	**
Antimony	ug/L	MW-1	11/07/2014	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1	05/01/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1	09/16/2015	ND	0.1610	0.6900	**
Antimony	ug/L	MW-1	04/11/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-1	11/11/2016	ND	0.2370	0.6900	**
Antimony	ug/L	MW-1	05/08/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-1	11/16/2017	ND	0.1850	0.6900	**
Antimony	ug/L	MW-1	06/06/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-1	10/28/2018	ND	0.4200	0.6900	**
Antimony	ug/L	MW-1	06/04/2019	ND	1.3200	0.6900	**
Antimony	ug/L	MW-1	11/01/2019	ND	0.5300	0.6900	**
Antimony	ug/L	MW-1	06/17/2020	ND	0.5100	0.6900	**
Antimony	ug/L	MW-1	11/03/2020	ND	0.5100	0.6900	**
Antimony	ug/L	MW-1	05/17/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-1	09/22/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-1	03/16/2022	ND	0.6900		
Antimony	ug/L	MW-1	08/31/2022	ND	0.6900		
Antimony	ug/L	MW-1	06/14/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-1	11/09/2023	ND	1.0000	0.6900	**
Antimony	ug/L	MW-37A	09/22/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-37A	12/14/2021	ND	1.1000	0.6900	**
Antimony	ug/L	MW-37A	03/07/2022	ND	0.6900		
Antimony	ug/L	MW-37A	06/27/2022	ND	0.6900		
Antimony	ug/L	MW-37A	08/17/2022	ND	0.6900		

* - 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	
Antimony	ug/L	MW-37A	12/06/2022	ND	0.6900		
Antimony	ug/L	MW-37A	06/08/2023	ND	1.0000	0.6900	**
Arsenic	ug/L	MW-1	05/05/2014		0.3540		
Arsenic	ug/L	MW-1	11/07/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1	05/01/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1	09/16/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-1	04/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-1	11/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-1	05/08/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-1	11/16/2017		0.6620		
Arsenic	ug/L	MW-1	06/06/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-1	10/28/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-1	06/04/2019	ND	0.2320	0.7500	**
Arsenic	ug/L	MW-1	11/01/2019	ND	0.7500		
Arsenic	ug/L	MW-1	06/17/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-1	11/03/2020	ND	0.8800	0.7500	**
Arsenic	ug/L	MW-1	05/17/2021	ND	0.7500		
Arsenic	ug/L	MW-1	09/22/2021	ND	0.7500		
Arsenic	ug/L	MW-1	03/16/2022	ND	0.7500		
Arsenic	ug/L	MW-1	08/31/2022	ND	0.7500		
Arsenic	ug/L	MW-1	06/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-1	11/09/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-37A	09/22/2021	ND	0.7500		
Arsenic	ug/L	MW-37A	12/14/2021	ND	0.7500		
Arsenic	ug/L	MW-37A	03/07/2022		4.5700		

* - 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	
Arsenic	ug/L	MW-37A	06/27/2022	ND	0.7500		
Arsenic	ug/L	MW-37A	08/17/2022	ND	0.7500		
Arsenic	ug/L	MW-37A	12/06/2022	ND	0.7500		
Arsenic	ug/L	MW-37A	06/08/2023	ND	0.5300	0.7500	**
Barium	ug/L	MW-1	05/05/2014		124.0000		
Barium	ug/L	MW-1	11/07/2014		190.0000		
Barium	ug/L	MW-1	05/01/2015		104.0000		
Barium	ug/L	MW-1	09/16/2015		166.0000		
Barium	ug/L	MW-1	04/11/2016		93.8000		
Barium	ug/L	MW-1	11/11/2016		114.0000		
Barium	ug/L	MW-1	05/08/2017		95.1000		
Barium	ug/L	MW-1	11/16/2017		130.0000		
Barium	ug/L	MW-1	06/06/2018		119.0000		
Barium	ug/L	MW-1	10/28/2018		142.0000		
Barium	ug/L	MW-1	06/04/2019		93.8000		
Barium	ug/L	MW-1	11/01/2019		124.0000		
Barium	ug/L	MW-1	06/17/2020		94.9000		
Barium	ug/L	MW-1	11/03/2020		184.0000		
Barium	ug/L	MW-1	05/17/2021		146.0000		
Barium	ug/L	MW-1	09/22/2021		111.0000		
Barium	ug/L	MW-1	03/16/2022		112.0000		
Barium	ug/L	MW-1	08/31/2022		112.0000		
Barium	ug/L	MW-1	06/14/2023		106.0000		
Barium	ug/L	MW-1	11/09/2023		282.0000		
Barium	ug/L	MW-37A	09/22/2021		202.0000		

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Barium	ug/L	MW-37A	12/14/2021		137.0000		
Barium	ug/L	MW-37A	03/07/2022		273.0000		
Barium	ug/L	MW-37A	06/27/2022		144.0000		
Barium	ug/L	MW-37A	08/17/2022		122.0000		
Barium	ug/L	MW-37A	12/06/2022		247.0000		
Barium	ug/L	MW-37A	06/08/2023		111.0000		
Beryllium	ug/L	MW-1	05/05/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	MW-1	11/07/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1	05/01/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1	09/16/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-1	04/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-1	11/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-1	05/08/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-1	11/16/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-1	06/06/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-1	10/28/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-1	06/04/2019	ND	0.5300	0.2700	**
Beryllium	ug/L	MW-1	11/01/2019	ND	0.2700		
Beryllium	ug/L	MW-1	06/17/2020	ND	0.2700		
Beryllium	ug/L	MW-1	11/03/2020	ND	0.2700		
Beryllium	ug/L	MW-1	05/17/2021	ND	0.2700		
Beryllium	ug/L	MW-1	09/22/2021	ND	0.2700		
Beryllium	ug/L	MW-1	03/16/2022	ND	0.2700		
Beryllium	ug/L	MW-1	08/31/2022	ND	0.2700		
Beryllium	ug/L	MW-1	06/14/2023	ND	0.3300	0.2700	**

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*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium	ug/L	MW-1	11/09/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-37A	09/22/2021	ND	0.2700		
Beryllium	ug/L	MW-37A	12/14/2021	ND	0.2700		
Beryllium	ug/L	MW-37A	03/07/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	06/27/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	08/17/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	12/06/2022	ND	0.2700		
Beryllium	ug/L	MW-37A	06/08/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	MW-1	05/05/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-1	11/07/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1	05/01/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1	09/16/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-1	04/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-1	11/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-1	05/08/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-1	11/16/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-1	06/06/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-1	10/28/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-1	06/04/2019	ND	0.1670	0.0550	**
Cadmium	ug/L	MW-1	11/01/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	MW-1	06/17/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-1	11/03/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-1	05/17/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-1	09/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-1	03/16/2022	ND	0.0550		

* - 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	ug/L	MW-1	08/31/2022	ND	0.0550		
Cadmium	ug/L	MW-1	06/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-1	11/09/2023		0.2090		
Cadmium	ug/L	MW-37A	09/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-37A	12/14/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-37A	03/07/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	06/27/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	08/17/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	12/06/2022	ND	0.0550		
Cadmium	ug/L	MW-37A	06/08/2023	ND	0.1000	0.0550	**
Chromium	ug/L	MW-1	05/05/2014		0.8160		
Chromium	ug/L	MW-1	11/07/2014	ND	1.2400	1.1000	**
Chromium	ug/L	MW-1	05/01/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-1	09/16/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-1	04/11/2016		0.8520		
Chromium	ug/L	MW-1	11/11/2016		0.4230		
Chromium	ug/L	MW-1	05/08/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-1	11/16/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-1	06/06/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-1	10/28/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-1	06/04/2019	ND	1.1400	1.1000	**
Chromium	ug/L	MW-1	11/01/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-1	06/17/2020	ND	1.1000		
Chromium	ug/L	MW-1	11/03/2020	ND	1.1000		
Chromium	ug/L	MW-1	05/17/2021	ND	1.1000		

* - 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	
Chromium	ug/L	MW-1	09/22/2021	ND	1.1000		
Chromium	ug/L	MW-1	03/16/2022	ND	1.1000		
Chromium	ug/L	MW-1	08/31/2022	ND	1.1000		
Chromium	ug/L	MW-1	06/14/2023	ND	1.1000		
Chromium	ug/L	MW-1	11/09/2023	ND	1.1000		
Chromium	ug/L	MW-37A	09/22/2021	ND	1.1000		
Chromium	ug/L	MW-37A	12/14/2021	ND	1.1000		
Chromium	ug/L	MW-37A	03/07/2022	ND	1.1000		
Chromium	ug/L	MW-37A	06/27/2022	ND	1.1000		
Chromium	ug/L	MW-37A	08/17/2022	ND	1.1000		
Chromium	ug/L	MW-37A	12/06/2022	ND	1.1000		
Chromium	ug/L	MW-37A	06/08/2023	ND	1.1000		
Cobalt	ug/L	MW-1	05/05/2014		0.2310		
Cobalt	ug/L	MW-1	11/07/2014		0.1680		
Cobalt	ug/L	MW-1	05/01/2015	ND	0.0528	0.1700	**
Cobalt	ug/L	MW-1	09/16/2015		0.1820		
Cobalt	ug/L	MW-1	04/11/2016		0.0520		
Cobalt	ug/L	MW-1	11/11/2016		0.0470		
Cobalt	ug/L	MW-1	05/08/2017	ND	0.0453	0.1700	**
Cobalt	ug/L	MW-1	11/16/2017		0.0830		
Cobalt	ug/L	MW-1	06/06/2018	ND	0.0610	0.1700	**
Cobalt	ug/L	MW-1	10/28/2018	ND	0.0610	0.1700	**
Cobalt	ug/L	MW-1	06/04/2019	ND	0.4020	0.1700	**
Cobalt	ug/L	MW-1	11/01/2019	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	06/17/2020	ND	0.0910	0.1700	**

* - 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	
Cobalt	ug/L	MW-1	11/03/2020	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	05/17/2021	ND	0.0910	0.1700	**
Cobalt	ug/L	MW-1	09/22/2021	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-1	03/16/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-1	08/31/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-1	06/14/2023	ND	0.1700		
Cobalt	ug/L	MW-1	11/09/2023	ND	0.1700		
Cobalt	ug/L	MW-37A	09/22/2021		0.6810		
Cobalt	ug/L	MW-37A	12/14/2021	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	03/07/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	06/27/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	08/17/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	12/06/2022	ND	0.1900	0.1700	**
Cobalt	ug/L	MW-37A	06/08/2023	ND	0.1700		
Copper	ug/L	MW-1	05/05/2014		1.0400		
Copper	ug/L	MW-1	11/07/2014		0.9060		
Copper	ug/L	MW-1	05/01/2015	ND	0.4850	1.8000	**
Copper	ug/L	MW-1	09/16/2015		0.5260		
Copper	ug/L	MW-1	04/11/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-1	11/11/2016	ND	1.2200	1.8000	**
Copper	ug/L	MW-1	05/08/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-1	11/16/2017	ND	2.1900	1.8000	**
Copper	ug/L	MW-1	06/06/2018	ND	3.8000	1.8000	**
Copper	ug/L	MW-1	10/28/2018	ND	1.6000	1.8000	**
Copper	ug/L	MW-1	06/04/2019	ND	0.4970	1.8000	**

* - 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	
Copper	ug/L	MW-1	11/01/2019	ND	2.0000	1.8000	**
Copper	ug/L	MW-1	06/17/2020	ND	1.5000	1.8000	**
Copper	ug/L	MW-1	11/03/2020	ND	1.5000	1.8000	**
Copper	ug/L	MW-1	05/17/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-1	09/22/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-1	03/16/2022	ND	1.8000		
Copper	ug/L	MW-1	08/31/2022	ND	1.8000		
Copper	ug/L	MW-1	06/14/2023	ND	1.8000		
Copper	ug/L	MW-1	11/09/2023		5.2700		
Copper	ug/L	MW-37A	09/22/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-37A	12/14/2021	ND	1.4000	1.8000	**
Copper	ug/L	MW-37A	03/07/2022	ND	1.8000		
Copper	ug/L	MW-37A	06/27/2022	ND	1.8000		
Copper	ug/L	MW-37A	08/17/2022	ND	1.8000		
Copper	ug/L	MW-37A	12/06/2022	ND	1.8000		
Copper	ug/L	MW-37A	06/08/2023	ND	1.8000		
Field pH	SU	MW-1	05/01/2015		6.9500		
Field pH	SU	MW-1	09/16/2015		6.8800		
Field pH	SU	MW-1	12/09/2015		6.7400		
Field pH	SU	MW-1	04/11/2016		7.2000		
Field pH	SU	MW-1	11/11/2016		7.1700		
Field pH	SU	MW-1	05/08/2017		7.4400		
Field pH	SU	MW-1	11/16/2017		7.5100		
Field pH	SU	MW-1	06/06/2018		6.9700		
Field pH	SU	MW-1	10/28/2018		7.3100		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Field pH	SU	MW-1	06/04/2019		6.9700		
Field pH	SU	MW-1	11/01/2019		6.9500		
Field pH	SU	MW-1	06/17/2020		6.6900		
Field pH	SU	MW-1	11/03/2020		6.7300		
Field pH	SU	MW-1	05/17/2021		6.6500		
Field pH	SU	MW-1	09/22/2021		6.1900		
Field pH	SU	MW-1	03/16/2022		7.1100		
Field pH	SU	MW-1	08/31/2022		8.0700		
Field pH	SU	MW-1	06/14/2023		6.5900		
Field pH	SU	MW-1	11/09/2023		6.9500		
Field pH	SU	MW-37A	09/22/2021		6.3700		
Field pH	SU	MW-37A	12/14/2021		6.8000		
Field pH	SU	MW-37A	03/07/2022		6.8000		
Field pH	SU	MW-37A	06/27/2022		7.6100		
Field pH	SU	MW-37A	08/17/2022		7.7900		
Field pH	SU	MW-37A	12/06/2022		7.0100		
Field pH	SU	MW-37A	06/08/2023		6.8600		
Field Specific Conductance	umhos/cm	MW-1	05/01/2015		551.7000		
Field Specific Conductance	umhos/cm	MW-1	09/16/2015		1052.0000		
Field Specific Conductance	umhos/cm	MW-1	12/09/2015		1431.0000		
Field Specific Conductance	umhos/cm	MW-1	04/11/2016		508.0000		
Field Specific Conductance	umhos/cm	MW-1	11/11/2016		470.4000		
Field Specific Conductance	umhos/cm	MW-1	05/08/2017		463.2000		
Field Specific Conductance	umhos/cm	MW-1	11/16/2017		645.3000		
Field Specific Conductance	umhos/cm	MW-1	06/06/2018		649.9000		

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*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Field Specific Conductance	umhos/cm	MW-1	10/28/2018		536.5000		
Field Specific Conductance	umhos/cm	MW-1	06/04/2019		558.4100		
Field Specific Conductance	umhos/cm	MW-1	11/01/2019		623.1200		
Field Specific Conductance	umhos/cm	MW-1	06/17/2020		559.3700		
Field Specific Conductance	umhos/cm	MW-1	11/03/2020		1056.6000		
Field Specific Conductance	umhos/cm	MW-1	05/17/2021		888.2900		
Field Specific Conductance	umhos/cm	MW-1	09/22/2021		504.9900		
Field Specific Conductance	umhos/cm	MW-1	03/16/2022		737.2900		
Field Specific Conductance	umhos/cm	MW-1	08/31/2022		563.2100		
Field Specific Conductance	umhos/cm	MW-1	06/14/2023		636.7100		
Field Specific Conductance	umhos/cm	MW-1	11/09/2023		1456.6000		
Field Specific Conductance	umhos/cm	MW-37A	09/22/2021		679.6700		
Field Specific Conductance	umhos/cm	MW-37A	12/14/2021		724.2600		
Field Specific Conductance	umhos/cm	MW-37A	03/07/2022		682.4500		
Field Specific Conductance	umhos/cm	MW-37A	06/27/2022		698.0400		
Field Specific Conductance	umhos/cm	MW-37A	08/17/2022		668.8600		
Field Specific Conductance	umhos/cm	MW-37A	12/06/2022		713.3200		
Field Specific Conductance	umhos/cm	MW-37A	06/08/2023		617.8900		
Lead	ug/L	MW-1	05/05/2014	ND	0.1800	0.2400	**
Lead	ug/L	MW-1	11/07/2014	ND	0.0967	0.2400	**
Lead	ug/L	MW-1	05/01/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-1	09/16/2015		0.3030		
Lead	ug/L	MW-1	04/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-1	11/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-1	05/08/2017	ND	0.3240	0.2400	**

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** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
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Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Lead	ug/L	MW-1	11/16/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-1	06/06/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-1	10/28/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-1	06/04/2019	ND	0.1860	0.2400	**
Lead	ug/L	MW-1	11/01/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-1	06/17/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-1	11/03/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-1	05/17/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-1	09/22/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-1	03/16/2022	ND	0.2400		
Lead	ug/L	MW-1	08/31/2022	ND	0.2400		
Lead	ug/L	MW-1	06/14/2023	ND	0.2400		
Lead	ug/L	MW-1	11/09/2023		0.9940		
Lead	ug/L	MW-37A	09/22/2021		1.0600		
Lead	ug/L	MW-37A	12/14/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-37A	03/07/2022	ND	0.2400		
Lead	ug/L	MW-37A	06/27/2022	ND	0.2400		
Lead	ug/L	MW-37A	08/17/2022	ND	0.2400		
Lead	ug/L	MW-37A	12/06/2022	ND	0.2400		
Lead	ug/L	MW-37A	06/08/2023	ND	0.2400		
Nickel	ug/L	MW-1	05/05/2014		4.0100		
Nickel	ug/L	MW-1	11/07/2014		6.2000		
Nickel	ug/L	MW-1	05/01/2015		1.4900		
Nickel	ug/L	MW-1	09/16/2015		5.8700		
Nickel	ug/L	MW-1	04/11/2016	ND	1.5300	1.9000	**

* - 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	
Nickel	ug/L	MW-1	11/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-1	05/08/2017	ND	0.9290	1.9000	**
Nickel	ug/L	MW-1	11/16/2017		1.5300		
Nickel	ug/L	MW-1	06/06/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-1	10/28/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-1	06/04/2019	ND	0.6250	1.9000	**
Nickel	ug/L	MW-1	11/01/2019	ND	1.7000	1.9000	**
Nickel	ug/L	MW-1	06/17/2020	ND	1.9000		
Nickel	ug/L	MW-1	11/03/2020	ND	1.9000		
Nickel	ug/L	MW-1	05/17/2021	ND	1.9000		
Nickel	ug/L	MW-1	09/22/2021	ND	1.9000		
Nickel	ug/L	MW-1	03/16/2022	ND	1.9000		
Nickel	ug/L	MW-1	08/31/2022	ND	1.9000		
Nickel	ug/L	MW-1	06/14/2023	ND	1.9000		
Nickel	ug/L	MW-1	11/09/2023		20.9000		
Nickel	ug/L	MW-37A	09/22/2021	ND	1.9000		
Nickel	ug/L	MW-37A	12/14/2021	ND	1.9000		
Nickel	ug/L	MW-37A	03/07/2022	ND	1.9000		
Nickel	ug/L	MW-37A	06/27/2022	ND	1.9000		
Nickel	ug/L	MW-37A	08/17/2022	ND	1.9000		
Nickel	ug/L	MW-37A	12/06/2022	ND	1.9000		
Nickel	ug/L	MW-37A	06/08/2023	ND	1.9000		
Selenium	ug/L	MW-1	05/05/2014		1.1500		
Selenium	ug/L	MW-1	11/07/2014	ND	3.3400	0.9600	**
Selenium	ug/L	MW-1	05/01/2015	ND	3.3400	0.9600	**

* - 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	
Selenium	ug/L	MW-1	09/16/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-1	04/11/2016		1.4100		
Selenium	ug/L	MW-1	11/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-1	05/08/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-1	11/16/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-1	06/06/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-1	10/28/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-1	06/04/2019	ND	0.9820	0.9600	**
Selenium	ug/L	MW-1	11/01/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-1	06/17/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-1	11/03/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-1	05/17/2021	ND	0.9600		
Selenium	ug/L	MW-1	09/22/2021	ND	0.9600		
Selenium	ug/L	MW-1	03/16/2022	ND	0.9600		
Selenium	ug/L	MW-1	08/31/2022	ND	0.9600		
Selenium	ug/L	MW-1	06/14/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-1	11/09/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-37A	09/22/2021	ND	0.9600		
Selenium	ug/L	MW-37A	12/14/2021	ND	0.9600		
Selenium	ug/L	MW-37A	03/07/2022	ND	0.9600		
Selenium	ug/L	MW-37A	06/27/2022	ND	0.9600		
Selenium	ug/L	MW-37A	08/17/2022	ND	0.9600		
Selenium	ug/L	MW-37A	12/06/2022	ND	0.9600		
Selenium	ug/L	MW-37A	06/08/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-1	05/05/2014	ND	0.0330	0.3700	**

* - 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	ug/L	MW-1	11/07/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-1	05/01/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-1	09/16/2015		0.1170		
Silver	ug/L	MW-1	04/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-1	11/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-1	05/08/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-1	11/16/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-1	06/06/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-1	10/28/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-1	06/04/2019	ND	0.1150	0.3700	**
Silver	ug/L	MW-1	11/01/2019	ND	0.3700		
Silver	ug/L	MW-1	06/17/2020	ND	0.3700		
Silver	ug/L	MW-1	11/03/2020	ND	0.3700		
Silver	ug/L	MW-1	05/17/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-1	09/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-1	03/16/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-1	08/31/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-1	06/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-1	11/09/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-37A	09/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-37A	12/14/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-37A	03/07/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	06/27/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	08/17/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-37A	12/06/2022	ND	0.4900	0.3700	**

* - 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	ug/L	MW-37A	06/08/2023	ND	0.5000	0.3700	**
Sulfide	ug/L	MW-1	05/05/2014	ND	219.0000		
Sulfide	ug/L	MW-1	09/16/2015	ND	219.0000		
Sulfide	ug/L	MW-1	11/11/2016	ND	180.0000	219.0000	**
Thallium	ug/L	MW-1	05/05/2014	ND	0.0500	0.2600	**
Thallium	ug/L	MW-1	11/07/2014	ND	0.0325	0.2600	**
Thallium	ug/L	MW-1	05/01/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-1	09/16/2015		0.0380		
Thallium	ug/L	MW-1	04/11/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-1	11/11/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-1	05/08/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-1	11/16/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-1	06/06/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-1	10/28/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-1	06/04/2019	ND	0.5700	0.2600	**
Thallium	ug/L	MW-1	11/01/2019	ND	0.2700	0.2600	**
Thallium	ug/L	MW-1	06/17/2020	ND	0.2600		
Thallium	ug/L	MW-1	11/03/2020	ND	0.2600		
Thallium	ug/L	MW-1	05/17/2021	ND	0.2600		
Thallium	ug/L	MW-1	09/22/2021	ND	0.2600		
Thallium	ug/L	MW-1	03/16/2022	ND	0.2600		
Thallium	ug/L	MW-1	08/31/2022	ND	0.2600		
Thallium	ug/L	MW-1	06/14/2023	ND	0.2600		
Thallium	ug/L	MW-1	11/09/2023	ND	0.2600		
Thallium	ug/L	MW-37A	09/22/2021	ND	0.2600		

* - 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	ug/L	MW-37A	12/14/2021	ND	0.2600		
Thallium	ug/L	MW-37A	03/07/2022	ND	0.2600		
Thallium	ug/L	MW-37A	06/27/2022	ND	0.2600		
Thallium	ug/L	MW-37A	08/17/2022	ND	0.2600		
Thallium	ug/L	MW-37A	12/06/2022	ND	0.2600		
Thallium	ug/L	MW-37A	06/08/2023	ND	0.2600		
Vanadium	ug/L	MW-1	05/05/2014		0.6760		
Vanadium	ug/L	MW-1	11/07/2014		0.5100		
Vanadium	ug/L	MW-1	05/01/2015	ND	0.4490	1.1000	**
Vanadium	ug/L	MW-1	09/16/2015		0.5420		
Vanadium	ug/L	MW-1	04/11/2016		0.4660		
Vanadium	ug/L	MW-1	11/11/2016		0.3940		
Vanadium	ug/L	MW-1	05/08/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-1	11/16/2017	ND	0.8400	1.1000	**
Vanadium	ug/L	MW-1	06/06/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	MW-1	10/28/2018	ND	0.5200	1.1000	**
Vanadium	ug/L	MW-1	06/04/2019	ND	2.1500	1.1000	**
Vanadium	ug/L	MW-1	11/01/2019	ND	0.8200	1.1000	**
Vanadium	ug/L	MW-1	06/17/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	MW-1	11/03/2020	ND	0.8500	1.1000	**
Vanadium	ug/L	MW-1	05/17/2021	ND	1.1000		
Vanadium	ug/L	MW-1	09/22/2021	ND	1.1000		
Vanadium	ug/L	MW-1	03/16/2022	ND	1.1000		
Vanadium	ug/L	MW-1	08/31/2022	ND	1.1000		
Vanadium	ug/L	MW-1	06/14/2023	ND	1.1000		

* - 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	
Vanadium	ug/L	MW-1	11/09/2023	ND	1.1000		
Vanadium	ug/L	MW-37A	09/22/2021	ND	1.1000		
Vanadium	ug/L	MW-37A	12/14/2021	ND	1.1000		
Vanadium	ug/L	MW-37A	03/07/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	06/27/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	08/17/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	12/06/2022	ND	1.1000		
Vanadium	ug/L	MW-37A	06/08/2023	ND	1.1000		
Zinc	ug/L	MW-1	05/05/2014	ND	2.0000	10.0000	**
Zinc	ug/L	MW-1	11/07/2014	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1	05/01/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1	09/16/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-1	04/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-1	11/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-1	05/08/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-1	11/16/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-1	06/06/2018	ND	10.0000		
Zinc	ug/L	MW-1	10/28/2018	ND	10.0000		
Zinc	ug/L	MW-1	06/04/2019	ND	6.9200	10.0000	**
Zinc	ug/L	MW-1	11/01/2019	ND	10.0000		
Zinc	ug/L	MW-1	06/17/2020	ND	10.0000		
Zinc	ug/L	MW-1	11/03/2020	ND	10.0000		
Zinc	ug/L	MW-1	05/17/2021	ND	10.0000		
Zinc	ug/L	MW-1	09/22/2021	ND	10.0000		
Zinc	ug/L	MW-1	03/16/2022	ND	10.0000		

* - 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	
Zinc	ug/L	MW-1	08/31/2022	ND	10.0000		
Zinc	ug/L	MW-1	06/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-1	11/09/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-37A	09/22/2021	ND	10.0000		
Zinc	ug/L	MW-37A	12/14/2021	ND	10.0000		
Zinc	ug/L	MW-37A	03/07/2022	ND	10.0000		
Zinc	ug/L	MW-37A	06/27/2022	ND	10.0000		
Zinc	ug/L	MW-37A	08/17/2022	ND	10.0000		
Zinc	ug/L	MW-37A	12/06/2022	ND	10.0000		
Zinc	ug/L	MW-37A	06/08/2023	ND	6.4000	10.0000	**

* - 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	ug/L	MW-101	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-24A	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-25A	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-29A	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-2R	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-3	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-31A	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-33A	12/05/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-34A	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-38A	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-39A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-4	11/19/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-40A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-41A	12/17/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-42A	12/05/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-43A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-44A	12/03/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-45A	11/21/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-46A	12/09/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-4B	11/19/2024	ND	1.0000		0.6900
Antimony	ug/L	MW-7A	11/19/2024	ND	1.0000		0.6900
Arsenic	ug/L	MW-101	12/09/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-24A	11/21/2024	ND	0.5300		4.5700

* - 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
Arsenic	ug/L	MW-25A	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-29A	12/09/2024		6.7500	*	4.5700
Arsenic	ug/L	MW-2R	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-3	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-31A	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-33A	12/05/2024		112.0000	***	4.5700
Arsenic	ug/L	MW-34A	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-38A	12/09/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-39A	12/03/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-4	11/19/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-40A	12/03/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-41A	12/17/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-42A	12/05/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-43A	12/03/2024		6.3200	***	4.5700
Arsenic	ug/L	MW-44A	12/03/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-45A	11/21/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-46A	12/09/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-4B	11/19/2024	ND	0.5300		4.5700
Arsenic	ug/L	MW-7A	11/19/2024	ND	0.5300		4.5700
Barium	ug/L	MW-101	12/09/2024		221.0000		306.3163
Barium	ug/L	MW-24A	11/21/2024		117.0000		306.3163
Barium	ug/L	MW-25A	11/21/2024		229.0000		306.3163
Barium	ug/L	MW-29A	12/09/2024		161.0000		306.3163

* - 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
Barium	ug/L	MW-2R	11/21/2024		129.0000		306.3163
Barium	ug/L	MW-3	12/17/2024		205.0000		306.3163
Barium	ug/L	MW-31A	12/17/2024		279.0000		306.3163
Barium	ug/L	MW-33A	12/05/2024		199.0000		306.3163
Barium	ug/L	MW-34A	12/17/2024		67.5000		306.3163
Barium	ug/L	MW-38A	12/09/2024		153.0000		306.3163
Barium	ug/L	MW-39A	12/03/2024		156.0000		306.3163
Barium	ug/L	MW-4	11/19/2024		518.0000	***	306.3163
Barium	ug/L	MW-40A	12/03/2024		215.0000		306.3163
Barium	ug/L	MW-41A	12/17/2024		159.0000		306.3163
Barium	ug/L	MW-42A	12/05/2024		177.0000		306.3163
Barium	ug/L	MW-43A	12/03/2024		214.0000		306.3163
Barium	ug/L	MW-44A	12/03/2024		159.0000		306.3163
Barium	ug/L	MW-45A	11/21/2024		128.0000		306.3163
Barium	ug/L	MW-46A	12/09/2024		262.0000		306.3163
Barium	ug/L	MW-4B	11/19/2024		225.0000		306.3163
Barium	ug/L	MW-7A	02/14/2025		196.0000	**	306.3163
Beryllium	ug/L	MW-101	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-24A	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-25A	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-29A	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-2R	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-3	12/17/2024	ND	0.3300		0.2700

* - 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
Beryllium	ug/L	MW-31A	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-33A	12/05/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-34A	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-38A	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-39A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-4	11/19/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-40A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-41A	12/17/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-42A	12/05/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-43A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-44A	12/03/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-45A	11/21/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-46A	12/09/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-4B	11/19/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-7A	11/19/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-101	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-24A	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-25A	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-29A	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-2R	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-3	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-31A	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-33A	12/05/2024	ND	0.1000		0.2090

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*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
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ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Cadmium	ug/L	MW-34A	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-38A	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-39A	12/03/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	02/14/2025	ND	0.1000	**	0.2090
Cadmium	ug/L	MW-40A	12/03/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-41A	12/17/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-42A	12/05/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-43A	12/03/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-44A	12/03/2024	ND	0.1000	**	0.2090
Cadmium	ug/L	MW-45A	11/21/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-46A	12/09/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-4B	11/19/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-7A	11/19/2024	ND	0.1000		0.2090
Chromium	ug/L	MW-101	12/09/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-24A	11/21/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-25A	11/21/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-29A	12/09/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-2R	11/21/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-3	12/17/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-31A	12/17/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-33A	12/05/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-34A	12/17/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-38A	12/09/2024	ND	1.2000		1.1000

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Chromium	ug/L	MW-39A	12/03/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-4	11/19/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-40A	12/03/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-41A	12/17/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-42A	12/05/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-43A	12/03/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-44A	12/03/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-45A	11/21/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-46A	12/09/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-4B	11/19/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-7A	11/19/2024	ND	1.2000		1.1000
Cobalt	ug/L	MW-101	12/09/2024	ND	0.1700	**	0.6810
Cobalt	ug/L	MW-24A	11/21/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-25A	11/21/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-29A	12/09/2024		16.5000	***	0.6810
Cobalt	ug/L	MW-2R	11/21/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-3	12/17/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-31A	12/17/2024		2.0900	***	0.6810
Cobalt	ug/L	MW-33A	12/05/2024		2.4000	*	0.6810
Cobalt	ug/L	MW-34A	12/17/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-38A	12/09/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-39A	12/03/2024		0.8120	*	0.6810
Cobalt	ug/L	MW-4	11/19/2024		2.0400	***	0.6810

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt	ug/L	MW-40A	12/03/2024		2.1400	***	0.6810
Cobalt	ug/L	MW-41A	12/17/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-42A	12/05/2024		2.7700	***	0.6810
Cobalt	ug/L	MW-43A	12/03/2024		3.8300	***	0.6810
Cobalt	ug/L	MW-44A	12/03/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-45A	11/21/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-46A	12/09/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-4B	11/19/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-7A	11/19/2024	ND	0.1700		0.6810
Copper	ug/L	MW-101	12/09/2024	ND	1.8000		5.2700
Copper	ug/L	MW-24A	11/21/2024	ND	1.8000		5.2700
Copper	ug/L	MW-25A	11/21/2024	ND	1.8000		5.2700
Copper	ug/L	MW-29A	12/09/2024	ND	1.8000		5.2700
Copper	ug/L	MW-2R	11/21/2024	ND	1.8000		5.2700
Copper	ug/L	MW-3	12/17/2024	ND	1.8000		5.2700
Copper	ug/L	MW-31A	12/17/2024	ND	1.8000		5.2700
Copper	ug/L	MW-33A	12/05/2024	ND	1.8000		5.2700
Copper	ug/L	MW-34A	12/17/2024	ND	1.8000		5.2700
Copper	ug/L	MW-38A	12/09/2024	ND	1.8000		5.2700
Copper	ug/L	MW-39A	12/03/2024	ND	1.8000		5.2700
Copper	ug/L	MW-4	11/19/2024	ND	1.8000		5.2700
Copper	ug/L	MW-40A	12/03/2024	ND	1.8000		5.2700
Copper	ug/L	MW-41A	12/17/2024	ND	1.8000		5.2700

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Copper	ug/L	MW-42A	12/05/2024	ND	1.8000		5.2700
Copper	ug/L	MW-43A	12/03/2024	ND	1.8000		5.2700
Copper	ug/L	MW-44A	12/03/2024	ND	1.8000		5.2700
Copper	ug/L	MW-45A	11/21/2024	ND	1.8000		5.2700
Copper	ug/L	MW-46A	12/09/2024	ND	1.8000		5.2700
Copper	ug/L	MW-4B	11/19/2024	ND	1.8000		5.2700
Copper	ug/L	MW-7A	11/19/2024	ND	1.8000		5.2700
Field pH	SU	MW-101	12/09/2024		6.9100		8.0828
Field pH	SU	MW-24A	11/21/2024		6.7800		8.0828
Field pH	SU	MW-25A	11/21/2024		6.7400		8.0828
Field pH	SU	MW-29A	12/09/2024		6.5700		8.0828
Field pH	SU	MW-2R	11/21/2024		7.2300		8.0828
Field pH	SU	MW-3	12/17/2024		7.1400		8.0828
Field pH	SU	MW-31A	12/17/2024		6.6400		8.0828
Field pH	SU	MW-33A	12/05/2024		6.6700		8.0828
Field pH	SU	MW-34A	12/17/2024		7.5500		8.0828
Field pH	SU	MW-38A	12/09/2024		7.1300		8.0828
Field pH	SU	MW-39A	12/03/2024		7.1900		8.0828
Field pH	SU	MW-4	11/19/2024		6.5600		8.0828
Field pH	SU	MW-40A	12/03/2024		7.1500		8.0828
Field pH	SU	MW-41A	12/17/2024		7.2200		8.0828
Field pH	SU	MW-42A	12/05/2024		6.7800		8.0828
Field pH	SU	MW-43A	12/03/2024		6.7900		8.0828

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Field pH	SU	MW-44A	12/03/2024		6.7500		8.0828
Field pH	SU	MW-45A	11/21/2024		7.0400		8.0828
Field pH	SU	MW-46A	12/09/2024		6.7800		8.0828
Field pH	SU	MW-4B	11/19/2024		6.7800		8.0828
Field pH	SU	MW-7A	11/19/2024		6.8300		8.0828
Field Specific Conductance	umhos/cm	MW-101	12/09/2024		2176.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-24A	11/21/2024		2038.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-25A	11/21/2024		2293.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	12/09/2024		2598.1000	***	1473.0961
Field Specific Conductance	umhos/cm	MW-2R	11/21/2024		1647.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-3	12/17/2024		1547.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	12/17/2024		2765.5000	***	1473.0961
Field Specific Conductance	umhos/cm	MW-33A	12/05/2024		2328.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-34A	12/17/2024		909.9400		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	12/09/2024		1714.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-39A	12/03/2024		1517.5000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-4	11/19/2024		1817.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-40A	12/03/2024		1896.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-41A	12/17/2024		1232.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-42A	12/05/2024		3061.3000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-43A	12/03/2024		2233.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-44A	12/03/2024		2050.2000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-45A	11/21/2024		1515.9000	*	1473.0961

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Field Specific Conductance	umhos/cm	MW-46A	12/09/2024		2875.5000	***	1473.0961
Field Specific Conductance	umhos/cm	MW-4B	11/19/2024		1024.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/19/2024		1625.4000	*	1473.0961
Lead	ug/L	MW-101	12/09/2024	ND	0.2600		1.0600
Lead	ug/L	MW-24A	11/21/2024	ND	0.2600		1.0600
Lead	ug/L	MW-25A	11/21/2024	ND	0.2600		1.0600
Lead	ug/L	MW-29A	12/09/2024	ND	0.2600		1.0600
Lead	ug/L	MW-2R	11/21/2024	ND	0.2600		1.0600
Lead	ug/L	MW-3	12/17/2024	ND	0.2600		1.0600
Lead	ug/L	MW-31A	12/17/2024	ND	0.2600		1.0600
Lead	ug/L	MW-33A	12/05/2024	ND	0.2600		1.0600
Lead	ug/L	MW-34A	12/17/2024	ND	0.2600		1.0600
Lead	ug/L	MW-38A	12/09/2024	ND	0.2600		1.0600
Lead	ug/L	MW-39A	12/03/2024		0.5890		1.0600
Lead	ug/L	MW-4	11/19/2024	ND	0.2600		1.0600
Lead	ug/L	MW-40A	12/03/2024	ND	0.2600		1.0600
Lead	ug/L	MW-41A	12/17/2024	ND	0.2600		1.0600
Lead	ug/L	MW-42A	12/05/2024	ND	0.2600		1.0600
Lead	ug/L	MW-43A	12/03/2024	ND	0.2600		1.0600
Lead	ug/L	MW-44A	12/03/2024	ND	0.2600		1.0600
Lead	ug/L	MW-45A	11/21/2024	ND	0.2600		1.0600
Lead	ug/L	MW-46A	12/09/2024	ND	0.2600		1.0600
Lead	ug/L	MW-4B	11/19/2024	ND	0.2600		1.0600

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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Lead	ug/L	MW-7A	11/19/2024	ND	0.2600		1.0600
Nickel	ug/L	MW-101	12/09/2024		8.1900		20.9000
Nickel	ug/L	MW-24A	11/21/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-25A	11/21/2024		9.1200		20.9000
Nickel	ug/L	MW-29A	12/09/2024		69.6000	***	20.9000
Nickel	ug/L	MW-2R	11/21/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-3	12/17/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-31A	12/17/2024		32.3000	***	20.9000
Nickel	ug/L	MW-33A	12/05/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-34A	12/17/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-38A	12/09/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-39A	12/03/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-4	11/19/2024		6.1700		20.9000
Nickel	ug/L	MW-40A	12/03/2024		16.8000		20.9000
Nickel	ug/L	MW-41A	12/17/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-42A	02/14/2025		23.5000	*	20.9000
Nickel	ug/L	MW-43A	12/03/2024		25.9000	*	20.9000
Nickel	ug/L	MW-44A	12/03/2024		34.2000	***	20.9000
Nickel	ug/L	MW-45A	11/21/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-46A	12/09/2024		28.2000	***	20.9000
Nickel	ug/L	MW-4B	11/19/2024	ND	2.1000		20.9000
Nickel	ug/L	MW-7A	11/19/2024		8.8100		20.9000
Selenium	ug/L	MW-101	12/09/2024	ND	1.4000		1.4100

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*** - Current value failed - exceedance verified.
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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Selenium	ug/L	MW-24A	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-25A	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-29A	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-2R	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-3	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-31A	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-33A	12/05/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-34A	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-38A	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-39A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-4	11/19/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-40A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-41A	12/17/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-42A	12/05/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-43A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-44A	12/03/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-45A	11/21/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-46A	12/09/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-4B	11/19/2024	ND	1.4000		1.4100
Selenium	ug/L	MW-7A	11/19/2024	ND	1.4000		1.4100
Silver	ug/L	MW-101	12/09/2024	ND	0.5000		0.3700
Silver	ug/L	MW-24A	11/21/2024	ND	0.5000		0.3700
Silver	ug/L	MW-25A	11/21/2024	ND	0.5000		0.3700

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*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
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Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Silver	ug/L	MW-29A	12/09/2024	ND	0.5000	**	0.3700
Silver	ug/L	MW-2R	11/21/2024	ND	0.5000		0.3700
Silver	ug/L	MW-3	12/17/2024	ND	0.5000		0.3700
Silver	ug/L	MW-31A	12/17/2024	ND	0.5000		0.3700
Silver	ug/L	MW-33A	12/05/2024	ND	0.5000		0.3700
Silver	ug/L	MW-34A	12/17/2024	ND	0.5000		0.3700
Silver	ug/L	MW-38A	12/09/2024	ND	0.5000		0.3700
Silver	ug/L	MW-39A	12/03/2024	ND	0.5000		0.3700
Silver	ug/L	MW-4	11/19/2024	ND	0.5000	**	0.3700
Silver	ug/L	MW-40A	12/03/2024	ND	0.5000		0.3700
Silver	ug/L	MW-41A	12/17/2024	ND	0.5000		0.3700
Silver	ug/L	MW-42A	12/05/2024	ND	0.5000		0.3700
Silver	ug/L	MW-43A	12/03/2024	ND	0.5000		0.3700
Silver	ug/L	MW-44A	12/03/2024	ND	0.5000	**	0.3700
Silver	ug/L	MW-45A	11/21/2024	ND	0.5000		0.3700
Silver	ug/L	MW-46A	12/09/2024	ND	0.5000		0.3700
Silver	ug/L	MW-4B	11/19/2024	ND	0.5000		0.3700
Silver	ug/L	MW-7A	11/19/2024	ND	0.5000		0.3700
Sulfide	ug/L	MW-24A	06/18/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-29A	12/09/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-31A	03/15/2022	ND	231.0000		*****
Sulfide	ug/L	MW-33A	09/13/2022	ND	231.0000		*****
Sulfide	ug/L	MW-4	06/08/2023	ND	231.0000		*****

* - 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
Sulfide	ug/L	MW-40A	06/13/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-42A	06/18/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-43A	07/03/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-44A	06/26/2024	ND	1410.0000		*****
Sulfide	ug/L	MW-4B	11/21/2017	ND	231.0000		*****
Sulfide	ug/L	MW-7A	06/18/2024	ND	1410.0000		*****
Thallium	ug/L	MW-101	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-24A	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-25A	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-29A	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-2R	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-3	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-31A	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-33A	12/05/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-34A	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-38A	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-39A	12/03/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-4	11/19/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-40A	12/03/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-41A	12/17/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-42A	12/05/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-43A	12/03/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-44A	12/03/2024	ND	0.5700		0.2600

* - 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	ug/L	MW-45A	11/21/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-46A	12/09/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-4B	11/19/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-7A	11/19/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-101	12/09/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-24A	11/21/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-25A	11/21/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-29A	12/09/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-2R	11/21/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-3	12/17/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-31A	12/17/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-33A	12/05/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-34A	12/17/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-38A	12/09/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-39A	12/03/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-4	11/19/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-40A	12/03/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-41A	12/17/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-42A	12/05/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-43A	12/03/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-44A	12/03/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-45A	11/21/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-46A	12/09/2024	ND	1.1000		1.1000

* - 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
Vanadium	ug/L	MW-4B	11/19/2024	ND	1.1000		1.1000
Vanadium	ug/L	MW-7A	11/19/2024	ND	1.1000		1.1000
Zinc	ug/L	MW-101	12/09/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-24A	11/21/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-25A	11/21/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-29A	12/09/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-2R	11/21/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-3	12/17/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-31A	12/17/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-33A	12/05/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-34A	12/17/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-38A	12/09/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-39A	12/03/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-4	11/19/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-40A	12/03/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-41A	12/17/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-42A	12/05/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-43A	12/03/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-44A	12/03/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-45A	11/21/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-46A	12/09/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-4B	11/19/2024	ND	9.7000		10.0000
Zinc	ug/L	MW-7A	11/19/2024	ND	9.7000		10.0000

* - 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 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient Detect	Upgradient N	Upgradient Proportion	Downgradient Detect	Downgradient N	Downgradient Proportion
Antimony	0	27	0.000	29	378	0.077
Arsenic	3	27	0.111	102	379	0.269
Barium	27	27	1.000	385	385	1.000
Beryllium	0	27	0.000	16	377	0.042
Cadmium	1	27	0.037	59	379	0.156
Chromium	3	27	0.111	43	377	0.114
Cobalt	7	27	0.259	152	378	0.402
Copper	4	27	0.148	68	378	0.180
Field pH	26	26	1.000	300	300	1.000
Field Specific Conductance	26	26	1.000	300	300	1.000
Lead	3	27	0.111	57	377	0.151
Nickel	6	27	0.222	174	381	0.457
Selenium	2	27	0.074	20	378	0.053
Silver	1	27	0.037	12	379	0.032
Sulfide	0	3	0.000	1	34	0.029
Thallium	1	27	0.037	18	377	0.048
Vanadium	5	27	0.185	53	377	0.141
Zinc	0	27	0.000	71	381	0.186

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
Antimony	0	27	0.000	5.310	5.310					2.326
Arsenic	3	27	0.111	8.262	8.611					2.326
Barium	27	27	1.000	3.126	1.822					2.326
Beryllium	0	27	0.000	5.310	5.310					2.326
Cadmium	1	27	0.037	21.308	21.308					2.326
Chromium	3	27	0.111	6.697	7.011					2.326
Cobalt	7	27	0.259	5.310	5.760					2.326
Copper	4	27	0.148	6.158	5.224					2.326
Field pH	26	26	1.000	0.387	0.038					2.326
Field Specific Conductance	26	26	1.000	2.485	1.900					2.326
Lead	3	27	0.111	9.476	8.628					2.326
Nickel	6	27	0.222	6.857	5.517					2.326
Selenium	2	27	0.074	7.603	7.524					2.326
Silver	1	27	0.037	21.308	21.308					2.326
Sulfide	0	3	0.000	0.495	0.495					2.326
Thallium	1	27	0.037	21.308	21.308					2.326
Vanadium	5	27	0.185	5.533	5.472					2.326
Zinc	0	27	0.000	5.310	5.310					2.326

* - 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 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Dist Form	Model Type
Antimony	non-norm	nonpar
Arsenic	non-norm	nonpar
Barium	lognor	lognor
Beryllium	non-norm	nonpar
Cadmium	non-norm	nonpar
Chromium	non-norm	nonpar
Cobalt	non-norm	nonpar
Copper	non-norm	nonpar
Field pH	normal	normal
Field Specific Conductance	lognor	lognor
Lead	non-norm	nonpar
Nickel	non-norm	nonpar
Selenium	non-norm	nonpar
Silver	non-norm	nonpar
Sulfide	normal	too few
Thallium	non-norm	nonpar
Vanadium	non-norm	nonpar
Zinc	non-norm	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	ug/L	0	27					0.6900	nonpar	***	0.99
Arsenic	ug/L	3	27					4.5700	nonpar		0.99
Barium	ug/L	27	27	4.9131	0.3216	0.0100	2.5237	306.3163	lognor		
Beryllium	ug/L	0	27					0.2700	nonpar	***	0.99
Cadmium	ug/L	1	27					0.2090	nonpar		0.99
Chromium	ug/L	3	27					1.1000	nonpar	***	0.99
Cobalt	ug/L	7	27					0.6810	nonpar		0.99
Copper	ug/L	4	27					5.2700	nonpar		0.99
Field pH	SU	26	26	7.0119	0.4229	0.0100	2.5320	8.0828	normal		
Field Specific Conductance	umhos/cm	26	26	6.5275	0.3032	0.0100	2.5320	1473.0961	lognor		
Lead	ug/L	3	27					1.0600	nonpar		0.99
Nickel	ug/L	6	27					20.9000	nonpar		0.99
Selenium	ug/L	2	27					1.4100	nonpar		0.99
Silver	ug/L	1	27					0.3700	nonpar	***	0.99
Sulfide	ug/L	0	3							*	
Thallium	ug/L	1	27					0.2600	nonpar	***	0.99
Vanadium	ug/L	5	27					1.1000	nonpar	***	0.99
Zinc	ug/L	0	27					10.0000	nonpar	***	0.99

Conf = confidence level for passing initial test or one of two verification resamples 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 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	Units	Well	Date	Result	Detects	N	% >= PQL	% >= MDL	Manual RL	Median	>= Med
Arsenic	ug/L	MW-1	05/05/2014	0.3540	2	20	10	20	no	0.7500	
Arsenic	ug/L	MW-1	11/16/2017	0.6620	2	20	10	20	no	0.7500	
Arsenic	ug/L	MW-37A	03/07/2022	4.5700	1	7	14	43	no	0.7500	yes
Cadmium	ug/L	MW-1	11/09/2023	0.2090	1	20	5	5	no	0.0550	yes
Chromium	ug/L	MW-1	05/05/2014	0.8160	3	20	15	30	no	1.1000	
Chromium	ug/L	MW-1	04/11/2016	0.8520	3	20	15	30	no	1.1000	
Chromium	ug/L	MW-1	11/11/2016	0.4230	3	20	15	30	no	1.1000	
Cobalt	ug/L	MW-37A	09/22/2021	0.6810	1	7	14	57	no	0.1900	
Copper	ug/L	MW-1	05/05/2014	1.0400	4	20	20	25	no	1.5000	
Copper	ug/L	MW-1	11/07/2014	0.9060	4	20	20	25	no	1.5000	
Copper	ug/L	MW-1	09/16/2015	0.5260	4	20	20	25	no	1.5000	
Copper	ug/L	MW-1	11/09/2023	5.2700	4	20	20	25	no	1.5000	
Lead	ug/L	MW-1	09/16/2015	0.3030	2	20	10	15	no	0.2110	
Lead	ug/L	MW-1	11/09/2023	0.9940	2	20	10	15	no	0.2110	
Lead	ug/L	MW-37A	09/22/2021	1.0600	1	7	14	43	no	0.2400	yes
Selenium	ug/L	MW-1	05/05/2014	1.1500	2	20	10	10	no	0.9600	
Selenium	ug/L	MW-1	04/11/2016	1.4100	2	20	10	10	no	0.9600	
Silver	ug/L	MW-1	09/16/2015	0.1170	1	20	5	10	no	0.3000	no
Thallium	ug/L	MW-1	09/16/2015	0.0380	1	20	5	5	no	0.2600	no
Vanadium	ug/L	MW-1	05/05/2014	0.6760	5	20	25	40	no	0.8500	
Vanadium	ug/L	MW-1	11/07/2014	0.5100	5	20	25	40	no	0.8500	
Vanadium	ug/L	MW-1	09/16/2015	0.5420	5	20	25	40	no	0.8500	
Vanadium	ug/L	MW-1	04/11/2016	0.4660	5	20	25	40	no	0.8500	

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	>= 2x	>= 3x	
Arsenic	no		
Arsenic	no		
Arsenic			*
Cadmium			*
Chromium	no		
Chromium	no		
Chromium	no		
Cobalt	yes		*
Copper	no		
Copper	no		
Copper	no		
Copper	yes		*
Lead	no		
Lead	yes		*
Lead			*
Selenium	no		
Selenium	no		
Silver			
Thallium			
Vanadium	no		
Vanadium	no		
Vanadium	no		
Vanadium	no		

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	Units	Well	Date	Result	Detects	N	% >= PQL	% >= MDL	Manual RL	Median	>= Med
Vanadium	ug/L	MW-1	11/11/2016	0.3940	5	20	25	40	no	0.8500	

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	>= 2x	>= 3x	
Vanadium	no		

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL 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	ug/L	MW-29A	11/20/2019	ND	0.7500		4.5700
Arsenic	ug/L	MW-29A	02/06/2020		2.2800		4.5700
Arsenic	ug/L	MW-29A	06/30/2020		3.4000		4.5700
Arsenic	ug/L	MW-29A	08/26/2020		6.8400	*	4.5700
Arsenic	ug/L	MW-29A	11/20/2020		4.5900	*	4.5700
Arsenic	ug/L	MW-29A	05/24/2021		4.0900		4.5700
Arsenic	ug/L	MW-29A	09/28/2021		6.0900	*	4.5700
Arsenic	ug/L	MW-29A	03/29/2022		5.5700	*	4.5700
Arsenic	ug/L	MW-29A	09/12/2022		10.2000	*	4.5700
Arsenic	ug/L	MW-29A	06/12/2023		4.3700		4.5700
Arsenic	ug/L	MW-29A	11/15/2023		6.4900	*	4.5700
Arsenic	ug/L	MW-29A	06/26/2024		4.5400		4.5700
Arsenic	ug/L	MW-29A	12/09/2024		6.7500	*	4.5700
Arsenic	ug/L	MW-33A	11/18/2019		42.4000	*	4.5700
Arsenic	ug/L	MW-33A	02/12/2020		80.9000	*	4.5700
Arsenic	ug/L	MW-33A	06/30/2020		5.2300	*	4.5700
Arsenic	ug/L	MW-33A	08/25/2020		65.8000	*	4.5700
Arsenic	ug/L	MW-33A	11/03/2020		17.9000	*	4.5700
Arsenic	ug/L	MW-33A	06/03/2021		35.3000	*	4.5700
Arsenic	ug/L	MW-33A	08/03/2021		52.7000	*	4.5700
Arsenic	ug/L	MW-33A	09/29/2021		18.4000	*	4.5700
Arsenic	ug/L	MW-33A	03/16/2022		11.3000	*	4.5700

* - 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
Arsenic	ug/L	MW-33A	09/13/2022		13.8000	*	4.5700
Arsenic	ug/L	MW-33A	06/13/2023	ND	0.5300		4.5700
Arsenic	ug/L	MW-33A	06/12/2024		24.3000	*	4.5700
Arsenic	ug/L	MW-33A	08/29/2024		51.8000	*	4.5700
Arsenic	ug/L	MW-33A	12/05/2024		112.0000	*	4.5700
Arsenic	ug/L	MW-43A	09/01/2022		8.0600	*	4.5700
Arsenic	ug/L	MW-43A	12/06/2022		7.3400	*	4.5700
Arsenic	ug/L	MW-43A	06/07/2023		8.2800	*	4.5700
Arsenic	ug/L	MW-43A	08/28/2023		8.8500	*	4.5700
Arsenic	ug/L	MW-43A	11/02/2023		9.8100	*	4.5700
Arsenic	ug/L	MW-43A	06/11/2024		6.2800	*	4.5700
Arsenic	ug/L	MW-43A	12/03/2024		6.3200	*	4.5700
Barium	ug/L	MW-4	10/13/2007		742.0000	*	306.3163
Barium	ug/L	MW-4	01/09/2008		603.0000	*	306.3163
Barium	ug/L	MW-4	04/08/2008		793.0000	*	306.3163
Barium	ug/L	MW-4	07/16/2008		544.0000	*	306.3163
Barium	ug/L	MW-4	10/23/2008		514.0000	*	306.3163
Barium	ug/L	MW-4	04/09/2009		549.0000	*	306.3163
Barium	ug/L	MW-4	10/05/2009		623.0000	*	306.3163
Barium	ug/L	MW-4	02/25/2010		564.0000	*	306.3163
Barium	ug/L	MW-4	04/21/2010		580.0000	*	306.3163
Barium	ug/L	MW-4	10/14/2010		529.0000	*	306.3163

* - Significantly increased over background.
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*** - 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	ug/L	MW-4	04/13/2011		542.0000	*	306.3163
Barium	ug/L	MW-4	10/18/2011		513.0000	*	306.3163
Barium	ug/L	MW-4	04/24/2012		533.0000	*	306.3163
Barium	ug/L	MW-4	10/24/2012		710.0000	*	306.3163
Barium	ug/L	MW-4	04/08/2013		774.0000	*	306.3163
Barium	ug/L	MW-4	11/05/2013		514.0000	*	306.3163
Barium	ug/L	MW-4	05/02/2014		513.0000	*	306.3163
Barium	ug/L	MW-4	11/04/2014		469.0000	*	306.3163
Barium	ug/L	MW-4	05/06/2015		463.0000	*	306.3163
Barium	ug/L	MW-4	09/18/2015		479.0000	*	306.3163
Barium	ug/L	MW-4	03/31/2016		484.0000	*	306.3163
Barium	ug/L	MW-4	11/28/2016		539.0000	*	306.3163
Barium	ug/L	MW-4	05/11/2017		482.0000	*	306.3163
Barium	ug/L	MW-4	11/16/2017		40.6000		306.3163
Barium	ug/L	MW-4	06/04/2018		530.0000	*	306.3163
Barium	ug/L	MW-4	10/29/2018		464.0000	*	306.3163
Barium	ug/L	MW-4	06/04/2019		451.0000	*	306.3163
Barium	ug/L	MW-4	10/30/2019		191.0000		306.3163
Barium	ug/L	MW-4	06/17/2020		421.0000	*	306.3163
Barium	ug/L	MW-4	11/17/2020		409.0000	*	306.3163
Barium	ug/L	MW-4	05/25/2021		475.0000	*	306.3163
Barium	ug/L	MW-4	09/28/2021		482.0000	*	306.3163

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*** - 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	ug/L	MW-4	03/02/2022		503.0000	*	306.3163
Barium	ug/L	MW-4	09/07/2022		536.0000	*	306.3163
Barium	ug/L	MW-4	06/08/2023		134.0000		306.3163
Barium	ug/L	MW-4	11/13/2023		514.0000	*	306.3163
Barium	ug/L	MW-4	06/11/2024		485.0000	*	306.3163
Barium	ug/L	MW-4	11/19/2024		518.0000	*	306.3163
Barium	ug/L	MW-7A	10/13/2007		191.0000		306.3163
Barium	ug/L	MW-7A	01/09/2008		202.0000		306.3163
Barium	ug/L	MW-7A	04/08/2008		301.0000		306.3163
Barium	ug/L	MW-7A	07/16/2008		185.0000		306.3163
Barium	ug/L	MW-7A	10/23/2008		381.0000	*	306.3163
Barium	ug/L	MW-7A	04/09/2009		195.0000		306.3163
Barium	ug/L	MW-7A	10/05/2009		220.0000		306.3163
Barium	ug/L	MW-7A	04/21/2010		181.0000		306.3163
Barium	ug/L	MW-7A	10/14/2010		263.0000		306.3163
Barium	ug/L	MW-7A	04/13/2011		197.0000		306.3163
Barium	ug/L	MW-7A	10/18/2011		319.0000	*	306.3163
Barium	ug/L	MW-7A	04/24/2012		307.0000	*	306.3163
Barium	ug/L	MW-7A	10/24/2012		316.0000	*	306.3163
Barium	ug/L	MW-7A	04/08/2013		155.0000		306.3163
Barium	ug/L	MW-7A	11/06/2013		326.0000	*	306.3163
Barium	ug/L	MW-7A	05/02/2014		149.0000		306.3163

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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	ug/L	MW-7A	10/31/2014		184.0000		306.3163
Barium	ug/L	MW-7A	05/04/2015		152.0000		306.3163
Barium	ug/L	MW-7A	09/14/2015		240.0000		306.3163
Barium	ug/L	MW-7A	04/04/2016		165.0000		306.3163
Barium	ug/L	MW-7A	11/16/2016		315.0000	*	306.3163
Barium	ug/L	MW-7A	05/08/2017		150.0000		306.3163
Barium	ug/L	MW-7A	11/01/2017		172.0000		306.3163
Barium	ug/L	MW-7A	06/06/2018		166.0000		306.3163
Barium	ug/L	MW-7A	10/30/2018		171.0000		306.3163
Barium	ug/L	MW-7A	06/04/2019		160.0000		306.3163
Barium	ug/L	MW-7A	11/04/2019		185.0000		306.3163
Barium	ug/L	MW-7A	02/03/2020		174.0000		306.3163
Barium	ug/L	MW-7A	06/17/2020		139.0000		306.3163
Barium	ug/L	MW-7A	11/05/2020		160.0000		306.3163
Barium	ug/L	MW-7A	05/25/2021		166.0000		306.3163
Barium	ug/L	MW-7A	09/23/2021		156.0000		306.3163
Barium	ug/L	MW-7A	03/15/2022		143.0000		306.3163
Barium	ug/L	MW-7A	08/31/2022		71.9000		306.3163
Barium	ug/L	MW-7A	06/13/2023		323.0000	*	306.3163
Barium	ug/L	MW-7A	08/29/2023		366.0000	*	306.3163
Barium	ug/L	MW-7A	11/13/2023		451.0000	*	306.3163
Barium	ug/L	MW-7A	06/18/2024		190.0000		306.3163

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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	ug/L	MW-7A	11/19/2024		425.0000	*	306.3163
Barium	ug/L	MW-7A	02/14/2025		196.0000		306.3163
Cadmium	ug/L	MW-4	10/13/2007		1.2100	*	0.2090
Cadmium	ug/L	MW-4	01/09/2008		0.8340	*	0.2090
Cadmium	ug/L	MW-4	04/08/2008		1.3600	*	0.2090
Cadmium	ug/L	MW-4	07/16/2008	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/23/2008	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	04/09/2009	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/05/2009	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	02/25/2010		0.5300	*	0.2090
Cadmium	ug/L	MW-4	04/21/2010	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/14/2010	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	04/13/2011	ND	0.5000		0.2090
Cadmium	ug/L	MW-4	10/18/2011		0.2360	*	0.2090
Cadmium	ug/L	MW-4	04/24/2012	ND	0.2290		0.2090
Cadmium	ug/L	MW-4	10/24/2012		0.4100	*	0.2090
Cadmium	ug/L	MW-4	04/08/2013		0.4300	*	0.2090
Cadmium	ug/L	MW-4	11/05/2013		0.1910		0.2090
Cadmium	ug/L	MW-4	05/02/2014		0.1440		0.2090
Cadmium	ug/L	MW-4	11/04/2014		0.1170		0.2090
Cadmium	ug/L	MW-4	05/06/2015		0.1490		0.2090
Cadmium	ug/L	MW-4	09/18/2015		0.1330		0.2090

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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
Cadmium	ug/L	MW-4	03/31/2016		0.1700		0.2090
Cadmium	ug/L	MW-4	11/28/2016		0.1420		0.2090
Cadmium	ug/L	MW-4	05/11/2017	ND	0.0441		0.2090
Cadmium	ug/L	MW-4	11/16/2017		0.2730	*	0.2090
Cadmium	ug/L	MW-4	06/04/2018	ND	0.0600		0.2090
Cadmium	ug/L	MW-4	10/29/2018	ND	0.0600		0.2090
Cadmium	ug/L	MW-4	06/04/2019	ND	0.1670		0.2090
Cadmium	ug/L	MW-4	10/30/2019	ND	0.0390		0.2090
Cadmium	ug/L	MW-4	06/17/2020		0.1390		0.2090
Cadmium	ug/L	MW-4	11/17/2020		0.1630		0.2090
Cadmium	ug/L	MW-4	05/25/2021		0.1840		0.2090
Cadmium	ug/L	MW-4	09/28/2021		0.1220		0.2090
Cadmium	ug/L	MW-4	03/02/2022		0.1180		0.2090
Cadmium	ug/L	MW-4	09/07/2022	ND	0.0550		0.2090
Cadmium	ug/L	MW-4	06/08/2023	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	11/13/2023	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	06/11/2024	ND	0.1000		0.2090
Cadmium	ug/L	MW-4	11/19/2024		0.2540	*	0.2090
Cadmium	ug/L	MW-4	02/14/2025	ND	0.1000		0.2090
Cadmium	ug/L	MW-44A	09/01/2022	ND	0.0550		0.2090
Cadmium	ug/L	MW-44A	12/06/2022	ND	0.0550		0.2090
Cadmium	ug/L	MW-44A	06/07/2023		0.3060	*	0.2090

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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
Cadmium	ug/L	MW-44A	08/28/2023		0.4160	*	0.2090
Cadmium	ug/L	MW-44A	11/02/2023		0.7950	*	0.2090
Cadmium	ug/L	MW-44A	06/26/2024		0.3890	*	0.2090
Cadmium	ug/L	MW-44A	12/03/2024	ND	0.1000		0.2090
Cobalt	ug/L	MW-101	06/10/2019	ND	0.4020		0.6810
Cobalt	ug/L	MW-101	08/14/2019	ND	0.4020		0.6810
Cobalt	ug/L	MW-101	11/20/2019	ND	0.0910		0.6810
Cobalt	ug/L	MW-101	02/06/2020	ND	0.0910		0.6810
Cobalt	ug/L	MW-101	06/30/2020	ND	0.0910		0.6810
Cobalt	ug/L	MW-101	11/20/2020	ND	0.0910		0.6810
Cobalt	ug/L	MW-101	05/24/2021	ND	0.0910		0.6810
Cobalt	ug/L	MW-101	09/28/2021	ND	0.1900		0.6810
Cobalt	ug/L	MW-101	09/12/2022	ND	0.1900		0.6810
Cobalt	ug/L	MW-101	06/12/2023	ND	0.1700		0.6810
Cobalt	ug/L	MW-101	06/26/2024		1.3600	*	0.6810
Cobalt	ug/L	MW-101	12/09/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-29A	11/20/2019		8.4300	*	0.6810
Cobalt	ug/L	MW-29A	02/06/2020		9.6400	*	0.6810
Cobalt	ug/L	MW-29A	06/30/2020		9.9800	*	0.6810
Cobalt	ug/L	MW-29A	08/26/2020		10.7000	*	0.6810
Cobalt	ug/L	MW-29A	11/20/2020		10.1000	*	0.6810
Cobalt	ug/L	MW-29A	05/24/2021		11.9000	*	0.6810

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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	ug/L	MW-29A	09/28/2021		7.9000	*	0.6810
Cobalt	ug/L	MW-29A	03/29/2022		7.3800	*	0.6810
Cobalt	ug/L	MW-29A	09/12/2022		10.1000	*	0.6810
Cobalt	ug/L	MW-29A	06/12/2023		12.5000	*	0.6810
Cobalt	ug/L	MW-29A	11/15/2023		18.7000	*	0.6810
Cobalt	ug/L	MW-29A	06/26/2024		11.2000	*	0.6810
Cobalt	ug/L	MW-29A	12/09/2024		16.5000	*	0.6810
Cobalt	ug/L	MW-31A	11/05/2019		13.4000	*	0.6810
Cobalt	ug/L	MW-31A	02/07/2020		12.4000	*	0.6810
Cobalt	ug/L	MW-31A	06/18/2020		13.6000	*	0.6810
Cobalt	ug/L	MW-31A	08/26/2020		12.0000	*	0.6810
Cobalt	ug/L	MW-31A	11/18/2020		10.0000	*	0.6810
Cobalt	ug/L	MW-31A	05/19/2021		10.4000	*	0.6810
Cobalt	ug/L	MW-31A	09/29/2021		3.3700	*	0.6810
Cobalt	ug/L	MW-31A	03/15/2022		3.0100	*	0.6810
Cobalt	ug/L	MW-31A	09/07/2022		32.2000	*	0.6810
Cobalt	ug/L	MW-31A	06/20/2023		3.7500	*	0.6810
Cobalt	ug/L	MW-31A	11/14/2023		4.6200	*	0.6810
Cobalt	ug/L	MW-31A	07/01/2024		3.4800	*	0.6810
Cobalt	ug/L	MW-31A	12/17/2024		2.0900	*	0.6810
Cobalt	ug/L	MW-33A	11/18/2019		3.0000	*	0.6810
Cobalt	ug/L	MW-33A	02/12/2020		2.5900	*	0.6810

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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	ug/L	MW-33A	06/30/2020	ND	0.0910		0.6810
Cobalt	ug/L	MW-33A	08/25/2020		2.3400	*	0.6810
Cobalt	ug/L	MW-33A	11/03/2020		1.8300	*	0.6810
Cobalt	ug/L	MW-33A	06/03/2021		3.2000	*	0.6810
Cobalt	ug/L	MW-33A	08/03/2021		3.2000	*	0.6810
Cobalt	ug/L	MW-33A	09/29/2021		2.0300	*	0.6810
Cobalt	ug/L	MW-33A	03/16/2022		0.5030		0.6810
Cobalt	ug/L	MW-33A	09/13/2022		0.7430	*	0.6810
Cobalt	ug/L	MW-33A	06/13/2023	ND	0.1700		0.6810
Cobalt	ug/L	MW-33A	06/12/2024		4.5100	*	0.6810
Cobalt	ug/L	MW-33A	12/05/2024		2.4000	*	0.6810
Cobalt	ug/L	MW-39A	09/23/2021		0.8570	*	0.6810
Cobalt	ug/L	MW-39A	12/14/2021	ND	0.1900		0.6810
Cobalt	ug/L	MW-39A	03/07/2022	ND	0.1900		0.6810
Cobalt	ug/L	MW-39A	06/23/2022	ND	0.1900		0.6810
Cobalt	ug/L	MW-39A	08/17/2022	ND	0.1900		0.6810
Cobalt	ug/L	MW-39A	12/06/2022	ND	0.1900		0.6810
Cobalt	ug/L	MW-39A	06/08/2023	ND	0.1700		0.6810
Cobalt	ug/L	MW-39A	11/06/2023	ND	0.1700		0.6810
Cobalt	ug/L	MW-39A	06/13/2024	ND	0.1700		0.6810
Cobalt	ug/L	MW-39A	12/03/2024		0.8120	*	0.6810
Cobalt	ug/L	MW-4	10/13/2007	ND	20.0000		0.6810

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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	ug/L	MW-4	01/09/2008	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	04/08/2008	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	07/16/2008	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	10/23/2008	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	04/09/2009	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	10/05/2009	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	02/25/2010	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	04/21/2010	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	10/14/2010	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	04/13/2011	ND	20.0000		0.6810
Cobalt	ug/L	MW-4	10/18/2011		8.2700	*	0.6810
Cobalt	ug/L	MW-4	04/24/2012		5.8500	*	0.6810
Cobalt	ug/L	MW-4	10/24/2012		10.1000	*	0.6810
Cobalt	ug/L	MW-4	04/08/2013		10.0000	*	0.6810
Cobalt	ug/L	MW-4	11/05/2013		4.3700	*	0.6810
Cobalt	ug/L	MW-4	05/02/2014		6.0900	*	0.6810
Cobalt	ug/L	MW-4	11/04/2014		0.9670	*	0.6810
Cobalt	ug/L	MW-4	05/06/2015		0.4480		0.6810
Cobalt	ug/L	MW-4	09/18/2015		0.3300		0.6810
Cobalt	ug/L	MW-4	03/31/2016		0.4110		0.6810
Cobalt	ug/L	MW-4	11/28/2016		0.4410		0.6810
Cobalt	ug/L	MW-4	05/11/2017	ND	0.0453		0.6810

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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	ug/L	MW-4	11/16/2017		3.7500	*	0.6810
Cobalt	ug/L	MW-4	06/04/2018		1.4400	*	0.6810
Cobalt	ug/L	MW-4	10/29/2018	ND	0.0610		0.6810
Cobalt	ug/L	MW-4	06/04/2019	ND	0.4020		0.6810
Cobalt	ug/L	MW-4	10/30/2019	ND	0.0910		0.6810
Cobalt	ug/L	MW-4	06/17/2020	ND	0.0910		0.6810
Cobalt	ug/L	MW-4	11/17/2020		1.4800	*	0.6810
Cobalt	ug/L	MW-4	05/25/2021		0.9370	*	0.6810
Cobalt	ug/L	MW-4	09/28/2021		1.0700	*	0.6810
Cobalt	ug/L	MW-4	03/02/2022		1.4400	*	0.6810
Cobalt	ug/L	MW-4	09/07/2022		1.6100	*	0.6810
Cobalt	ug/L	MW-4	06/08/2023	ND	0.1700		0.6810
Cobalt	ug/L	MW-4	11/13/2023		1.5400	*	0.6810
Cobalt	ug/L	MW-4	06/11/2024		1.8500	*	0.6810
Cobalt	ug/L	MW-4	11/19/2024		2.0400	*	0.6810
Cobalt	ug/L	MW-40A	09/23/2021		3.2200	*	0.6810
Cobalt	ug/L	MW-40A	12/14/2021		1.0600	*	0.6810
Cobalt	ug/L	MW-40A	03/07/2022		1.1700	*	0.6810
Cobalt	ug/L	MW-40A	06/23/2022		0.8070	*	0.6810
Cobalt	ug/L	MW-40A	08/17/2022		1.4700	*	0.6810
Cobalt	ug/L	MW-40A	12/06/2022		2.1900	*	0.6810
Cobalt	ug/L	MW-40A	06/07/2023		1.5100	*	0.6810

* - 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	ug/L	MW-40A	11/06/2023		1.8600	*	0.6810
Cobalt	ug/L	MW-40A	06/13/2024		1.6900	*	0.6810
Cobalt	ug/L	MW-40A	12/03/2024		2.1400	*	0.6810
Cobalt	ug/L	MW-42A	08/31/2022		3.9800	*	0.6810
Cobalt	ug/L	MW-42A	12/06/2022		3.3100	*	0.6810
Cobalt	ug/L	MW-42A	06/07/2023		0.5180		0.6810
Cobalt	ug/L	MW-42A	08/28/2023		2.4600	*	0.6810
Cobalt	ug/L	MW-42A	11/02/2023		2.5600	*	0.6810
Cobalt	ug/L	MW-42A	06/18/2024		2.5600	*	0.6810
Cobalt	ug/L	MW-42A	12/05/2024		2.7700	*	0.6810
Cobalt	ug/L	MW-43A	09/01/2022		3.6800	*	0.6810
Cobalt	ug/L	MW-43A	12/06/2022		3.2700	*	0.6810
Cobalt	ug/L	MW-43A	06/07/2023		4.5100	*	0.6810
Cobalt	ug/L	MW-43A	08/28/2023		4.9300	*	0.6810
Cobalt	ug/L	MW-43A	11/02/2023		4.7500	*	0.6810
Cobalt	ug/L	MW-43A	06/11/2024		3.4900	*	0.6810
Cobalt	ug/L	MW-43A	12/03/2024		3.8300	*	0.6810
Field Specific Conductance	umhos/cm	MW-101	06/10/2019		1115.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	08/14/2019		1114.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	11/20/2019		1183.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	02/06/2020		1145.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	06/30/2020		956.0100		1473.0961

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*** - Manual exclusion.
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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
Field Specific Conductance	umhos/cm	MW-101	11/20/2020		1162.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	02/03/2021		1109.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	05/24/2021		1034.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	09/28/2021		1147.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	09/12/2022		957.1300		1473.0961
Field Specific Conductance	umhos/cm	MW-101	06/12/2023		1139.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-101	06/26/2024		975.9900		1473.0961
Field Specific Conductance	umhos/cm	MW-101	12/09/2024		2176.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-24A	05/07/2015		1120.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	04/04/2016		1040.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	05/12/2017		1147.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	06/07/2018		1120.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	10/29/2018		793.3200		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	06/05/2019		996.2500		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	08/13/2019		944.6600		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	11/04/2019		969.1300		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	06/29/2020		911.6900		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	11/18/2020		886.0500		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	05/24/2021		870.5900		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	09/28/2021		1287.3900		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	08/30/2022		938.8400		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	06/14/2023		1253.2000		1473.0961

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*** - 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
Field Specific Conductance	umhos/cm	MW-24A	06/18/2024		1092.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-24A	11/21/2024		2038.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-25A	05/04/2015		900.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	04/06/2016		829.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	11/15/2016		963.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	05/11/2017		986.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	11/06/2017		817.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	06/18/2018		1265.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	10/30/2018		905.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	06/06/2019		1191.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	11/04/2019		1146.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	02/06/2020		1125.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	06/30/2020		1126.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	11/05/2020		1105.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	05/19/2021		1060.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	09/28/2021		1007.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	03/29/2022		1120.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	08/30/2022		1133.9000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	06/15/2023		1203.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	11/15/2023		1203.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	01/25/2024		1072.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-25A	06/13/2024		1099.6000		1473.0961

* - 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
Field Specific Conductance	umhos/cm	MW-25A	11/21/2024		2293.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	11/20/2019		1559.2000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	02/06/2020		1595.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	06/30/2020		1584.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	08/26/2020		1681.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	11/20/2020		1541.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	05/24/2021		1556.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	09/28/2021		1573.5000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	03/29/2022		1748.0000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	06/27/2022		1781.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	09/12/2022		1996.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	12/07/2022		1660.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	06/12/2023		2066.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	11/15/2023		1728.3000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	06/26/2024		1905.0000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-29A	12/09/2024		2598.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-2R	10/12/2007		694.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	01/09/2008		859.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	04/08/2008		850.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	05/07/2015		644.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	09/18/2015		702.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	04/12/2016		588.5000		1473.0961

* - 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
Field Specific Conductance	umhos/cm	MW-2R	11/30/2016		594.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	05/24/2017		628.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	11/17/2017		609.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	06/07/2018		747.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	10/28/2018		475.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	06/07/2019		690.7800		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	11/04/2019		638.0800		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	06/18/2020		588.3100		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	11/23/2020		798.8700		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	05/19/2021		766.1400		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	09/29/2021		760.7900		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	03/16/2022		816.5200		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	09/07/2022		632.9700		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	06/14/2023		772.9800		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	11/20/2023		730.9300		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	01/23/2024		787.9500		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	07/01/2024		708.7200		1473.0961
Field Specific Conductance	umhos/cm	MW-2R	11/21/2024		1647.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-3	10/12/2007		688.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	01/09/2008		682.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	04/08/2008		721.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	05/11/2015		353.9000		1473.0961

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*** - 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
Field Specific Conductance	umhos/cm	MW-3	09/22/2015		664.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	04/07/2016		618.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	11/30/2016		512.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	05/22/2017		629.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	11/21/2017		506.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	06/18/2018		778.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	10/28/2018		583.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	06/07/2019		552.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	11/18/2019		730.9800		1473.0961
Field Specific Conductance	umhos/cm	MW-3	06/18/2020		791.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	11/23/2020		834.6500		1473.0961
Field Specific Conductance	umhos/cm	MW-3	06/03/2021		825.5800		1473.0961
Field Specific Conductance	umhos/cm	MW-3	09/29/2021		802.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-3	03/16/2022		812.1700		1473.0961
Field Specific Conductance	umhos/cm	MW-3	06/27/2022		847.5600		1473.0961
Field Specific Conductance	umhos/cm	MW-3	09/13/2022		908.9500		1473.0961
Field Specific Conductance	umhos/cm	MW-3	06/13/2023		922.7700		1473.0961
Field Specific Conductance	umhos/cm	MW-3	11/20/2023		772.8300		1473.0961
Field Specific Conductance	umhos/cm	MW-3	01/25/2024		739.9600		1473.0961
Field Specific Conductance	umhos/cm	MW-3	07/01/2024		756.2200		1473.0961
Field Specific Conductance	umhos/cm	MW-3	12/17/2024		1547.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	11/05/2019		1475.1000	*	1473.0961

* - 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
Field Specific Conductance	umhos/cm	MW-31A	02/07/2020		1537.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	06/18/2020		1689.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	08/26/2020		1650.0000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	11/18/2020		2207.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	02/23/2021		1512.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	06/08/2021		2191.5000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	09/29/2021		2232.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	03/15/2022		1842.6000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	09/07/2022		3837.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	06/20/2023		1952.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	11/14/2023		1591.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	07/01/2024		1760.6000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-31A	12/17/2024		2765.5000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-33A	11/18/2019		728.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	02/12/2020		736.3900		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	06/30/2020		662.3600		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	08/25/2020		754.5600		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	11/03/2020		886.7800		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	06/03/2021		727.3400		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	09/29/2021		730.0200		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	03/16/2022		787.1300		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	09/13/2022		736.4700		1473.0961

* - Significantly increased over background.
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*** - 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
Field Specific Conductance	umhos/cm	MW-33A	06/13/2023		691.8400		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	06/12/2024		890.3400		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	08/29/2024		897.0400		1473.0961
Field Specific Conductance	umhos/cm	MW-33A	12/05/2024		2328.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-38A	09/23/2021		698.2900		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	12/14/2021		852.2700		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	03/07/2022		747.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	06/23/2022		745.0200		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	08/17/2022		780.3600		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	12/06/2022		767.3800		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	06/08/2023		757.8700		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	11/06/2023		754.4400		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	06/13/2024		760.9400		1473.0961
Field Specific Conductance	umhos/cm	MW-38A	12/09/2024		1714.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-39A	09/23/2021		714.7400		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	12/14/2021		864.6900		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	03/07/2022		751.5800		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	06/23/2022		757.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	08/17/2022		791.2100		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	12/06/2022		772.3200		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	06/08/2023		773.6700		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	11/06/2023		758.9200		1473.0961

* - Significantly increased over background.
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*** - 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
Field Specific Conductance	umhos/cm	MW-39A	06/13/2024		790.3700		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	08/29/2024		773.4100		1473.0961
Field Specific Conductance	umhos/cm	MW-39A	12/03/2024		1517.5000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-4	10/13/2007		1470.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	01/09/2008		1440.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	04/08/2008		1590.0000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-4	05/06/2015		763.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	09/18/2015		965.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	03/31/2016		961.9000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	11/28/2016		890.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	05/11/2017		1011.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	11/16/2017		818.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	06/04/2018		1206.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	10/29/2018		882.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	06/04/2019		1260.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	10/30/2019		1225.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	06/17/2020		1208.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	11/17/2020		1196.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	05/25/2021		1220.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	09/28/2021		1190.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	03/02/2022		1292.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	09/07/2022		1334.6000		1473.0961

* - 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
Field Specific Conductance	umhos/cm	MW-4	06/08/2023		1354.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	11/13/2023		1222.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	06/11/2024		1201.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-4	11/19/2024		1817.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-40A	09/23/2021		900.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	12/14/2021		1037.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	03/07/2022		1110.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	06/23/2022		1036.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	08/17/2022		1010.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	12/06/2022		1065.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	06/07/2023		1347.9000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	11/06/2023		1148.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	06/13/2024		1134.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-40A	12/03/2024		1896.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-42A	08/31/2022		2048.5000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-42A	12/06/2022		1073.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-42A	06/07/2023		940.2100		1473.0961
Field Specific Conductance	umhos/cm	MW-42A	08/28/2023		1173.9000		1473.0961
Field Specific Conductance	umhos/cm	MW-42A	11/02/2023		1001.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-42A	06/18/2024		1221.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-42A	12/05/2024		3061.3000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-43A	09/01/2022		1227.3000		1473.0961

* - 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
Field Specific Conductance	umhos/cm	MW-43A	12/06/2022		1248.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-43A	06/07/2023		1300.8000		1473.0961
Field Specific Conductance	umhos/cm	MW-43A	08/28/2023		1499.6000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-43A	11/02/2023		1525.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-43A	06/11/2024		1050.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-43A	08/29/2024		1099.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-43A	12/03/2024		2233.7000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-44A	09/01/2022		1128.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-44A	12/06/2022		1540.8000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-44A	06/07/2023		1224.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-44A	08/28/2023		1562.2000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-44A	11/02/2023		1717.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-44A	06/26/2024		1021.9000		1473.0961
Field Specific Conductance	umhos/cm	MW-44A	12/03/2024		2050.2000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-45A	11/09/2023		619.0700		1473.0961
Field Specific Conductance	umhos/cm	MW-45A	01/23/2024		608.9800		1473.0961
Field Specific Conductance	umhos/cm	MW-45A	07/01/2024		649.0800		1473.0961
Field Specific Conductance	umhos/cm	MW-45A	11/21/2024		1515.9000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-46A	11/13/2023		1733.4000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-46A	01/23/2024		1760.1000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-46A	06/11/2024		1613.0000	*	1473.0961
Field Specific Conductance	umhos/cm	MW-46A	12/09/2024		2875.5000	*	1473.0961

* - Significantly increased over background.
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*** - 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
Field Specific Conductance	umhos/cm	MW-7A	10/13/2007		845.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	01/09/2008		812.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	04/08/2008		830.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	05/04/2015		608.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	09/14/2015		736.1000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	04/04/2016		596.3000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/16/2016		820.7000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	05/08/2017		584.2000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/01/2017		511.5000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	06/06/2018		725.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	10/30/2018		641.9000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	06/04/2019		805.7800		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/04/2019		781.0800		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	02/03/2020		903.0000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	06/17/2020		740.0900		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/05/2020		723.9200		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	02/23/2021		816.3400		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	05/25/2021		806.1400		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	09/23/2021		643.6600		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	03/15/2022		748.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	08/31/2022		766.7600		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	06/13/2023		1089.7000		1473.0961

* - 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
Field Specific Conductance	umhos/cm	MW-7A	08/29/2023		1076.4000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/13/2023		1103.6000		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	06/18/2024		765.1900		1473.0961
Field Specific Conductance	umhos/cm	MW-7A	11/19/2024		1625.4000	*	1473.0961
Nickel	ug/L	MW-29A	11/20/2019		49.7000	*	20.9000
Nickel	ug/L	MW-29A	02/06/2020		49.2000	*	20.9000
Nickel	ug/L	MW-29A	06/30/2020		51.1000	*	20.9000
Nickel	ug/L	MW-29A	08/26/2020		57.0000	*	20.9000
Nickel	ug/L	MW-29A	11/20/2020		47.2000	*	20.9000
Nickel	ug/L	MW-29A	05/24/2021		55.5000	*	20.9000
Nickel	ug/L	MW-29A	09/28/2021		51.0000	*	20.9000
Nickel	ug/L	MW-29A	03/29/2022		63.6000	*	20.9000
Nickel	ug/L	MW-29A	09/12/2022		69.1000	*	20.9000
Nickel	ug/L	MW-29A	06/12/2023		76.0000	*	20.9000
Nickel	ug/L	MW-29A	11/15/2023		87.0000	*	20.9000
Nickel	ug/L	MW-29A	06/26/2024		63.9000	*	20.9000
Nickel	ug/L	MW-29A	12/09/2024		69.6000	*	20.9000
Nickel	ug/L	MW-31A	11/05/2019		20.4000		20.9000
Nickel	ug/L	MW-31A	02/07/2020		21.6000	*	20.9000
Nickel	ug/L	MW-31A	06/18/2020		27.5000	*	20.9000
Nickel	ug/L	MW-31A	08/26/2020		47.0000	*	20.9000
Nickel	ug/L	MW-31A	11/18/2020		52.8000	*	20.9000

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*** - 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
Nickel	ug/L	MW-31A	05/19/2021		53.4000	*	20.9000
Nickel	ug/L	MW-31A	09/29/2021		47.7000	*	20.9000
Nickel	ug/L	MW-31A	03/15/2022		28.1000	*	20.9000
Nickel	ug/L	MW-31A	09/07/2022		112.0000	*	20.9000
Nickel	ug/L	MW-31A	06/20/2023		39.7000	*	20.9000
Nickel	ug/L	MW-31A	11/14/2023		30.8000	*	20.9000
Nickel	ug/L	MW-31A	07/01/2024		30.3000	*	20.9000
Nickel	ug/L	MW-31A	12/17/2024		32.3000	*	20.9000
Nickel	ug/L	MW-42A	08/31/2022		37.2000	*	20.9000
Nickel	ug/L	MW-42A	12/06/2022		14.7000		20.9000
Nickel	ug/L	MW-42A	06/07/2023		8.6200		20.9000
Nickel	ug/L	MW-42A	08/28/2023		19.3000		20.9000
Nickel	ug/L	MW-42A	11/02/2023		14.8000		20.9000
Nickel	ug/L	MW-42A	06/18/2024		16.6000		20.9000
Nickel	ug/L	MW-42A	12/05/2024		27.6000	*	20.9000
Nickel	ug/L	MW-42A	02/14/2025		23.5000	*	20.9000
Nickel	ug/L	MW-43A	09/01/2022		24.4000	*	20.9000
Nickel	ug/L	MW-43A	12/06/2022		25.6000	*	20.9000
Nickel	ug/L	MW-43A	06/07/2023		31.0000	*	20.9000
Nickel	ug/L	MW-43A	08/28/2023		41.5000	*	20.9000
Nickel	ug/L	MW-43A	11/02/2023		36.4000	*	20.9000
Nickel	ug/L	MW-43A	06/11/2024		17.3000		20.9000

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*** - 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
Nickel	ug/L	MW-43A	12/03/2024		25.9000	*	20.9000
Nickel	ug/L	MW-44A	09/01/2022		21.7000	*	20.9000
Nickel	ug/L	MW-44A	12/06/2022		51.8000	*	20.9000
Nickel	ug/L	MW-44A	06/07/2023		28.7000	*	20.9000
Nickel	ug/L	MW-44A	08/28/2023		70.2000	*	20.9000
Nickel	ug/L	MW-44A	11/02/2023		66.6000	*	20.9000
Nickel	ug/L	MW-44A	06/26/2024		21.6000	*	20.9000
Nickel	ug/L	MW-44A	12/03/2024		34.2000	*	20.9000
Nickel	ug/L	MW-46A	11/13/2023		33.8000	*	20.9000
Nickel	ug/L	MW-46A	01/23/2024		35.0000	*	20.9000
Nickel	ug/L	MW-46A	06/11/2024		26.6000	*	20.9000
Nickel	ug/L	MW-46A	09/05/2024		26.6000	*	20.9000
Nickel	ug/L	MW-46A	12/09/2024		28.2000	*	20.9000
Silver	ug/L	MW-29A	11/20/2019	ND	0.3700		0.3700
Silver	ug/L	MW-29A	02/06/2020	ND	0.3700		0.3700
Silver	ug/L	MW-29A	06/30/2020	ND	0.3700		0.3700
Silver	ug/L	MW-29A	08/26/2020	ND	0.3700		0.3700
Silver	ug/L	MW-29A	11/20/2020	ND	0.3700		0.3700
Silver	ug/L	MW-29A	05/24/2021	ND	0.4200		0.3700
Silver	ug/L	MW-29A	09/28/2021	ND	0.4200		0.3700
Silver	ug/L	MW-29A	03/29/2022	ND	0.4900		0.3700
Silver	ug/L	MW-29A	09/12/2022	ND	1.9600		0.3700

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*** - 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
Silver	ug/L	MW-29A	06/12/2023	ND	0.5000		0.3700
Silver	ug/L	MW-29A	11/15/2023	ND	0.5000		0.3700
Silver	ug/L	MW-29A	06/26/2024		1.1000	*	0.3700
Silver	ug/L	MW-29A	12/09/2024	ND	0.5000		0.3700
Silver	ug/L	MW-4	10/13/2007	ND	20.0000		0.3700
Silver	ug/L	MW-4	01/09/2008	ND	20.0000		0.3700
Silver	ug/L	MW-4	04/08/2008	ND	20.0000		0.3700
Silver	ug/L	MW-4	07/16/2008	ND	20.0000		0.3700
Silver	ug/L	MW-4	10/23/2008	ND	20.0000		0.3700
Silver	ug/L	MW-4	04/09/2009	ND	20.0000		0.3700
Silver	ug/L	MW-4	10/05/2009	ND	20.0000		0.3700
Silver	ug/L	MW-4	02/25/2010	ND	20.0000		0.3700
Silver	ug/L	MW-4	04/21/2010	ND	20.0000		0.3700
Silver	ug/L	MW-4	10/14/2010	ND	20.0000		0.3700
Silver	ug/L	MW-4	04/13/2011	ND	20.0000		0.3700
Silver	ug/L	MW-4	10/18/2011	ND	1.7000		0.3700
Silver	ug/L	MW-4	04/24/2012	ND	1.7000		0.3700
Silver	ug/L	MW-4	10/24/2012	ND	0.0270		0.3700
Silver	ug/L	MW-4	04/08/2013	ND	0.0789		0.3700
Silver	ug/L	MW-4	11/05/2013	ND	0.0789		0.3700
Silver	ug/L	MW-4	05/02/2014	ND	0.0330		0.3700
Silver	ug/L	MW-4	11/04/2014	ND	0.0420		0.3700

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*** - 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
Silver	ug/L	MW-4	05/06/2015	ND	0.0420		0.3700
Silver	ug/L	MW-4	09/18/2015	ND	0.0420		0.3700
Silver	ug/L	MW-4	03/31/2016		0.1650		0.3700
Silver	ug/L	MW-4	11/28/2016	ND	0.1530		0.3700
Silver	ug/L	MW-4	05/11/2017	ND	0.1400		0.3700
Silver	ug/L	MW-4	11/16/2017	ND	0.1400		0.3700
Silver	ug/L	MW-4	06/04/2018	ND	0.3000		0.3700
Silver	ug/L	MW-4	10/29/2018	ND	0.3000		0.3700
Silver	ug/L	MW-4	06/04/2019	ND	0.1150		0.3700
Silver	ug/L	MW-4	10/30/2019	ND	0.3700		0.3700
Silver	ug/L	MW-4	06/17/2020	ND	0.3700		0.3700
Silver	ug/L	MW-4	11/17/2020	ND	0.3700		0.3700
Silver	ug/L	MW-4	05/25/2021	ND	0.4200		0.3700
Silver	ug/L	MW-4	09/28/2021	ND	0.4200		0.3700
Silver	ug/L	MW-4	03/02/2022	ND	0.4900		0.3700
Silver	ug/L	MW-4	09/07/2022	ND	0.4900		0.3700
Silver	ug/L	MW-4	06/08/2023	ND	0.5000		0.3700
Silver	ug/L	MW-4	11/13/2023	ND	0.5000		0.3700
Silver	ug/L	MW-4	06/11/2024		1.2100	*	0.3700
Silver	ug/L	MW-4	11/19/2024	ND	0.5000		0.3700
Silver	ug/L	MW-44A	09/01/2022	ND	0.4900		0.3700
Silver	ug/L	MW-44A	12/06/2022	ND	0.4900		0.3700

* - 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
Silver	ug/L	MW-44A	06/07/2023	ND	0.5000		0.3700
Silver	ug/L	MW-44A	08/28/2023	ND	0.5000		0.3700
Silver	ug/L	MW-44A	11/02/2023	ND	0.5000		0.3700
Silver	ug/L	MW-44A	06/26/2024		1.0100	*	0.3700
Silver	ug/L	MW-44A	12/03/2024	ND	0.5000		0.3700

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

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Antimony (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.69**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Arsenic (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **4.57**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Barium (ug/L)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}$ = **sum[Y]** / **N** = **132.654** / **27** = **4.913**	Compute mean on a natural log scale.
3	$S_Y = ((\mathbf{sum[Y^2]} - \mathbf{sum[Y]}^2/\mathbf{N}) / (\mathbf{N}-1))^{1/2}$ $= ((\mathbf{654.429} - \mathbf{17596.983}/\mathbf{27}) / (\mathbf{27}-1))^{1/2}$ = **0.322**	Compute sd on a natural log scale.
4	alpha = min[$(1-.95^{1/\mathbf{K}})^{1/3}$, .01] = min[$(1-.95^{1/\mathbf{378}})^{1/3}$, .01] = **0.01**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
5	PL = exp[$\overline{\mathbf{Y}}$ + $\mathbf{tS_Y}(1+1/\mathbf{N})^{1/2}$] = exp[**4.913** + (**2.478*****0.322**)(1+1/**27**)$^{1/2}$] = **306.316**	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beryllium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.27**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cadmium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.209**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Chromium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.1**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cobalt (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.681**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Copper (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **5.27**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Field pH (SU)
Normal Prediction Limit

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **182.31** / **26** = **7.012**	Compute upgradient mean.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1282.816** - **33236.936**/**26**) / (**26**-1))^{½} = **0.423**	Compute upgradient sd.
3	alpha = min[(1-.95$^{1/\mathbf{K}}$)$^{1/3}$, .01] = min[(1-.95$^{1/\mathbf{378}}$)$^{1/3}$, .01] = **0.01**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
4	PL = $\overline{\mathbf{X}}$ + **tS**(1+1/**N**)^{½} = **7.012** + (**2.485*****0.423**)(1+1/**26**)^{½} = **8.083**	One-sided normal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Field Specific Conductance (umhos/cm)
Lognormal Prediction Limit

Step	Equation	Description
1	$Y = \log_e(X)$	Transform to natural logarithmic scale.
2	$\overline{Y}$ = **sum[Y]** / **N** = **169.714** / **26** = **6.527**	Compute mean on a natural log scale.
3	$S_Y = ((\mathbf{sum[Y^2]} - \mathbf{sum[Y]}^2/\mathbf{N}) / (\mathbf{N}\text{-}1))^{½}$ $= ((\mathbf{1110.1} - \mathbf{28802.857}/\mathbf{26}) / (\mathbf{26}\text{-}1))^{½}$ = **0.303**	Compute sd on a natural log scale.
4	alpha = min[$(1-.95^{1/\mathbf{K}})^{1/3}$, .01] = min[$(1-.95^{1/\mathbf{378}})^{1/3}$, .01] = **0.01**	Adjusted per comparison false positive rate. Pass initial or 1 of 2 resamples.
5	PL = exp[$\overline{\mathbf{Y}}$ + $\mathbf{tS_Y}(1+1/\mathbf{N})^{½}$] = exp[**6.527** + (**2.485*****0.303**)(1+1/**26**)^{½}] = **1473.096**	One-sided lognormal prediction limit (t is Student's t on N-1 degrees of freedom and 1-alpha confidence level).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Lead (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.06**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Nickel (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **20.9**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Selenium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.41**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Silver (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.37**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Thallium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.26**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

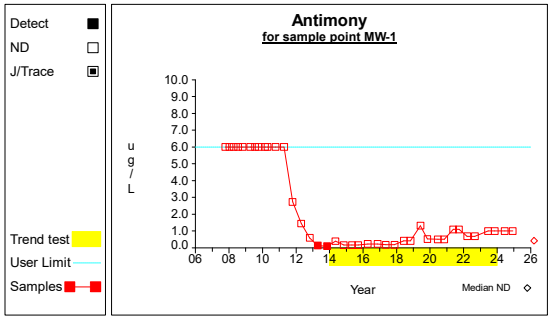
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vanadium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.1**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

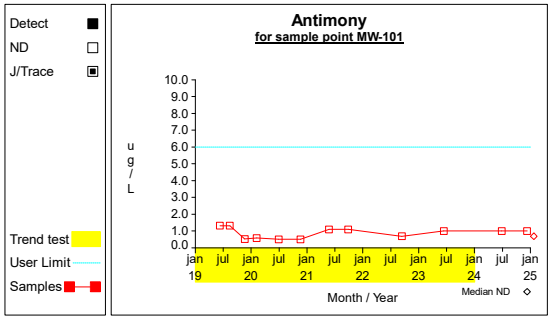
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Zinc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **10.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

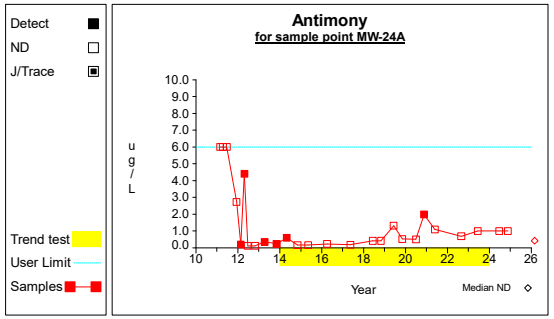
Time Series



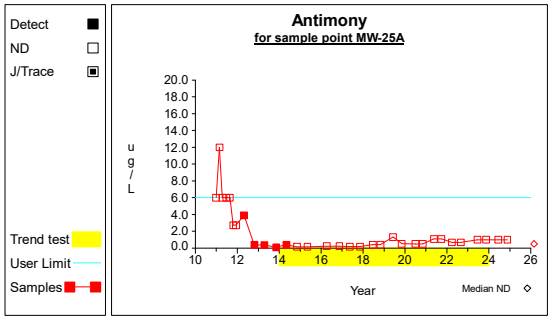
Graph 1



Graph 2



Graph 3



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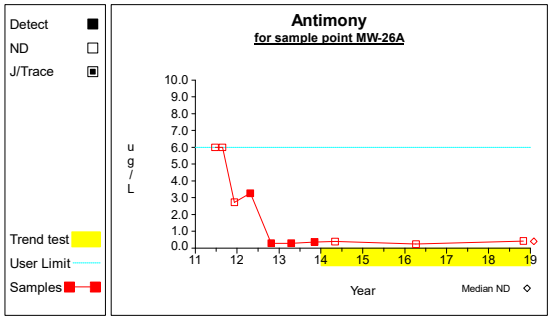

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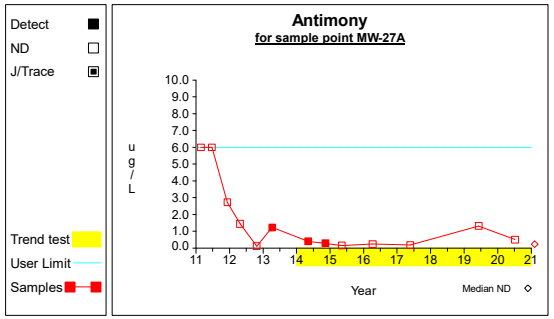

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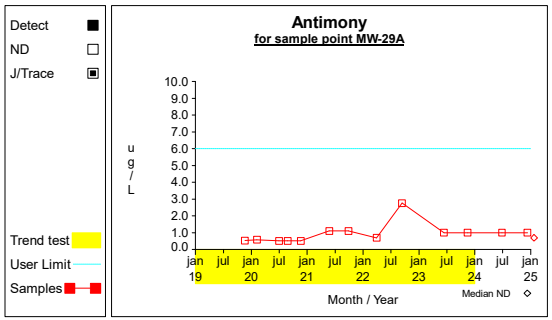

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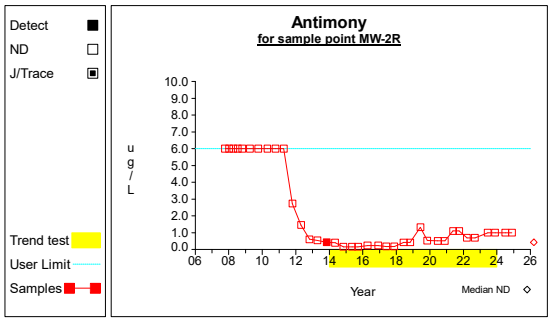

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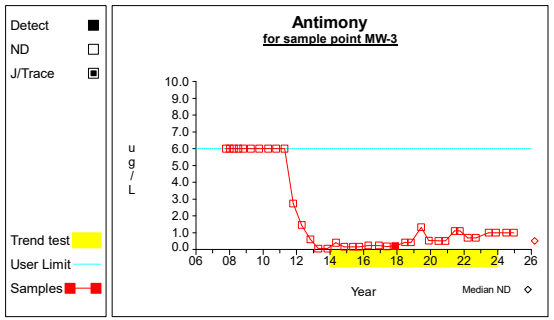
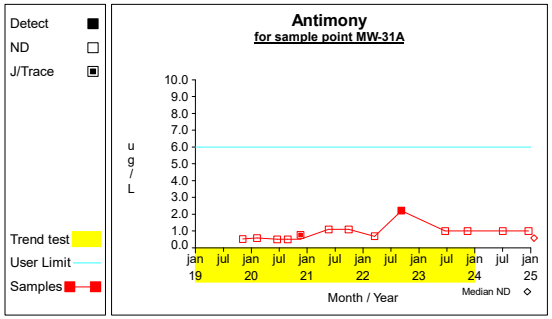


Graph 9

Time Series



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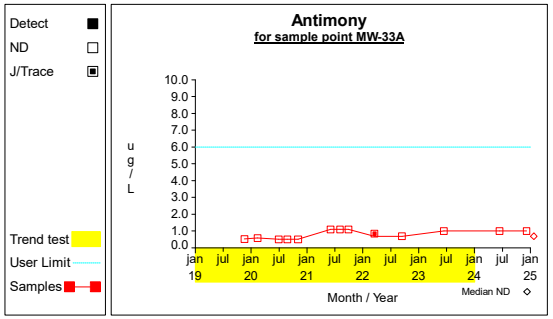

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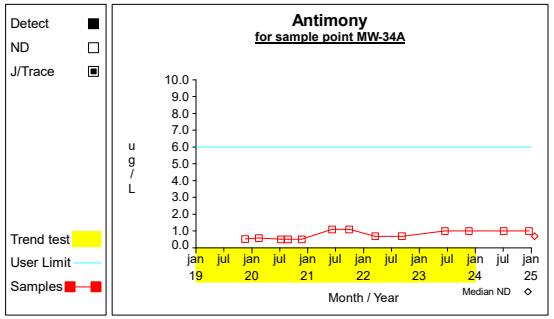

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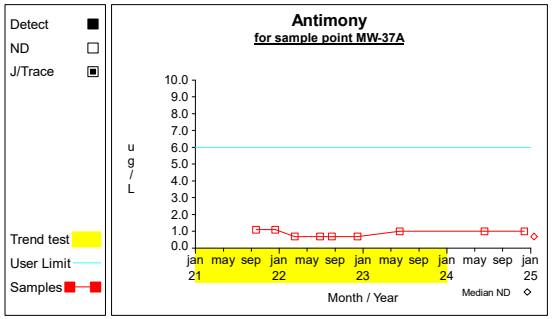

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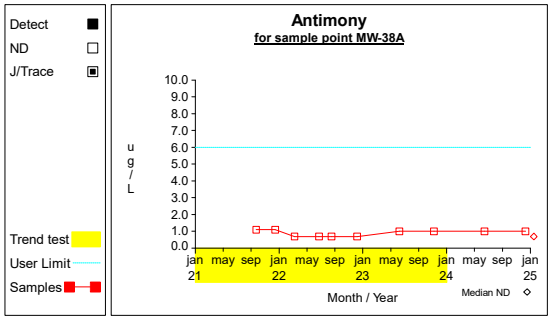

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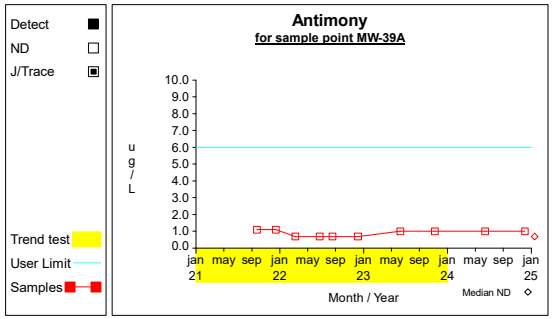

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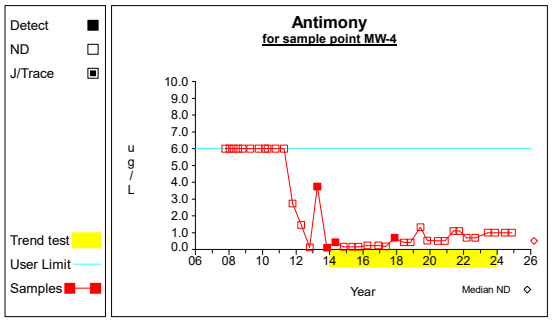

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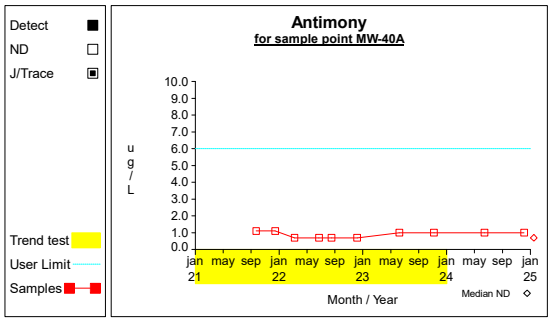

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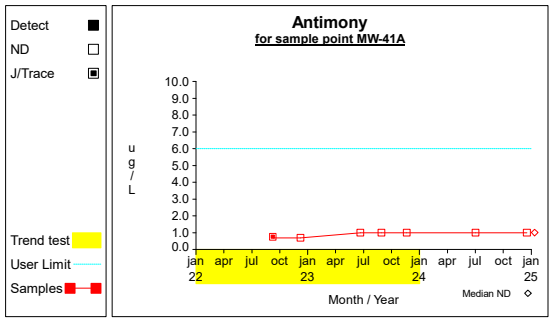
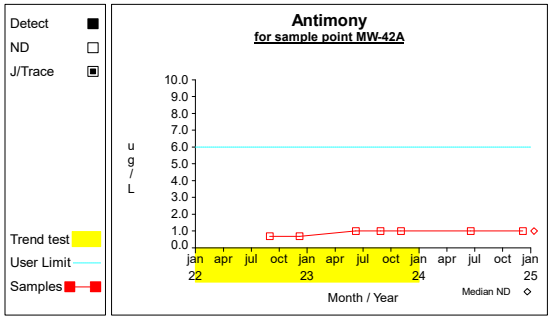
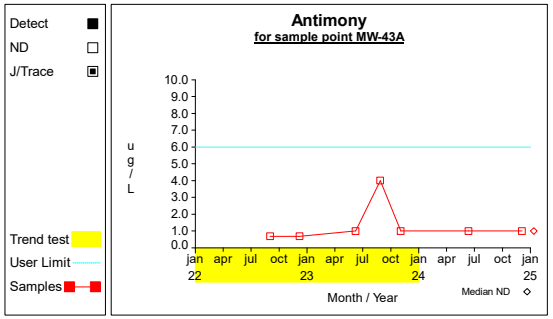


Graph 18

Time Series



Graph 19



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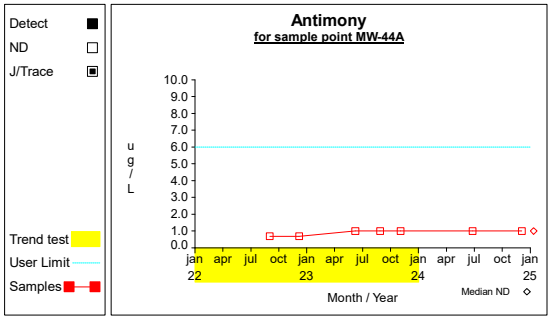

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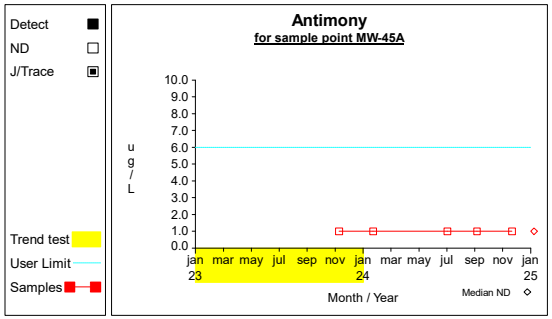

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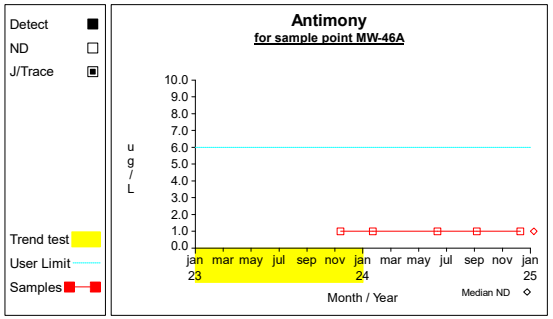

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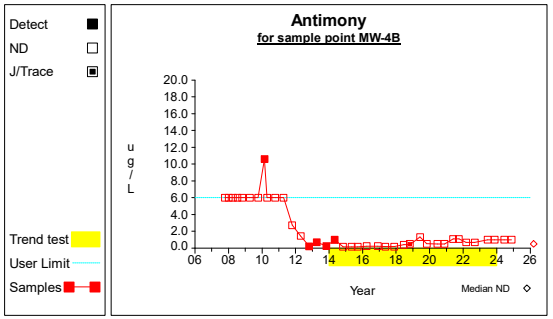

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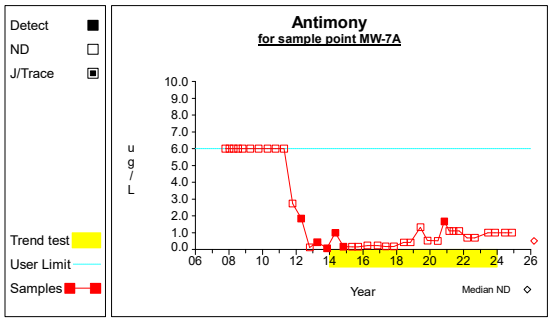
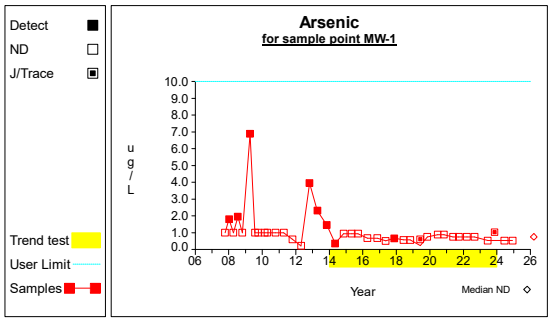
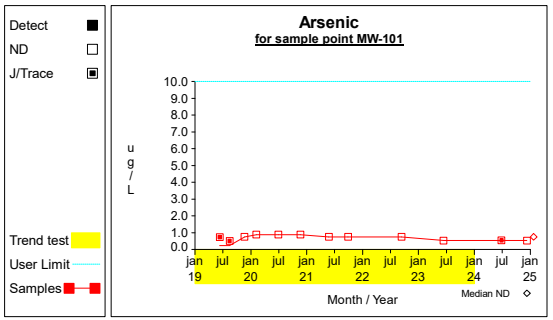


Graph 25

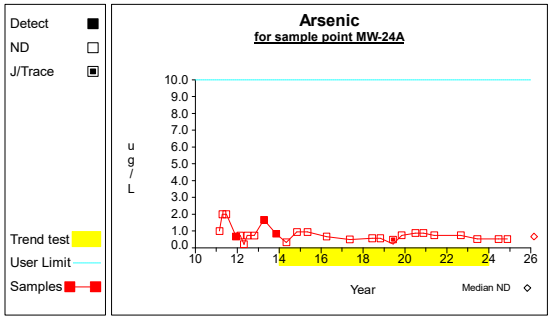


Graph 26

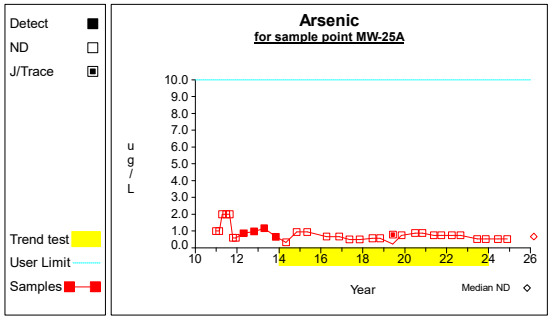


Graph 27

Time Series



Graph 28



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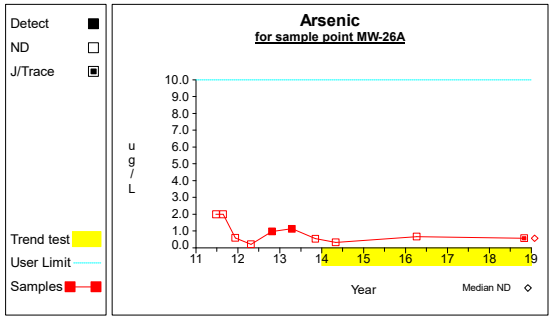
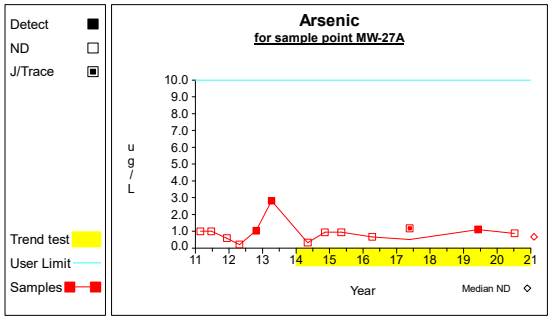
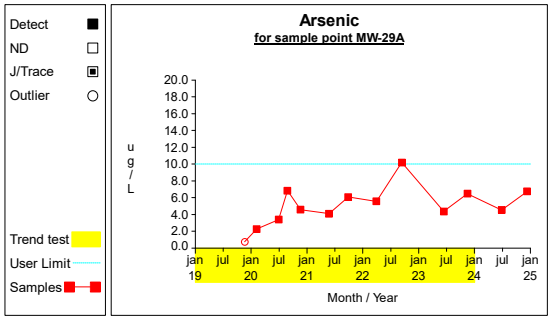


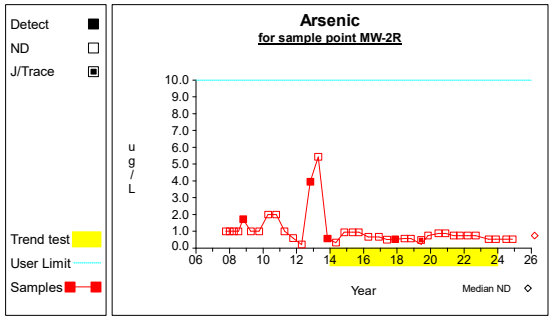
Graph 30



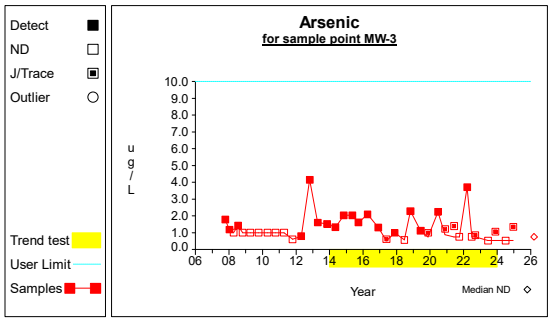
Graph 31



Graph 32



Graph 33



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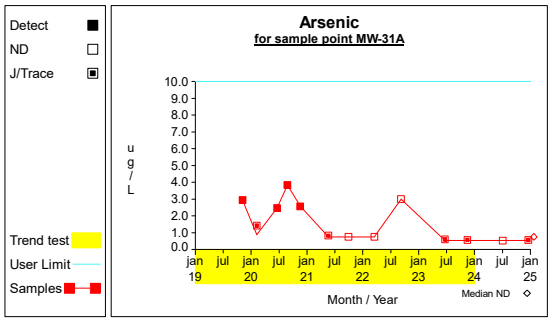

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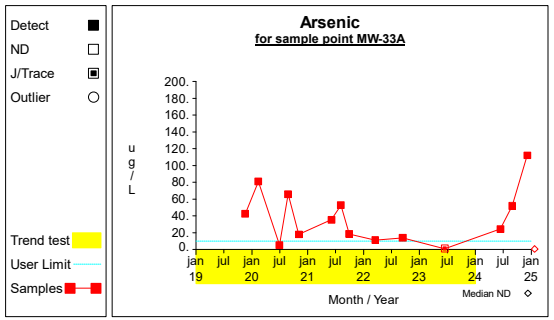
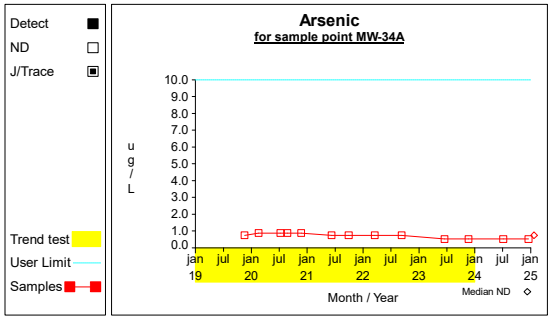
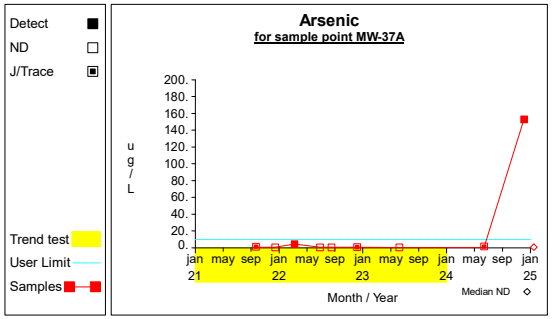


Graph 36

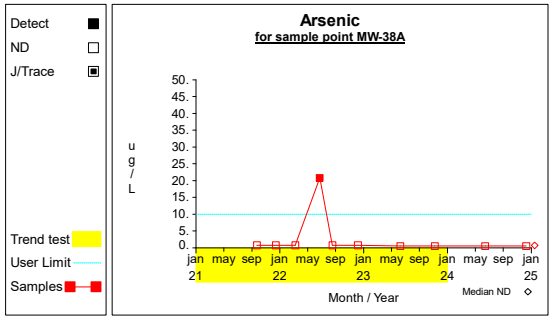
Time Series



Graph 37



Graph 38



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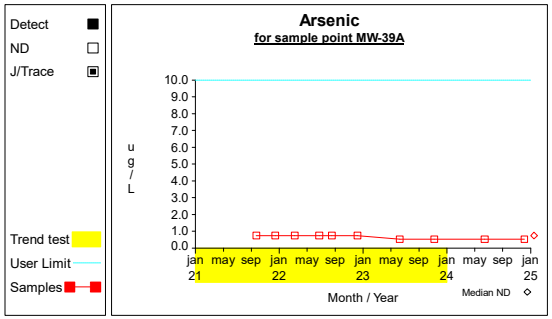

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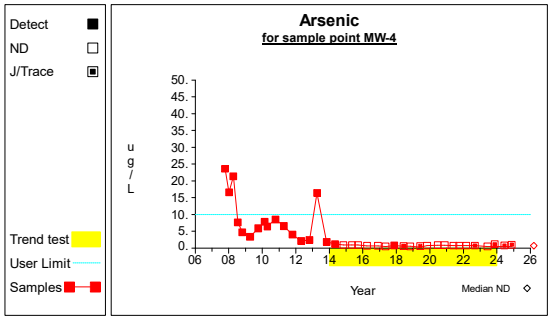

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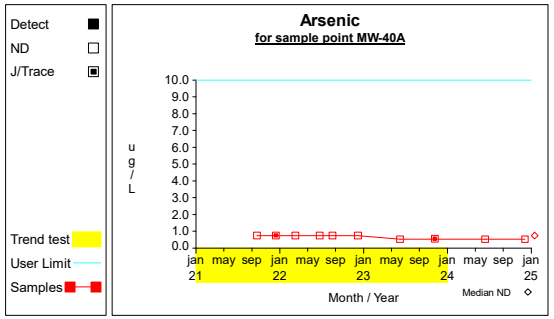

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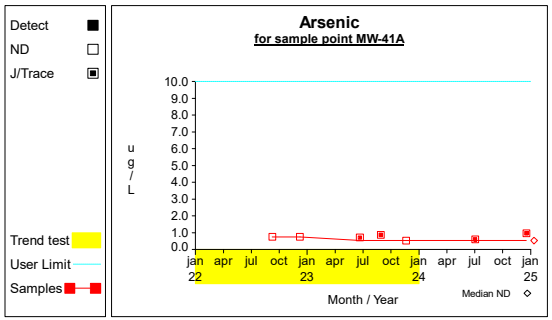

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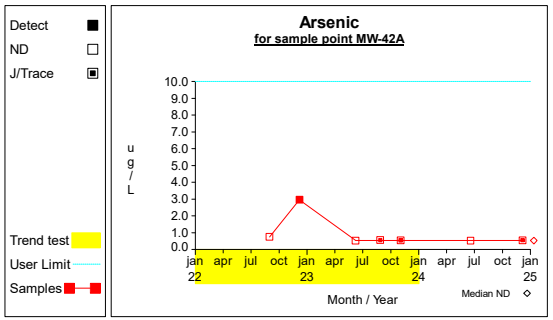
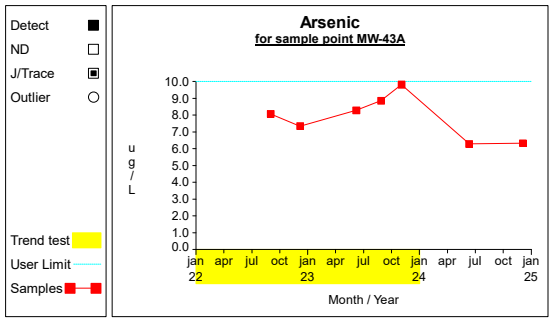
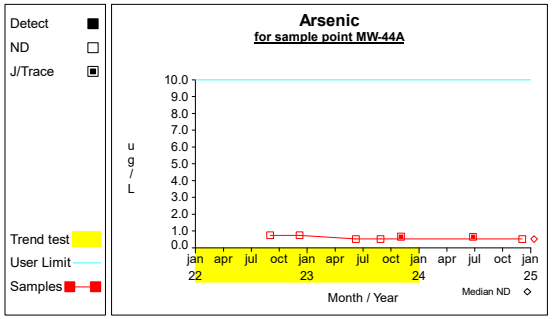


Graph 44

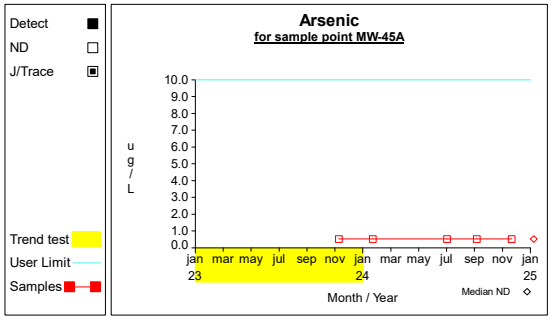


Graph 45

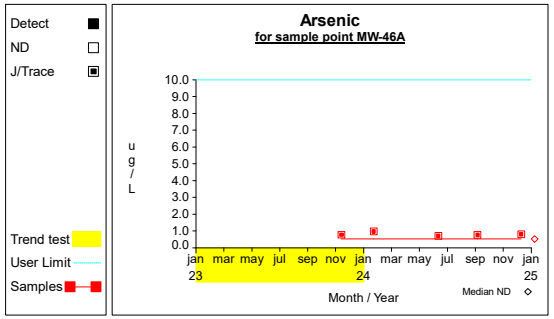
Time Series



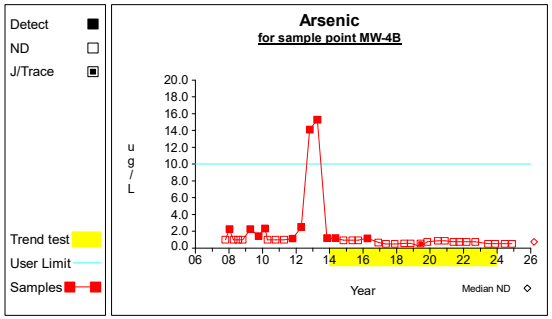
Graph 46



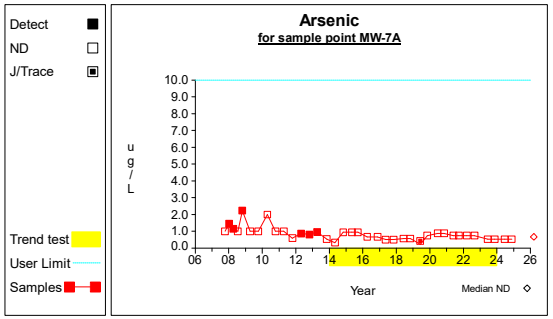
Graph 47



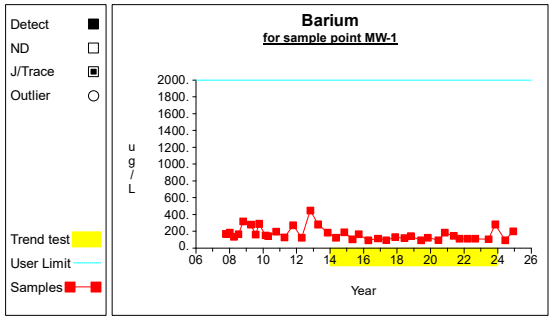
Graph 48



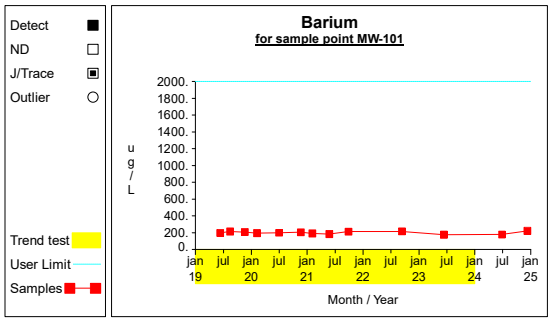
Graph 49



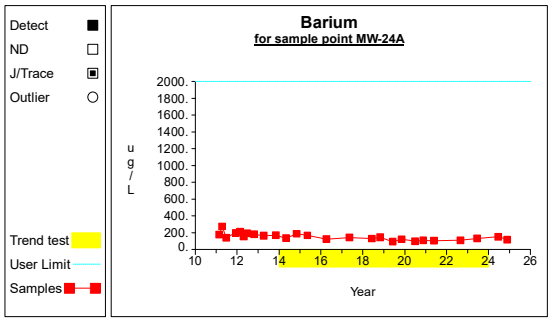
Graph 50



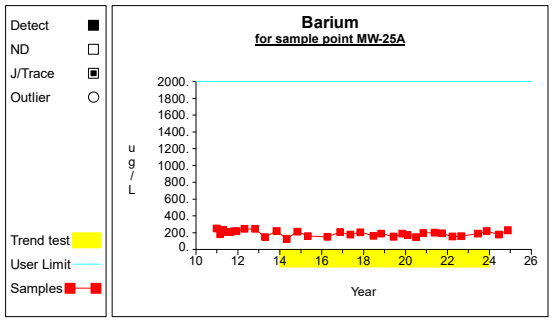
Graph 51



Graph 52

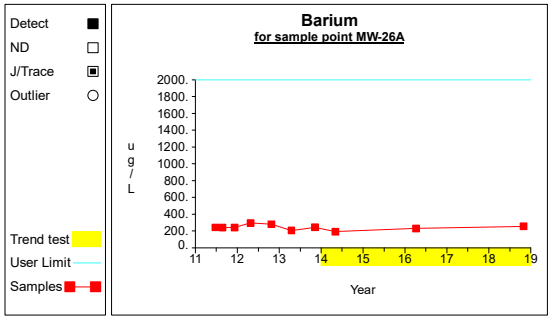


Graph 53

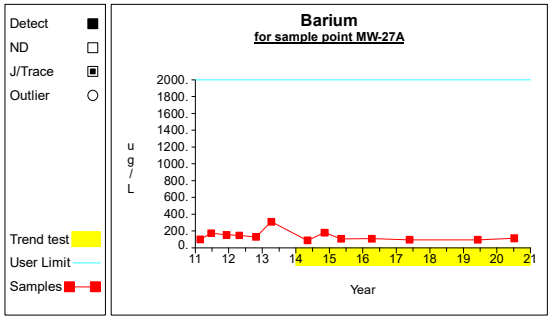


Graph 54

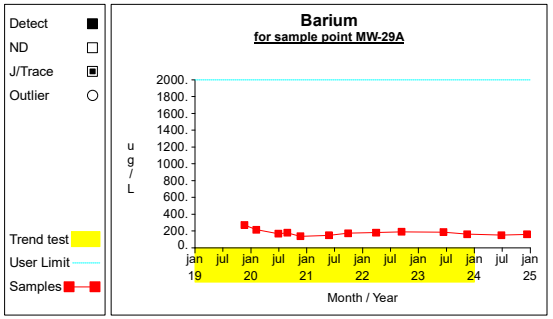
Time Series



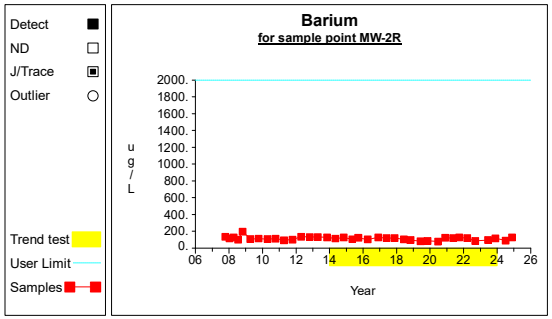
Graph 55



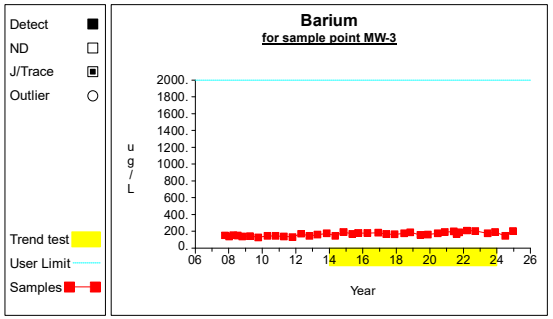
Graph 56



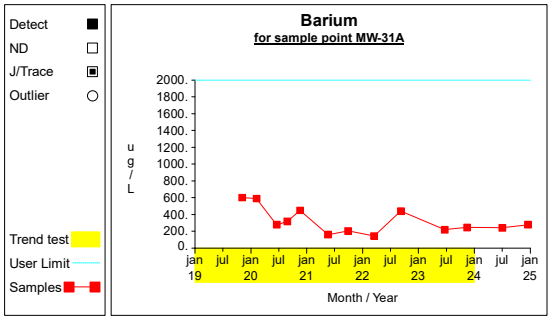
Graph 57



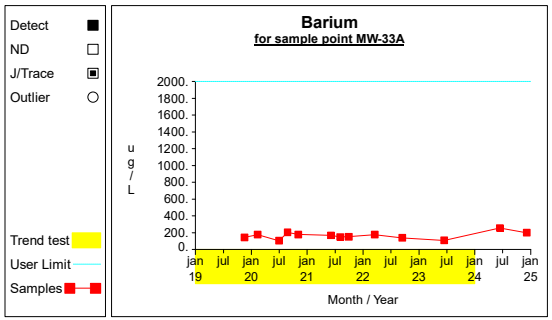
Graph 58



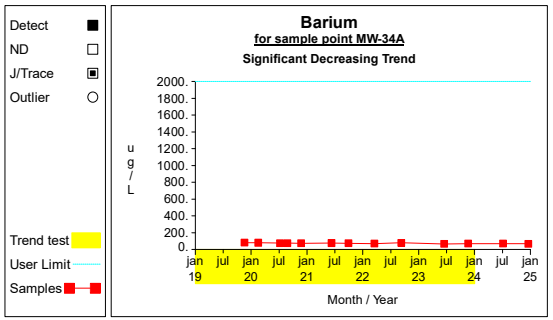
Graph 59



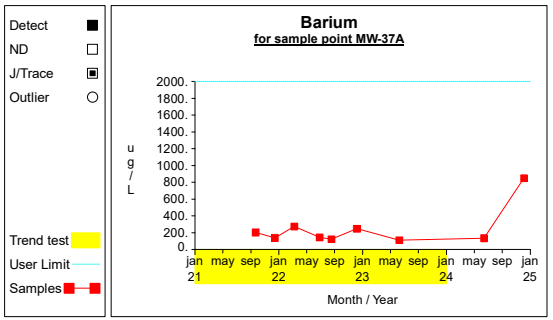
Graph 60



Graph 61

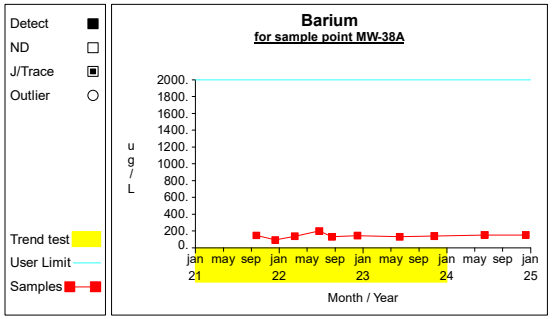


Graph 62

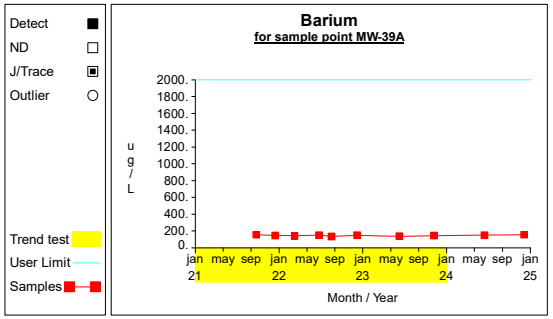


Graph 63

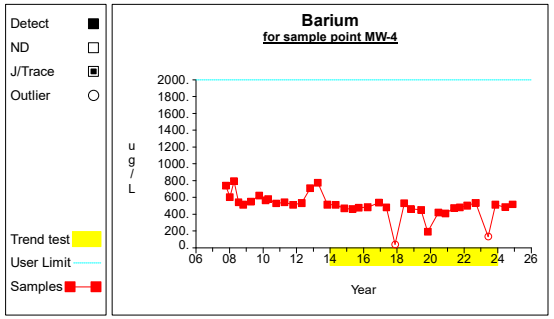
Time Series



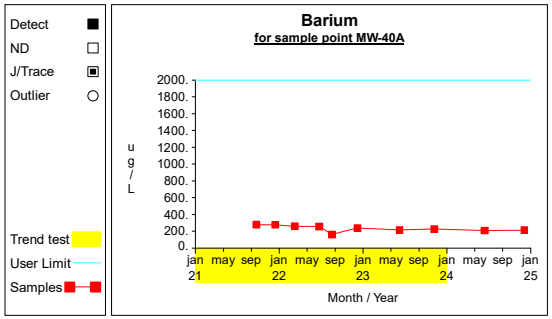
Graph 64



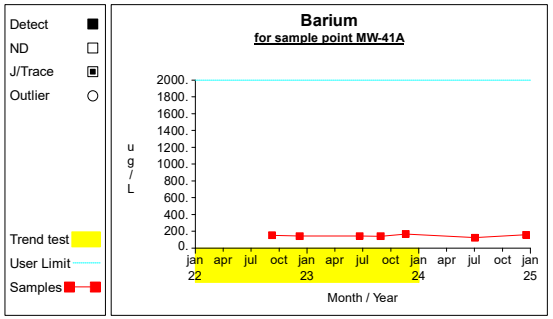
Graph 65



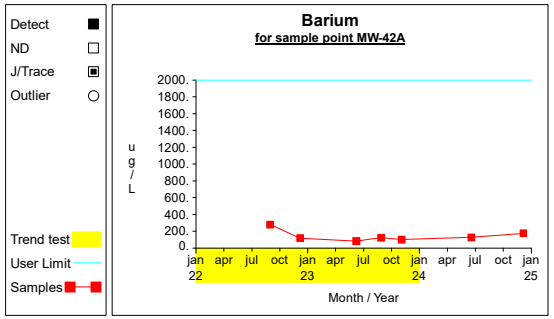
Graph 66



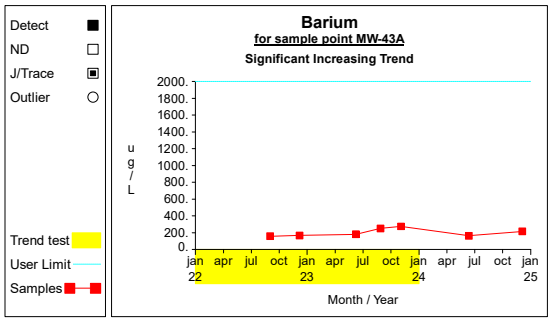
Graph 67



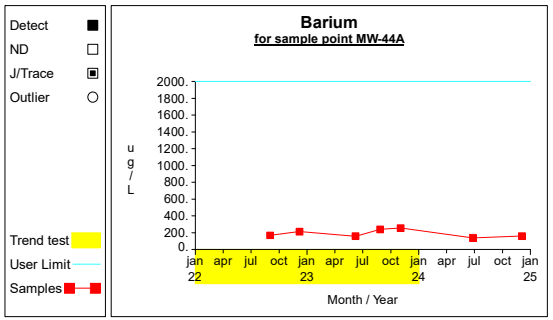
Graph 68



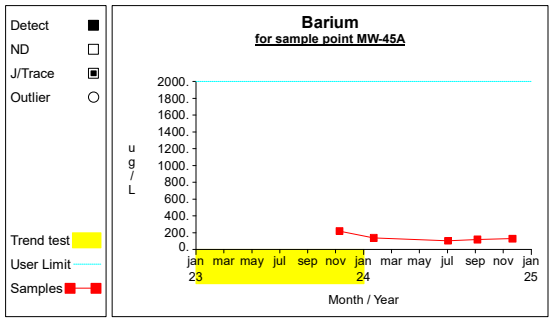
Graph 69



Graph 70

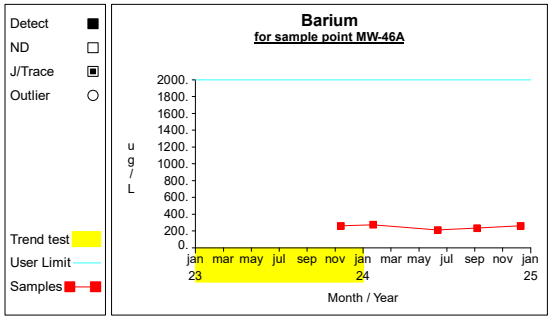


Graph 71

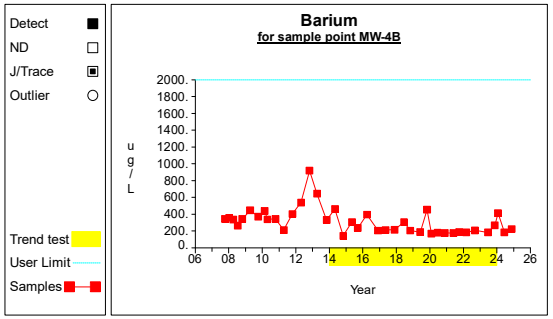


Graph 72

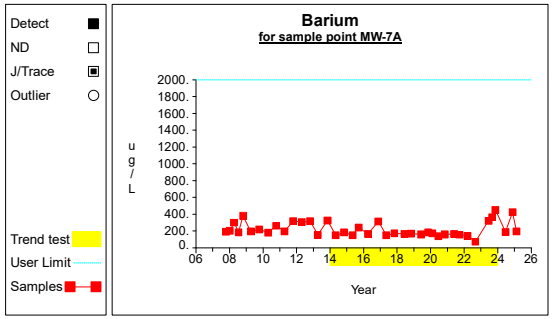
Time Series



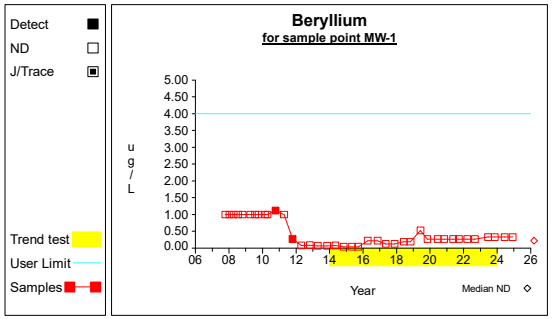
Graph 73



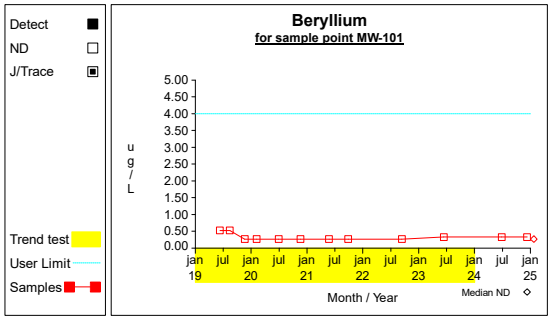
Graph 74



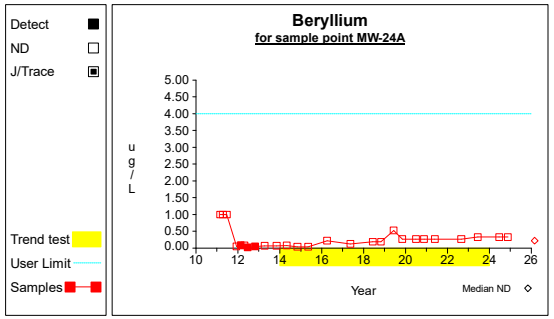
Graph 75



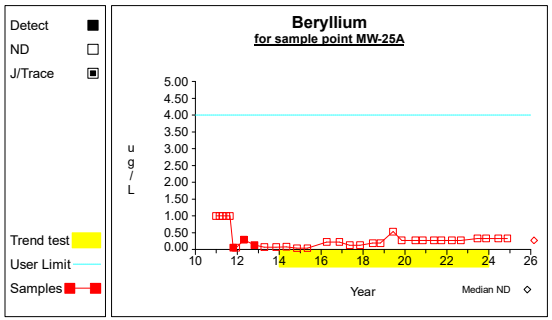
Graph 76



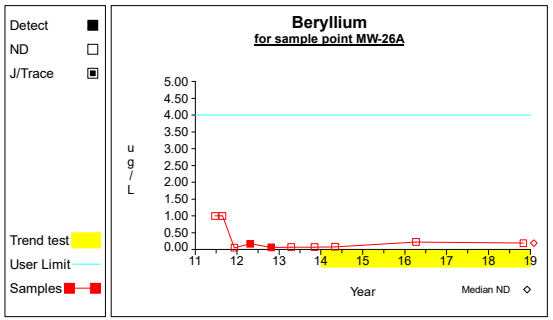
Graph 77



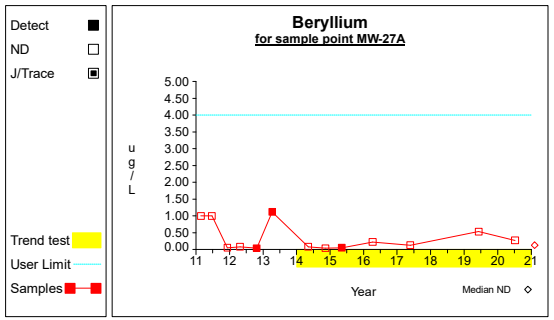
Graph 78



Graph 79

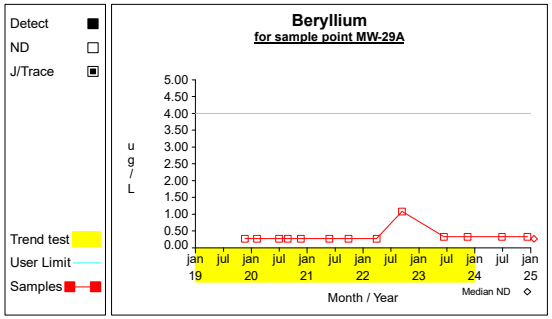


Graph 80

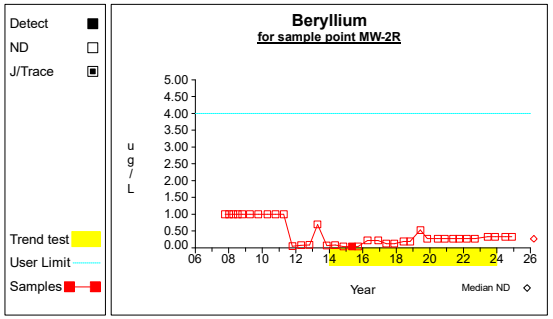


Graph 81

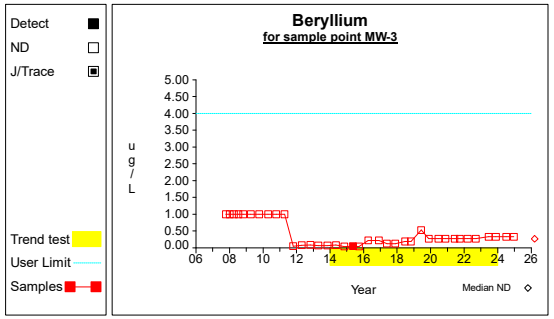
Time Series



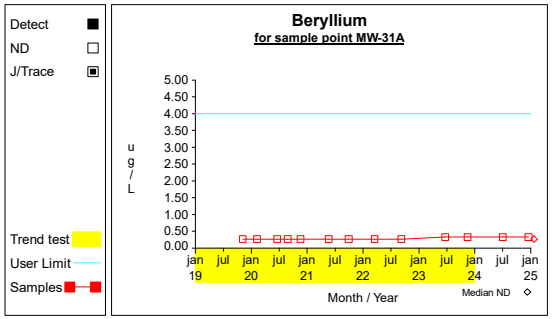
Graph 82



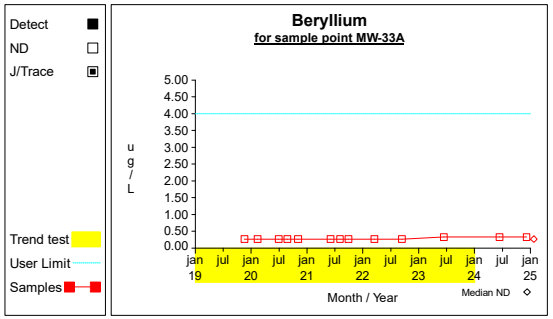
Graph 83



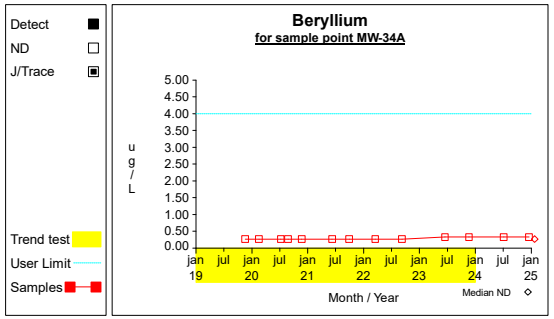
Graph 84



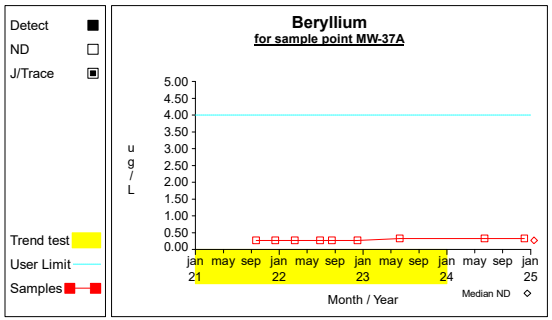
Graph 85



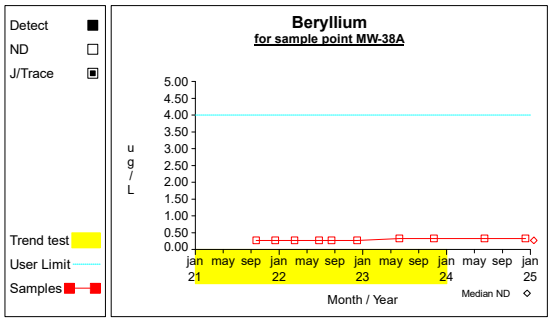
Graph 86



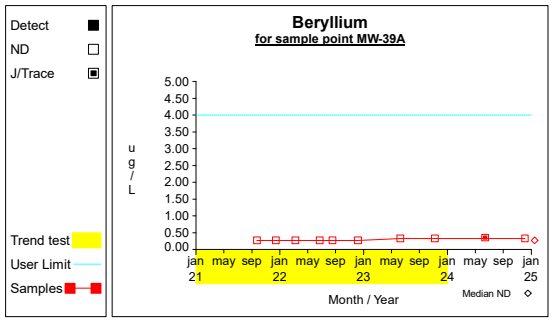
Graph 87



Graph 88

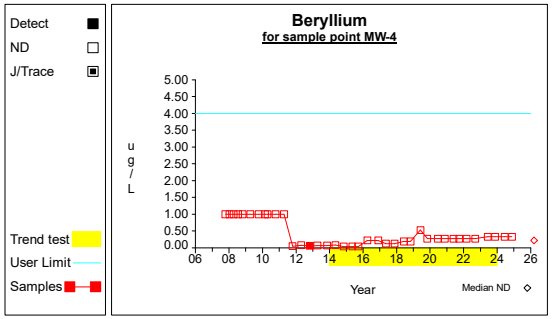


Graph 89

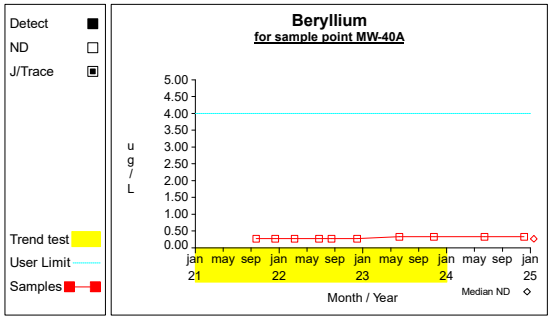


Graph 90

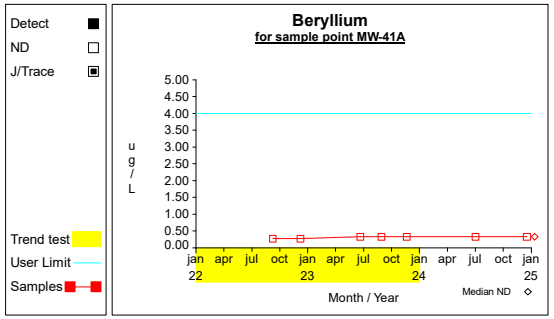
Time Series



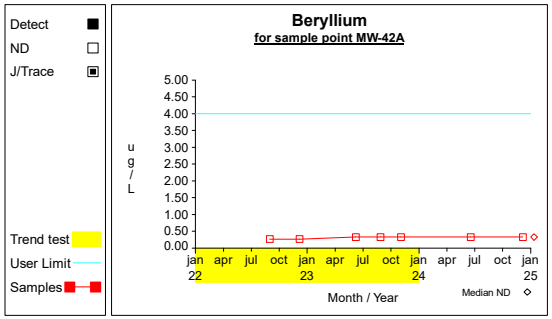
Graph 91



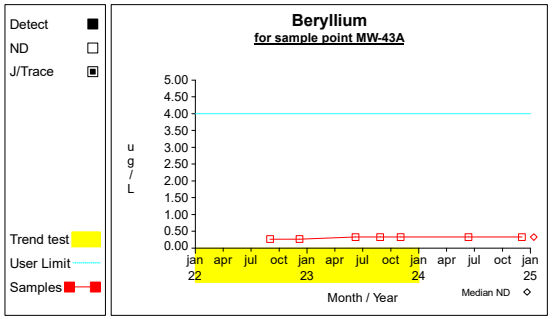
Graph 92



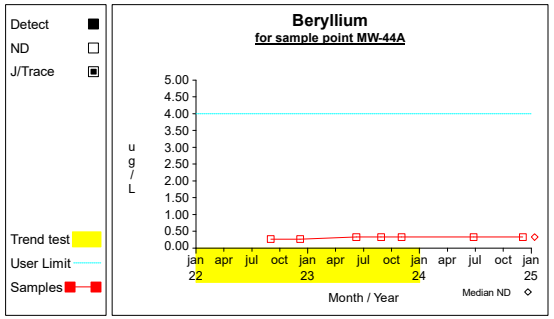
Graph 93



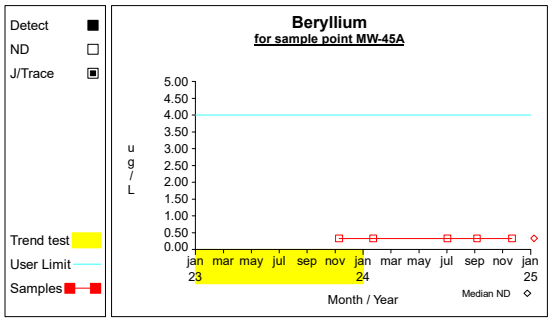
Graph 94



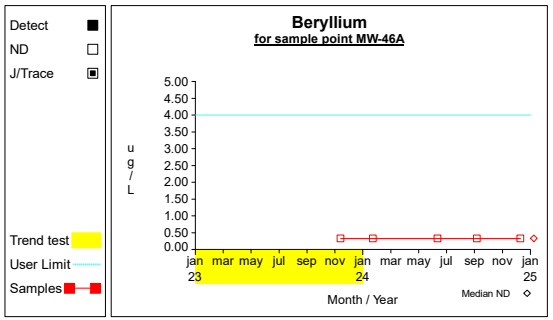
Graph 95



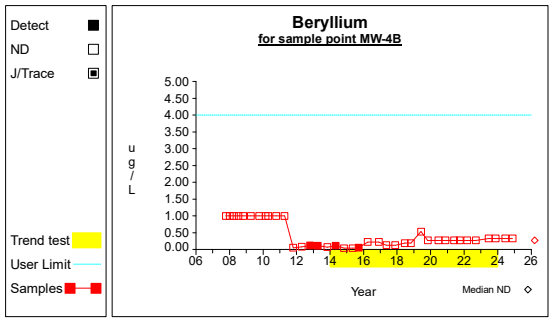
Graph 96



Graph 97

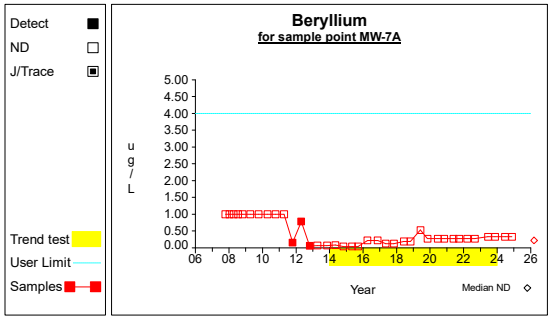


Graph 98

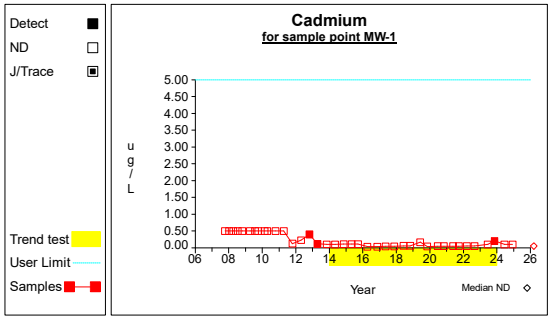


Graph 99

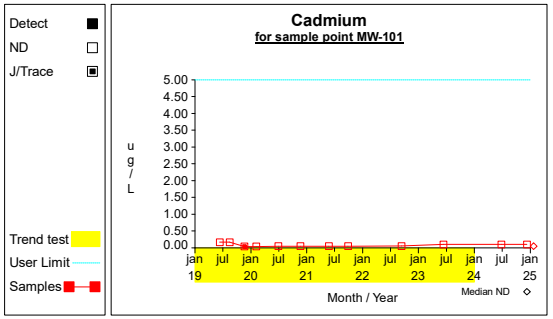
Time Series



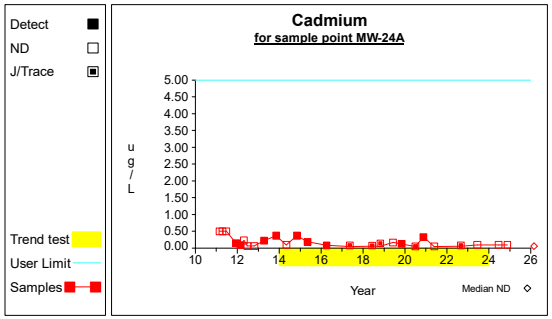
Graph 100



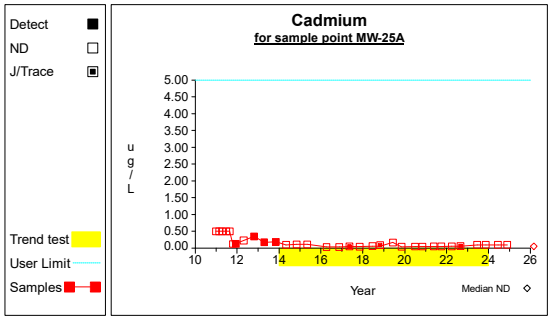
Graph 101



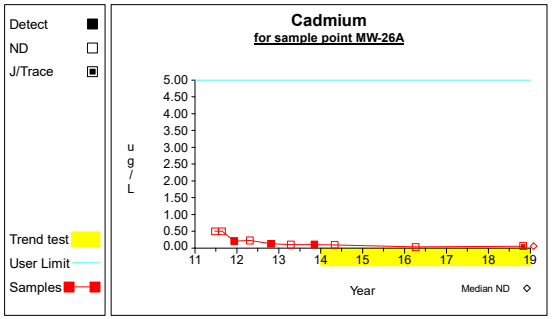
Graph 102



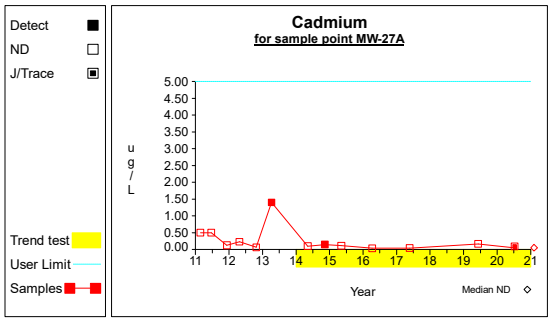
Graph 103



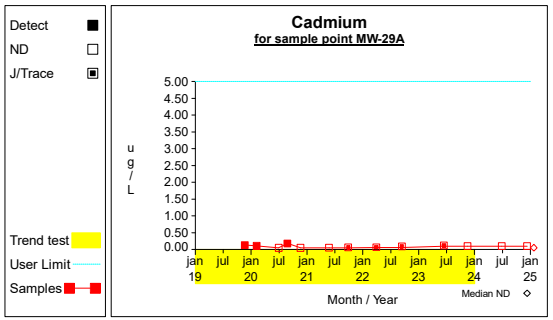
Graph 104



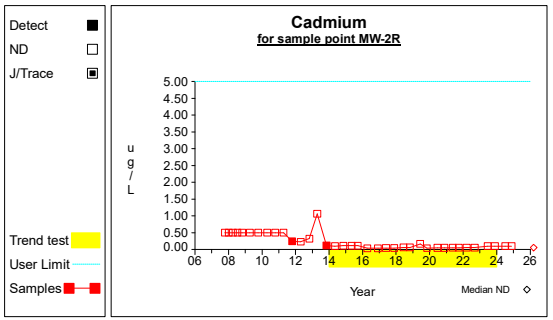
Graph 105



Graph 106

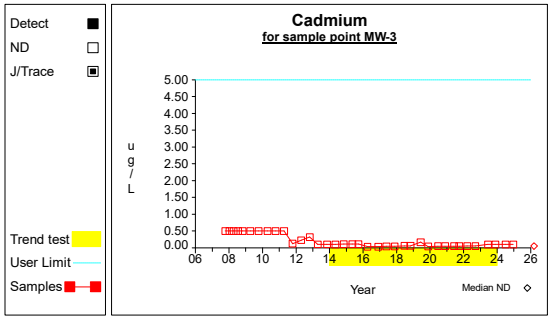


Graph 107

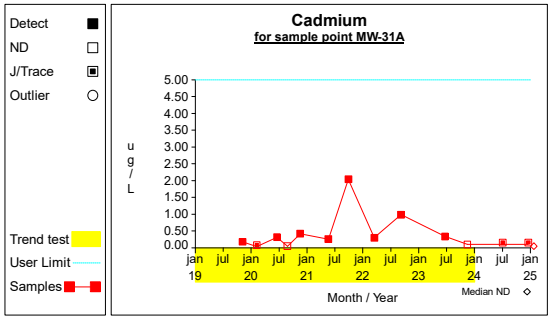


Graph 108

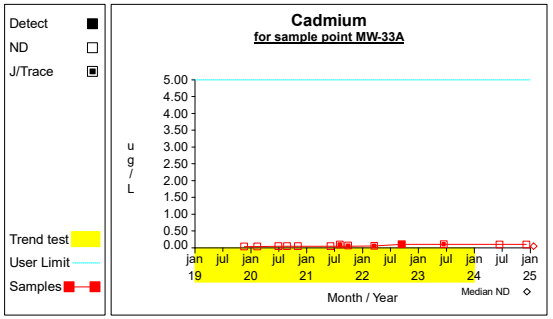
Time Series



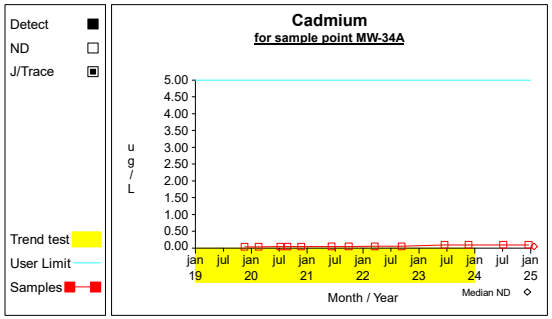
Graph 109



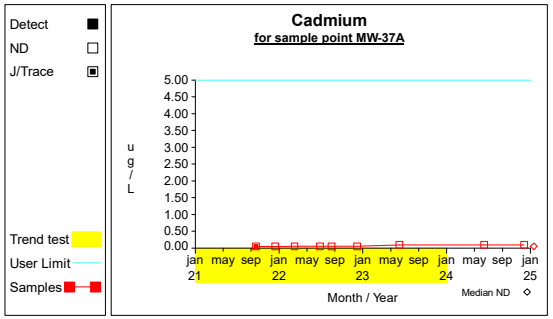
Graph 110



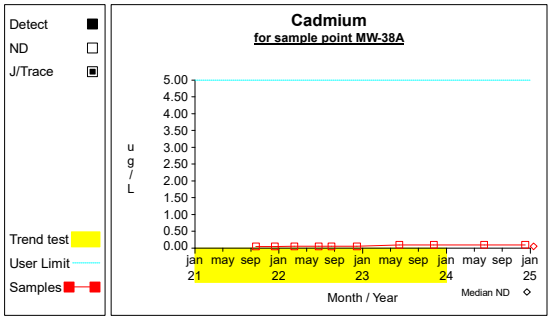
Graph 111



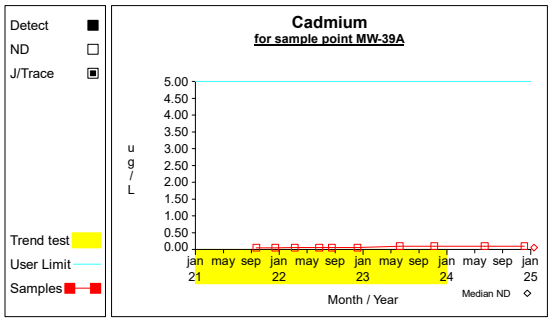
Graph 112



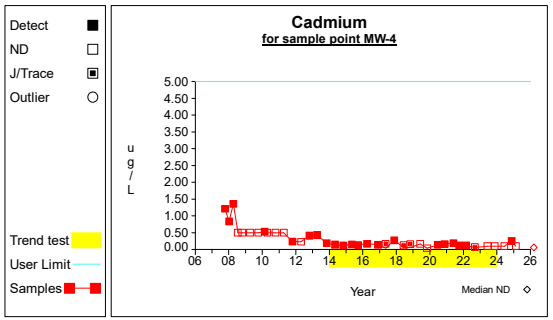
Graph 113



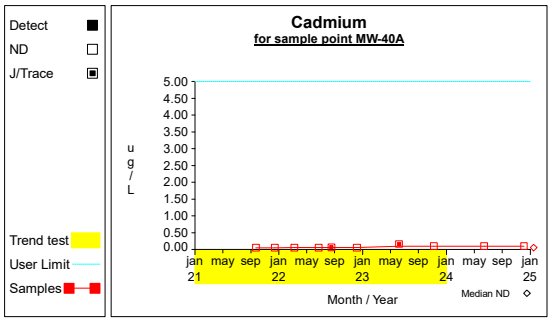
Graph 114



Graph 115

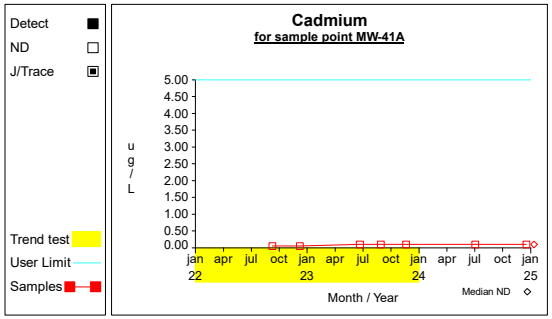


Graph 116

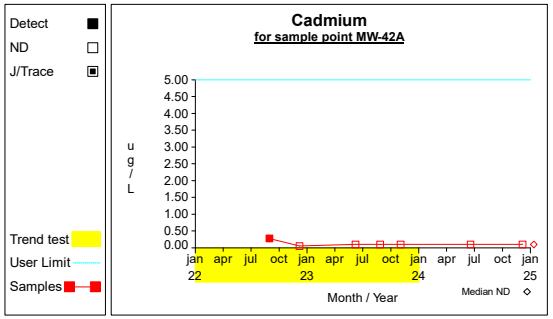


Graph 117

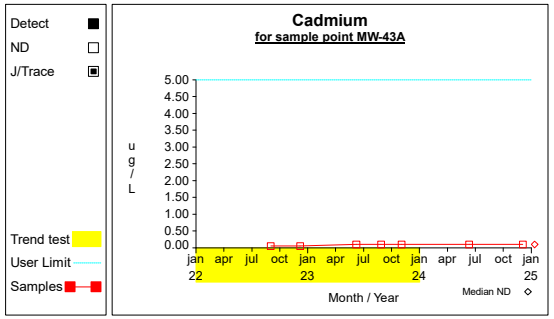
Time Series



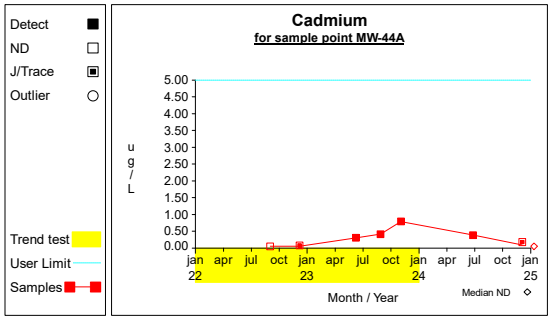
Graph 118



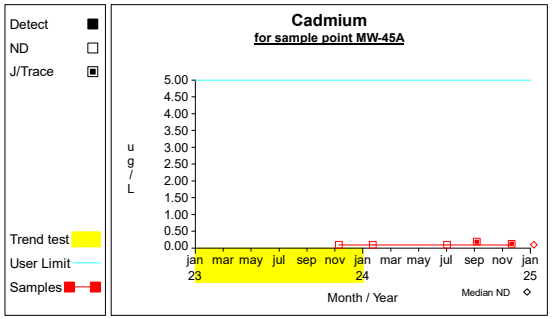
Graph 119



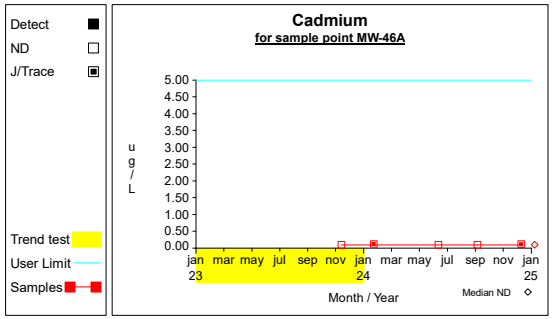
Graph 120



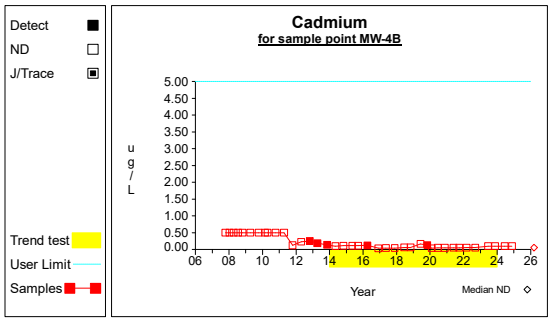
Graph 121



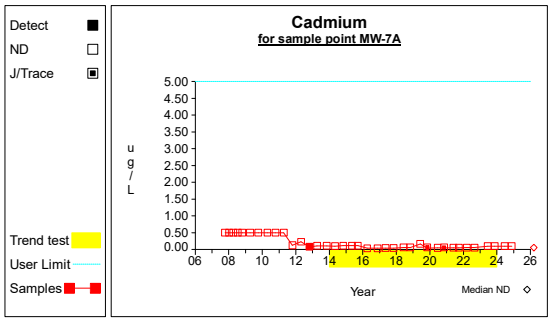
Graph 122



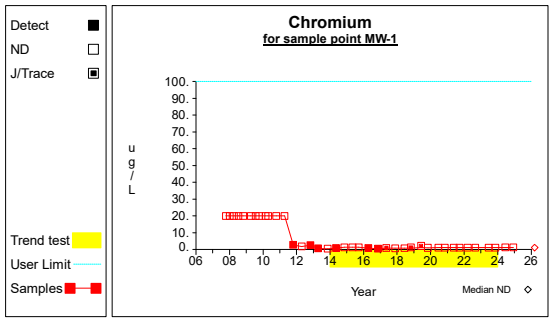
Graph 123



Graph 124

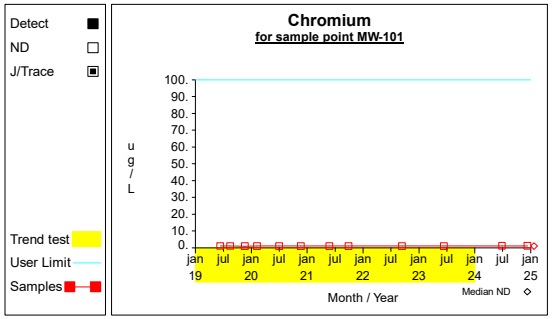


Graph 125

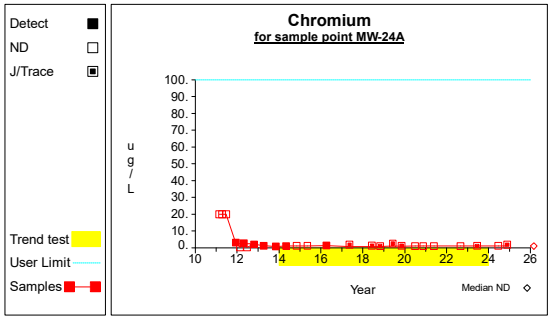


Graph 126

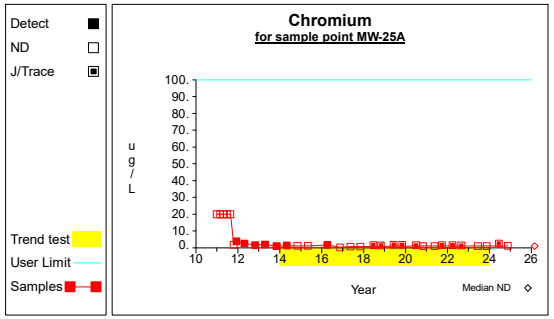
Time Series



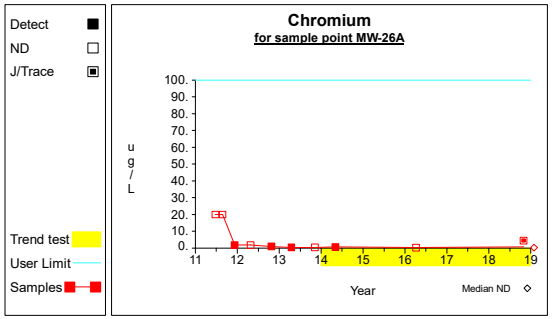
Graph 127



Graph 128



Graph 129



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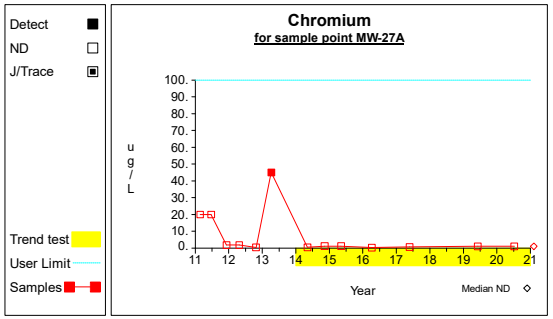
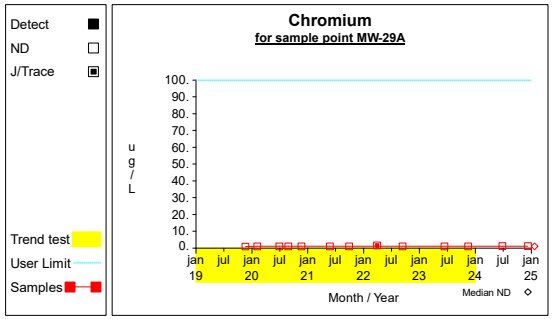
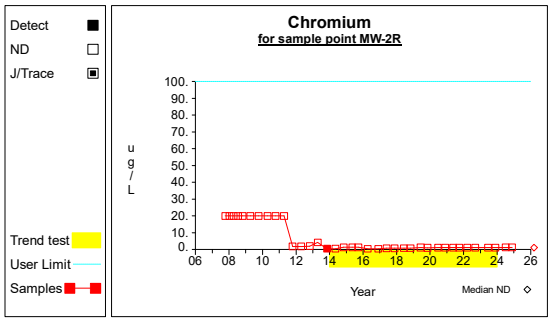


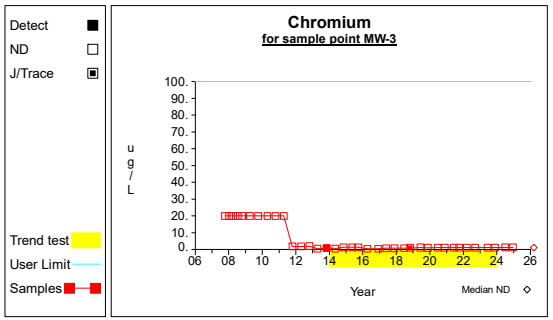
Graph 131



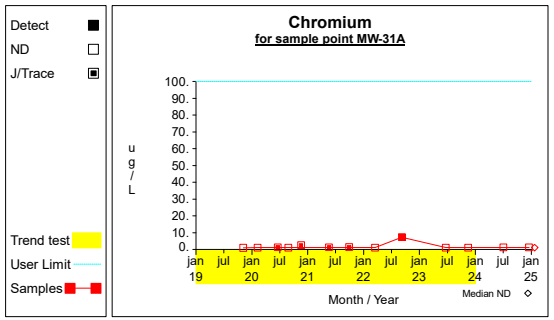
Graph 132



Graph 133

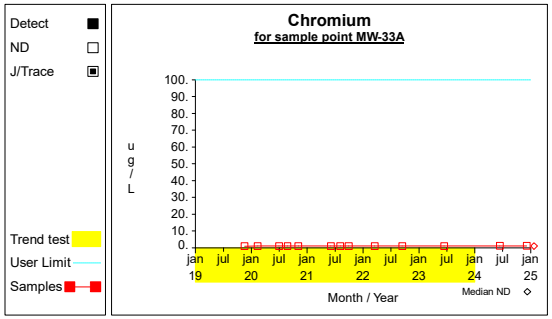


Graph 134

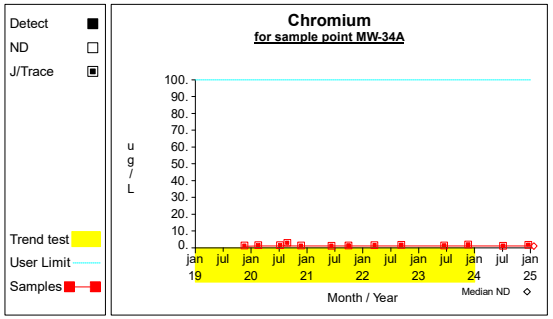


Graph 135

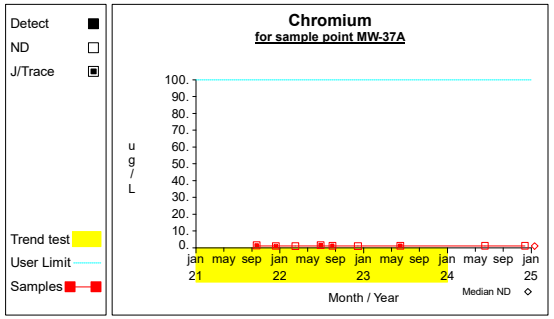
Time Series



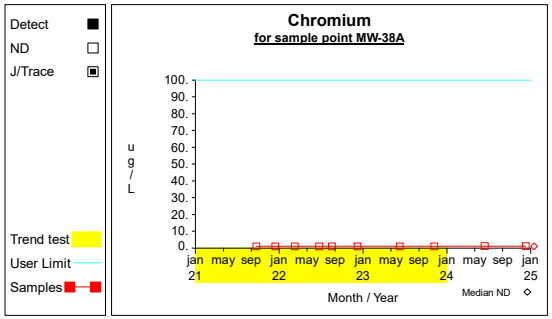
Graph 136



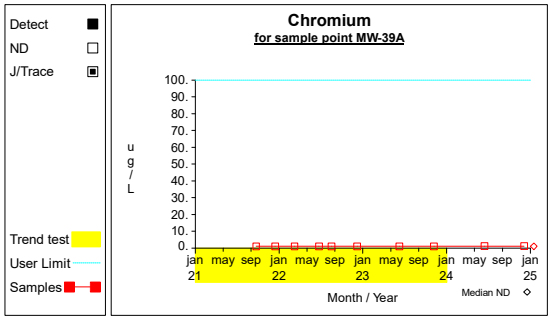
Graph 137



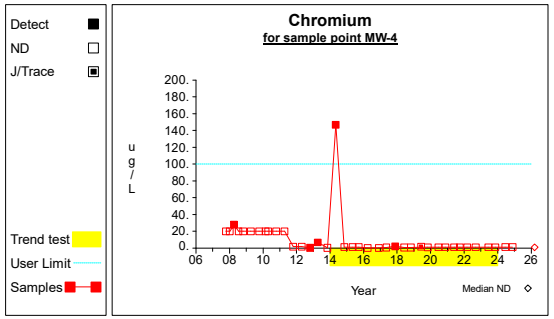
Graph 138



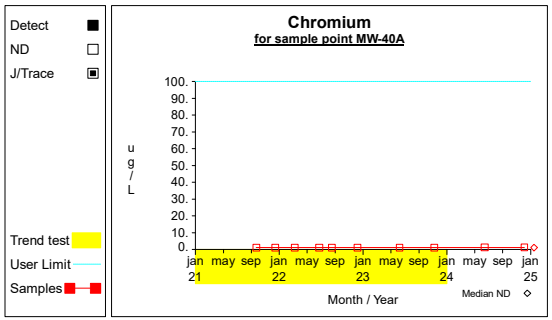
Graph 139



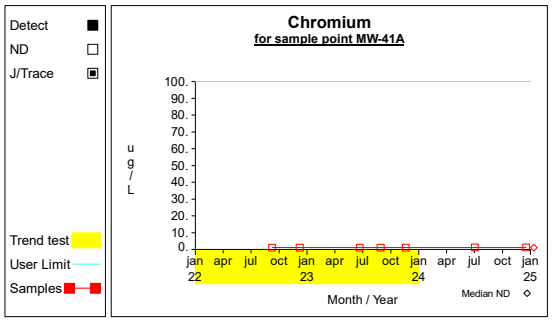
Graph 140



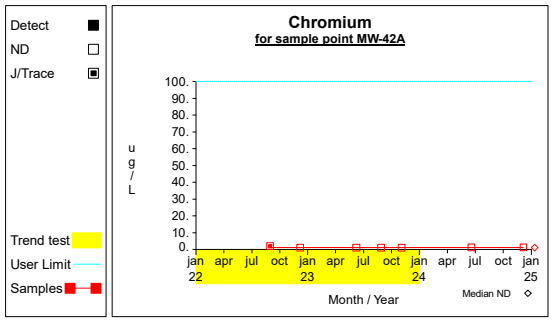
Graph 141



Graph 142

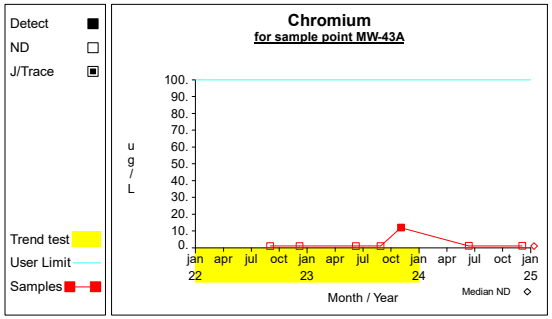


Graph 143

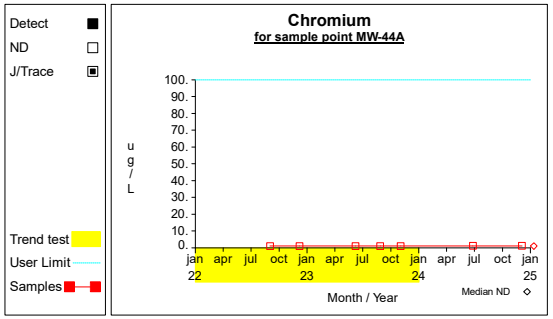


Graph 144

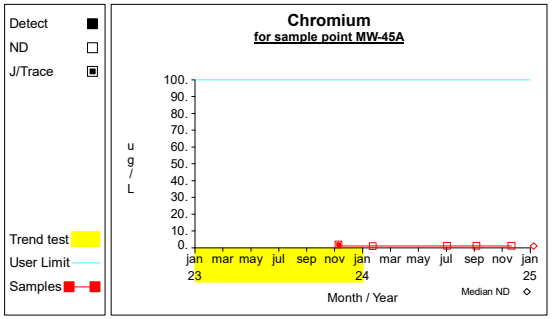
Time Series



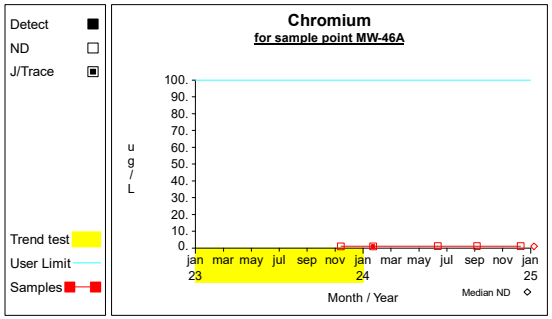
Graph 145



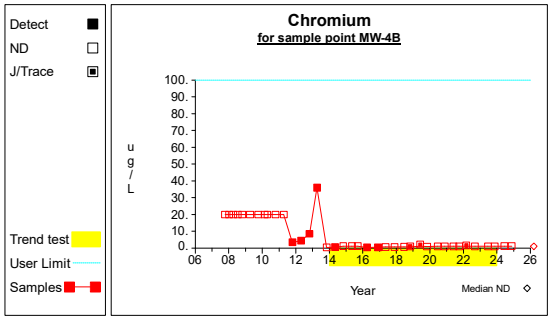
Graph 146



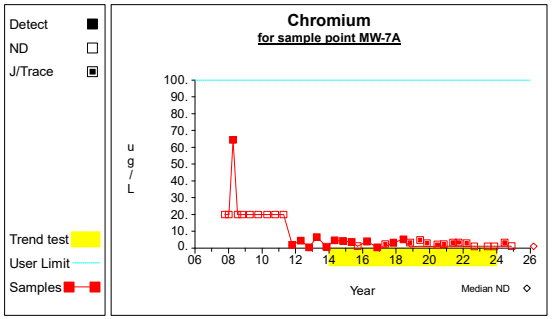
Graph 147



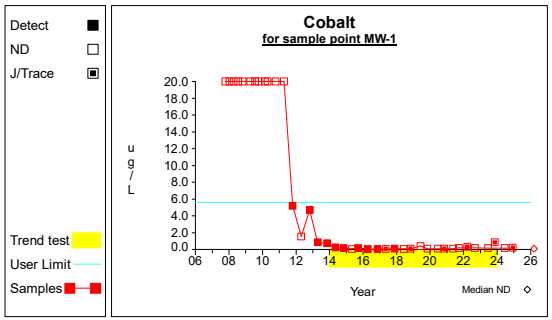
Graph 148



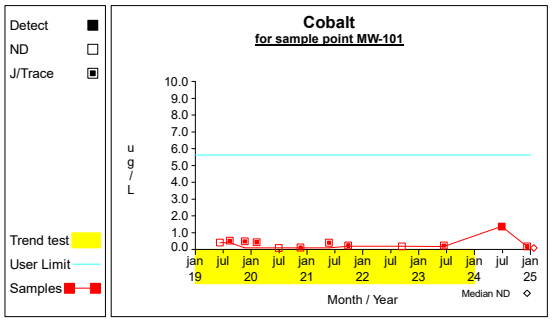
Graph 149



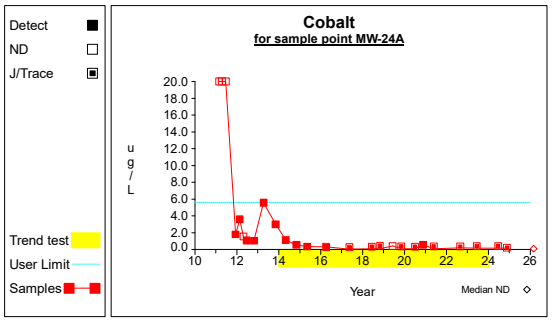
Graph 150



Graph 151

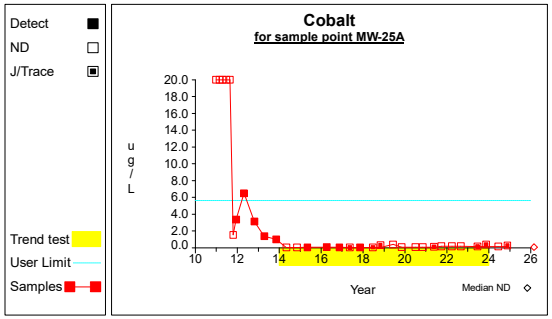


Graph 152

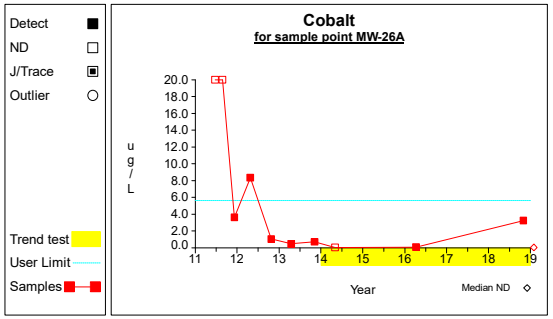


Graph 153

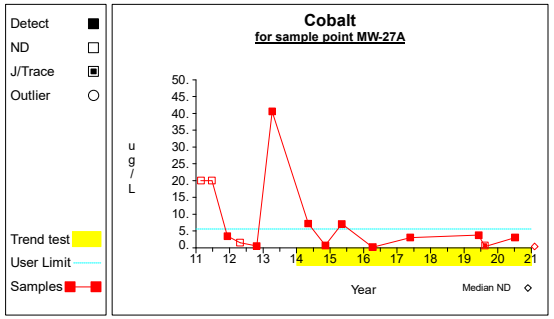
Time Series



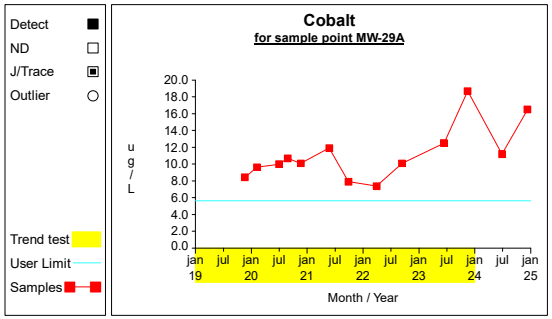
Graph 154



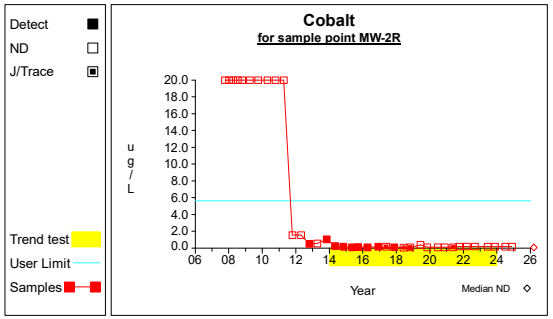
Graph 155



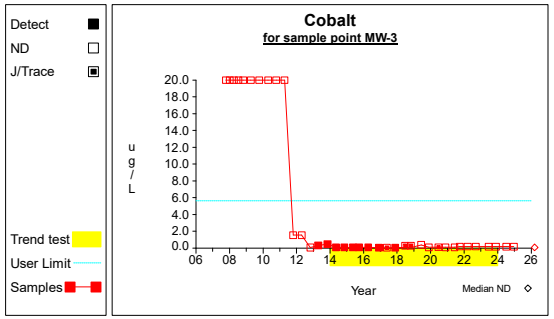
Graph 156



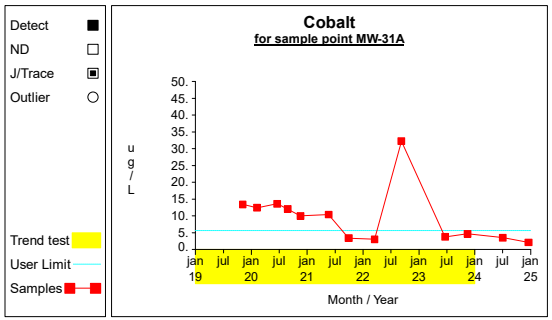
Graph 157



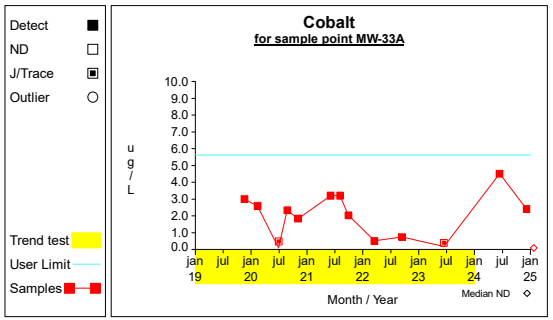
Graph 158



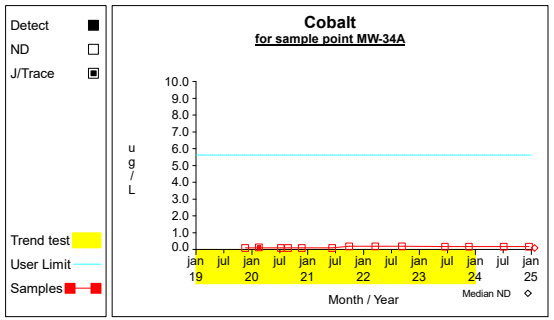
Graph 159



Graph 160

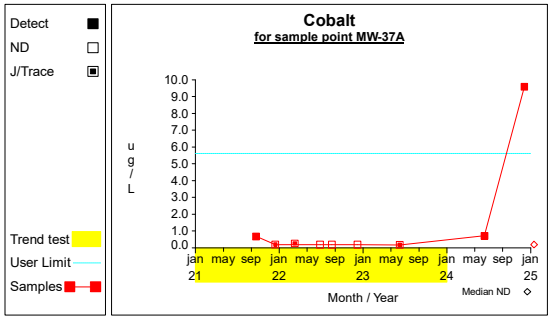


Graph 161

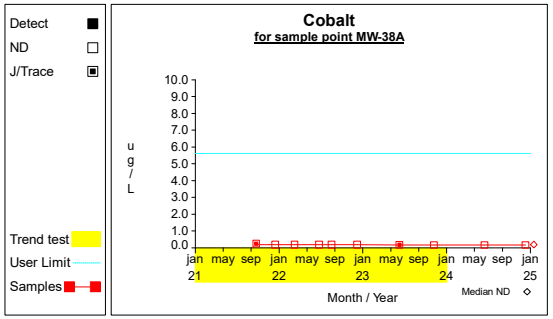


Graph 162

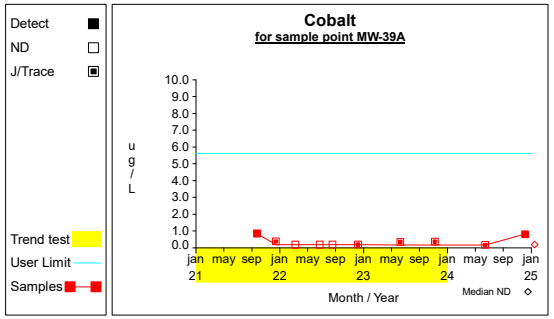
Time Series



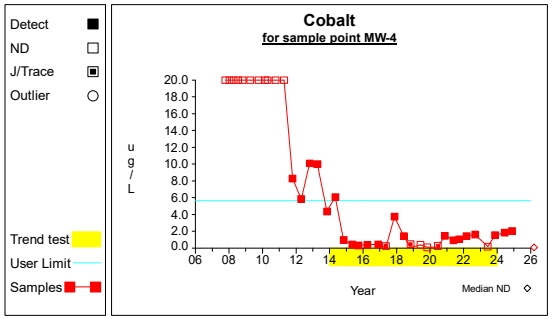
Graph 163



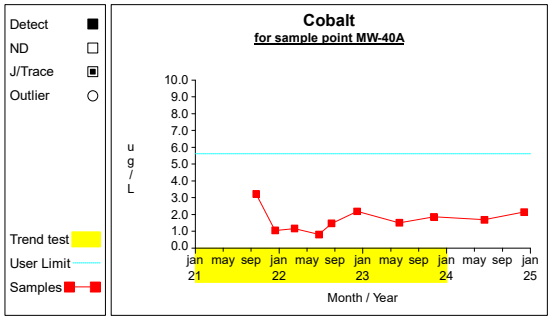
Graph 164



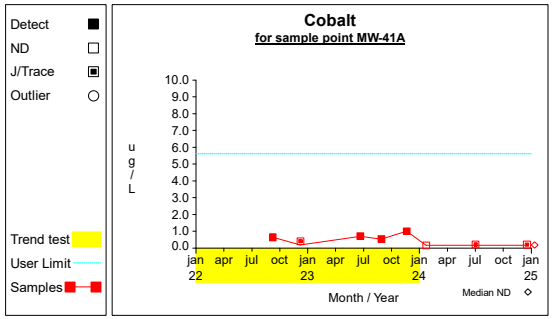
Graph 165



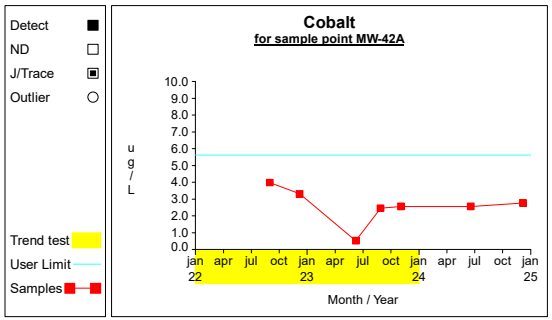
Graph 166



Graph 167



Graph 168



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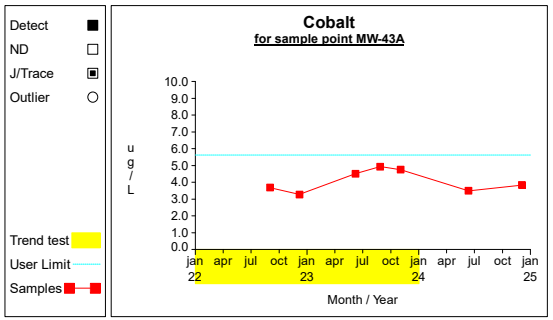

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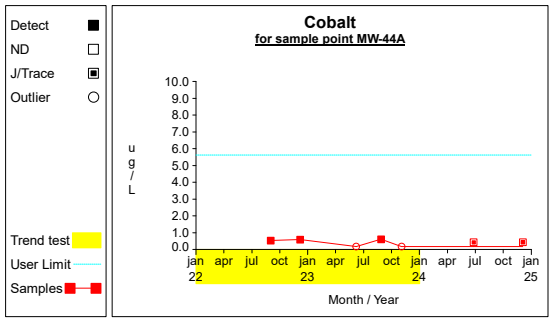
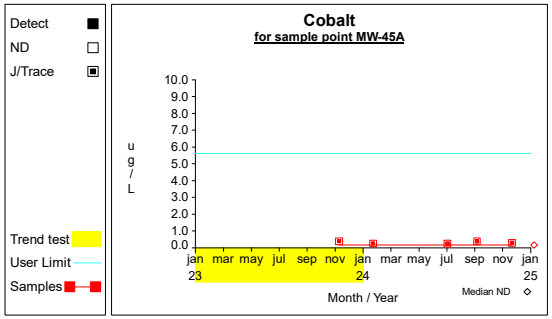
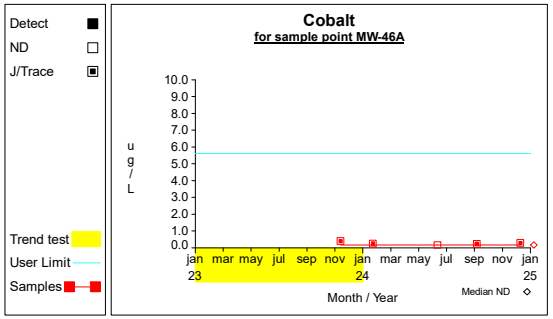


Graph 171

Time Series



Graph 172



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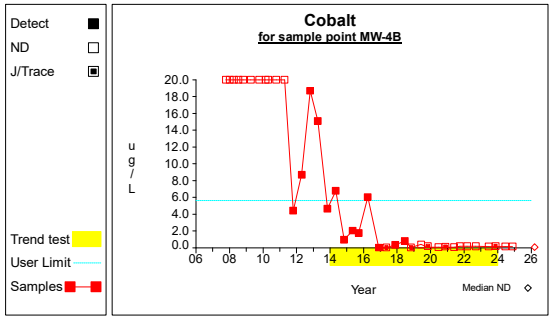

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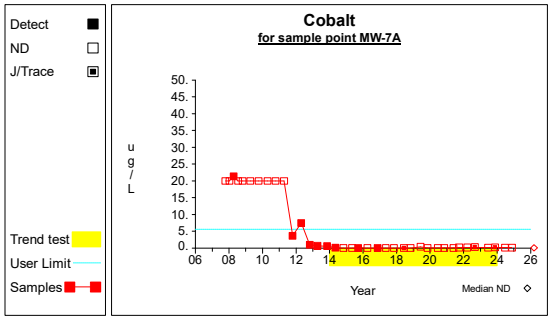

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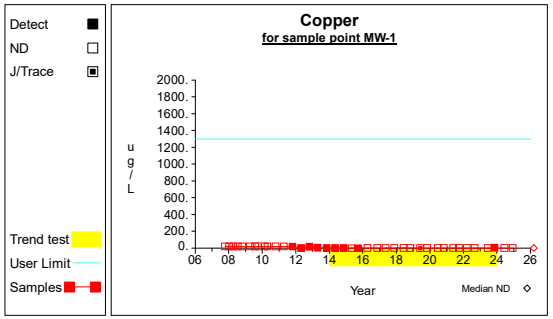
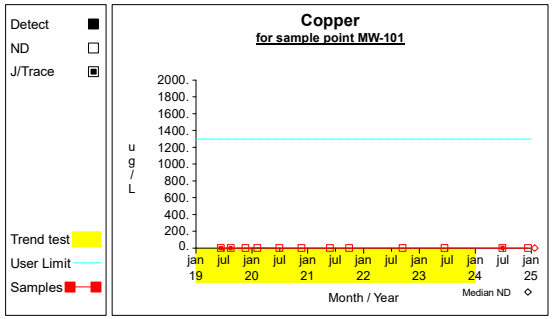


Graph 176



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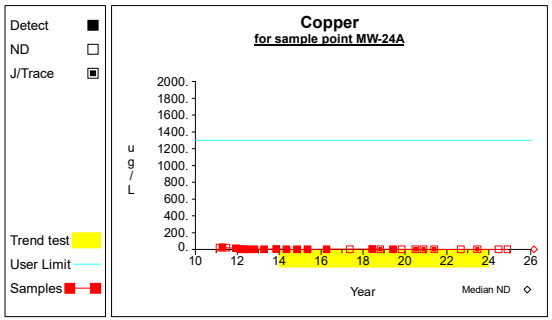
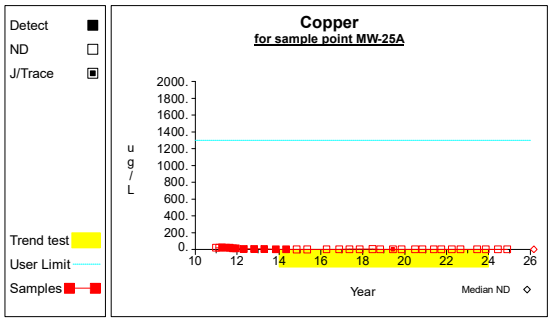
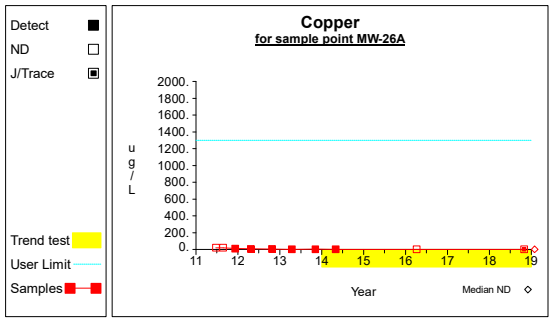


Graph 178

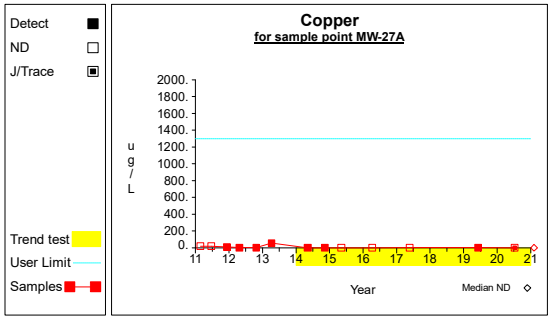


Graph 179

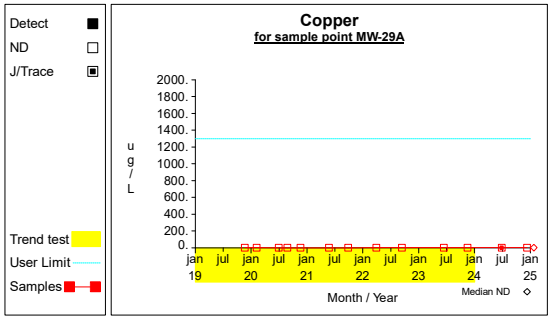


Graph 180

Time Series



Graph 181



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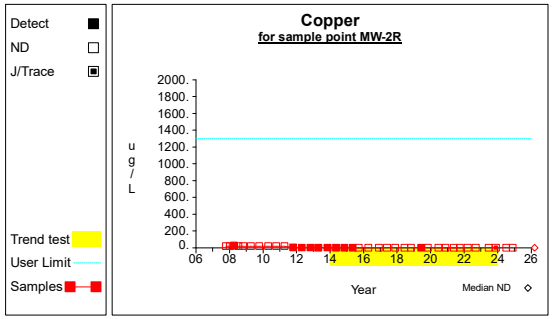
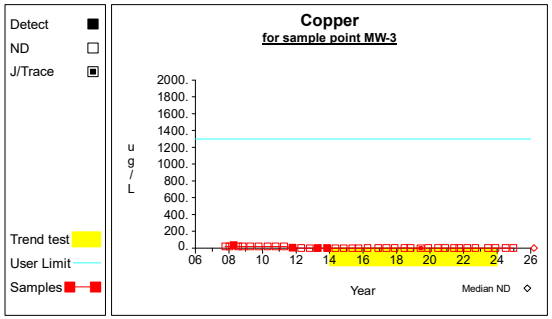


Graph 183



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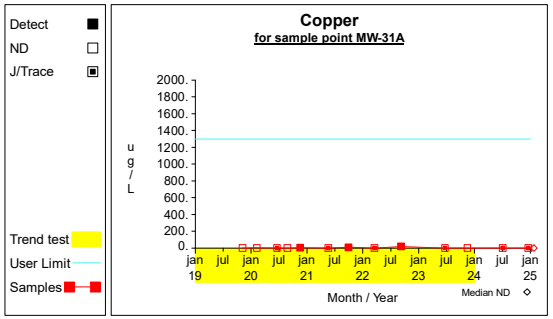

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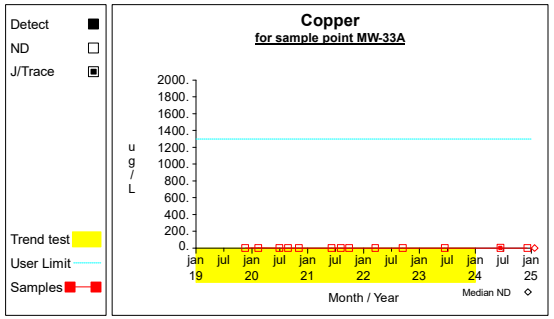
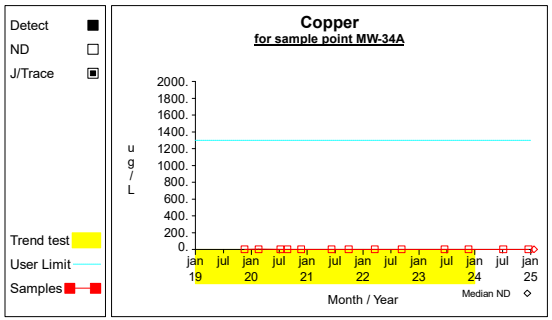
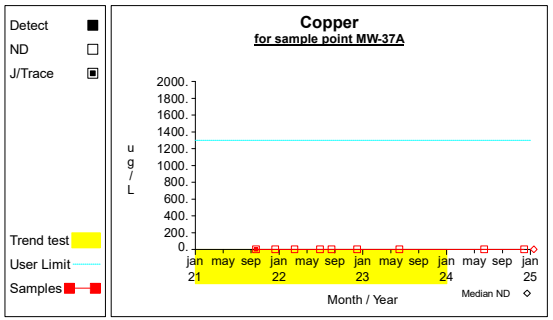


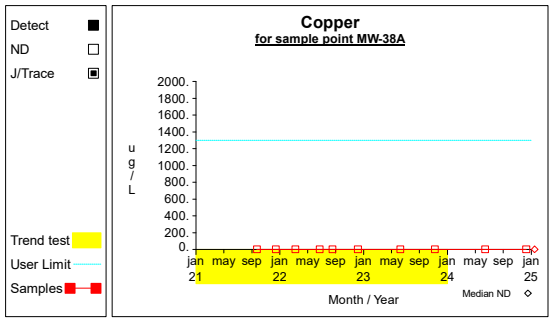
Graph 186



Graph 187

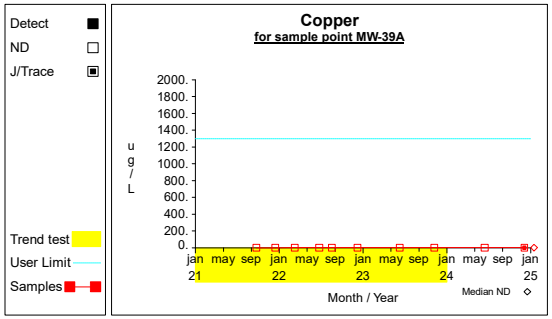


Graph 188

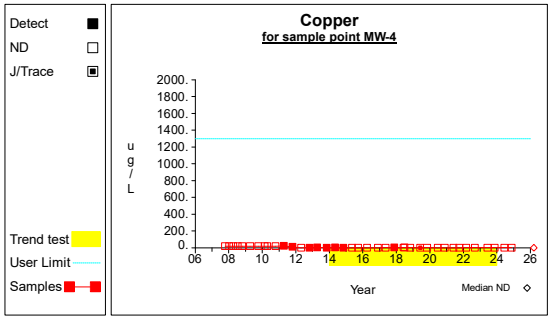


Graph 189

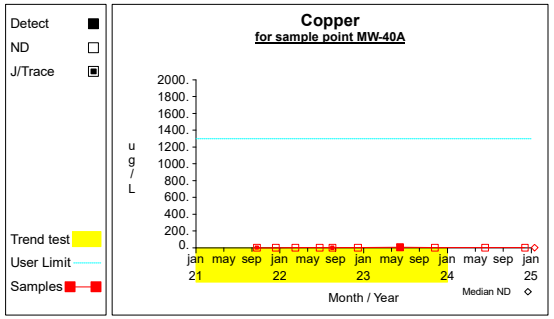
Time Series



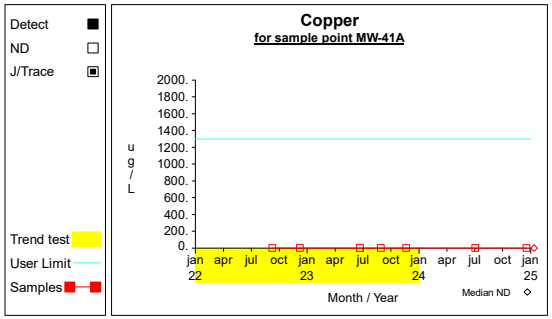
Graph 190



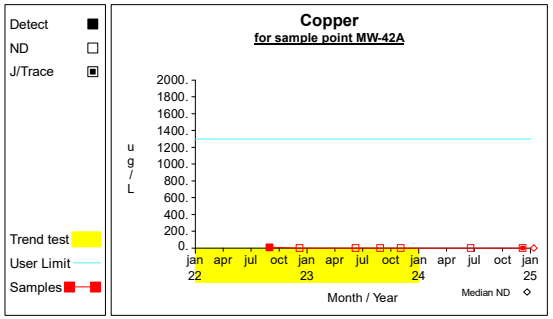
Graph 191



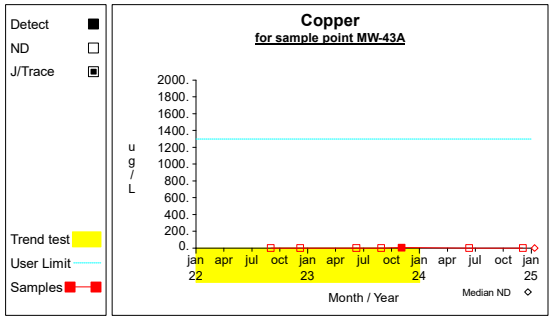
Graph 192



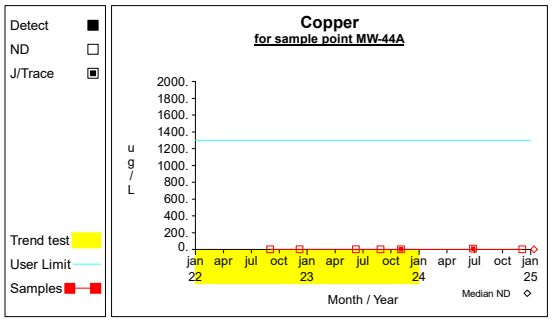
Graph 193



Graph 194



Graph 195



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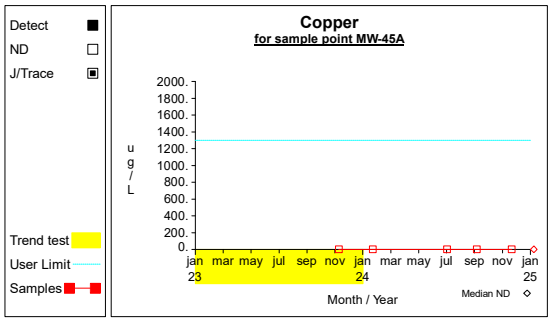
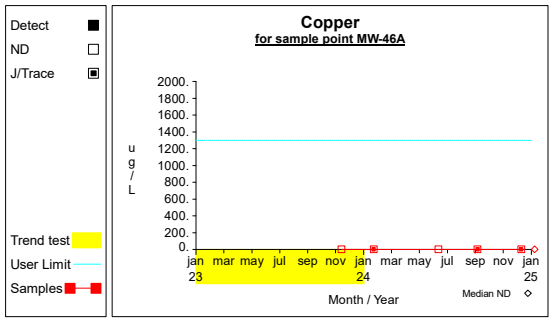
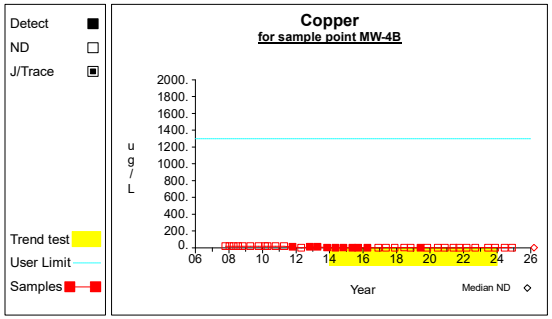


Graph 197

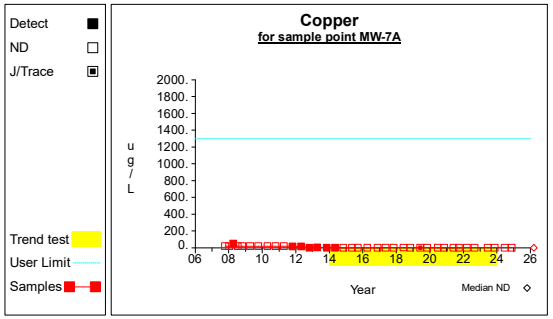


Graph 198

Time Series



Graph 199



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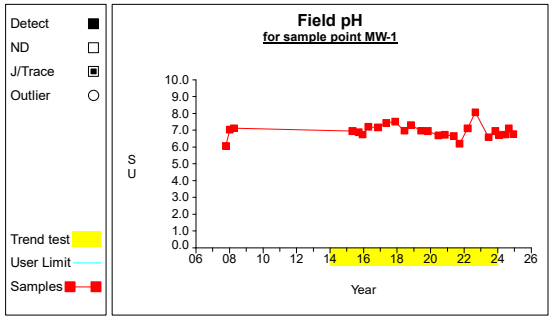
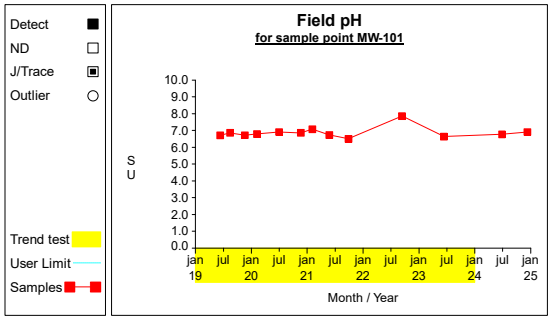
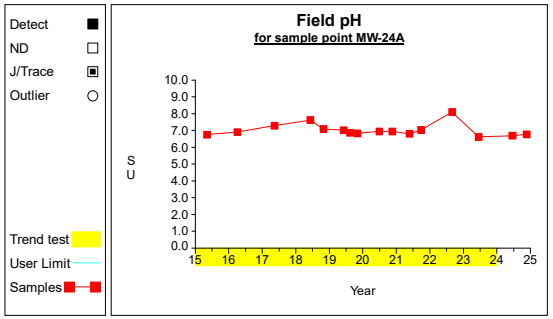


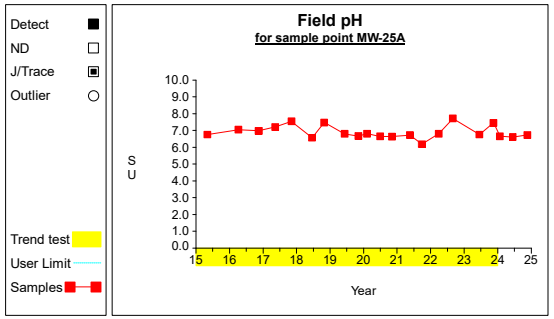
Graph 201



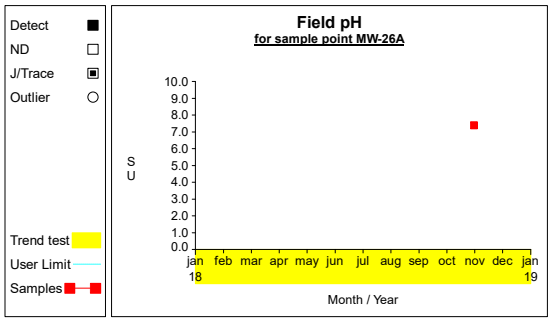
Graph 202



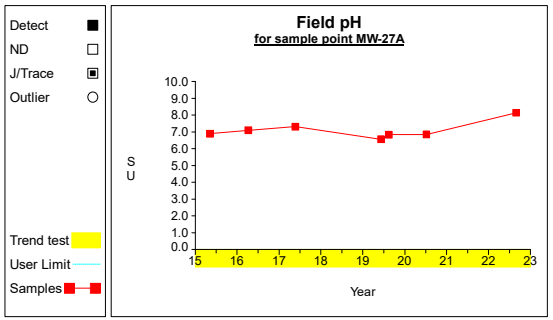
Graph 203



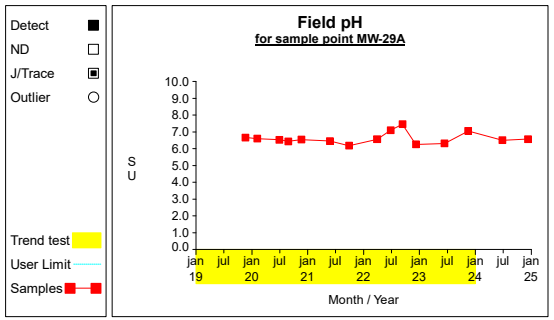
Graph 204



Graph 205

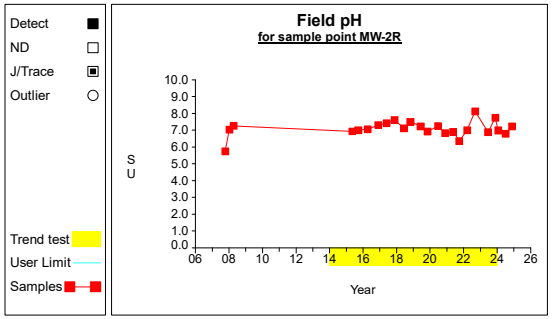


Graph 206

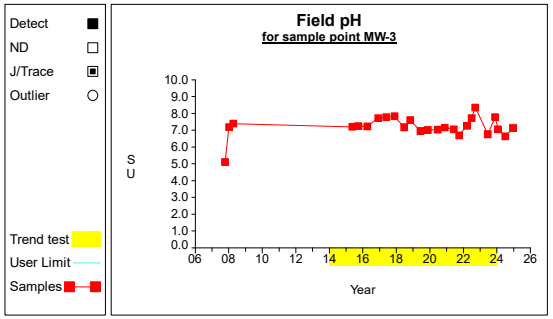


Graph 207

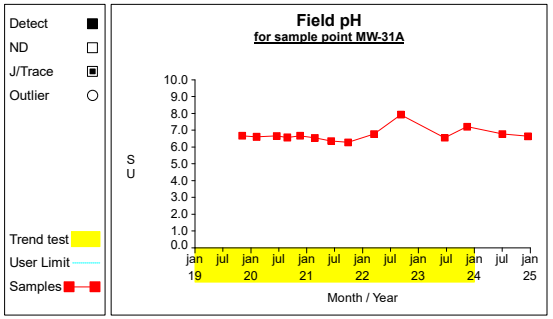
Time Series



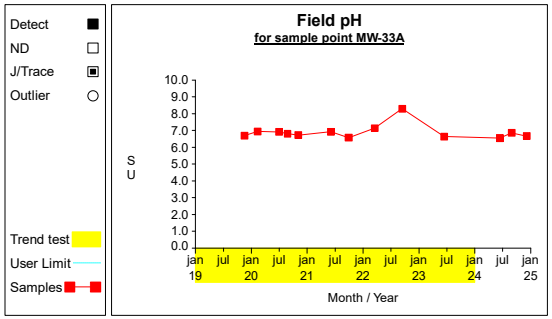
Graph 208



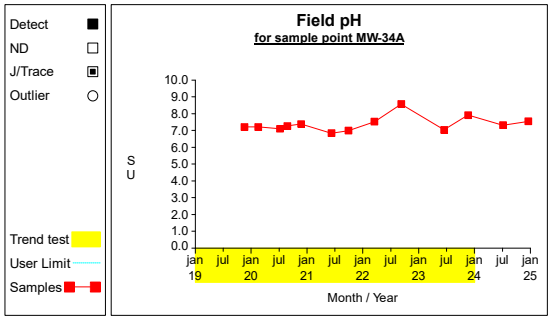
Graph 209



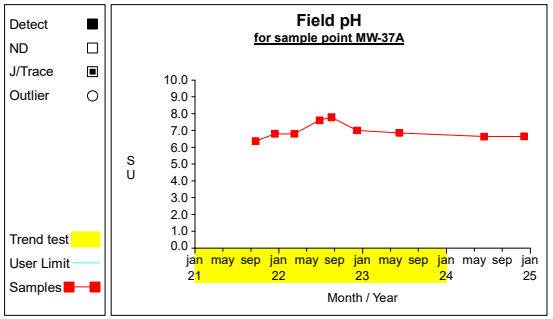
Graph 210



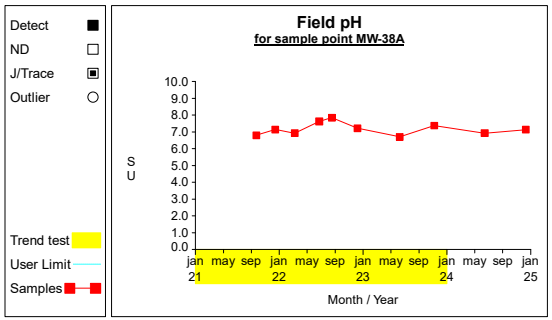
Graph 211



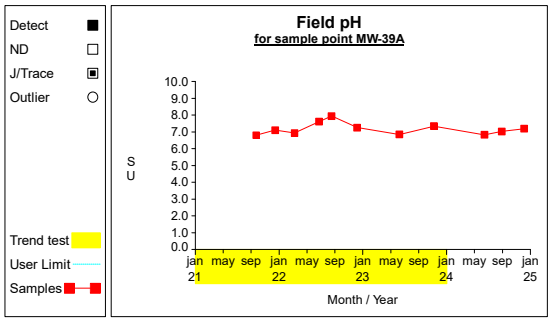
Graph 212



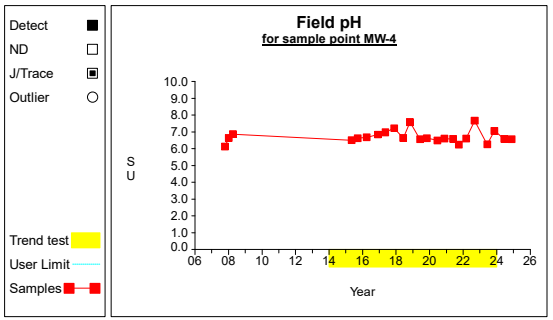
Graph 213



Graph 214

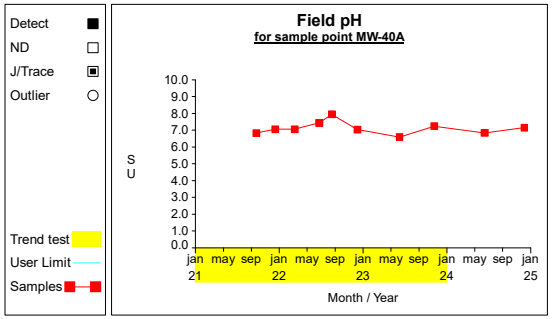


Graph 215

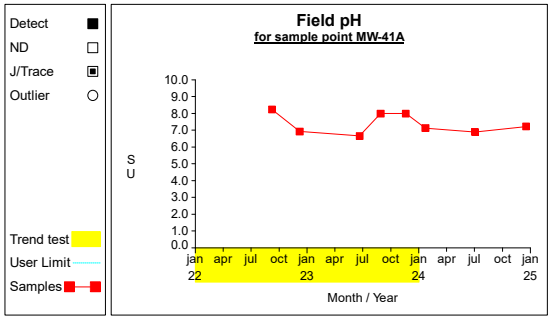


Graph 216

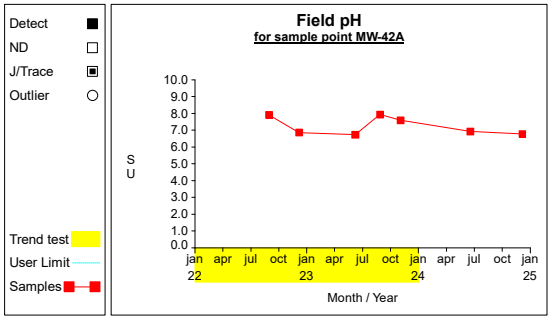
Time Series



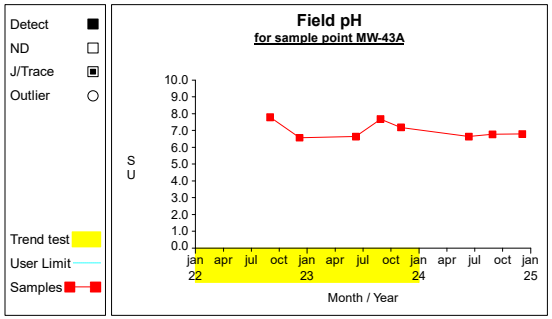
Graph 217



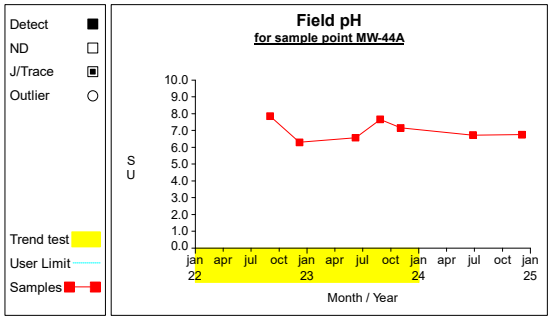
Graph 218



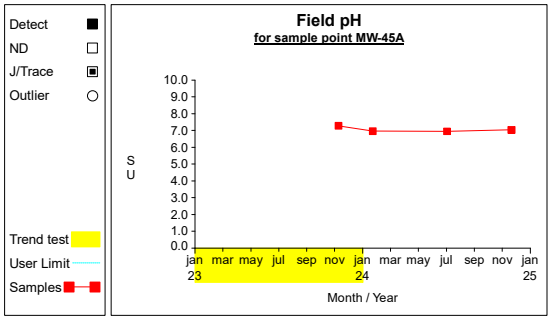
Graph 219



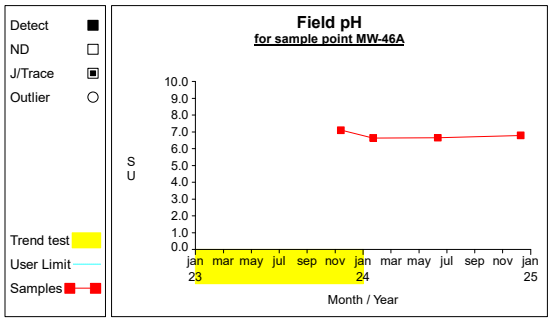
Graph 220



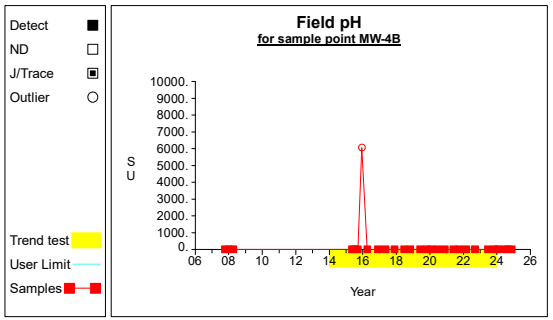
Graph 221



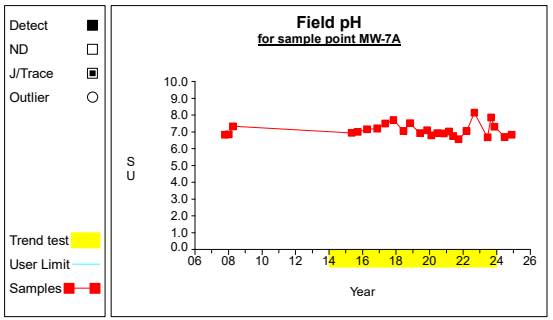
Graph 222



Graph 223

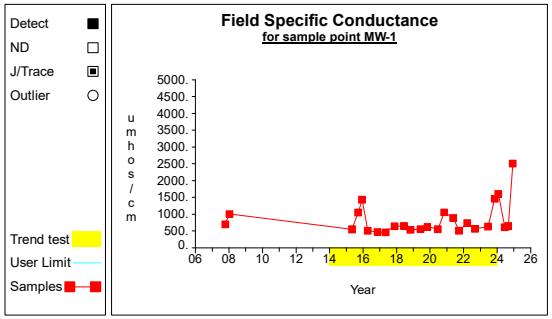


Graph 224

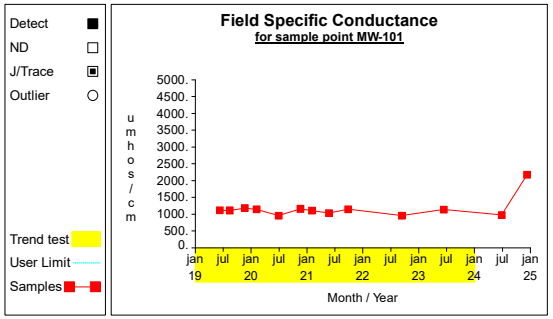


Graph 225

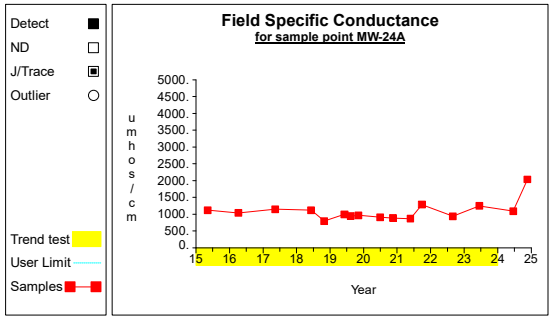
Time Series



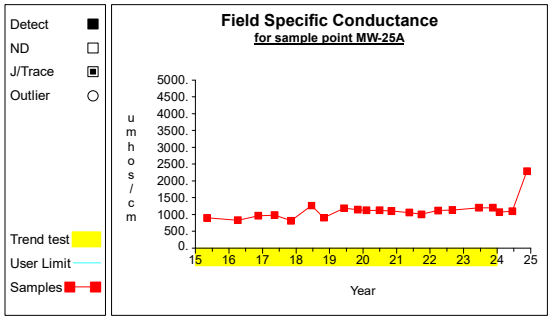
Graph 226



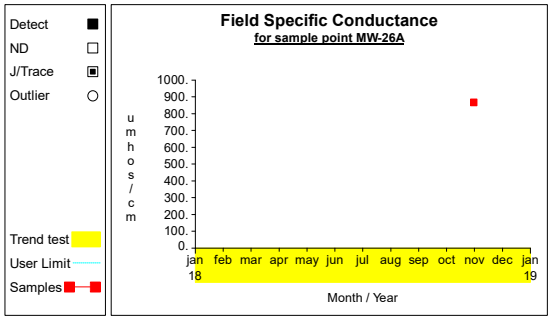
Graph 227



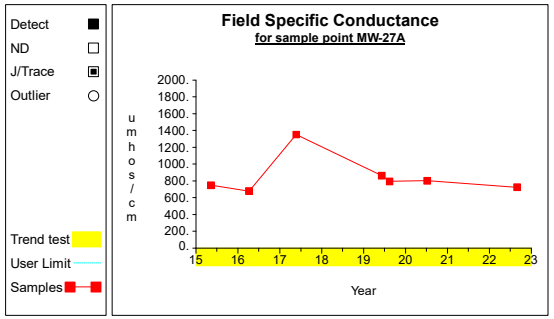
Graph 228



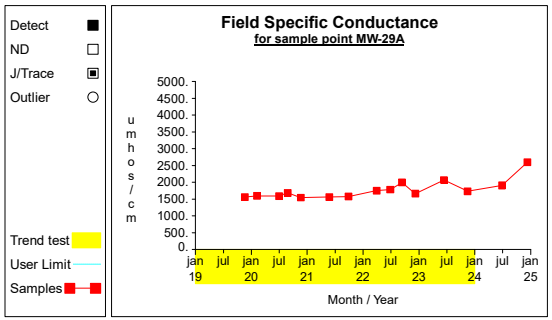
Graph 229



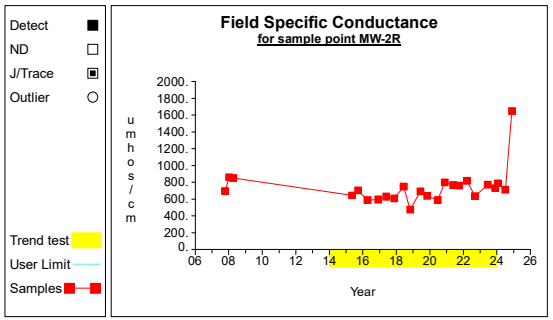
Graph 230



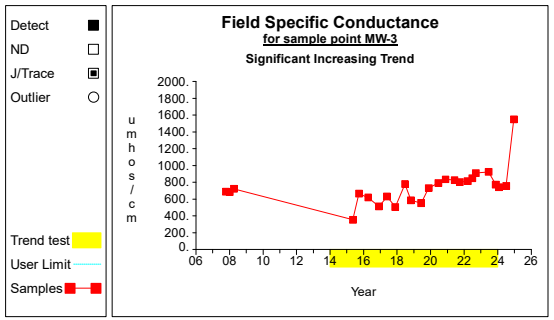
Graph 231



Graph 232

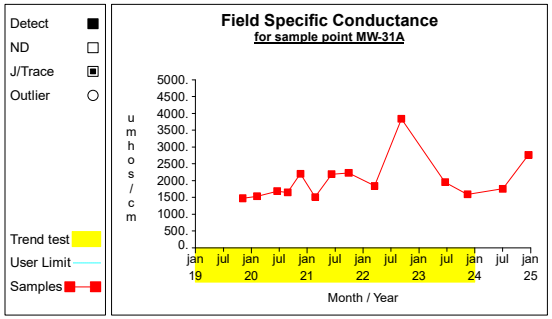


Graph 233

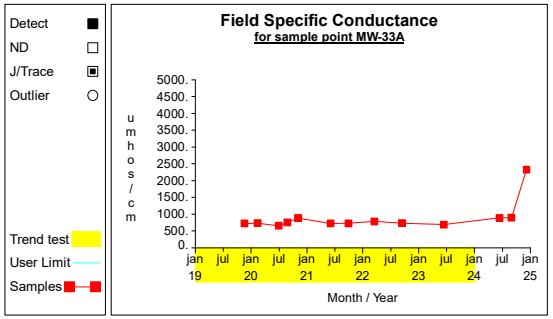


Graph 234

Time Series



Graph 235



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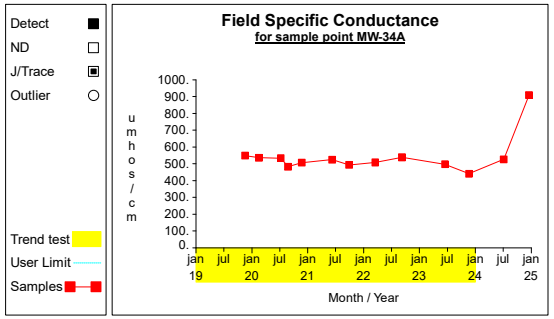
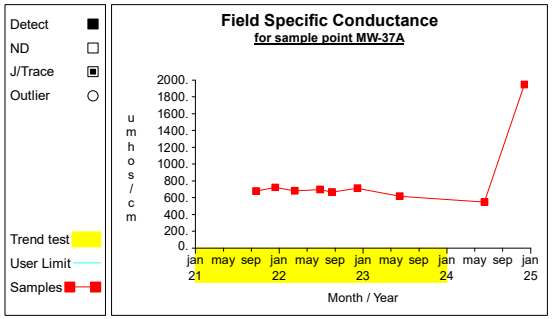
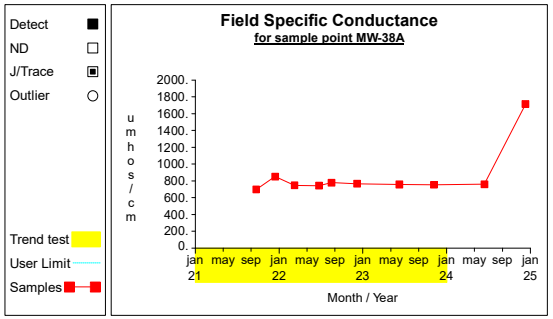


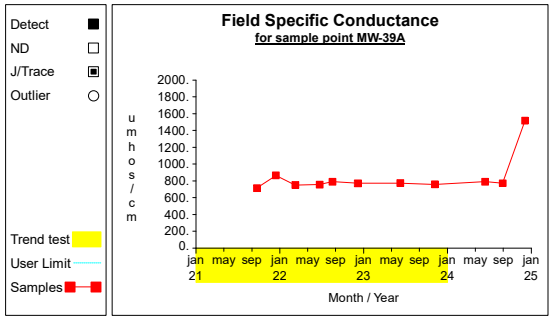
Graph 237



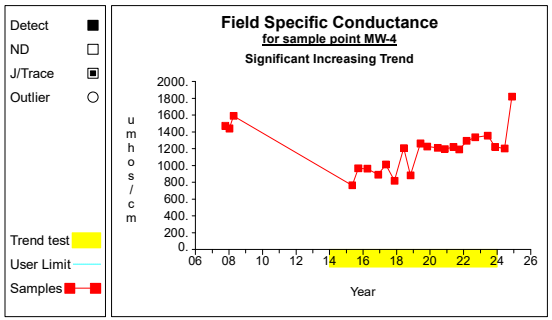
Graph 238



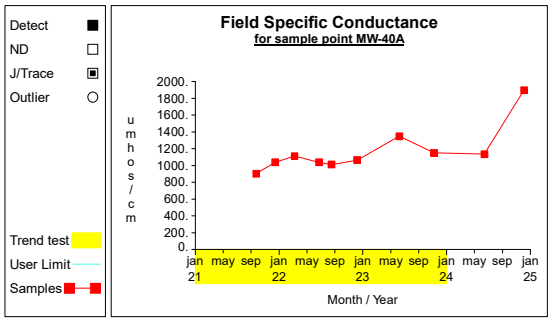
Graph 239



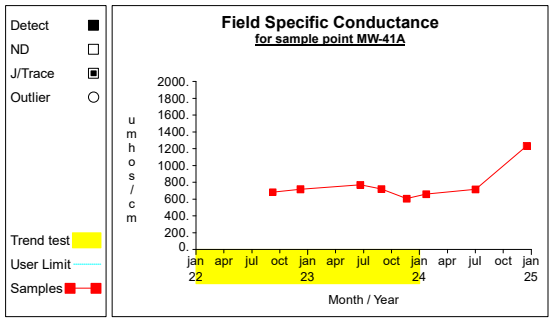
Graph 240



Graph 241

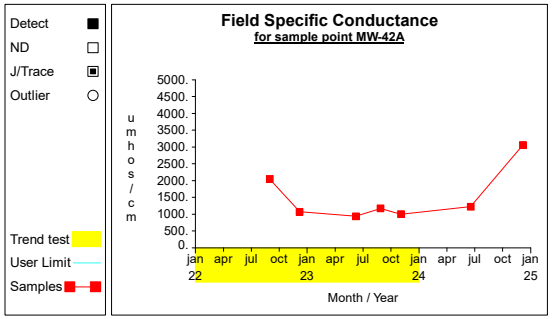


Graph 242

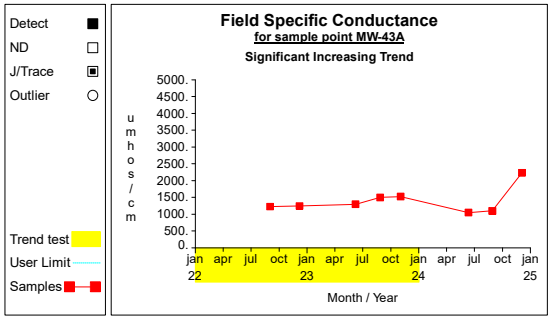


Graph 243

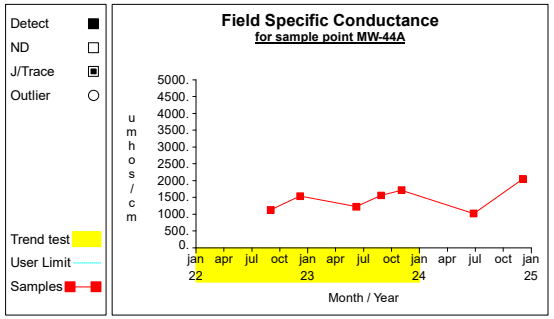
Time Series



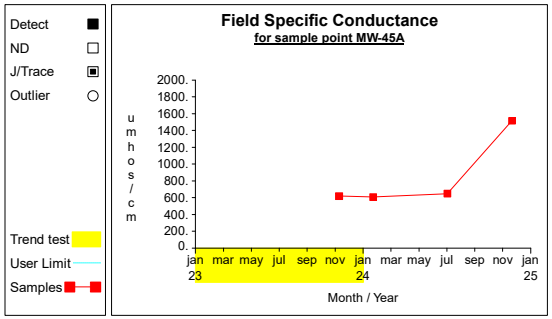
Graph 244



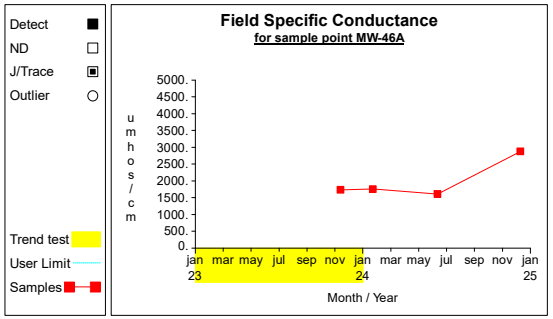
Graph 245



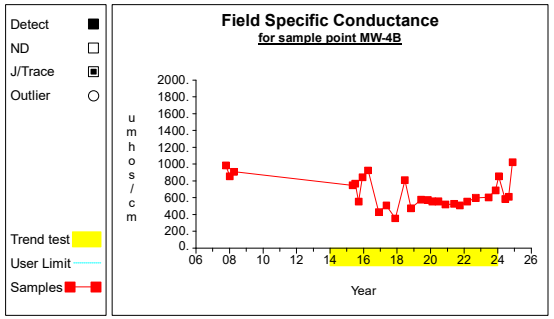
Graph 246



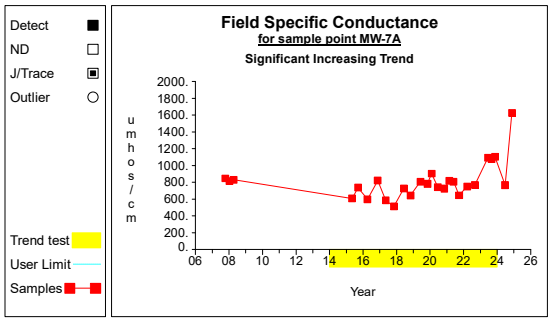
Graph 247



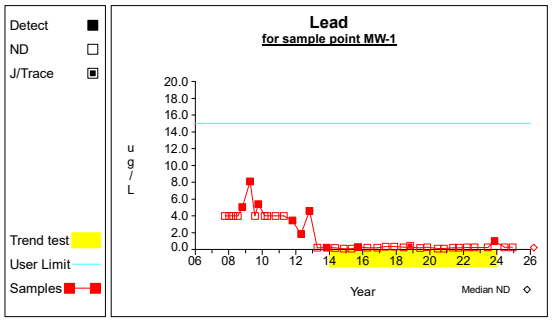
Graph 248



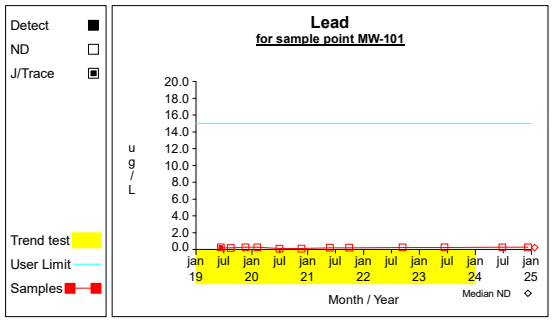
Graph 249



Graph 250

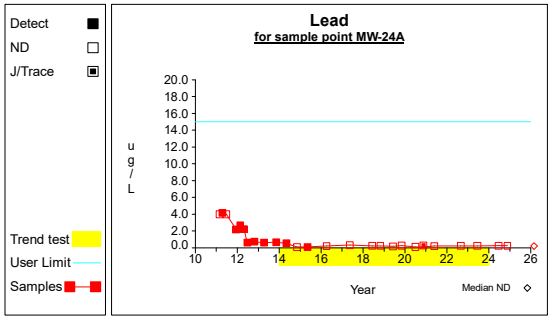


Graph 251

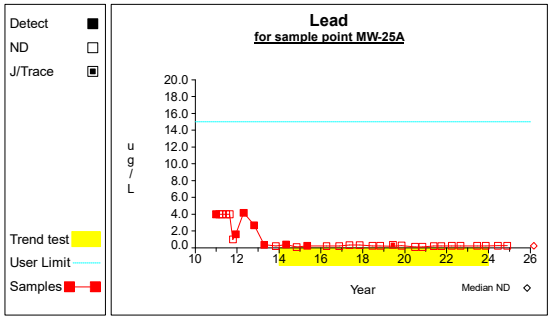


Graph 252

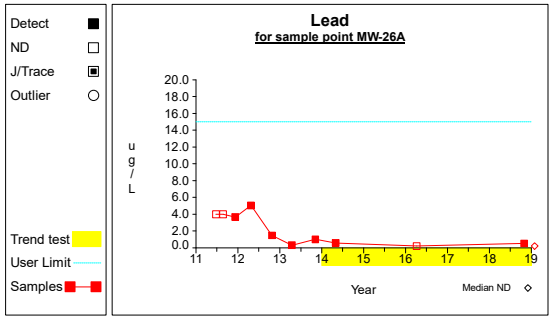
Time Series



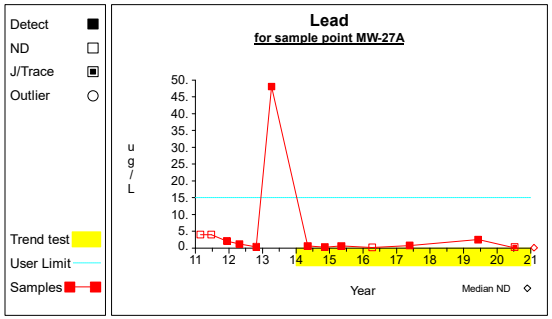
Graph 253



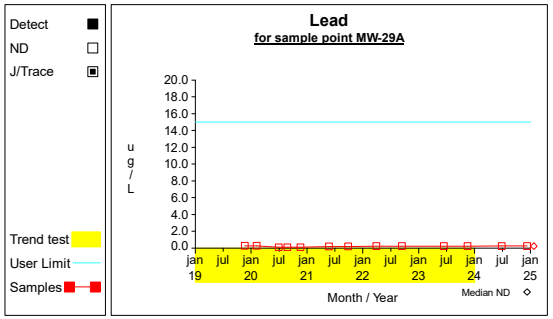
Graph 254



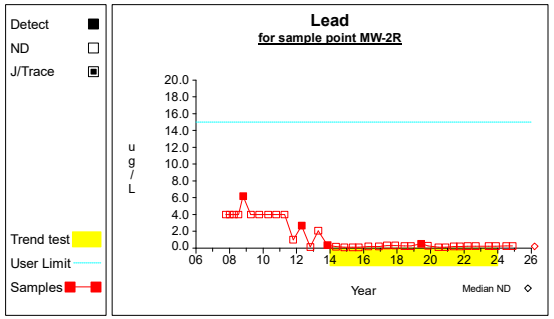
Graph 255



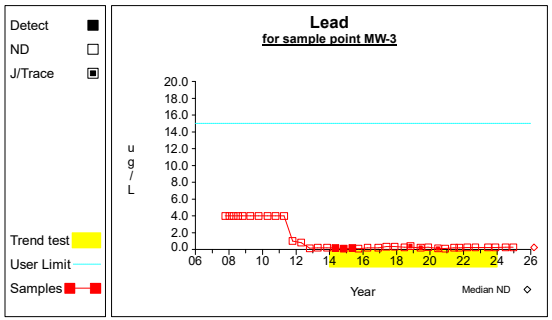
Graph 256



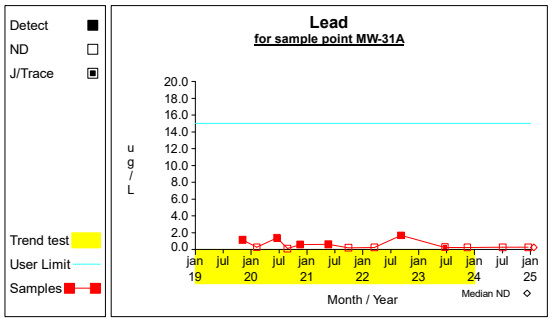
Graph 257



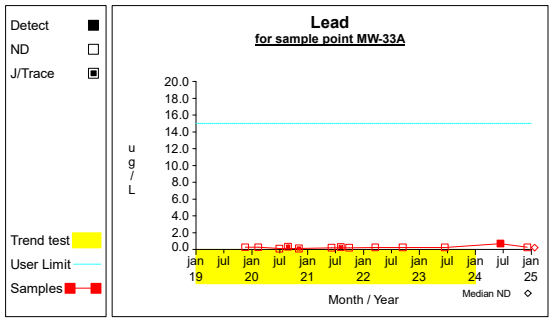
Graph 258



Graph 259

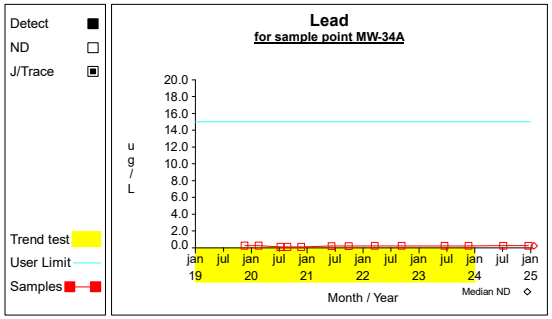


Graph 260

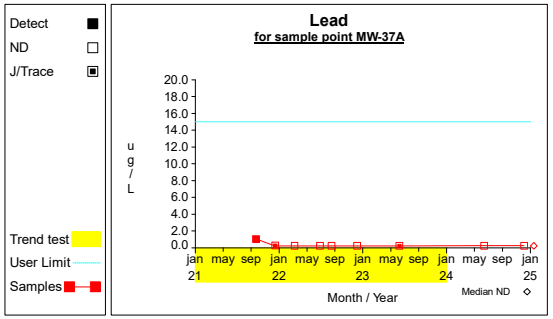


Graph 261

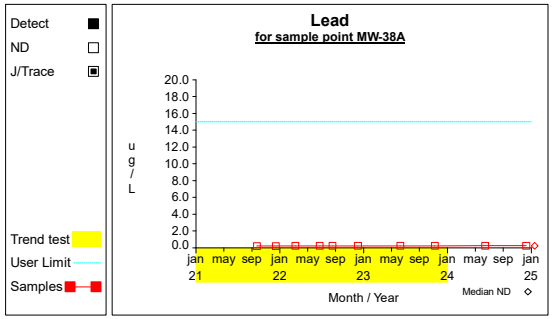
Time Series



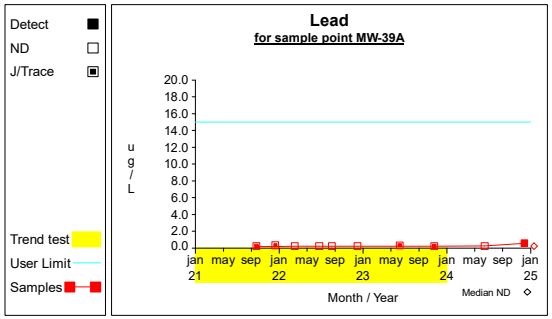
Graph 262



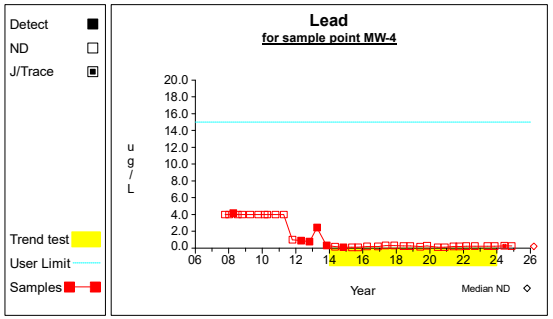
Graph 263



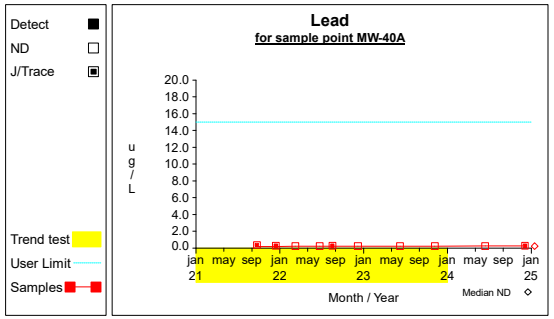
Graph 264



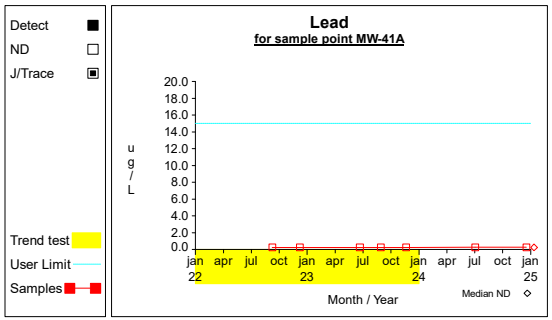
Graph 265



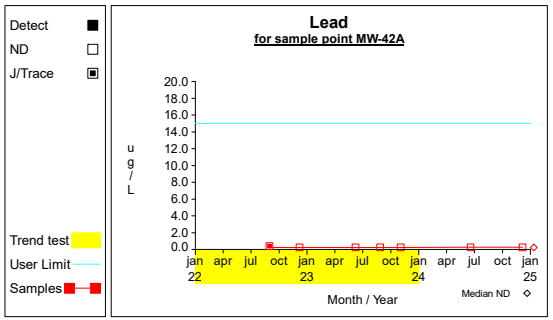
Graph 266



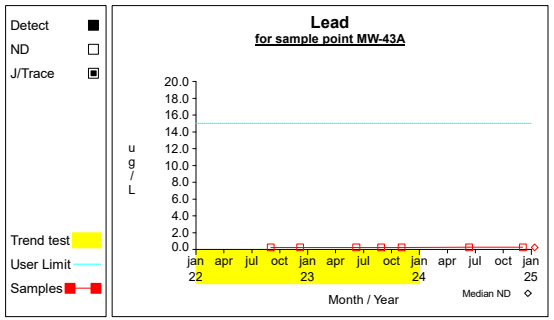
Graph 267



Graph 268

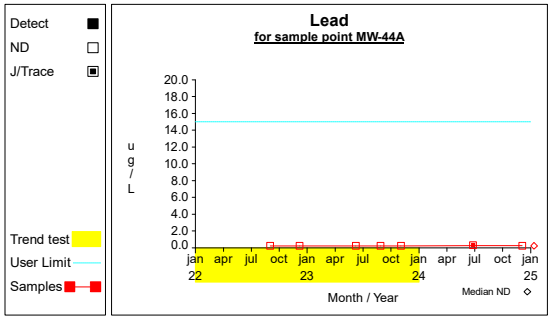


Graph 269

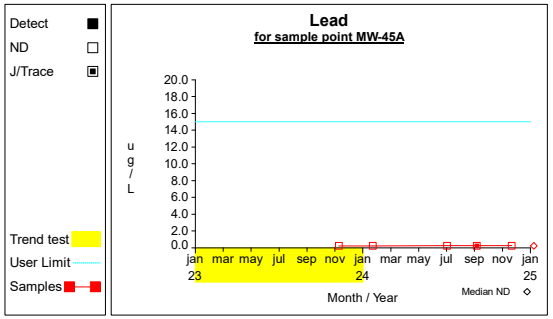


Graph 270

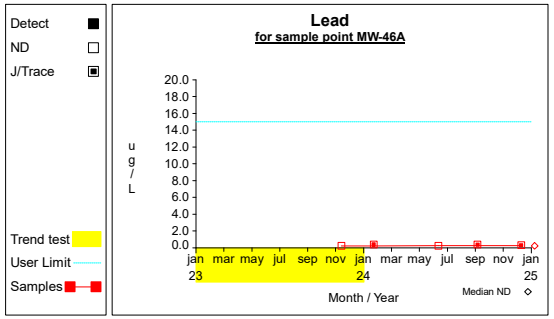
Time Series



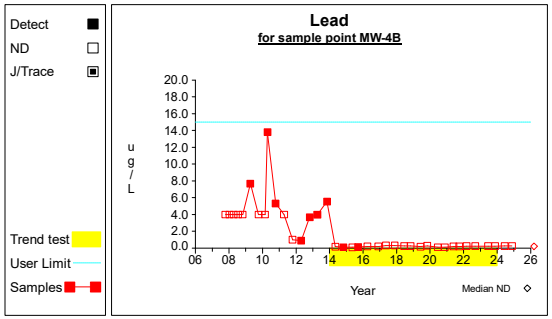
Graph 271



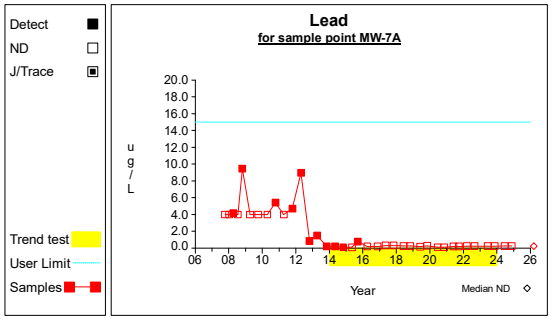
Graph 272



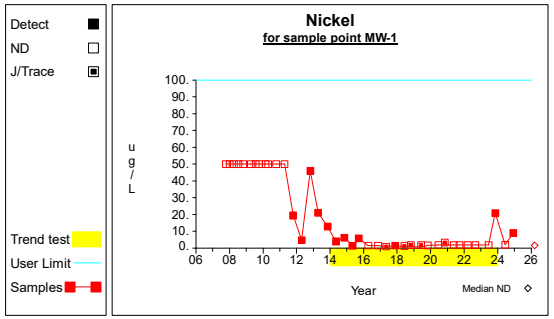
Graph 273



Graph 274



Graph 275



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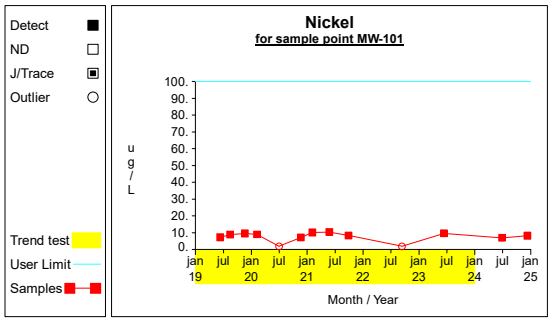
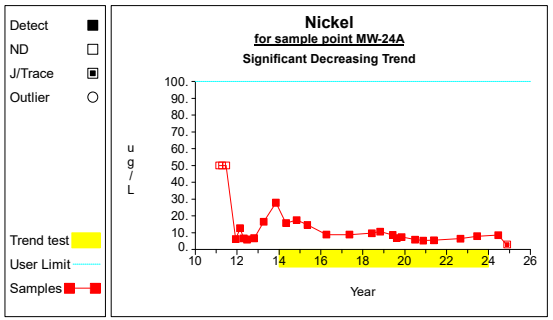
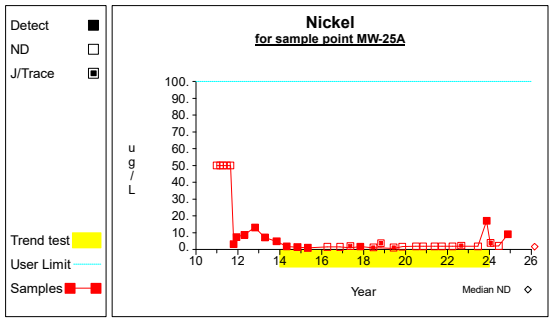


Graph 277

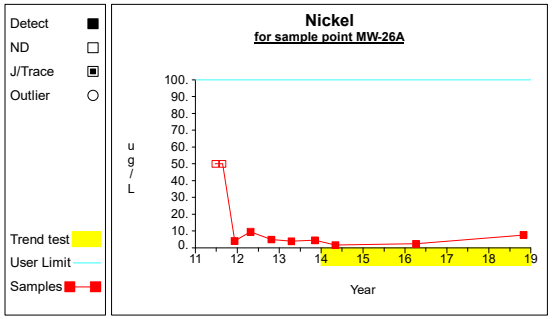


Graph 278

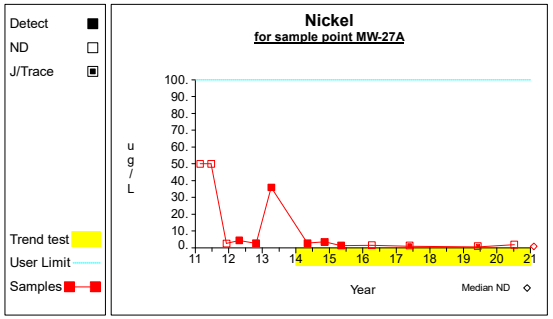


Graph 279

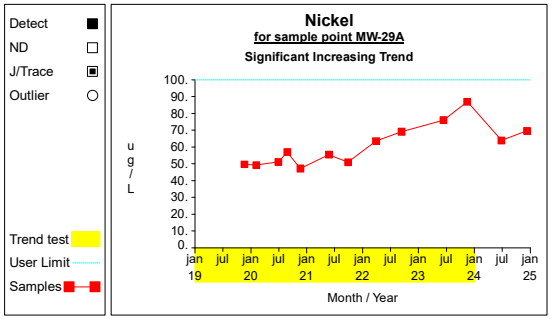
Time Series



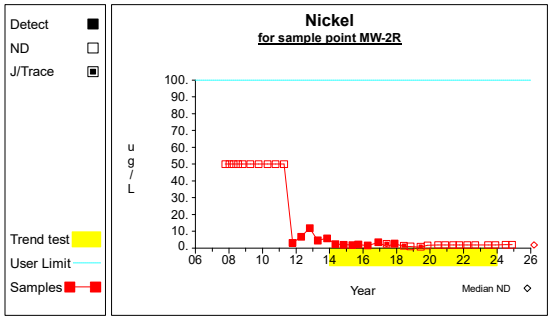
Graph 280



Graph 281



Graph 282



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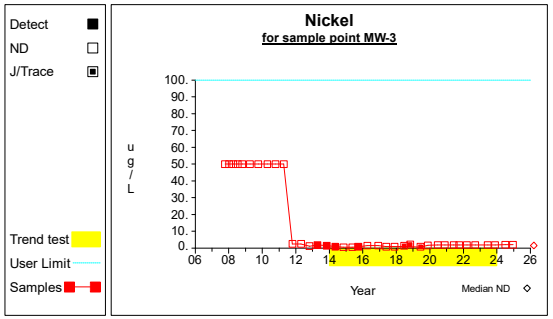
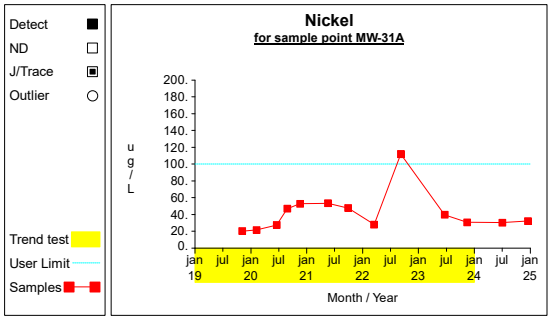


Graph 284



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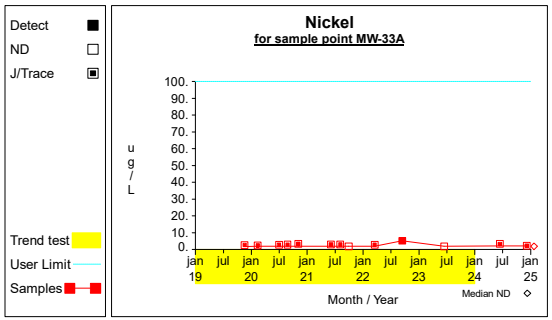
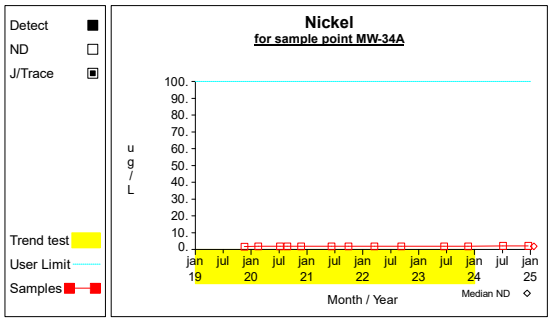


Graph 286



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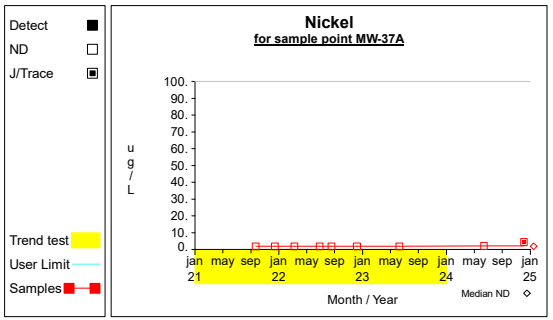
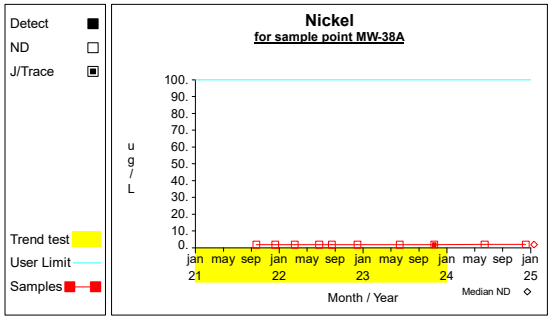
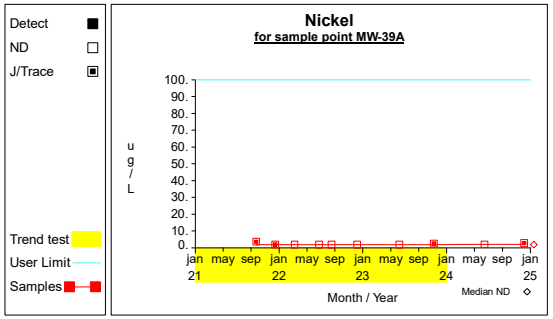


Graph 288

Time Series



Graph 289



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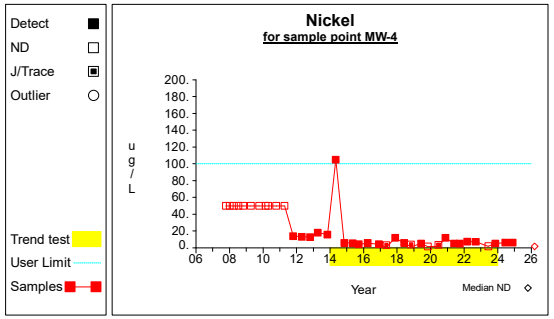

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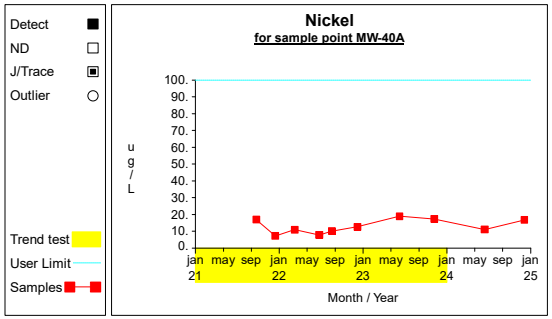
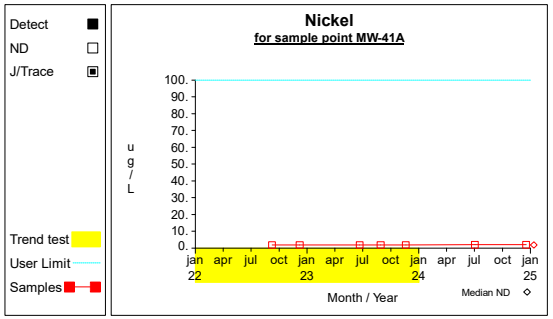
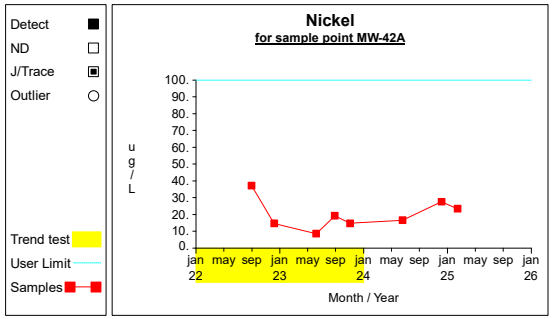


Graph 292



Graph 293



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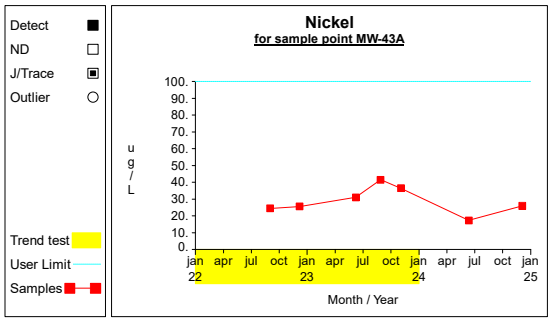
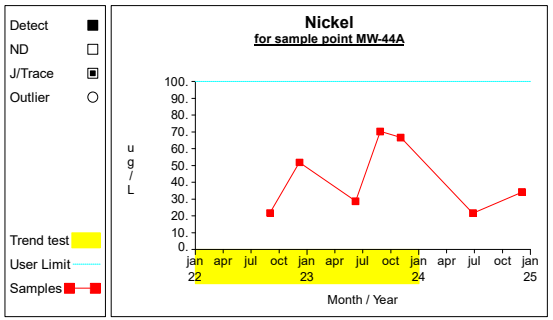


Graph 295



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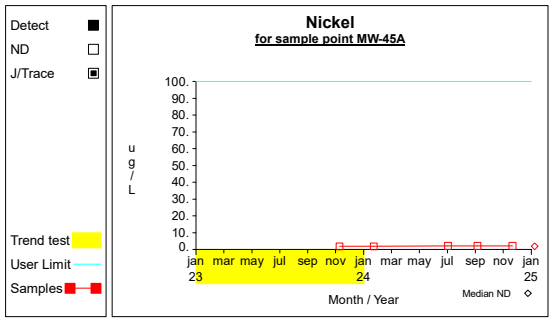
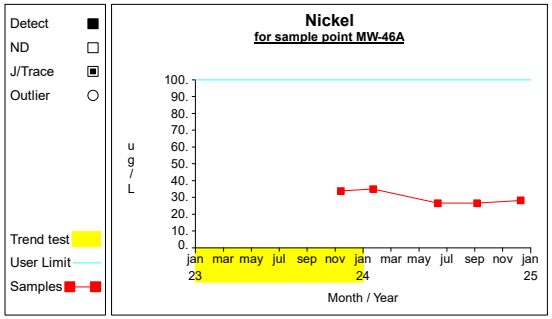
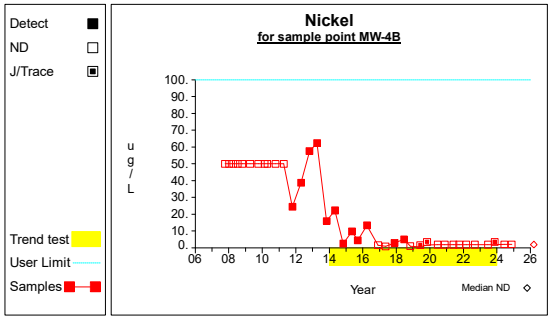


Graph 297

Time Series



Graph 298



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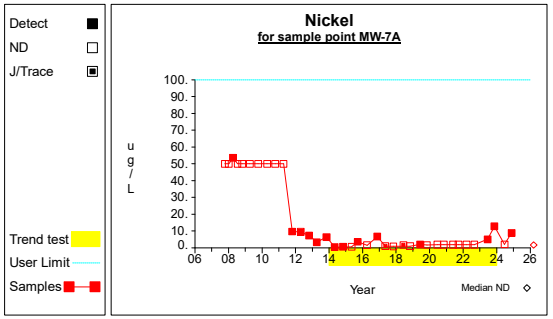
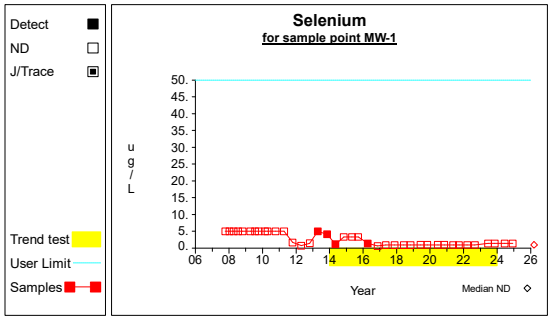
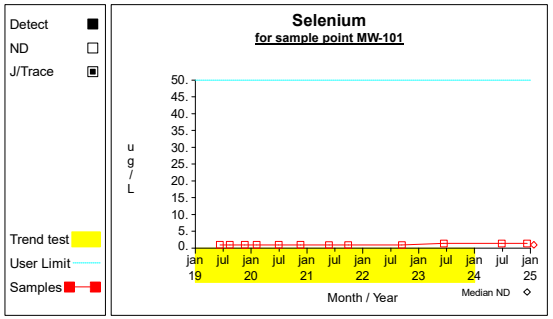


Graph 300



Graph 301



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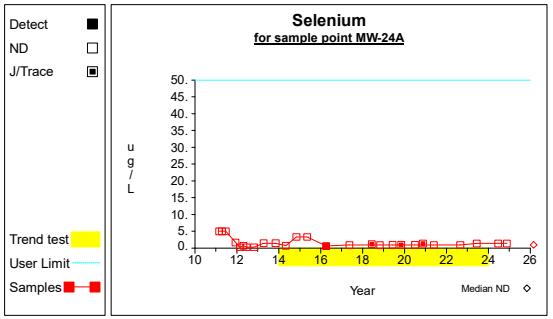
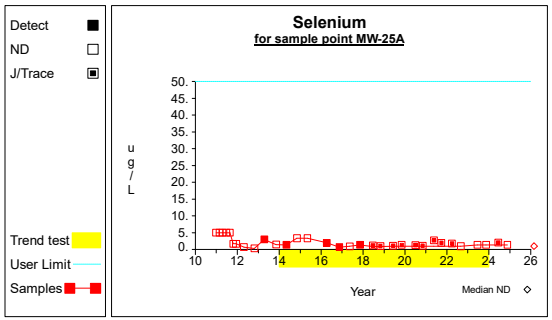


Graph 303



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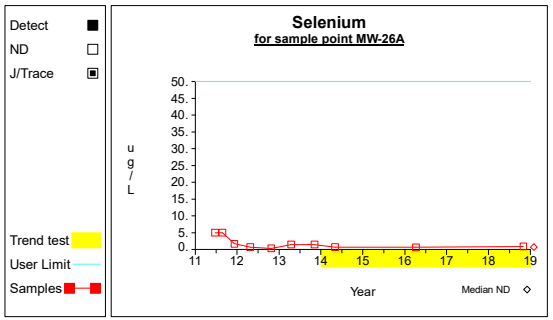
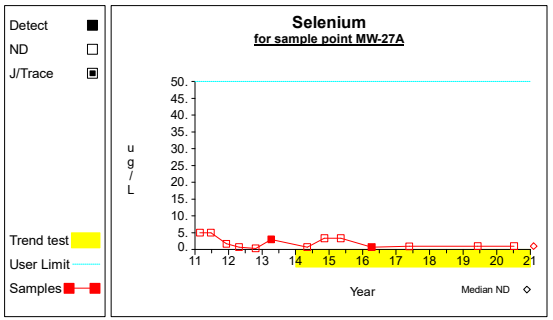
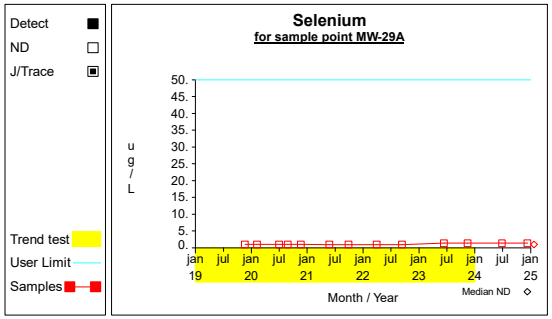


Graph 305

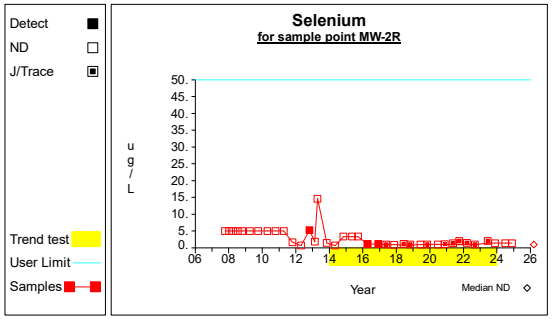


Graph 306

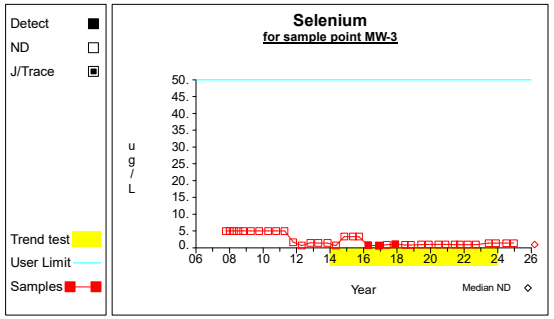
Time Series



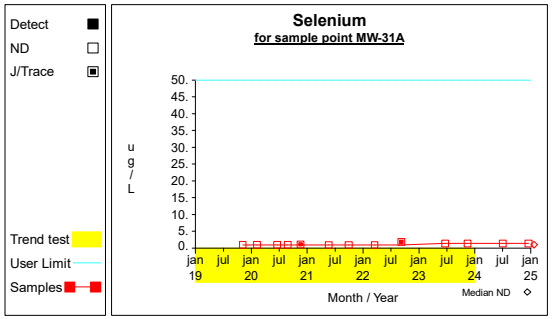
Graph 307



Graph 308



Graph 309



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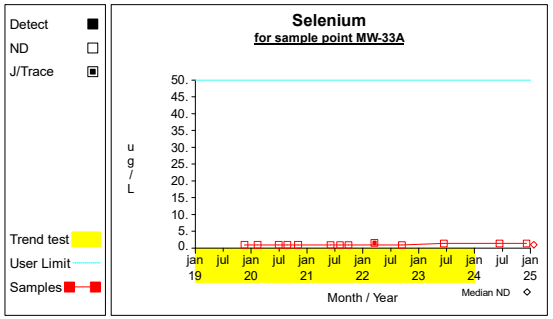

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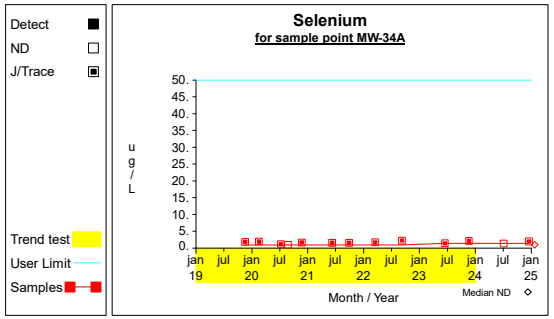
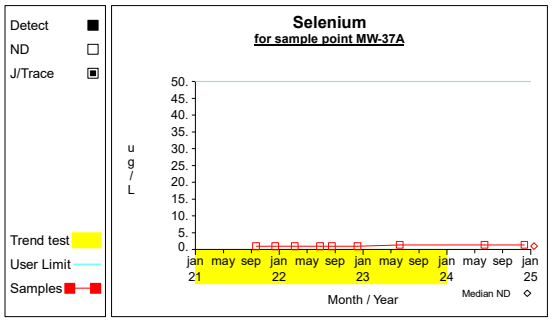
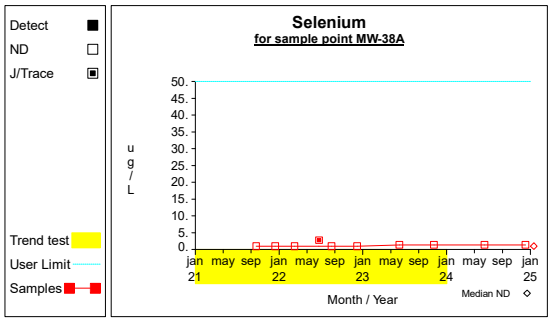


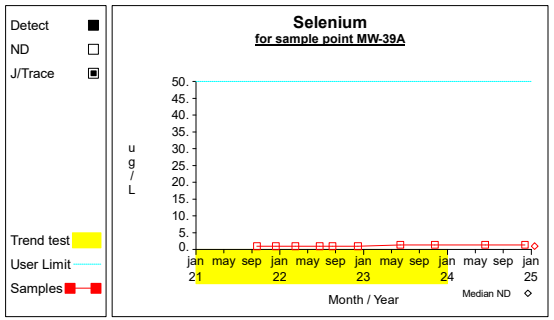
Graph 312



Graph 313

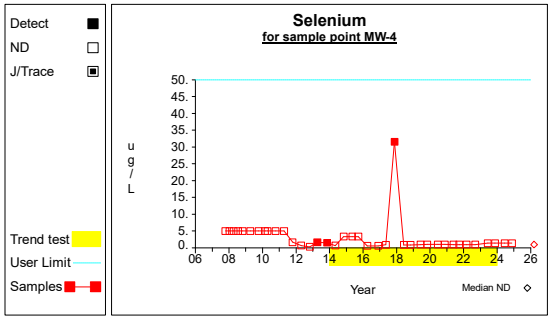


Graph 314

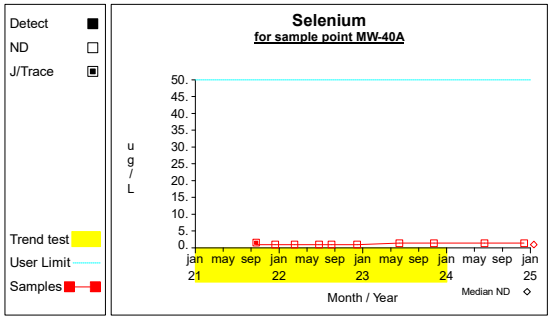


Graph 315

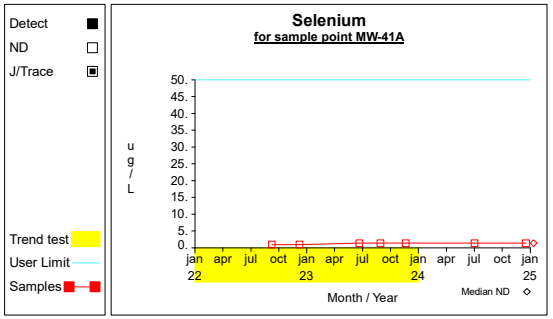
Time Series



Graph 316



Graph 317



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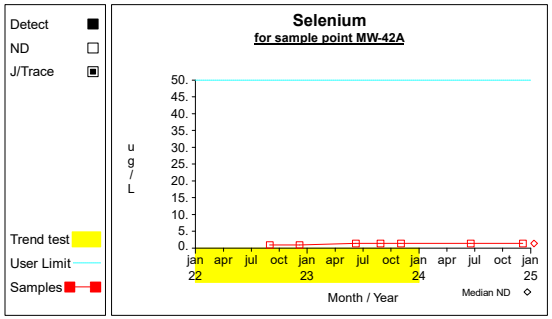
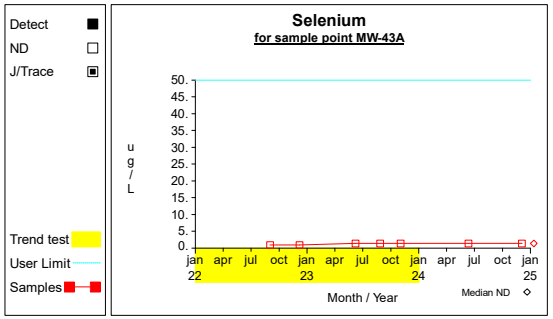
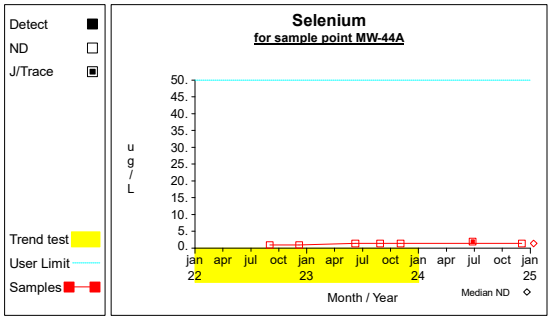


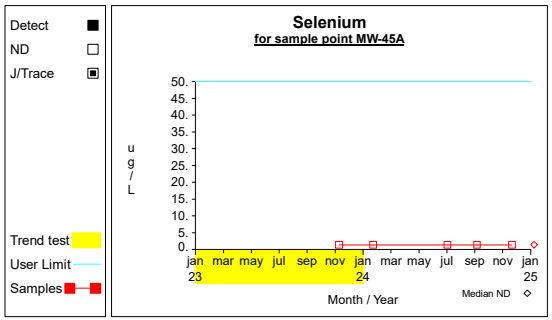
Graph 319



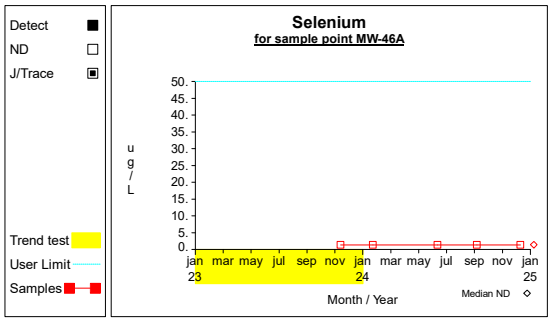
Graph 320



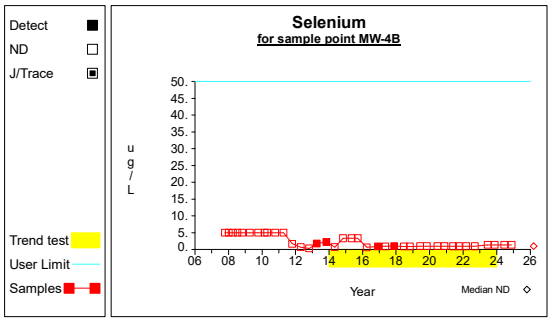
Graph 321



Graph 322

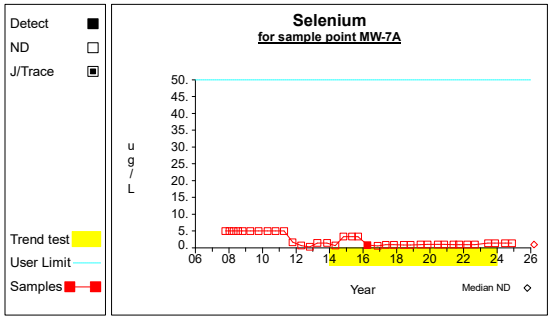


Graph 323

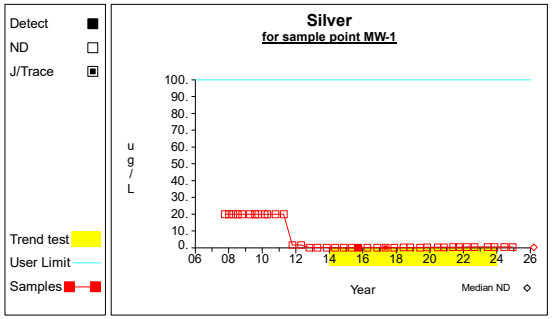


Graph 324

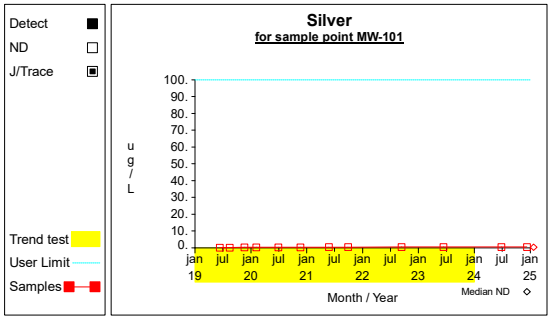
Time Series



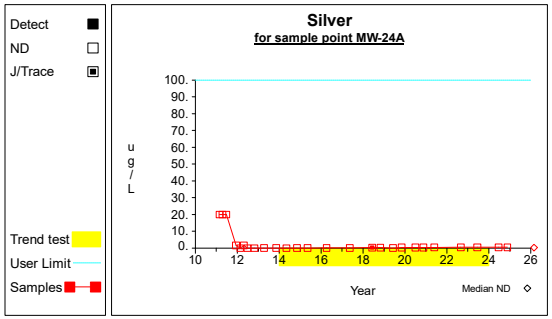
Graph 325



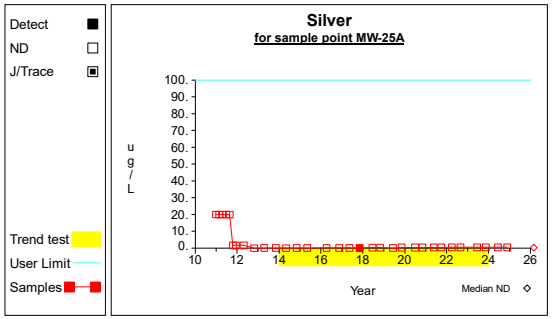
Graph 326



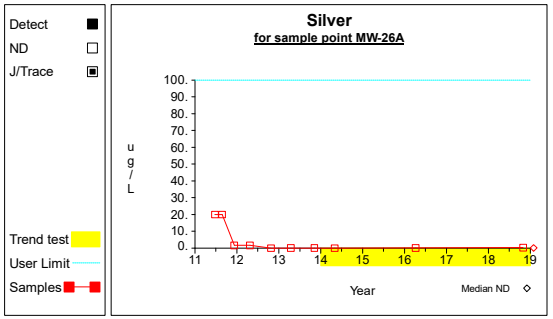
Graph 327



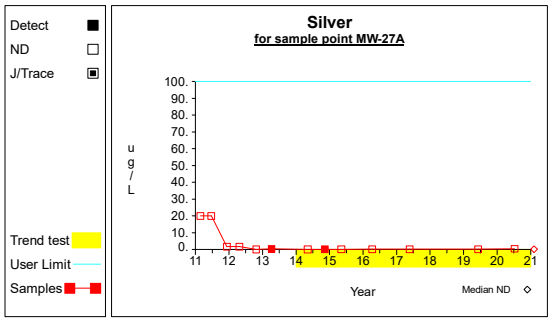
Graph 328



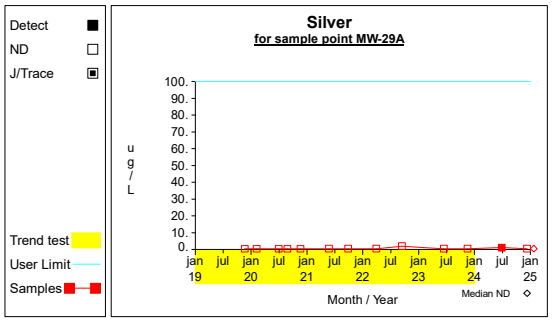
Graph 329



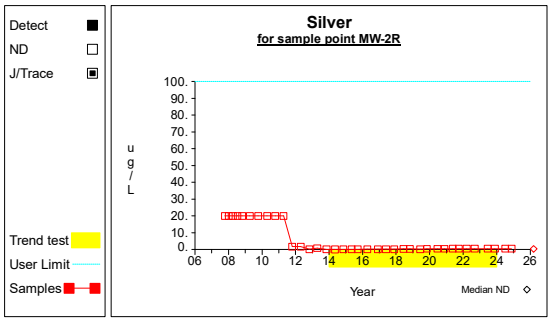
Graph 330



Graph 331

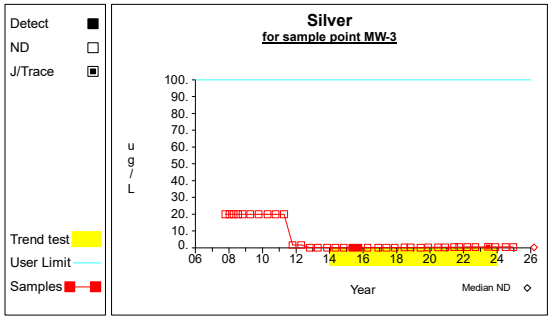


Graph 332

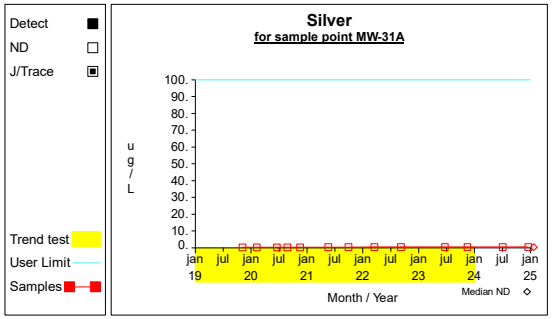


Graph 333

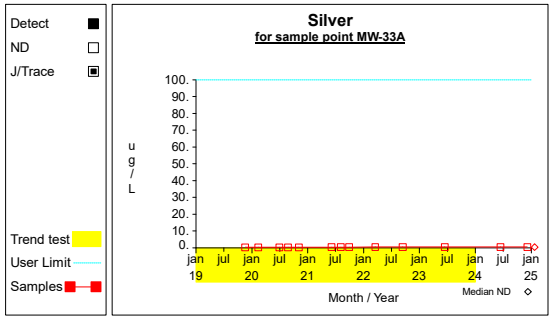
Time Series



Graph 334



Graph 335



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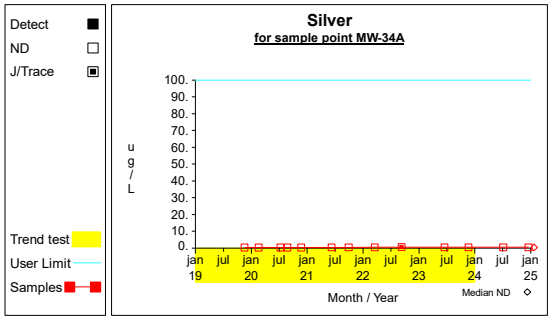

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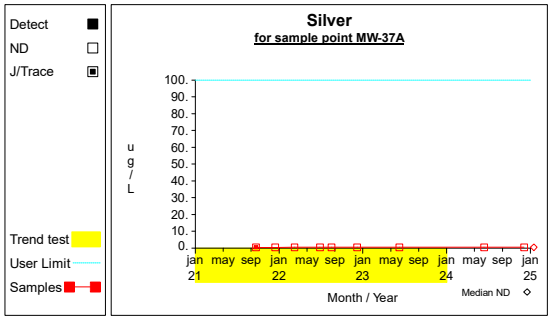
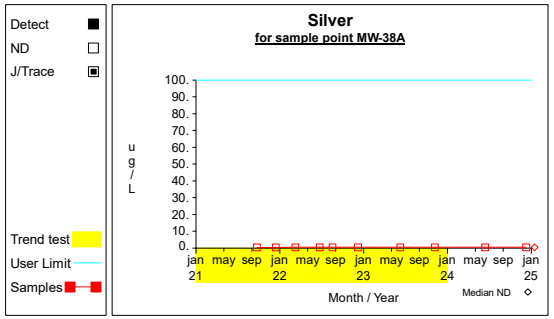
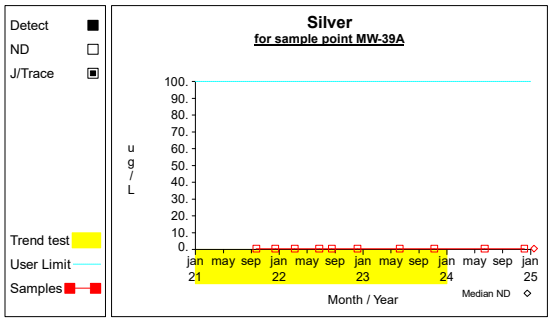


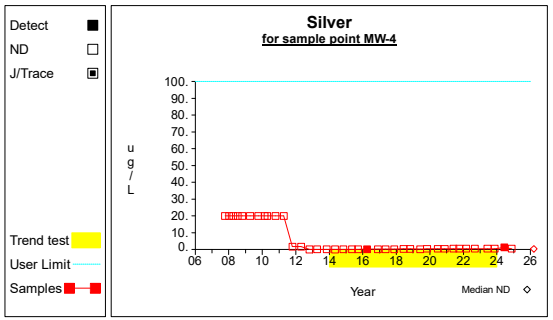
Graph 338



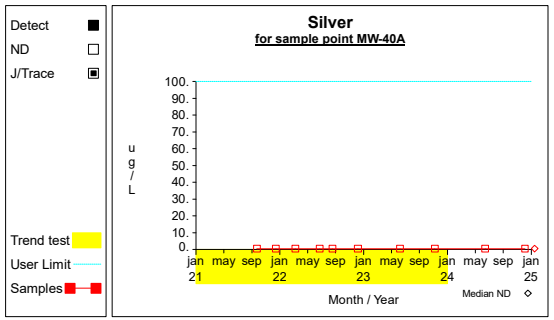
Graph 339



Graph 340

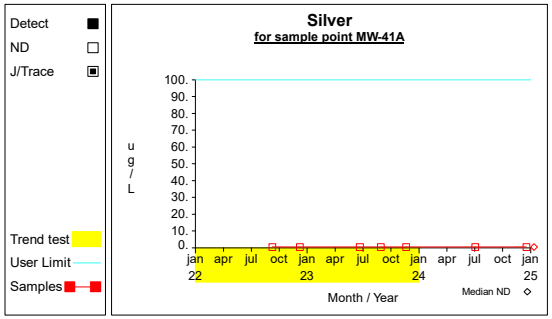


Graph 341

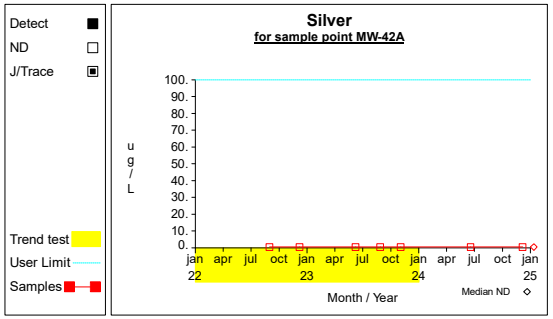


Graph 342

Time Series



Graph 343



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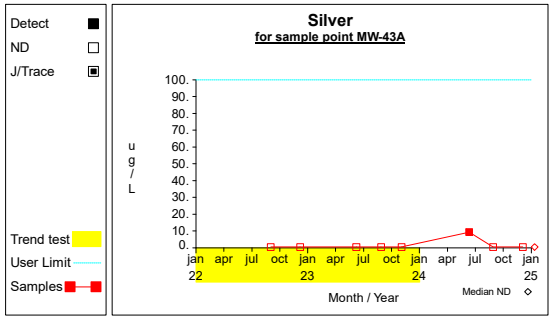
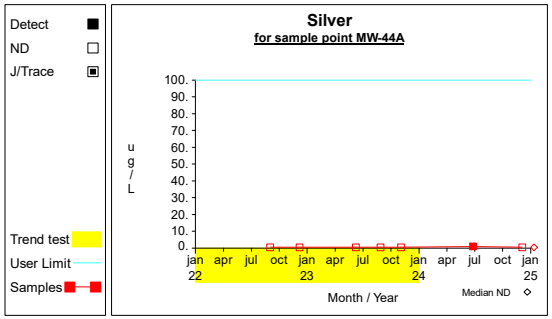


Graph 345



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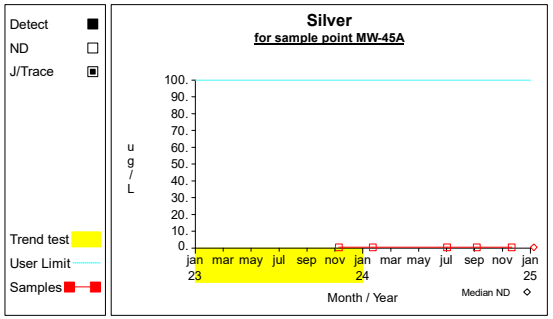
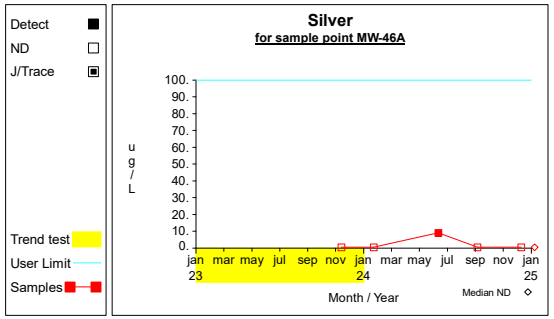


Graph 347



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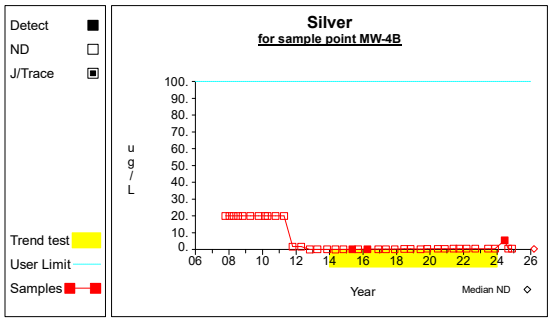
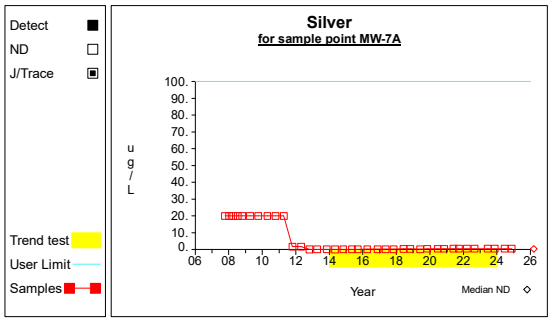
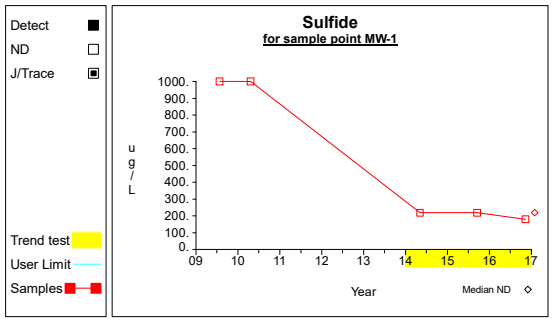


Graph 349

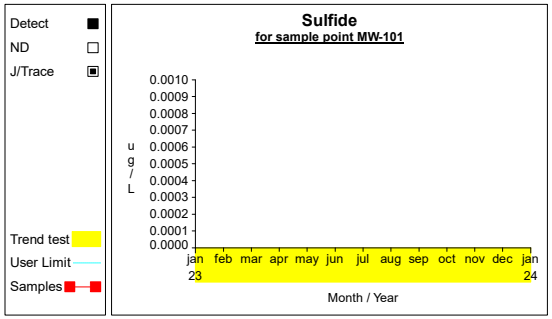


Graph 350



Graph 351

Time Series



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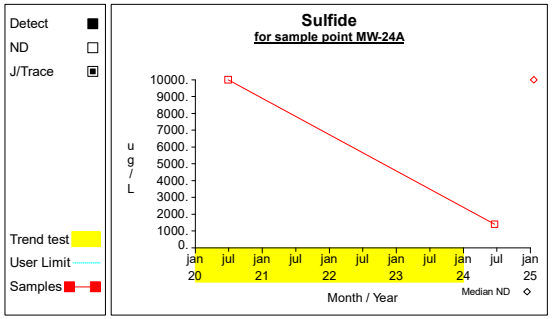

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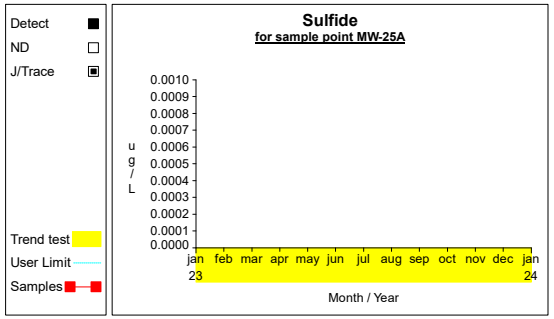
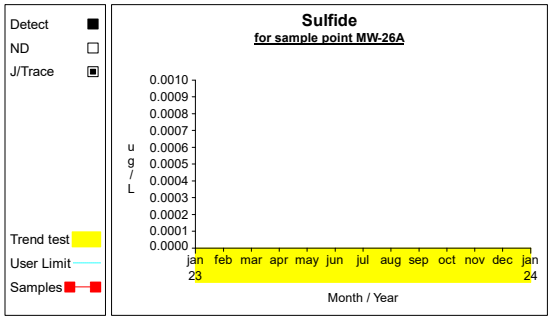
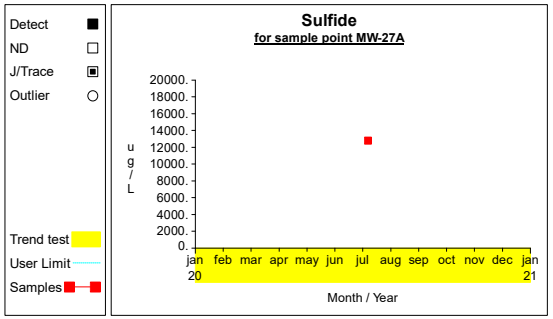


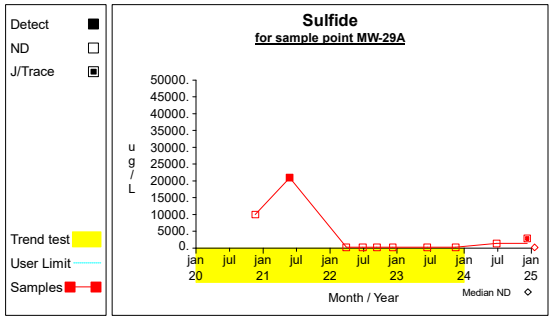
Graph 354



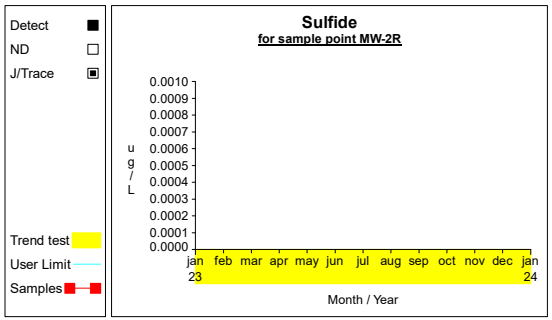
Graph 355



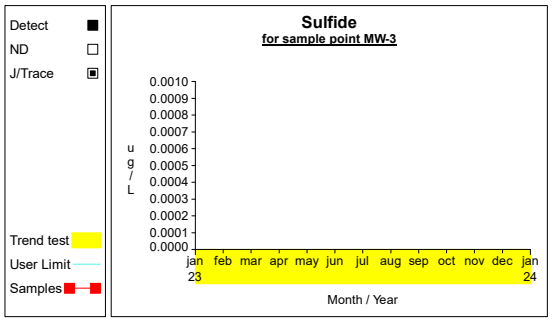
Graph 356



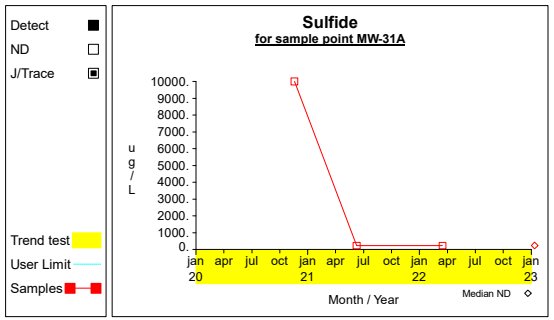
Graph 357



Graph 358

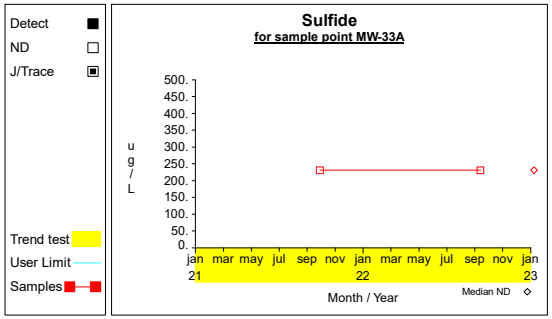


Graph 359

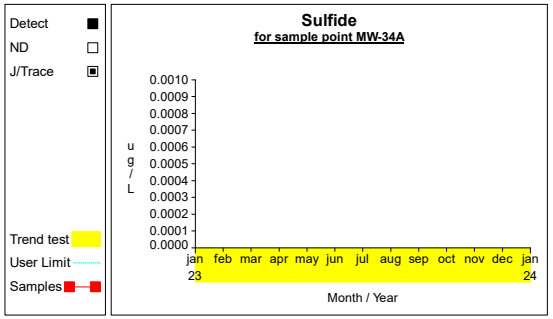


Graph 360

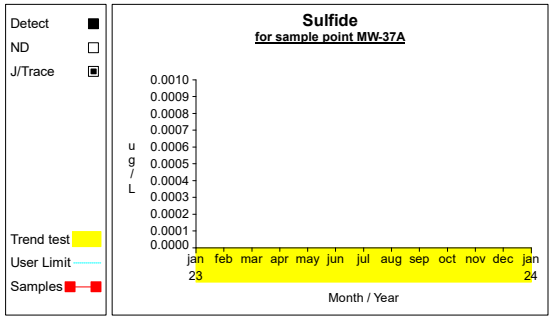
Time Series



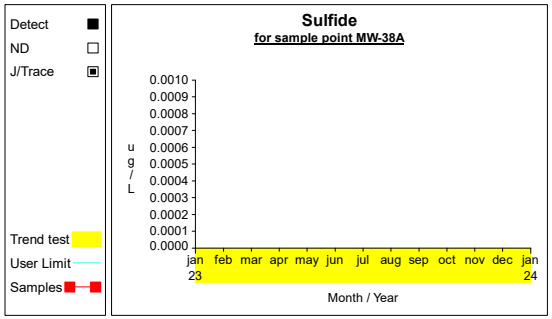
Graph 361



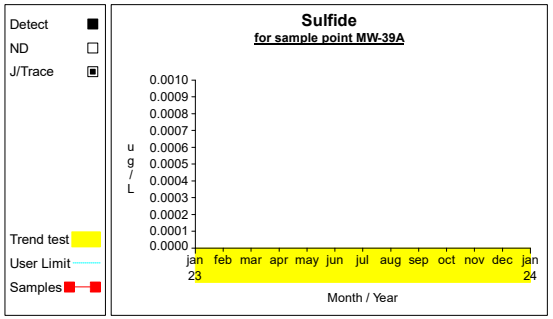
Graph 362



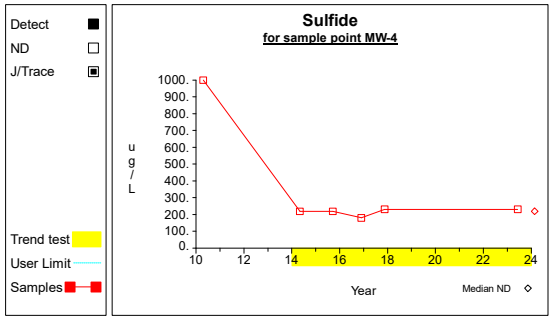
Graph 363



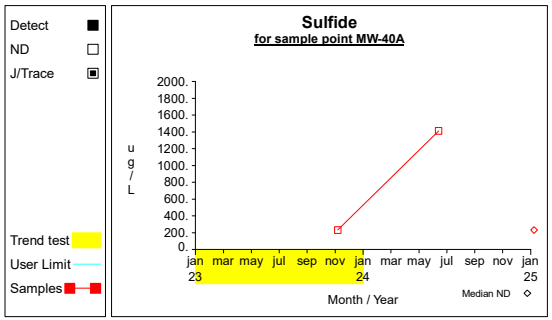
Graph 364



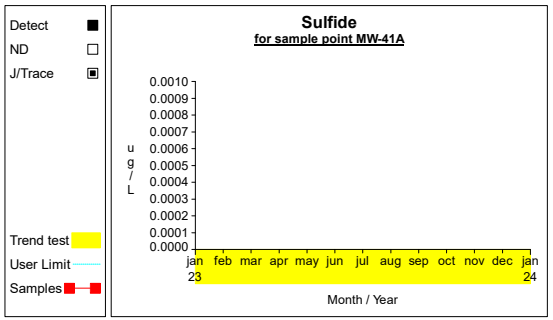
Graph 365



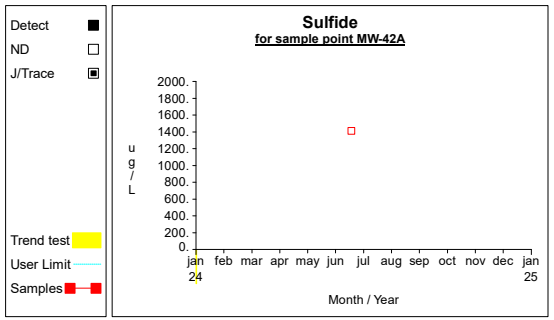
Graph 366



Graph 367

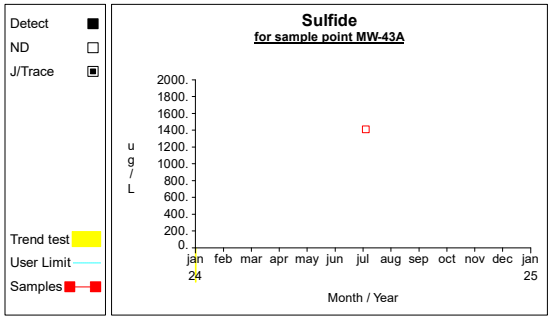


Graph 368

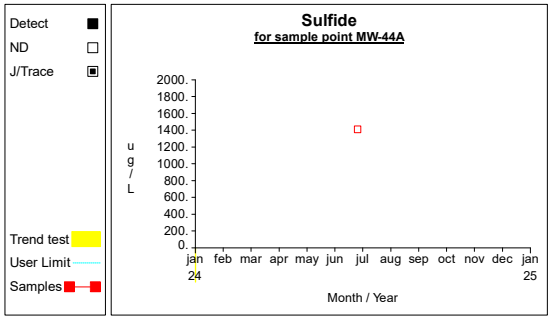


Graph 369

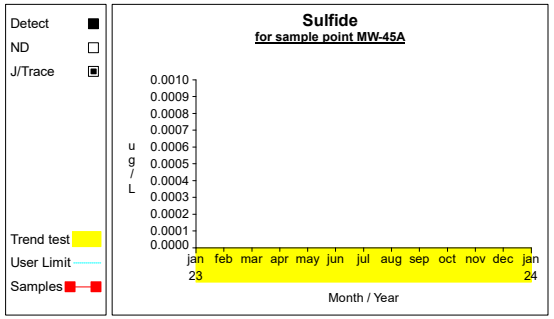
Time Series



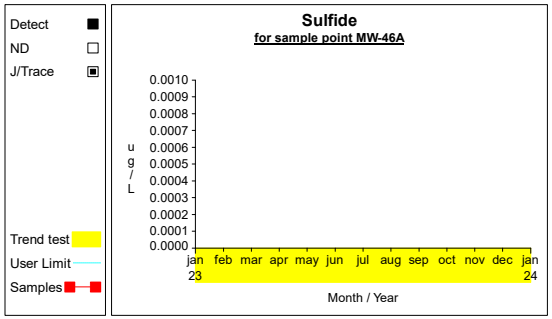
Graph 370



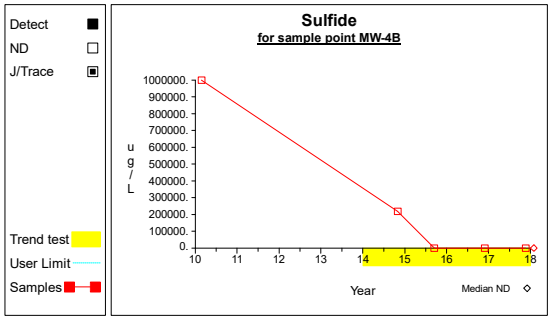
Graph 371



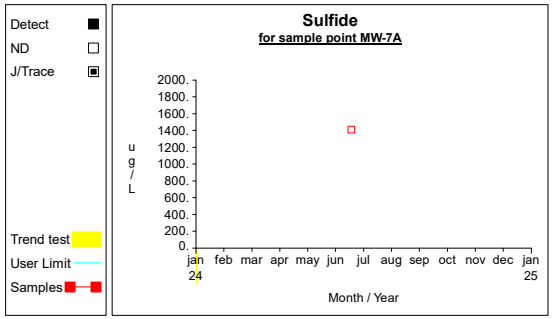
Graph 372



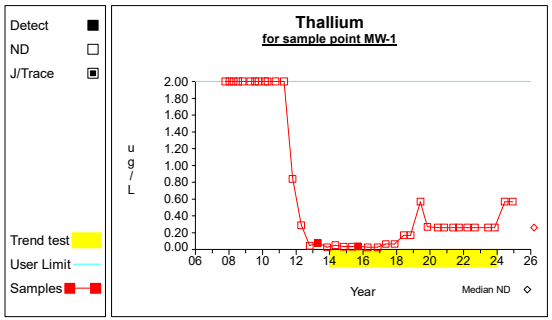
Graph 373



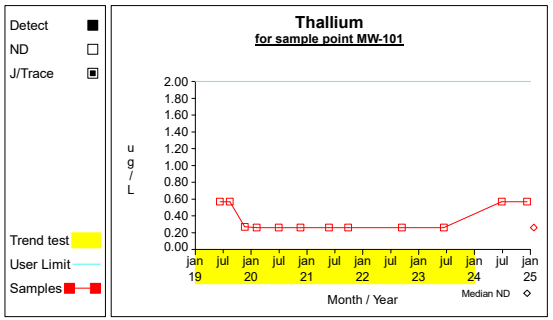
Graph 374



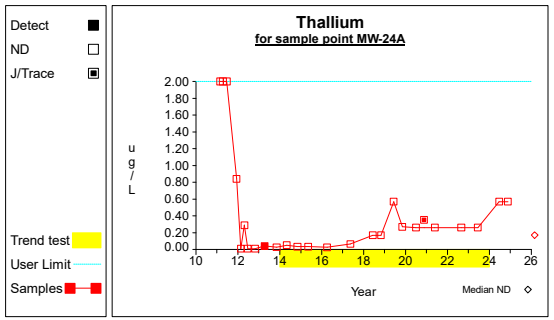
Graph 375



Graph 376

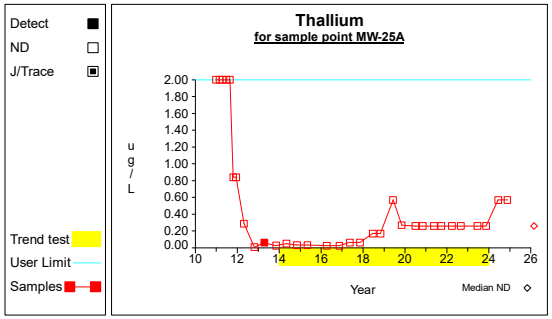


Graph 377

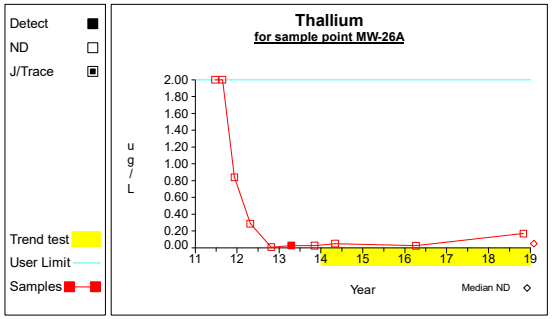


Graph 378

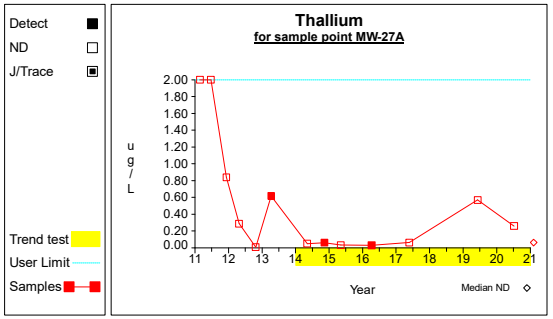
Time Series



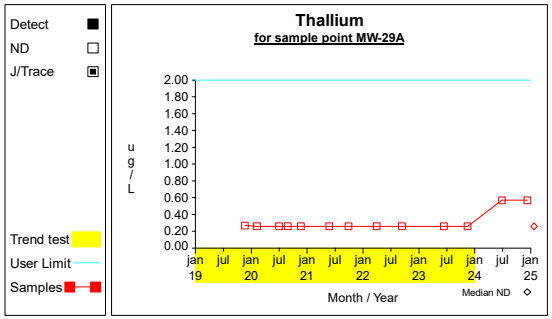
Graph 379



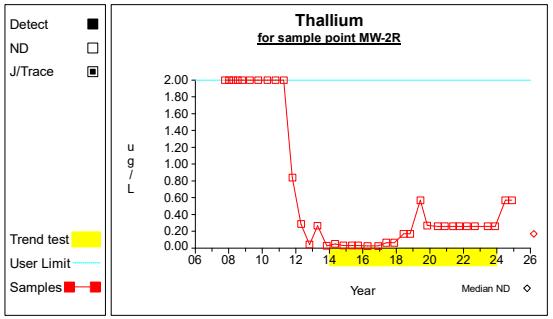
Graph 380



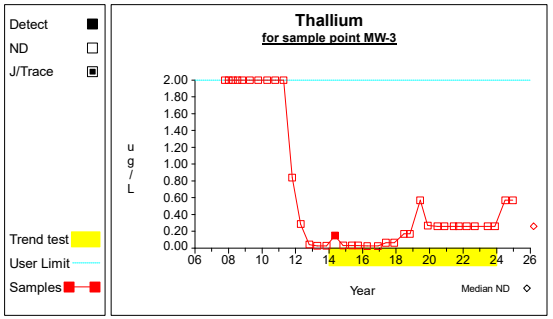
Graph 381



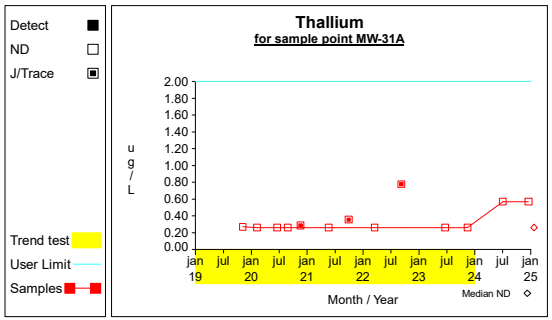
Graph 382



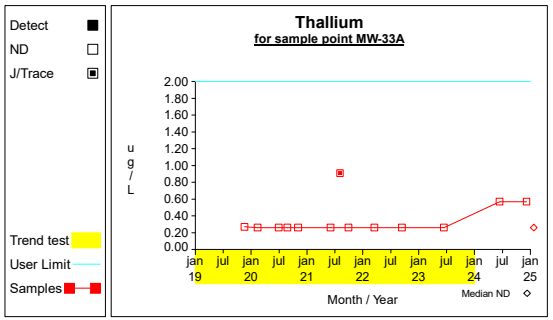
Graph 383



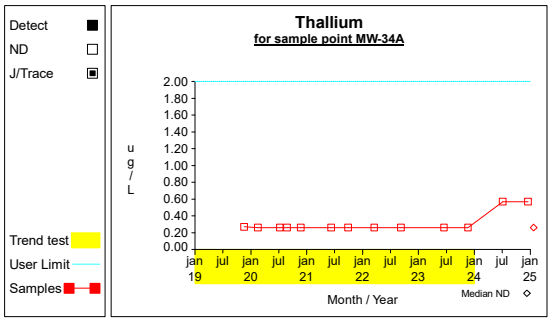
Graph 384



Graph 385

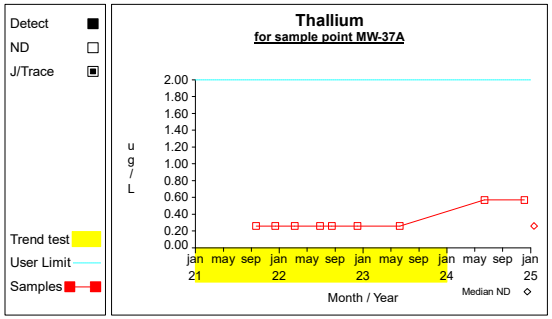


Graph 386

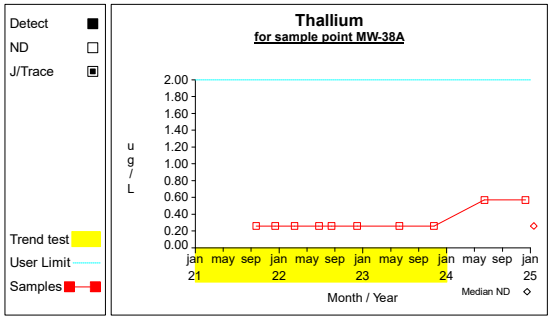


Graph 387

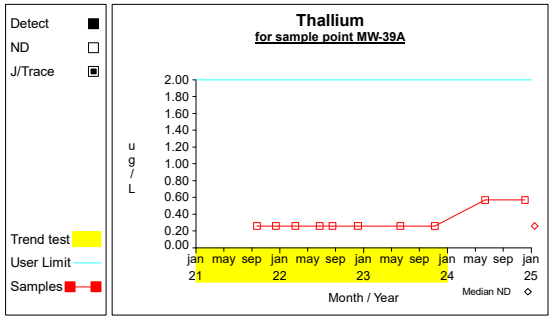
Time Series



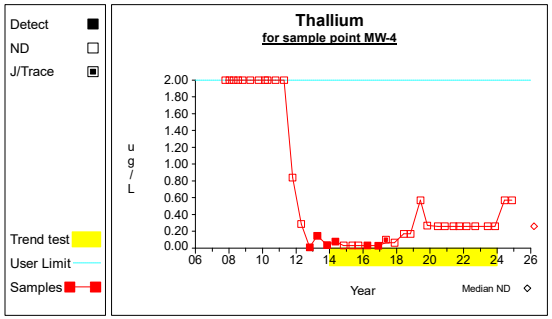
Graph 388



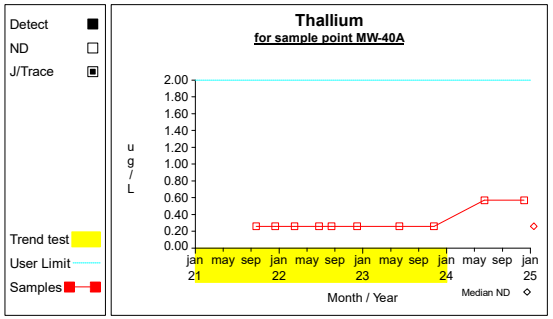
Graph 389



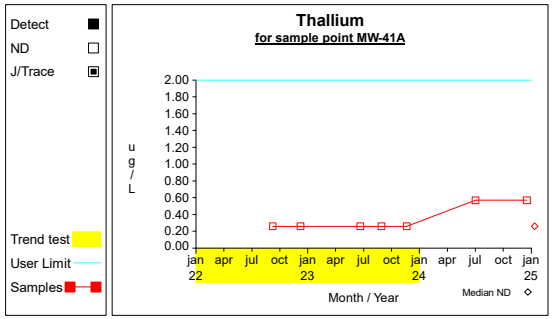
Graph 390



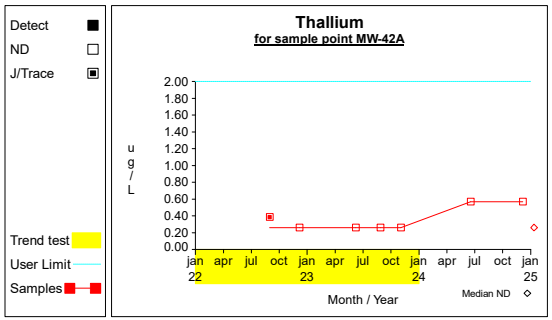
Graph 391



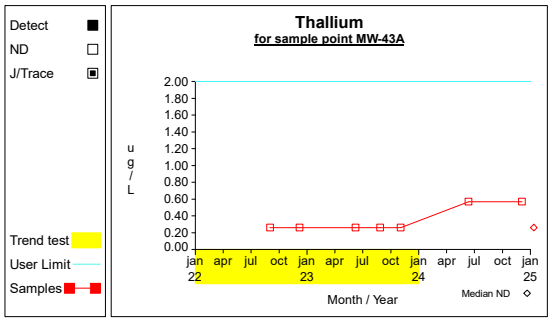
Graph 392



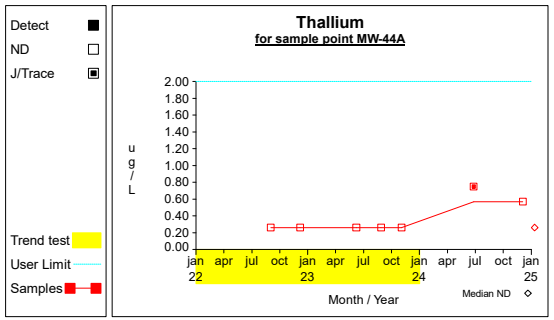
Graph 393



Graph 394

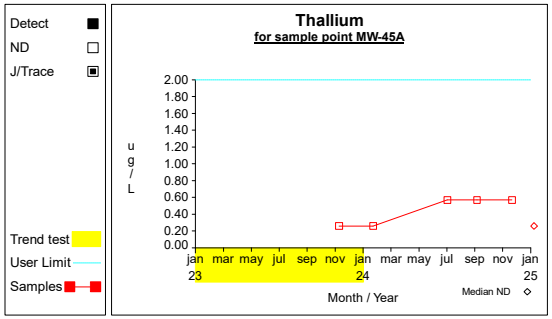


Graph 395

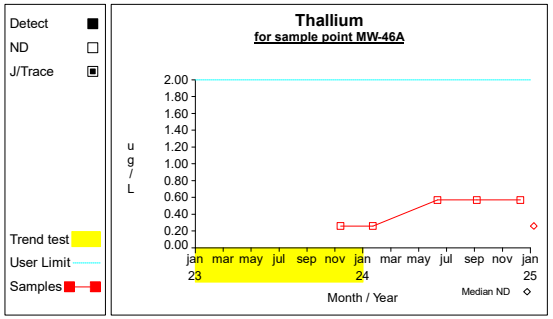


Graph 396

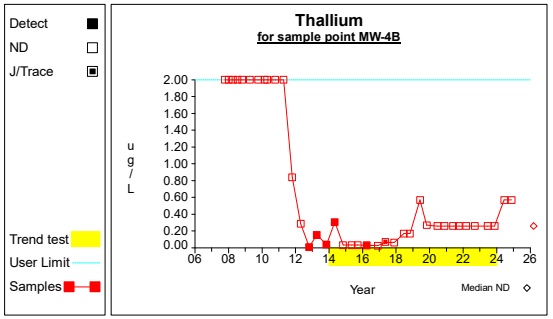
Time Series



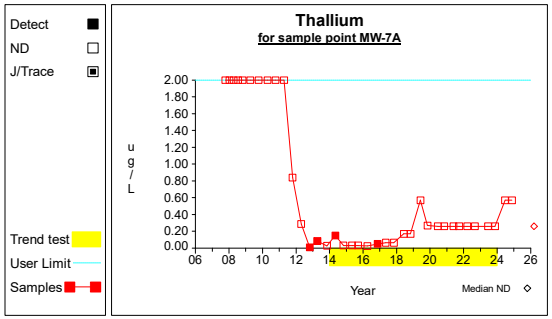
Graph 397



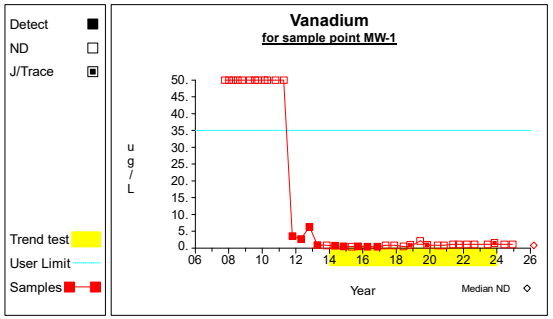
Graph 398



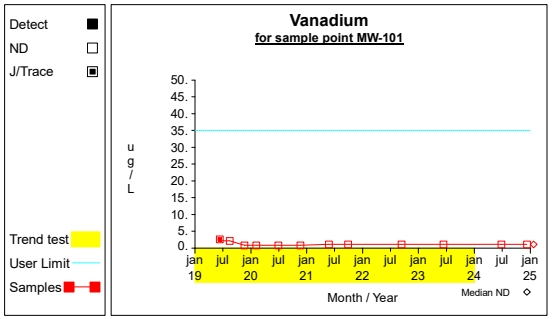
Graph 399



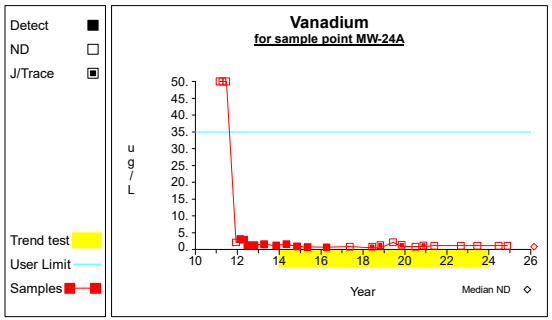
Graph 400



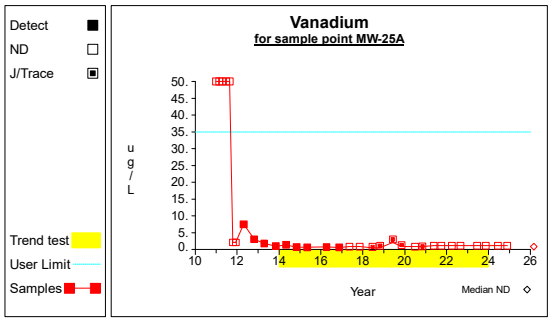
Graph 401



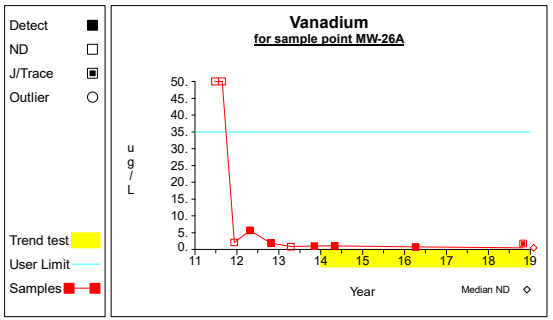
Graph 402



Graph 403

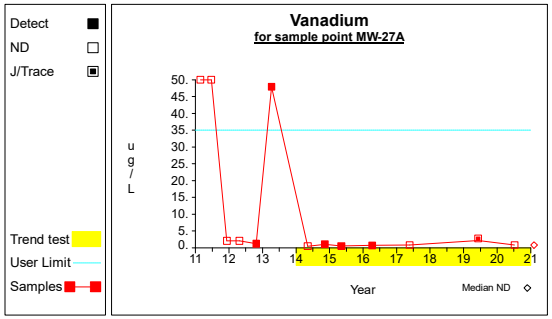


Graph 404

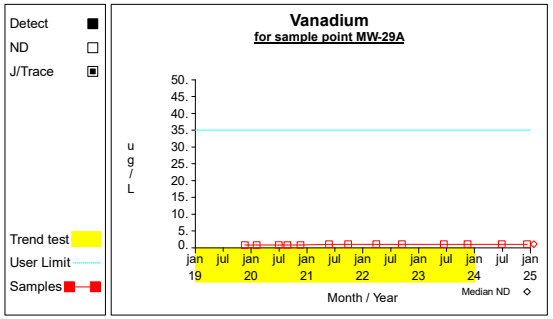


Graph 405

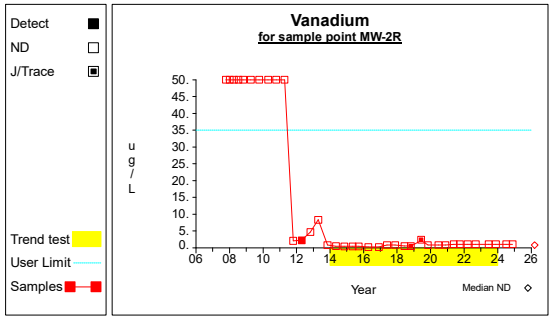
Time Series



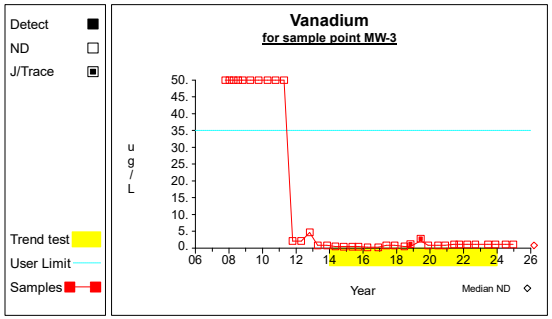
Graph 406



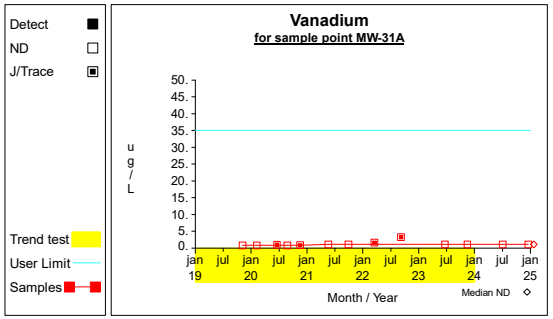
Graph 407



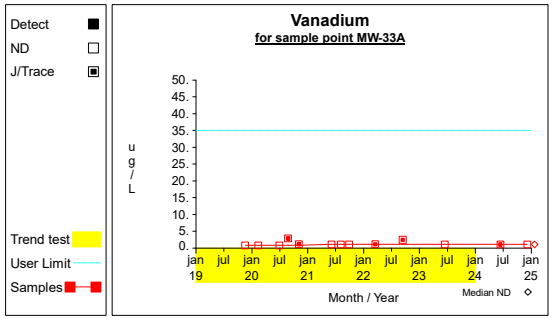
Graph 408



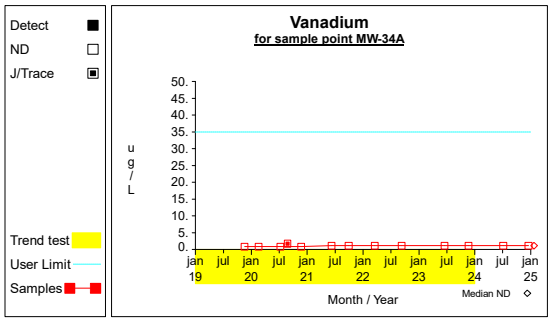
Graph 409



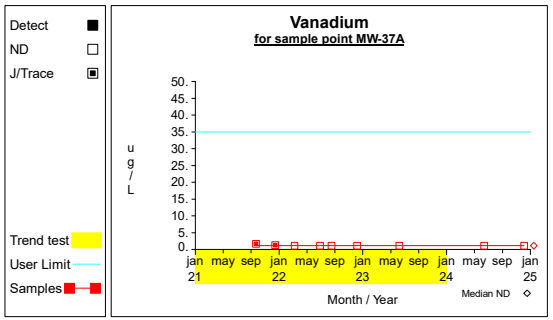
Graph 410



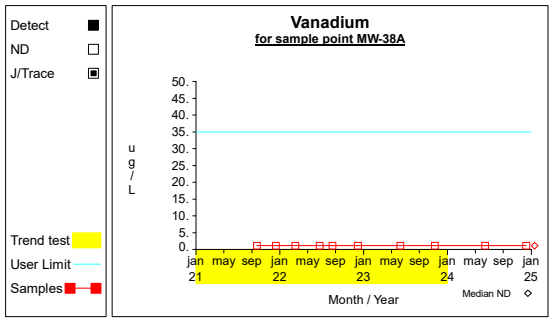
Graph 411



Graph 412

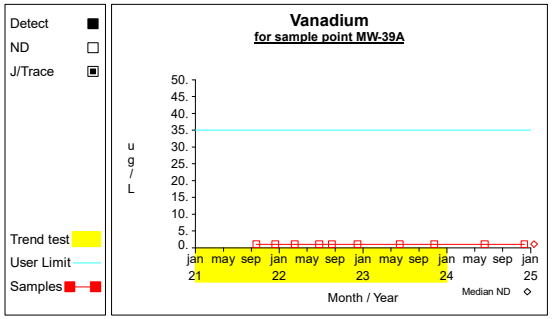


Graph 413

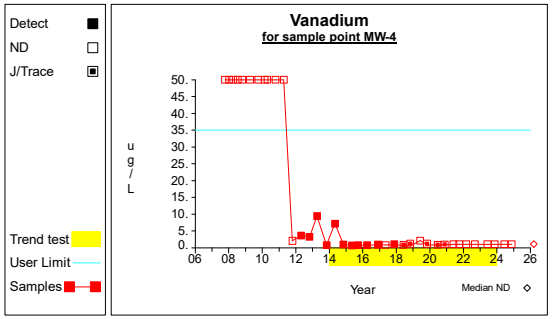


Graph 414

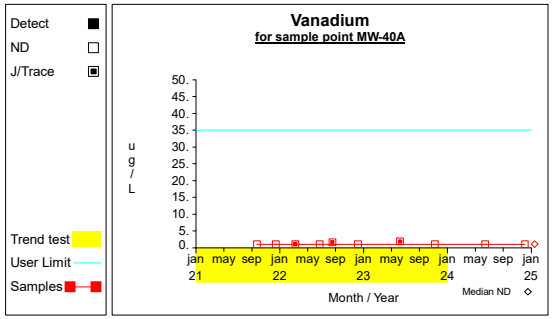
Time Series



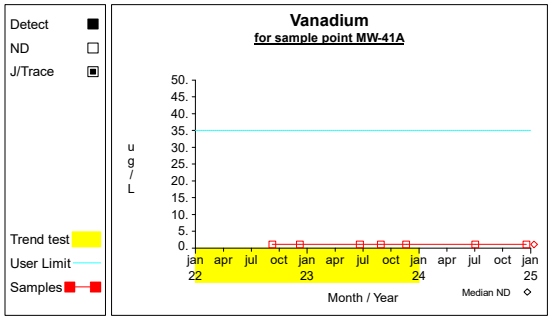
Graph 415



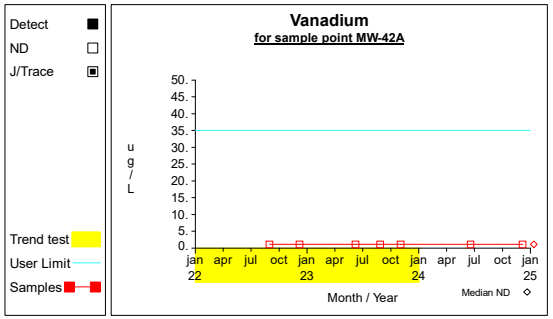
Graph 416



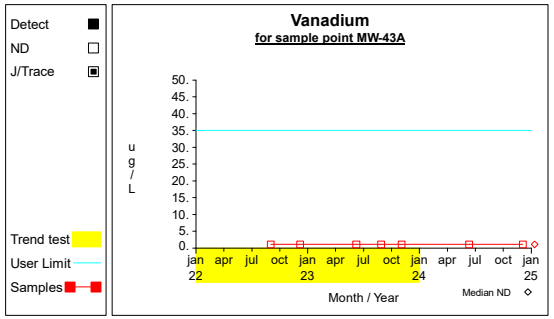
Graph 417



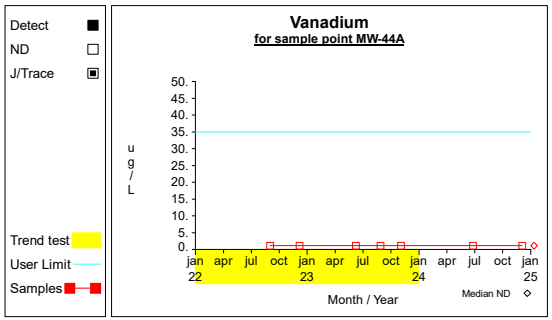
Graph 418



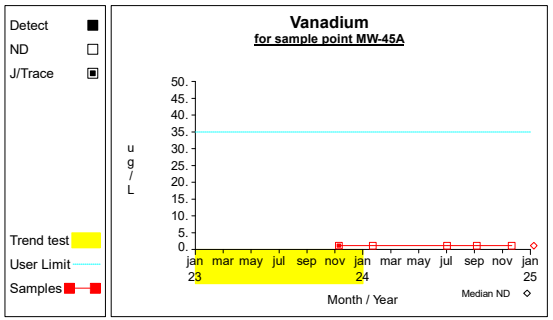
Graph 419



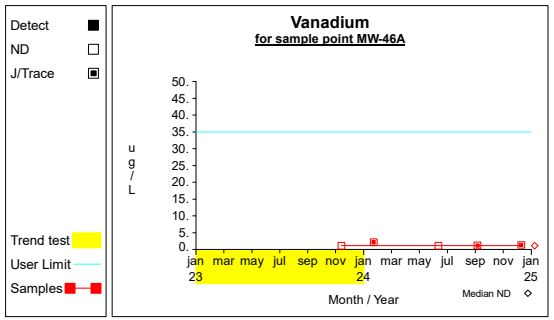
Graph 420



Graph 421

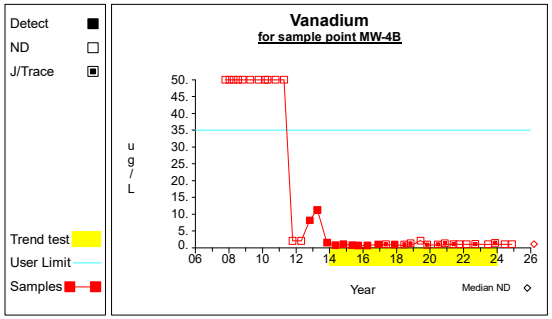


Graph 422

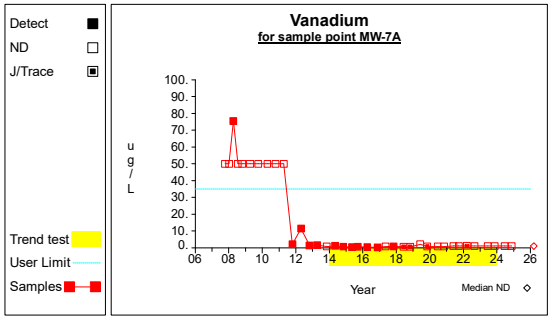


Graph 423

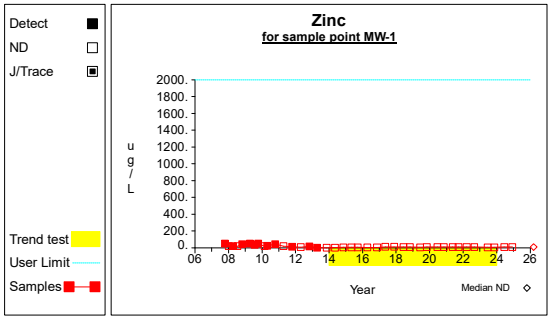
Time Series



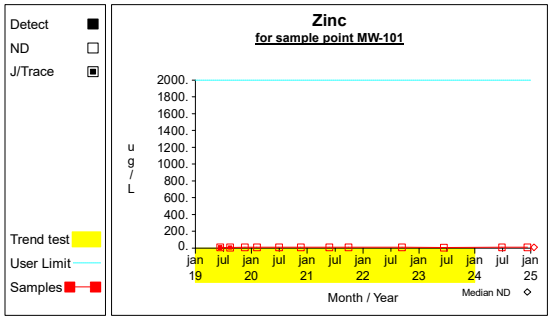
Graph 424



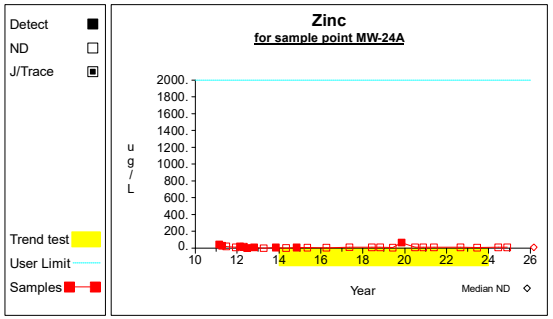
Graph 425



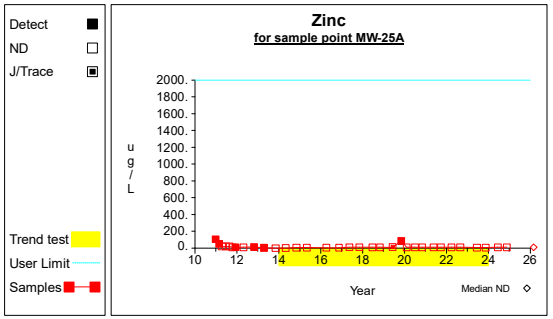
Graph 426



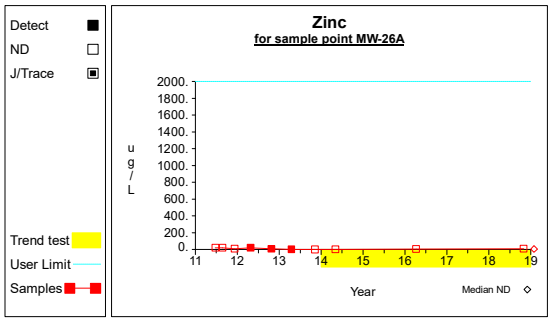
Graph 427



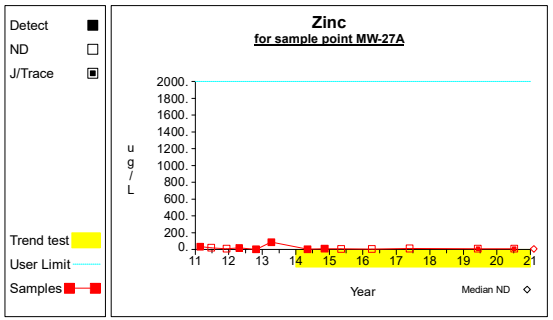
Graph 428



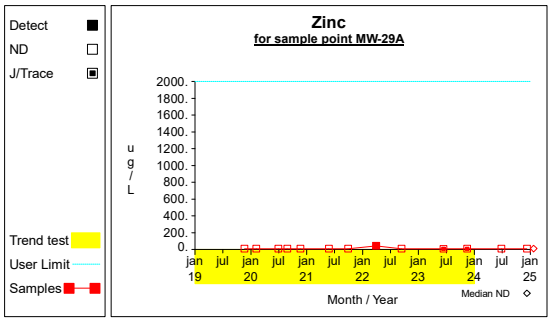
Graph 429



Graph 430

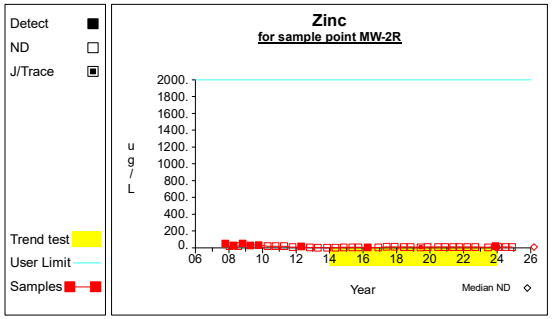


Graph 431

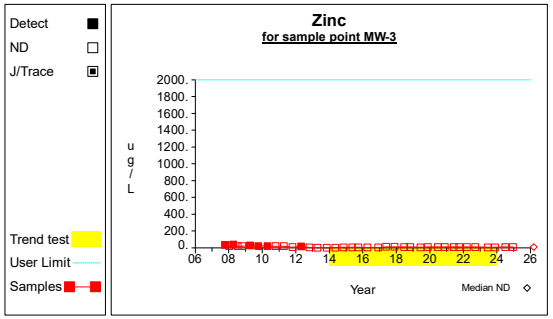


Graph 432

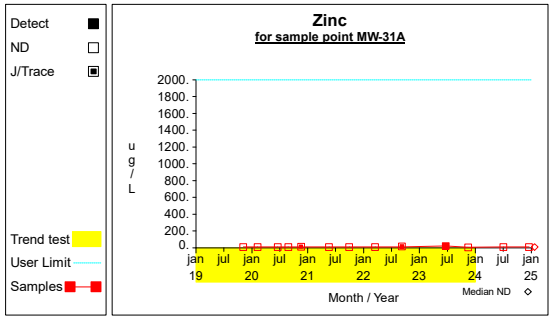
Time Series



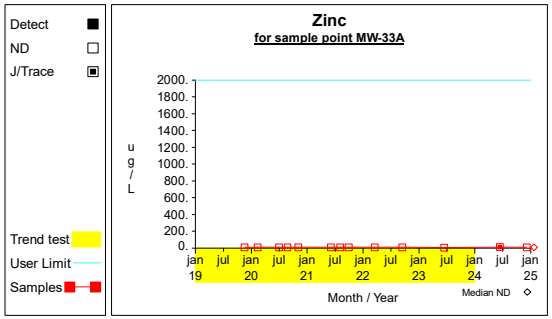
Graph 433



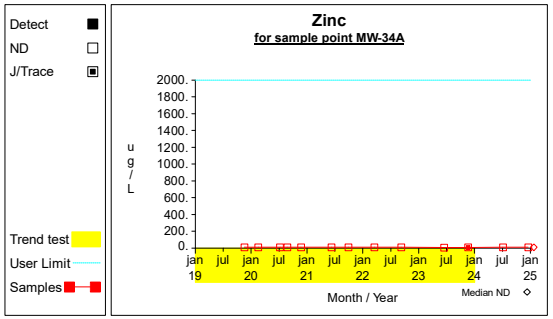
Graph 434



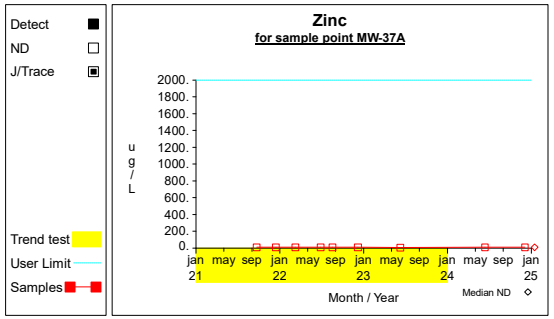
Graph 435



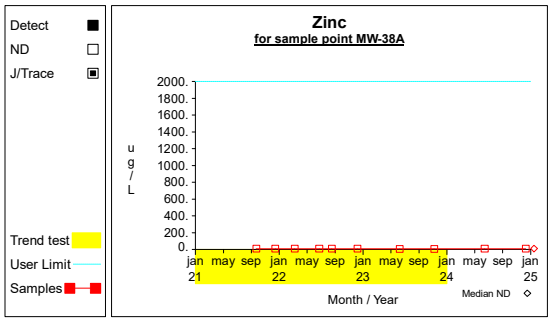
Graph 436



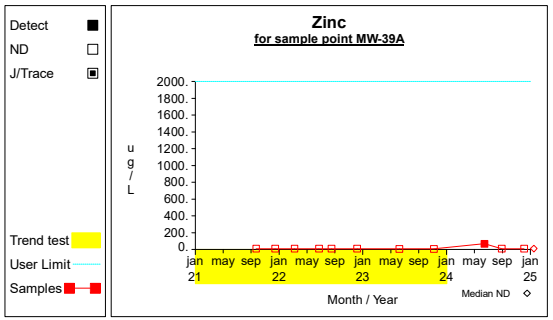
Graph 437



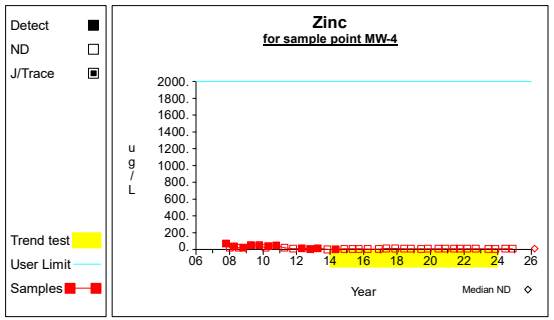
Graph 438



Graph 439

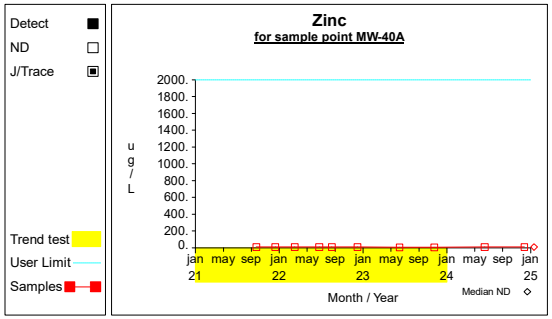


Graph 440

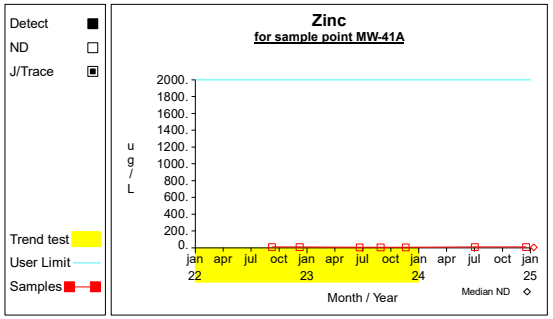


Graph 441

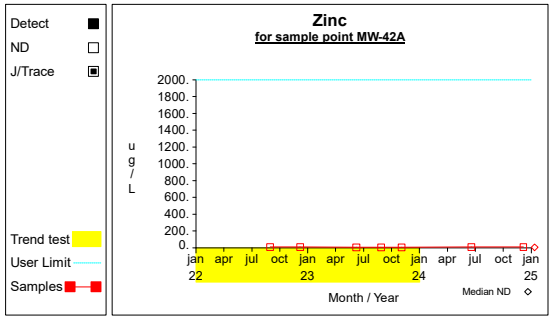
Time Series



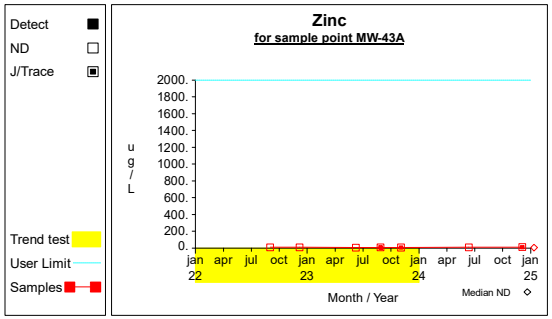
Graph 442



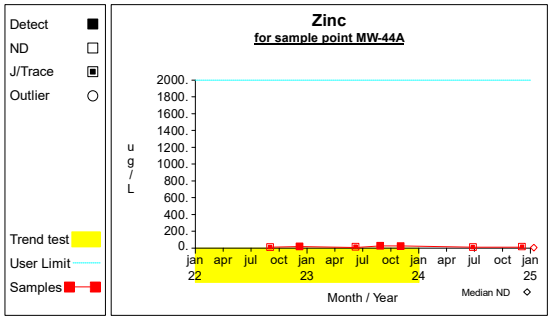
Graph 443



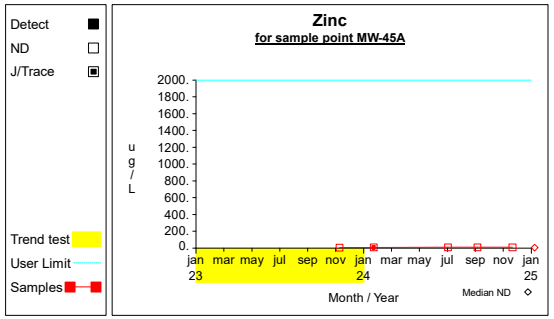
Graph 444



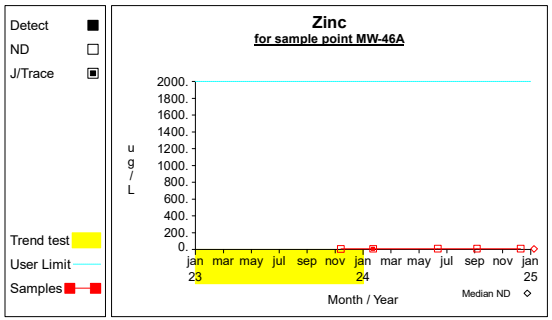
Graph 445



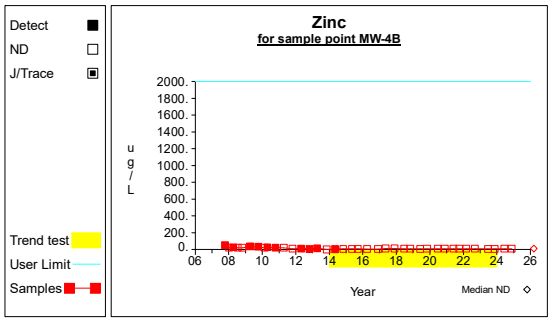
Graph 446



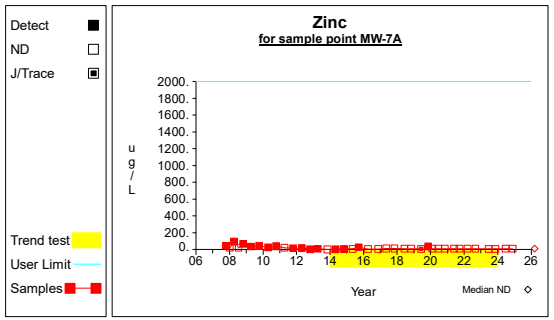
Graph 447



Graph 448



Graph 449



Graph 450

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,1,2,2-tetrachloroethane	MW-1	10/26/2012		.21	.10	ug/L
1,2-dibromo-3-chloropropane	MW-1	10/26/2012		1.17	.12	ug/L
1,2-dichlorobenzene	MW-1	10/26/2012		.480	.140	ug/L
1,2-dichlorobenzene	MW-1	4/15/2013		.185	.140	ug/L
1,2-dichloroethane	MW-1	10/26/2012		.18	.18	ug/L
1,4-dichlorobenzene	MW-1	10/26/2012		3.09	.20	ug/L
1,4-dichlorobenzene	MW-1	4/15/2013		1.52	.20	ug/L
2-butanone	MW-1	4/24/2012		.650	.470	ug/L
2-butanone	MW-1	10/26/2012		.800	.470	ug/L
2-butanone	MW-1	4/15/2013		.709	.470	ug/L
4,4'-dde	MW-1	9/16/2015		.00427	.00239	ug/L
4,4'-dde	MW-1	12/09/2015		.00671	.00233	ug/L
4,4'-ddt	MW-1	9/16/2015		.00632	.00432	ug/L
4,4'-ddt	MW-1	12/09/2015		.00947	.00422	ug/L
Acetone	MW-1	10/18/2011		2.07	1.79	ug/L
Acetone	MW-1	4/15/2013		1.94	1.79	ug/L
Acetone	MW-1	11/16/2017		1.98	1.79	ug/L
Acetonitrile	MW-1	11/11/2016		166	126	ug/L
Alpha-bhc	MW-1	9/16/2015		.00287	.00193	ug/L
Benzene	MW-1	4/01/1991		1.000	1.000	ug/L
Benzene	MW-1	10/18/2011		.170	.110	ug/L
Benzene	MW-1	10/26/2012		.650	.110	ug/L
Benzene	MW-1	4/15/2013		.287	.110	ug/L
Beta-bhc	MW-1	5/05/2014		.00594	.00511	ug/L
Bis(2-ethylhexyl)phthalate	MW-1	11/11/2016		.679	.429	ug/L
Bromomethane	MW-1	10/26/2012		.26	.22	ug/L
Carbon disulfide	MW-1	10/26/2012		.17	.15	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-1	10/23/2008		1.82	1.00	ug/L
Chlorobenzene	MW-1	4/08/2009		1.33	1.00	ug/L
Chlorobenzene	MW-1	10/05/2009		1.06	1.00	ug/L
Chlorobenzene	MW-1	10/18/2011		1.63	.19	ug/L
Chlorobenzene	MW-1	4/24/2012		.43	.19	ug/L
Chlorobenzene	MW-1	10/26/2012		9.15	.19	ug/L
Chlorobenzene	MW-1	4/15/2013		4.66	.19	ug/L
Chlorobenzene	MW-1	11/07/2014		1.42	.19	ug/L
Chlorobenzene	MW-1	11/09/2023		2.89	.40	ug/L
Chlorobenzene	MW-1	1/25/2024		4.64	.40	ug/L
Chloroethane	MW-1	10/26/2012		.57	.15	ug/L
Delta-bhc	MW-1	9/16/2015		.00458	.00261	ug/L
Dichloromethane	MW-1	10/18/2011		.280	.170	ug/L
Dichloromethane	MW-1	10/26/2012		.260	.170	ug/L
Dichloromethane	MW-1	5/05/2014		.228	.170	ug/L
Dichloromethane	MW-1	11/11/2016		.925	.170	ug/L
Dichloromethane	MW-1	11/16/2017		.286	.170	ug/L
Dieldrin	MW-1	9/16/2015		.00683	.00227	ug/L
Diethyl phthalate	MW-1	5/05/2014		.361	.274	ug/L
Diethyl phthalate	MW-1	11/07/2014		1.060	.289	ug/L
Diethyl phthalate	MW-1	12/22/2014		.348	.263	ug/L
Diethyl phthalate	MW-1	9/16/2015		.453	.274	ug/L
Di-n-octyl phthalate	MW-1	5/05/2014		.255	.242	ug/L
Di-n-octyl phthalate	MW-1	5/01/2015		1.080	.235	ug/L
Di-n-octyl phthalate	MW-1	11/11/2016		1.790	.253	ug/L
Endosulfan ii	MW-1	5/05/2014		.00375	.00202	ug/L
Endosulfan ii	MW-1	11/07/2014		.00589	.00218	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
Endosulfan sulfate	MW-1	9/16/2015		.00544	.00284	ug/L
Endosulfan sulfate	MW-1	12/09/2015		.00772	.00278	ug/L
Endrin	MW-1	9/16/2015		.00247	.00216	ug/L
Gamma-bhc (lindane)	MW-1	9/16/2015		.00267	.00216	ug/L
Heptachlor	MW-1	9/16/2015		.00335	.00295	ug/L
Heptachlor	MW-1	12/09/2015		.00490	.00289	ug/L
Methoxychlor	MW-1	5/05/2014		.01710	.00223	ug/L
Methoxychlor	MW-1	12/22/2014		.00889	.00228	ug/L
Methoxychlor	MW-1	5/01/2015		.01170	.00214	ug/L
Styrene	MW-1	10/26/2012		.11	.10	ug/L
Xylenes	MW-1	10/26/2012		.32	.13	ug/L
1,2-dibromo-3-chloropropane	MW-24A	2/21/2012		.12	.12	ug/L
1,4-dichlorobenzene	MW-24A	4/08/2013		.246	.200	ug/L
2-butanone	MW-24A	12/07/2011		1.29	.47	ug/L
2-butanone	MW-24A	4/24/2012		2.96	.47	ug/L
Acetone	MW-24A	2/21/2012		1.89	1.79	ug/L
Acetone	MW-24A	4/24/2012		3.97	1.79	ug/L
Acetone	MW-24A	4/04/2016		1.94	1.79	ug/L
Bromomethane	MW-24A	2/21/2012		.30	.22	ug/L
Carbon disulfide	MW-24A	10/24/2012		.160	.150	ug/L
Carbon disulfide	MW-24A	11/03/2014		.451	.150	ug/L
Chloroethane	MW-24A	12/07/2011		.45	.15	ug/L
Dichloromethane	MW-24A	2/21/2012		.63	.17	ug/L
Toluene	MW-24A	4/08/2013		.184	.150	ug/L
2-butanone	MW-25A	10/18/2011		.97	.47	ug/L
2-butanone	MW-25A	4/24/2012		1.51	.47	ug/L
Acetone	MW-25A	4/24/2012		2.55	1.79	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-25A	11/06/2017		2.39	1.79	ug/L
Benzene	MW-25A	12/07/2011		.11	.11	ug/L
Carbon disulfide	MW-25A	11/03/2014		.751	.150	ug/L
Chloroethane	MW-25A	10/18/2011		.27	.15	ug/L
Chloroethane	MW-25A	12/07/2011		.19	.15	ug/L
Dichloromethane	MW-25A	10/18/2011		.210	.170	ug/L
Dichloromethane	MW-25A	4/15/2013		.179	.170	ug/L
Dichloromethane	MW-25A	11/15/2016		.608	.170	ug/L
Dichloromethane	MW-25A	11/06/2017		.494	.170	ug/L
Toluene	MW-25A	11/15/2023		2.86	.43	ug/L
Tribromomethane	MW-25A	4/15/2013		.215	.140	ug/L
Acetone	MW-2R	11/30/2016		2.01	1.79	ug/L
Bromomethane	MW-2R	5/07/2015		.313	.220	ug/L
Bromomethane	MW-2R	11/30/2016		.404	.220	ug/L
Carbon disulfide	MW-2R	11/04/2014		1.97	.15	ug/L
Dichloromethane	MW-2R	10/26/2012		.250	.170	ug/L
Dichloromethane	MW-2R	11/06/2013		.361	.170	ug/L
Dichloromethane	MW-2R	11/30/2016		1.050	.170	ug/L
Dichloromethane	MW-2R	11/17/2017		.293	.170	ug/L
Toluene	MW-2R	11/20/2023		1.42	.43	ug/L
Acetone	MW-3	11/30/2016		2.41	1.79	ug/L
Benzene	MW-3	11/06/2014		.613	.110	ug/L
Bromomethane	MW-3	11/30/2016		.487	.220	ug/L
Bromomethane	MW-3	11/21/2017		.676	.220	ug/L
Carbon disulfide	MW-3	11/06/2014		1.08	.15	ug/L
Chloromethane	MW-3	11/30/2016		.366	.310	ug/L
Dichloromethane	MW-3	4/24/2012		.380	.170	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
Dichloromethane	MW-3	10/26/2012		.380	.170	ug/L
Dichloromethane	MW-3	11/06/2013		.352	.170	ug/L
Dichloromethane	MW-3	11/30/2016		.803	.170	ug/L
Toluene	MW-3	11/06/2014		.58	.15	ug/L
Toluene	MW-3	11/20/2023		1.20	.43	ug/L
1,1-dichloroethane	MW-31A	11/05/2019		1.26	.22	ug/L
1,1-dichloroethane	MW-31A	8/26/2020		1.40	.22	ug/L
1,1-dichloroethane	MW-31A	6/20/2023		1.23	.22	ug/L
Acetone	MW-31A	6/18/2020		11.8	3.1	ug/L
Endosulfan i	MW-31A	11/18/2020		.05310	.00244	ug/L
Endosulfan i	MW-31A	9/29/2021		.05800	.01200	ug/L
Acetone	MW-33A	6/12/2024		37.7	3.1	ug/L
Benzene	MW-33A	11/03/2020		.614	.220	ug/L
Benzene	MW-33A	12/05/2024		2.450	.220	ug/L
Chlorobenzene	MW-33A	11/03/2020		1.27	.40	ug/L
Chlorobenzene	MW-33A	12/05/2024		2.37	.40	ug/L
Chloroethane	MW-34A	2/17/2020		4.44	.79	ug/L
Acetone	MW-37A	6/12/2024		18.1	3.1	ug/L
Benzene	MW-37A	12/03/2024		6.01	.22	ug/L
1,1,1-trichloroethane	MW-4	9/05/1990		1.0	1.0	ug/L
1,1,1-trichloroethane	MW-4	11/19/1990		4.8	1.0	ug/L
1,1,1-trichloroethane	MW-4	6/18/1991		4.0	1.0	ug/L
1,1,1-trichloroethane	MW-4	10/03/1991		7.1	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/22/1992		5.5	1.0	ug/L
1,1,1-trichloroethane	MW-4	4/27/1992		5.6	1.0	ug/L
1,1,1-trichloroethane	MW-4	10/16/1992		3.2	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/05/1993		13.7	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
1,1,1-trichloroethane	MW-4	4/21/1994		1.8	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/25/1995		1.1	1.0	ug/L
1,1,1-trichloroethane	MW-4	10/27/1995		1.5	1.0	ug/L
1,1,1-trichloroethane	MW-4	1/01/1996		1.2	1.0	ug/L
1,1-dichloroethane	MW-4	10/13/2007		2.940	1.000	ug/L
1,1-dichloroethane	MW-4	1/09/2008		2.240	1.000	ug/L
1,1-dichloroethane	MW-4	4/08/2008		1.500	1.000	ug/L
1,1-dichloroethane	MW-4	7/16/2008		1.180	1.000	ug/L
1,1-dichloroethane	MW-4	2/25/2010		1.670	1.000	ug/L
1,1-dichloroethane	MW-4	4/21/2010		1.010	1.000	ug/L
1,1-dichloroethane	MW-4	10/18/2011		.580	.210	ug/L
1,1-dichloroethane	MW-4	4/24/2012		.560	.210	ug/L
1,1-dichloroethane	MW-4	10/24/2012		.340	.210	ug/L
1,1-dichloroethane	MW-4	4/08/2013		.812	.210	ug/L
1,1-dichloroethane	MW-4	3/31/2016		.320	.210	ug/L
1,1-dichloroethylene	MW-4	9/05/1990		1.0	1.0	ug/L
1,1-dichloroethylene	MW-4	10/03/1991		1.2	1.0	ug/L
1,1-dichloroethylene	MW-4	4/27/1992		1.3	1.0	ug/L
1,1-dichloroethylene	MW-4	10/16/1992		1.2	1.0	ug/L
1,1-dichloroethylene	MW-4	10/05/1993		51.2	1.0	ug/L
1,1-dichloroethylene	MW-4	4/21/1994		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-4	4/08/2013		.38	.14	ug/L
1,2-dichloroethane	MW-4	9/05/1990		1.000	1.000	ug/L
1,2-dichloroethane	MW-4	11/19/1990		1.500	1.000	ug/L
1,2-dichloroethane	MW-4	4/25/1991		1.700	1.000	ug/L
1,2-dichloroethane	MW-4	4/27/1992		1.500	1.000	ug/L
1,2-dichloroethane	MW-4	10/16/1992		4.500	1.000	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
1,2-dichloroethane	MW-4	4/21/1994		3.000	1.000	ug/L
1,2-dichloroethane	MW-4	1/25/1995		2.200	1.000	ug/L
1,2-dichloroethane	MW-4	4/24/1995		2.200	1.000	ug/L
1,2-dichloroethane	MW-4	10/27/1995		3.900	1.000	ug/L
1,2-dichloroethane	MW-4	1/01/1996		3.100	1.000	ug/L
1,2-dichloroethane	MW-4	4/01/1996		3.100	1.000	ug/L
1,2-dichloroethane	MW-4	7/01/1996		2.200	.400	ug/L
1,2-dichloroethane	MW-4	10/01/1996		3.200	.400	ug/L
1,2-dichloroethane	MW-4	1/16/1997		3.000	.400	ug/L
1,2-dichloroethane	MW-4	2/01/1997		3.000	.400	ug/L
1,2-dichloroethane	MW-4	4/01/1997		3.000	.400	ug/L
1,2-dichloroethane	MW-4	7/01/1997		3.200	.800	ug/L
1,2-dichloroethane	MW-4	10/27/1997		3.300	.400	ug/L
1,2-dichloroethane	MW-4	1/01/1998		3.400	.400	ug/L
1,2-dichloroethane	MW-4	4/01/1998		32.600	.400	ug/L
1,2-dichloroethane	MW-4	2/18/1999		2.200	.800	ug/L
1,2-dichloroethane	MW-4	5/25/1999		2.100	.400	ug/L
1,2-dichloroethane	MW-4	10/21/1999		1.600	.400	ug/L
1,2-dichloroethane	MW-4	4/27/2000		1.100	.400	ug/L
1,2-dichloroethane	MW-4	10/27/2000		1.300	.400	ug/L
1,2-dichloroethane	MW-4	4/25/2001		1.400	.400	ug/L
1,2-dichloroethane	MW-4	11/09/2001		.800	.400	ug/L
1,2-dichloroethane	MW-4	10/18/2002		1.000	.400	ug/L
1,2-dichloroethane	MW-4	5/19/2004		.900	.400	ug/L
1,2-dichloroethane	MW-4	4/14/2005		.510	.400	ug/L
1,2-dichloroethane	MW-4	4/08/2013		.208	.180	ug/L
1,2-dichloropropane	MW-4	10/13/2007		1.21	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
1,4-dichlorobenzene	MW-4	9/05/1990		1.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/25/1991		1.10	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/03/1991		2.00	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/22/1992		2.60	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/21/1994		3.10	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/25/1995		3.30	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/24/1995		2.70	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/27/1995		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/01/1996		3.00	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/01/1996		4.80	1.00	ug/L
1,4-dichlorobenzene	MW-4	7/01/1996		2.80	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/01/1996		7.30	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/16/1997		4.90	1.00	ug/L
1,4-dichlorobenzene	MW-4	2/01/1997		5.00	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/01/1997		5.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/27/1997		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/01/1998		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/01/1998		4.90	1.00	ug/L
1,4-dichlorobenzene	MW-4	7/01/1998		4.70	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/01/1998		2.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	5/25/1999		3.40	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/21/1999		2.90	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/27/2000		2.40	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/27/2000		3.20	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/25/2001		2.70	1.00	ug/L
1,4-dichlorobenzene	MW-4	11/09/2001		3.10	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/23/2003		4.40	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
1,4-dichlorobenzene	MW-4	5/19/2004		3.44	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/14/2005		4.19	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/14/2005		4.50	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/11/2006		1.43	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/10/2006		4.49	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/30/2007		4.07	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/13/2007		3.41	1.00	ug/L
1,4-dichlorobenzene	MW-4	1/09/2008		2.66	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/08/2008		4.37	1.00	ug/L
1,4-dichlorobenzene	MW-4	7/16/2008		2.14	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/23/2008		2.54	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/09/2009		2.93	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/05/2009		3.35	1.00	ug/L
1,4-dichlorobenzene	MW-4	2/25/2010		4.88	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/21/2010		3.12	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/14/2010		3.77	1.00	ug/L
1,4-dichlorobenzene	MW-4	4/13/2011		3.68	1.00	ug/L
1,4-dichlorobenzene	MW-4	10/18/2011		3.83	.20	ug/L
1,4-dichlorobenzene	MW-4	4/24/2012		4.33	.20	ug/L
1,4-dichlorobenzene	MW-4	10/24/2012		2.62	.20	ug/L
1,4-dichlorobenzene	MW-4	4/08/2013		4.84	.20	ug/L
1,4-dichlorobenzene	MW-4	11/05/2013		1.72	.20	ug/L
1,4-dichlorobenzene	MW-4	11/16/2017		.55	.20	ug/L
2-butanone	MW-4	4/08/2013		.816	.470	ug/L
Benzene	MW-4	9/05/1990		7.600	1.000	ug/L
Benzene	MW-4	11/19/1990		2.800	1.000	ug/L
Benzene	MW-4	4/25/1991		9.200	1.000	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
Benzene	MW-4	6/18/1991		5.900	1.000	ug/L
Benzene	MW-4	10/03/1991		3.100	1.000	ug/L
Benzene	MW-4	1/22/1992		5.700	1.000	ug/L
Benzene	MW-4	4/27/1992		7.200	1.000	ug/L
Benzene	MW-4	10/16/1992		16.800	1.000	ug/L
Benzene	MW-4	2/01/1994		10.500	1.000	ug/L
Benzene	MW-4	4/21/1994		11.500	1.000	ug/L
Benzene	MW-4	7/12/1994		4.300	1.000	ug/L
Benzene	MW-4	10/10/1994		9.600	1.000	ug/L
Benzene	MW-4	1/25/1995		10.200	1.000	ug/L
Benzene	MW-4	4/24/1995		8.800	1.000	ug/L
Benzene	MW-4	7/27/1995		11.600	1.000	ug/L
Benzene	MW-4	10/27/1995		13.300	1.000	ug/L
Benzene	MW-4	1/01/1996		10.900	1.000	ug/L
Benzene	MW-4	4/01/1996		12.900	1.000	ug/L
Benzene	MW-4	7/01/1996		9.100	1.000	ug/L
Benzene	MW-4	10/01/1996		16.000	1.000	ug/L
Benzene	MW-4	1/16/1997		10.900	.500	ug/L
Benzene	MW-4	2/01/1997		12.100	.500	ug/L
Benzene	MW-4	4/01/1997		11.400	.500	ug/L
Benzene	MW-4	7/01/1997		9.600	.500	ug/L
Benzene	MW-4	10/27/1997		10.900	.500	ug/L
Benzene	MW-4	1/01/1998		9.800	.500	ug/L
Benzene	MW-4	4/01/1998		8.900	.500	ug/L
Benzene	MW-4	7/01/1998		7.400	.500	ug/L
Benzene	MW-4	10/01/1998		4.500	.500	ug/L
Benzene	MW-4	2/18/1999		4.500	.500	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
Benzene	MW-4	5/25/1999		4.500	.500	ug/L
Benzene	MW-4	10/21/1999		3.300	.500	ug/L
Benzene	MW-4	4/27/2000		2.800	.500	ug/L
Benzene	MW-4	10/27/2000		2.800	.500	ug/L
Benzene	MW-4	4/25/2001		1.400	.500	ug/L
Benzene	MW-4	11/09/2001		2.400	.500	ug/L
Benzene	MW-4	5/15/2002		2.000	.500	ug/L
Benzene	MW-4	10/18/2002		1.500	.500	ug/L
Benzene	MW-4	4/23/2003		3.000	.500	ug/L
Benzene	MW-4	10/22/2003		3.540	.500	ug/L
Benzene	MW-4	5/19/2004		3.500	.500	ug/L
Benzene	MW-4	4/14/2005		2.460	.500	ug/L
Benzene	MW-4	10/14/2005		2.870	.500	ug/L
Benzene	MW-4	4/11/2006		.870	.500	ug/L
Benzene	MW-4	10/10/2006		3.630	.500	ug/L
Benzene	MW-4	4/30/2007		2.820	.500	ug/L
Benzene	MW-4	10/13/2007		2.290	.500	ug/L
Benzene	MW-4	1/09/2008		1.450	.500	ug/L
Benzene	MW-4	4/08/2008		1.630	.500	ug/L
Benzene	MW-4	7/16/2008		.580	.500	ug/L
Benzene	MW-4	10/23/2008		.610	.500	ug/L
Benzene	MW-4	4/09/2009		.650	.500	ug/L
Benzene	MW-4	10/05/2009		.920	.500	ug/L
Benzene	MW-4	2/25/2010		2.010	.500	ug/L
Benzene	MW-4	4/21/2010		1.070	.500	ug/L
Benzene	MW-4	10/14/2010		1.700	.500	ug/L
Benzene	MW-4	4/13/2011		1.300	.500	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
Benzene	MW-4	10/18/2011		.950	.110	ug/L
Benzene	MW-4	4/24/2012		1.080	.110	ug/L
Benzene	MW-4	10/24/2012		.480	.110	ug/L
Benzene	MW-4	4/08/2013		1.480	.110	ug/L
Benzene	MW-4	11/05/2013		.459	.110	ug/L
Benzene	MW-4	5/02/2014		.480	.110	ug/L
Benzene	MW-4	3/31/2016		.269	.110	ug/L
Benzene	MW-4	11/28/2016		.138	.110	ug/L
Benzene	MW-4	11/16/2017		.156	.110	ug/L
Carbon tetrachloride	MW-4	9/05/1990		1.0	.5	ug/L
Carbon tetrachloride	MW-4	4/27/1992		1.0	1.0	ug/L
Carbon tetrachloride	MW-4	10/16/1992		1.0	1.0	ug/L
Carbon tetrachloride	MW-4	4/21/1994		1.0	1.0	ug/L
Chlorobenzene	MW-4	10/13/2007		3.430	1.000	ug/L
Chlorobenzene	MW-4	1/09/2008		1.950	1.000	ug/L
Chlorobenzene	MW-4	4/08/2008		2.930	1.000	ug/L
Chlorobenzene	MW-4	7/16/2008		1.040	1.000	ug/L
Chlorobenzene	MW-4	10/23/2008		1.030	1.000	ug/L
Chlorobenzene	MW-4	4/09/2009		1.210	1.000	ug/L
Chlorobenzene	MW-4	10/05/2009		2.010	1.000	ug/L
Chlorobenzene	MW-4	2/25/2010		3.950	1.000	ug/L
Chlorobenzene	MW-4	4/21/2010		1.980	1.000	ug/L
Chlorobenzene	MW-4	10/14/2010		2.190	1.000	ug/L
Chlorobenzene	MW-4	4/13/2011		2.050	1.000	ug/L
Chlorobenzene	MW-4	10/18/2011		1.620	.190	ug/L
Chlorobenzene	MW-4	4/24/2012		2.200	.190	ug/L
Chlorobenzene	MW-4	10/24/2012		1.080	.190	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-4	4/08/2013		2.460	.190	ug/L
Chlorobenzene	MW-4	11/04/2014		.236	.190	ug/L
Chlorobenzene	MW-4	11/16/2017		.205	.190	ug/L
Chloroethane	MW-4	10/18/2011		.82	.15	ug/L
Chloroethane	MW-4	4/24/2012		.53	.15	ug/L
Chloroethane	MW-4	4/08/2013		1.01	.15	ug/L
Cis-1,2-dichloroethylene	MW-4	10/18/2011		.370	.130	ug/L
Cis-1,2-dichloroethylene	MW-4	4/24/2012		.190	.130	ug/L
Cis-1,2-dichloroethylene	MW-4	10/24/2012		.210	.130	ug/L
Cis-1,2-dichloroethylene	MW-4	4/08/2013		.302	.130	ug/L
Dichloromethane	MW-4	11/28/2016		.355	.170	ug/L
Dichloromethane	MW-4	11/16/2017		.226	.170	ug/L
Diethyl phthalate	MW-4	5/02/2014		.504	.280	ug/L
Diethyl phthalate	MW-4	6/26/2014		.735	.277	ug/L
Di-n-octyl phthalate	MW-4	11/28/2016		1.380	.253	ug/L
Endosulfan sulfate	MW-4	11/16/2017		.00282	.00272	ug/L
Endrin aldehyde	MW-4	11/16/2017		.00884	.00793	ug/L
Tetrachloroethylene	MW-4	1/09/2008		1.160	1.000	ug/L
Tetrachloroethylene	MW-4	10/18/2011		.390	.180	ug/L
Tetrachloroethylene	MW-4	4/24/2012		.360	.180	ug/L
Tetrachloroethylene	MW-4	10/24/2012		.250	.180	ug/L
Tetrachloroethylene	MW-4	4/08/2013		.265	.180	ug/L
Tetrachloroethylene	MW-4	11/05/2013		.766	.180	ug/L
Tetrachloroethylene	MW-4	5/02/2014		.531	.180	ug/L
Tetrachloroethylene	MW-4	11/04/2014		.507	.180	ug/L
Tetrachloroethylene	MW-4	5/06/2015		.648	.180	ug/L
Tetrachloroethylene	MW-4	9/18/2015		.453	.180	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
Tetrachloroethylene	MW-4	3/31/2016		.532	.180	ug/L
Tetrachloroethylene	MW-4	11/28/2016		.598	.180	ug/L
Tetrachloroethylene	MW-4	11/16/2017		.491	.180	ug/L
Toluene	MW-4	4/08/2013		.319	.150	ug/L
Toluene	MW-4	11/13/2023		2.090	.430	ug/L
Trans-1,2-dichloroethylene	MW-4	4/08/2013		.23	.21	ug/L
Trichloroethylene	MW-4	9/05/1990		3.60	1.00	ug/L
Trichloroethylene	MW-4	11/19/1990		5.70	1.00	ug/L
Trichloroethylene	MW-4	4/25/1991		2.60	1.00	ug/L
Trichloroethylene	MW-4	6/18/1991		4.30	1.00	ug/L
Trichloroethylene	MW-4	10/03/1991		20.30	1.00	ug/L
Trichloroethylene	MW-4	1/22/1992		26.40	1.00	ug/L
Trichloroethylene	MW-4	4/27/1992		28.90	1.00	ug/L
Trichloroethylene	MW-4	7/15/1992		26.90	1.00	ug/L
Trichloroethylene	MW-4	10/16/1992		30.50	1.00	ug/L
Trichloroethylene	MW-4	1/05/1993		26.80	1.00	ug/L
Trichloroethylene	MW-4	5/10/1993		29.60	1.00	ug/L
Trichloroethylene	MW-4	10/05/1993		12.90	1.00	ug/L
Trichloroethylene	MW-4	2/01/1994		11.30	1.00	ug/L
Trichloroethylene	MW-4	4/21/1994		11.90	1.00	ug/L
Trichloroethylene	MW-4	7/12/1994		8.00	1.00	ug/L
Trichloroethylene	MW-4	10/10/1994		9.40	1.00	ug/L
Trichloroethylene	MW-4	1/25/1995		7.80	1.00	ug/L
Trichloroethylene	MW-4	4/24/1995		6.90	1.00	ug/L
Trichloroethylene	MW-4	7/27/1995		8.50	5.00	ug/L
Trichloroethylene	MW-4	10/27/1995		11.90	1.00	ug/L
Trichloroethylene	MW-4	1/01/1996		9.10	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
Trichloroethylene	MW-4	4/01/1996		9.40	1.00	ug/L
Trichloroethylene	MW-4	7/01/1996		5.60	1.00	ug/L
Trichloroethylene	MW-4	10/01/1996		7.10	1.00	ug/L
Trichloroethylene	MW-4	1/16/1997		7.90	1.00	ug/L
Trichloroethylene	MW-4	2/01/1997		6.60	1.00	ug/L
Trichloroethylene	MW-4	4/01/1997		6.90	1.00	ug/L
Trichloroethylene	MW-4	7/01/1997		7.20	1.00	ug/L
Trichloroethylene	MW-4	10/27/1997		9.30	1.00	ug/L
Trichloroethylene	MW-4	1/01/1998		8.00	1.00	ug/L
Trichloroethylene	MW-4	4/01/1998		5.00	1.00	ug/L
Trichloroethylene	MW-4	7/01/1998		9.60	1.00	ug/L
Trichloroethylene	MW-4	10/01/1998		6.60	1.00	ug/L
Trichloroethylene	MW-4	2/18/1999		5.90	1.00	ug/L
Trichloroethylene	MW-4	5/25/1999		5.10	1.00	ug/L
Trichloroethylene	MW-4	10/21/1999		4.80	1.00	ug/L
Trichloroethylene	MW-4	4/27/2000		2.10	1.00	ug/L
Trichloroethylene	MW-4	10/27/2000		4.00	1.00	ug/L
Trichloroethylene	MW-4	4/25/2001		4.00	1.00	ug/L
Trichloroethylene	MW-4	11/09/2001		3.00	1.00	ug/L
Trichloroethylene	MW-4	10/18/2002		3.00	1.00	ug/L
Trichloroethylene	MW-4	4/23/2003		1.30	1.00	ug/L
Trichloroethylene	MW-4	4/11/2006		1.16	1.00	ug/L
Vinyl chloride	MW-4	1/01/1996		12.200	.300	ug/L
Vinyl chloride	MW-4	4/01/1996		10.200	2.000	ug/L
Vinyl chloride	MW-4	7/01/1996		9.000	.300	ug/L
Vinyl chloride	MW-4	10/01/1996		13.000	2.000	ug/L
Vinyl chloride	MW-4	1/16/1997		10.800	1.000	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
Vinyl chloride	MW-4	2/01/1997		9.000	1.000	ug/L
Vinyl chloride	MW-4	4/01/1997		9.400	1.000	ug/L
Vinyl chloride	MW-4	7/01/1997		8.200	.300	ug/L
Vinyl chloride	MW-4	10/27/1997		14.500	.300	ug/L
Vinyl chloride	MW-4	1/01/1998		12.400	.300	ug/L
Vinyl chloride	MW-4	4/01/1998		9.300	.300	ug/L
Vinyl chloride	MW-4	7/01/1998		11.300	.300	ug/L
Vinyl chloride	MW-4	2/18/1999		5.900	.300	ug/L
Vinyl chloride	MW-4	5/25/1999		8.400	.300	ug/L
Vinyl chloride	MW-4	10/21/1999		5.200	.300	ug/L
Vinyl chloride	MW-4	4/27/2000		3.500	.300	ug/L
Vinyl chloride	MW-4	10/27/2000		3.800	.300	ug/L
Vinyl chloride	MW-4	4/25/2001		3.400	.300	ug/L
Vinyl chloride	MW-4	11/09/2001		2.600	.300	ug/L
Vinyl chloride	MW-4	4/23/2003		2.040	.470	ug/L
Vinyl chloride	MW-4	5/19/2004		1.340	.470	ug/L
Vinyl chloride	MW-4	4/14/2005		1.100	.470	ug/L
Vinyl chloride	MW-4	10/14/2005		1.110	.470	ug/L
Vinyl chloride	MW-4	4/30/2007		1.290	1.000	ug/L
Vinyl chloride	MW-4	10/18/2011		.320	.100	ug/L
Vinyl chloride	MW-4	4/24/2012		.260	.100	ug/L
Vinyl chloride	MW-4	10/24/2012		.170	.100	ug/L
Vinyl chloride	MW-4	4/08/2013		.524	.100	ug/L
Benzene	MW-40A	9/23/2021		.543	.220	ug/L
Benzene	MW-40A	12/14/2021		.768	.220	ug/L
Benzene	MW-40A	12/06/2022		.994	.220	ug/L
Benzene	MW-40A	11/06/2023		.521	.220	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
Benzene	MW-42A	12/06/2022		.539	.220	ug/L
1,1,1-trichloroethane	MW-4B	4/01/1992		7.4	1.0	ug/L
1,1,1-trichloroethane	MW-4B	7/16/1992		4.1	1.0	ug/L
1,1,1-trichloroethane	MW-4B	10/16/1992		3.1	1.0	ug/L
1,1,1-trichloroethane	MW-4B	1/05/1993		3.9	1.0	ug/L
1,1,1-trichloroethane	MW-4B	5/10/1993		3.6	1.0	ug/L
1,1,1-trichloroethane	MW-4B	7/14/1993		5.7	1.0	ug/L
1,1,1-trichloroethane	MW-4B	10/05/1993		4.5	1.0	ug/L
1,1,1-trichloroethane	MW-4B	4/21/1994		3.7	1.0	ug/L
1,1,1-trichloroethane	MW-4B	7/12/1994		2.4	1.0	ug/L
1,1-dichloroethane	MW-4B	4/09/2009		1.28	1.00	ug/L
1,1-dichloroethane	MW-4B	10/05/2009		1.81	1.00	ug/L
1,1-dichloroethane	MW-4B	10/18/2011		1.87	.21	ug/L
1,1-dichloroethane	MW-4B	4/24/2012		1.97	.21	ug/L
1,1-dichloroethane	MW-4B	10/24/2012		1.94	.21	ug/L
1,1-dichloroethane	MW-4B	4/08/2013		2.28	.21	ug/L
1,1-dichloroethane	MW-4B	5/02/2014		1.52	.21	ug/L
1,1-dichloroethane	MW-4B	3/31/2016		.58	.21	ug/L
1,1-dichloroethylene	MW-4B	7/14/1993		20.1	1.0	ug/L
1,1-dichloroethylene	MW-4B	4/21/1994		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-4B	4/08/2013		.292	.140	ug/L
1,2-dichloroethane	MW-4B	7/16/1992		2.100	1.000	ug/L
1,2-dichloroethane	MW-4B	4/21/1994		1.000	1.000	ug/L
1,2-dichloroethane	MW-4B	10/27/1995		2.900	1.000	ug/L
1,2-dichloroethane	MW-4B	4/01/1996		1.600	1.000	ug/L
1,2-dichloroethane	MW-4B	10/01/1996		1.400	.400	ug/L
1,2-dichloroethane	MW-4B	1/16/1997		1.300	.400	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
1,2-dichloroethane	MW-4B	2/01/1997		1.000	.400	ug/L
1,2-dichloroethane	MW-4B	10/27/1997		.840	.400	ug/L
1,2-dichloroethane	MW-4B	1/01/1998		.790	.400	ug/L
1,2-dichloroethane	MW-4B	4/01/1998		9.900	.400	ug/L
1,2-dichloroethane	MW-4B	5/25/1999		.410	.400	ug/L
1,2-dichloroethane	MW-4B	10/21/1999		.460	.400	ug/L
1,2-dichloroethane	MW-4B	4/27/2000		.780	.400	ug/L
1,2-dichloroethane	MW-4B	10/23/2003		.970	.400	ug/L
1,2-dichloroethane	MW-4B	5/19/2004		.410	.400	ug/L
1,2-dichloroethane	MW-4B	4/24/2012		.180	.180	ug/L
1,2-dichloroethane	MW-4B	4/08/2013		.204	.180	ug/L
1,4-dichlorobenzene	MW-4B	4/21/1994		1.00	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/27/1995		2.10	1.00	ug/L
1,4-dichlorobenzene	MW-4B	4/01/1996		1.10	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/01/1996		2.60	1.00	ug/L
1,4-dichlorobenzene	MW-4B	1/16/1997		1.50	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/27/1997		1.10	1.00	ug/L
1,4-dichlorobenzene	MW-4B	4/27/2000		1.20	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/23/2003		2.85	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/01/2005		1.30	1.00	ug/L
1,4-dichlorobenzene	MW-4B	4/09/2009		1.17	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/05/2009		1.57	1.00	ug/L
1,4-dichlorobenzene	MW-4B	10/18/2011		2.31	.20	ug/L
1,4-dichlorobenzene	MW-4B	4/24/2012		2.55	.20	ug/L
1,4-dichlorobenzene	MW-4B	10/24/2012		3.78	.20	ug/L
1,4-dichlorobenzene	MW-4B	4/08/2013		3.36	.20	ug/L
2,4-dinitrophenol	MW-4B	11/21/2017		2.34	1.46	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
2-butanone	MW-4B	4/24/2012		.540	.470	ug/L
2-butanone	MW-4B	4/08/2013		.635	.470	ug/L
Acetone	MW-4B	4/24/2012		2.04	1.79	ug/L
Acetone	MW-4B	10/24/2012		2.04	1.79	ug/L
Benzene	MW-4B	4/01/1992		5.700	1.000	ug/L
Benzene	MW-4B	7/16/1992		12.800	1.000	ug/L
Benzene	MW-4B	10/16/1992		15.000	1.000	ug/L
Benzene	MW-4B	1/05/1993		12.900	10.000	ug/L
Benzene	MW-4B	5/10/1993		6.800	1.000	ug/L
Benzene	MW-4B	7/14/1993		2.600	1.000	ug/L
Benzene	MW-4B	2/01/1994		6.200	1.000	ug/L
Benzene	MW-4B	4/21/1994		3.700	1.000	ug/L
Benzene	MW-4B	7/12/1994		12.200	1.000	ug/L
Benzene	MW-4B	10/10/1994		13.300	1.000	ug/L
Benzene	MW-4B	4/24/1995		16.700	1.000	ug/L
Benzene	MW-4B	7/27/1995		12.200	1.000	ug/L
Benzene	MW-4B	10/27/1995		13.700	1.000	ug/L
Benzene	MW-4B	1/01/1996		10.700	1.000	ug/L
Benzene	MW-4B	4/01/1996		7.400	1.000	ug/L
Benzene	MW-4B	10/01/1996		10.000	1.000	ug/L
Benzene	MW-4B	1/16/1997		7.500	.500	ug/L
Benzene	MW-4B	2/01/1997		6.200	.500	ug/L
Benzene	MW-4B	4/01/1997		1.600	.500	ug/L
Benzene	MW-4B	7/01/1997		6.400	.500	ug/L
Benzene	MW-4B	10/27/1997		5.700	.500	ug/L
Benzene	MW-4B	1/01/1998		5.100	.500	ug/L
Benzene	MW-4B	4/01/1998		1.300	.500	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
Benzene	MW-4B	7/01/1998		.680	.500	ug/L
Benzene	MW-4B	10/01/1998		4.800	.500	ug/L
Benzene	MW-4B	2/18/1999		5.100	.500	ug/L
Benzene	MW-4B	5/25/1999		2.000	.500	ug/L
Benzene	MW-4B	10/21/1999		3.000	.500	ug/L
Benzene	MW-4B	4/27/2000		4.500	.500	ug/L
Benzene	MW-4B	10/27/2000		2.200	.500	ug/L
Benzene	MW-4B	10/22/2002		.600	.500	ug/L
Benzene	MW-4B	4/23/2003		1.700	.500	ug/L
Benzene	MW-4B	10/23/2003		4.610	.500	ug/L
Benzene	MW-4B	5/19/2004		1.350	.500	ug/L
Benzene	MW-4B	10/04/2004		.710	.500	ug/L
Benzene	MW-4B	4/01/2005		1.170	.500	ug/L
Benzene	MW-4B	10/01/2005		2.130	.500	ug/L
Benzene	MW-4B	10/10/2006		.630	.500	ug/L
Benzene	MW-4B	10/23/2008		.500	.500	ug/L
Benzene	MW-4B	10/05/2009		1.040	.500	ug/L
Benzene	MW-4B	2/25/2010		.560	.500	ug/L
Benzene	MW-4B	10/18/2011		.890	.110	ug/L
Benzene	MW-4B	4/24/2012		.980	.110	ug/L
Benzene	MW-4B	10/24/2012		1.250	.110	ug/L
Benzene	MW-4B	4/08/2013		1.150	.110	ug/L
Benzene	MW-4B	11/05/2013		.313	.110	ug/L
Benzene	MW-4B	5/02/2014		.724	.110	ug/L
Benzene	MW-4B	5/06/2015		.481	.110	ug/L
Benzene	MW-4B	3/31/2016		.496	.110	ug/L
Benzo (a) pyrene	MW-4B	10/31/2014		.535	.278	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
Benzo (b) fluoranthene	MW-4B	10/31/2014		.514	.344	ug/L
Benzo (g,h,i) perylene	MW-4B	10/31/2014		.394	.256	ug/L
Benzo (k) fluoranthene	MW-4B	10/31/2014		.723	.222	ug/L
Bromomethane	MW-4B	11/21/2017		.549	.220	ug/L
Butyl benzyl phthalate	MW-4B	10/31/2014		.466	.378	ug/L
Carbon tetrachloride	MW-4B	4/21/1994		1	1	ug/L
Chlorobenzene	MW-4B	4/09/2009		1.060	1.000	ug/L
Chlorobenzene	MW-4B	10/05/2009		1.910	1.000	ug/L
Chlorobenzene	MW-4B	10/18/2011		2.510	.190	ug/L
Chlorobenzene	MW-4B	4/24/2012		2.870	.190	ug/L
Chlorobenzene	MW-4B	10/24/2012		3.660	.190	ug/L
Chlorobenzene	MW-4B	4/08/2013		3.200	.190	ug/L
Chlorobenzene	MW-4B	5/06/2015		1.290	.190	ug/L
Chlorobenzene	MW-4B	11/21/2017		.254	.190	ug/L
Chloroethane	MW-4B	10/18/2011		.450	.150	ug/L
Chloroethane	MW-4B	4/24/2012		.400	.150	ug/L
Chloroethane	MW-4B	4/08/2013		.487	.150	ug/L
Dibenzo (a,h) anthracene	MW-4B	10/31/2014		.364	.278	ug/L
Dichloromethane	MW-4B	10/24/2012		.280	.170	ug/L
Dichloromethane	MW-4B	4/08/2013		.171	.170	ug/L
Dichloromethane	MW-4B	5/02/2014		.380	.170	ug/L
Dichloromethane	MW-4B	10/31/2014		1.600	.170	ug/L
Dichloromethane	MW-4B	11/29/2016		.197	.170	ug/L
Di-n-octyl phthalate	MW-4B	10/31/2014		1.360	.256	ug/L
Di-n-octyl phthalate	MW-4B	11/29/2016		1.430	.253	ug/L
Endosulfan i	MW-4B	9/15/2015		.00257	.00222	ug/L
Endosulfan i	MW-4B	12/09/2015		.01490	.00227	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
Indeno (1,2,3-cd) pyrene	MW-4B	10/31/2014		.403	.267	ug/L
Pentachlorophenol	MW-4B	11/21/2017		1.700	.261	ug/L
Tetrachloroethylene	MW-4B	10/18/2011		.29	.18	ug/L
Toluene	MW-4B	4/24/2012		.210	.150	ug/L
Toluene	MW-4B	4/08/2013		.394	.150	ug/L
Trichloroethylene	MW-4B	4/01/1992		18.6	1.0	ug/L
Trichloroethylene	MW-4B	7/16/1992		24.4	1.0	ug/L
Trichloroethylene	MW-4B	10/16/1992		26.5	1.0	ug/L
Trichloroethylene	MW-4B	1/05/1993		26.2	1.0	ug/L
Trichloroethylene	MW-4B	5/10/1993		20.3	1.0	ug/L
Trichloroethylene	MW-4B	7/14/1993		7.0	1.0	ug/L
Trichloroethylene	MW-4B	10/05/1993		2.3	1.0	ug/L
Trichloroethylene	MW-4B	2/01/1994		9.4	1.0	ug/L
Trichloroethylene	MW-4B	4/21/1994		8.6	1.0	ug/L
Trichloroethylene	MW-4B	7/12/1994		15.3	1.0	ug/L
Trichloroethylene	MW-4B	10/10/1994		13.2	1.0	ug/L
Trichloroethylene	MW-4B	10/27/1995		2.0	1.0	ug/L
Trichloroethylene	MW-4B	4/01/1996		2.0	1.0	ug/L
Trichloroethylene	MW-4B	1/16/1997		2.0	1.0	ug/L
Trichloroethylene	MW-4B	2/01/1997		1.5	1.0	ug/L
Trichloroethylene	MW-4B	4/01/1997		2.1	1.0	ug/L
Trichloroethylene	MW-4B	10/27/1997		1.4	1.0	ug/L
Trichloroethylene	MW-4B	1/01/1998		1.2	1.0	ug/L
Trichloroethylene	MW-4B	4/01/1998		1.4	1.0	ug/L
Trichloroethylene	MW-4B	7/01/1998		1.7	1.0	ug/L
Trichloroethylene	MW-4B	5/25/1999		1.2	1.0	ug/L
Vinyl chloride	MW-4B	4/01/1996		1.900	2.000	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
Vinyl chloride	MW-4B	1/16/1997		1.500	1.000	ug/L
Vinyl chloride	MW-4B	2/01/1997		1.400	1.000	ug/L
Vinyl chloride	MW-4B	7/01/1997		.840	.300	ug/L
Vinyl chloride	MW-4B	10/27/1997		1.100	.300	ug/L
Vinyl chloride	MW-4B	1/01/1998		.980	.300	ug/L
Vinyl chloride	MW-4B	4/01/1998		.480	.300	ug/L
Vinyl chloride	MW-4B	10/01/1998		.440	.300	ug/L
Vinyl chloride	MW-4B	5/25/1999		.930	.300	ug/L
Vinyl chloride	MW-4B	10/21/1999		.450	.300	ug/L
Vinyl chloride	MW-4B	10/23/2003		.550	.470	ug/L
Vinyl chloride	MW-4B	10/18/2011		.170	.100	ug/L
Vinyl chloride	MW-4B	4/24/2012		.270	.100	ug/L
Vinyl chloride	MW-4B	10/24/2012		.280	.100	ug/L
Vinyl chloride	MW-4B	4/08/2013		.284	.100	ug/L
1,2-dichlorobenzene	MW-7A	4/08/2013		.15	.14	ug/L
1,4-dichlorobenzene	MW-7A	4/08/2013		.236	.200	ug/L
2-butanone	MW-7A	4/24/2012		1.27	.47	ug/L
Acetone	MW-7A	4/04/2016		2.04	1.79	ug/L
Acetone	MW-7A	11/01/2017		2.20	1.79	ug/L
Carbon disulfide	MW-7A	10/24/2012		.150	.150	ug/L
Carbon disulfide	MW-7A	10/31/2014		.642	.150	ug/L
Chloroethane	MW-7A	10/18/2011		.21	.15	ug/L
Dichloromethane	MW-7A	10/24/2012		.250	.170	ug/L
Dichloromethane	MW-7A	11/16/2016		.301	.170	ug/L
Dichloromethane	MW-7A	11/01/2017		.780	.170	ug/L
Toluene	MW-7A	11/13/2023		2.00	.43	ug/L

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

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Table 9

Analytical Data Summary for MW-11

Constituents	Units	10/28/2018 10/31/2018	12/17/2018	5/17/2021 6/8/2021	8/2/2021 8/3/2021	8/16/2022 9/13/2022	6/6/2023 6/27/2023	6/11/2024 7/3/2024
Antimony	ug/L	<.420 .778J		<1.100		<.690	<1.000	<1.000
Arsenic	ug/L	<.57		<.75		<.75	<.53	<.53
Barium	ug/L	16.9		18.7		17.7	15.4	14.3
Beryllium	ug/L	<.19		<.27		<.27	<.33	<.33
Cadmium	ug/L	<.060		<.051		<.055 .056J	<.100	<.100
Chromium	ug/L	<.760 .795J		<1.100		<1.100	<1.100	<1.200
Cobalt	ug/L	7.890	2.570	<.091 .285J		<.190 .244J	<.170	<.170
Copper	ug/L	<1.6		<1.4		<1.8	<1.8	<1.8
Lead	ug/L	<.25		<.21		<.24	<.24	<.26
Mercury	ug/L						<.14	<.11
Nickel	ug/L	43.3	35.1	34.1	22.6	30.2	21.6	16.3
Selenium	ug/L	<.90		<.96 2.51J		<.96 2.87J	<1.40 2.16J	<1.40 1.91J
Silver	ug/L	<.30		<.42		<.49	<.50	<.50
Thallium	ug/L	<.17		<.26		<.26	<.26	<.57
Vanadium	ug/L	<.52		<1.10		<1.10	<1.10	<1.10
Zinc	ug/L	119.0	82.8	140.0	70.1	146.0	98.5	60.0

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

Table 9

Analytical Data Summary for MW-22

Constituents	Units	6/4/2019 6/13/2019	8/13/2019 8/15/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021
Antimony	ug/L	<1.32	<1.32	<.53	<.51	<.51	1.23	<1.10
Arsenic	ug/L	1.160	<.232 .899J	<.750 1.040J	<.880	<.880	<.880	<.750 .872J
Barium	ug/L	146	176	161	144	174	154	147
Beryllium	ug/L	<.53	<.53	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.167	<.167	<.039	<.049	<.049	<.049	<.051 .056J
Chromium	ug/L	<1.14	<1.14	<.98	<1.10	<1.10	<1.10	<1.10
Cobalt	ug/L	<.402	<.402	<.091 .099J	<.091	<.091 .115J	<.091	<.091 .122J
Copper	ug/L	<.497 .813J	<.497 .908J	<2.000	<1.500	<1.500	<1.500	<1.400
Lead	ug/L	<.186	<.186	<.270	<.110	<.110 .207J	<.110 .121J	<.210
Nickel	ug/L	6.61	8.64	9.21	7.25	9.85	9.21	6.72
Selenium	ug/L	<.982	<.982	<1.000	<1.000	<1.000	<1.000	<.960
Silver	ug/L	<.115	<.115	<.370	<.370	<.370	<.370	<.420
Thallium	ug/L	<.57	<.57	<.27	<.26	<.26	<.26	<.26
Vanadium	ug/L	<2.150 2.670J	<2.150	<.820	<.850	<.850	<.850 .923J	<1.100
Zinc	ug/L	<6.92 11.00J	<6.92 11.70J	<10.00	<10.00	<10.00	<10.00	<10.00

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

Table 9

Analytical Data Summary for MW-22

Constituents	9/21/2021 9/29/2021	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	<1.10	<.69	<.69	<1.00	<1.00	<1.00	<1.00
Arsenic	<.750	<.750	<.750	<.530 .618J	<.530 .834J	<.530 .801J	<.530 .864J
Barium	151	133	156	148	159	137	146
Beryllium	<.27	<.27	<.27	<.33	<.33	<.33	<.33
Cadmium	<.051	<.055	<.055 .057J	<.100	<.100	<.100	<.100
Chromium	<1.10	<1.10	<1.10	<1.10	<1.10	<1.20	<1.20
Cobalt	<.190	<.190	<.190	<.170	<.170	<.170	<.170
Copper	<1.400	<1.800	<1.800	<1.800	<1.800	<1.800	<1.800
Lead	<.210	<.240	<.240	<.240	<.240	<.260	<.260 .293J
Nickel	7.71	5.54	7.64	<1.90 4.45J	9.26	6.65	7.63
Selenium	<.960	<.960	<.960	<1.400	<1.400	<1.400	<1.400
Silver	<.420	<.490	<.490	<.500	<.500	<.500	<.500
Thallium	<.26	<.26	<.26	<.26	<.26	<.57	<.57
Vanadium	<1.100	<1.100 1.490J	<1.100	<1.100	<1.100	<1.100	<1.100
Zinc	<10.00	<10.00	<10.00	<6.40 9.53J	<6.40 9.94J	<9.70	<9.70

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

Table 9

Analytical Data Summary for MW-35

Constituents	Units	10/30/2019 11/20/2019	2/3/2020 2/17/2020	6/16/2020 7/7/2020	8/24/2020 8/26/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021
Antimony	ug/L	<.53	<.58	<.51	<.51	<.51	<1.10	<1.10
Arsenic	ug/L	<.750	<.880	<.880	<.880	<.880	<.750	<.750
Barium	ug/L	326	294	337	288	278	276	301
Beryllium	ug/L	<.27	<.27	<.27	<.27	<.27	<.27	<.27
Cadmium	ug/L	<.039	<.039	<.049	<.049	<.049	<.051	<.051
Chromium	ug/L	<.98	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Cobalt	ug/L	8.27	6.60	7.03	5.98	5.97	5.51	6.33
Copper	ug/L	<2.0	<3.2	<1.5	<1.5	<1.5	<1.4	<1.4
Lead	ug/L	<.27	<.27	<.11	<.11	<.11	<.21	<.21
Mercury	ug/L					<.100000	<.150000	
Nickel	ug/L	27.4	23.2	27.9	22.0	19.5	18.8	22.5
Selenium	ug/L	<1.00	<1.00	<1.00	<1.00	<1.00	<.96	<.96
Silver	ug/L	<.370	<.370	<.370	<.370	<.370	<.420	<.420
Thallium	ug/L	<.270 .386J	<.260 .304J	<.260 .357J	<.260 .339J	<.260 .273J	<.260 .307J	<.260 .340J
Vanadium	ug/L	<.82	<.82	<.85	<.85	<.85	<1.10	<1.10
Zinc	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

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

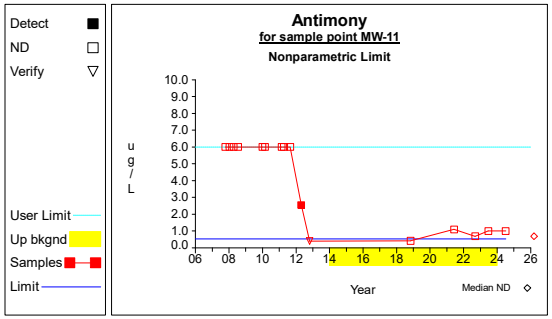
Table 9

Analytical Data Summary for MW-35

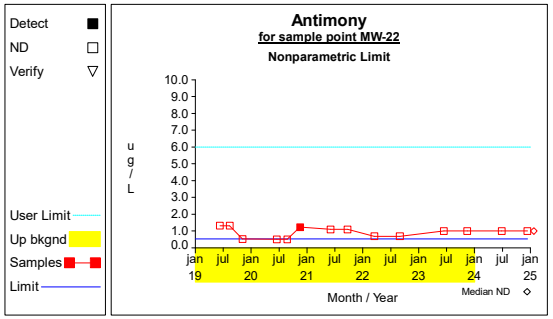
Constituents	3/2/2022 3/29/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	8/27/2024 9/5/2024	11/19/2024 12/18/2024
Antimony	<.69	<.69	<1.00	<1.00	<1.00		<1.00
Arsenic	<.750 1.010J	<.750 1.130J	<.530 .761J	<.530 1.730J	<.530 .767J		<.530 1.090J
Barium	316	345	264	467	280		186
Beryllium	<.27	<.27	<.33	<.33	<.33		<.33
Cadmium	<.055	<.055	<.100	<.100	<.100		<.100
Chromium	<1.10	<1.10	<1.10	<1.10	<1.20		<1.20
Cobalt	6.39	6.74	5.33	10.80	4.96		1.98
Copper	<1.8	<1.8	<1.8	<1.8	<1.8		<1.8
Lead	<.24	<.24	<.24	<.24	<.26		<.26
Mercury							
Nickel	24.9	26.5	18.7	32.7	17.6		11.8
Selenium	<.96	<.96	<1.40	<1.40	<1.40		<1.40
Silver	<.490	<.490 .759J	<.500	<.500	<.500		<.500
Thallium	<.260 .361J	<.260 .408J	<.260 .337J	<.260 .371J	1.140	<.570	<.570
Vanadium	<1.10	<1.10	<1.10	<1.10	<1.10		<1.10
Zinc	<10.0	<10.0	<6.4	<6.4	<9.7		<9.7

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

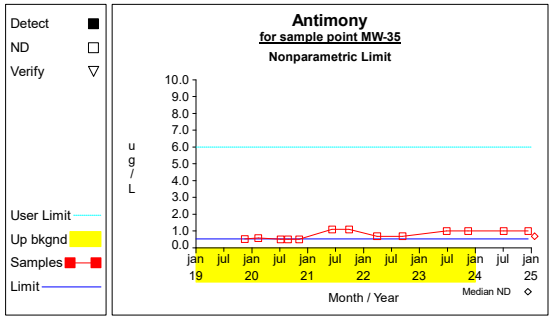
Up vs. Down Prediction Limits



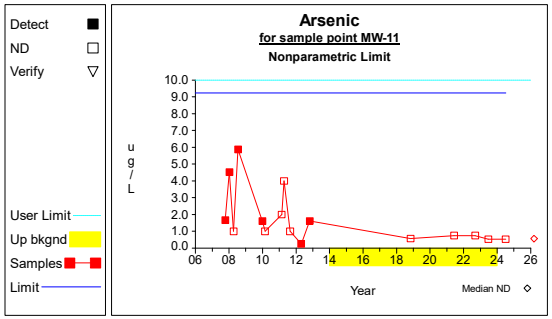
Graph 1



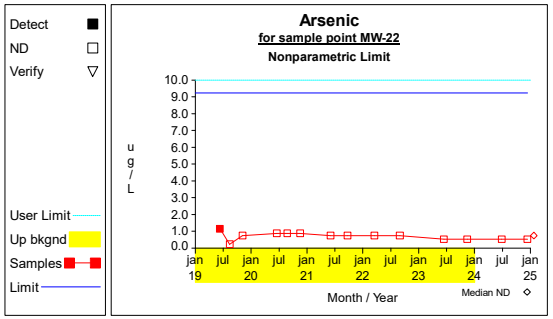
Graph 2



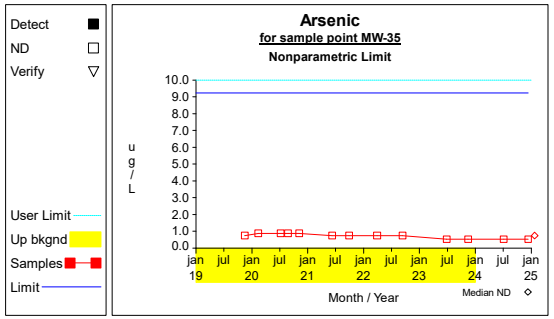
Graph 3



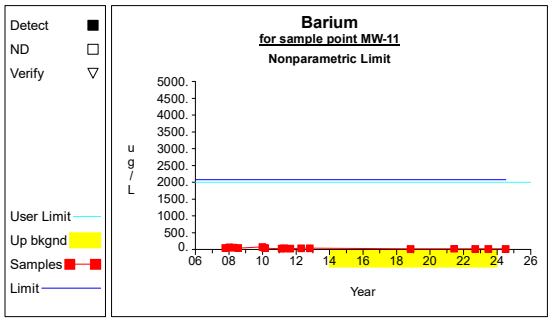
Graph 4



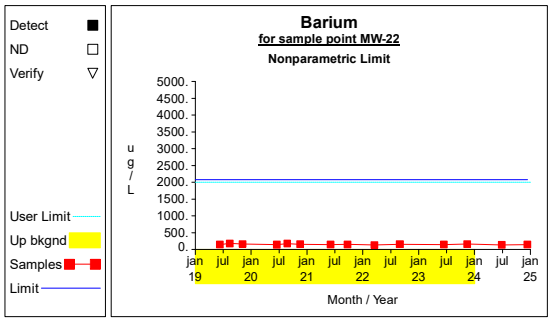
Graph 5



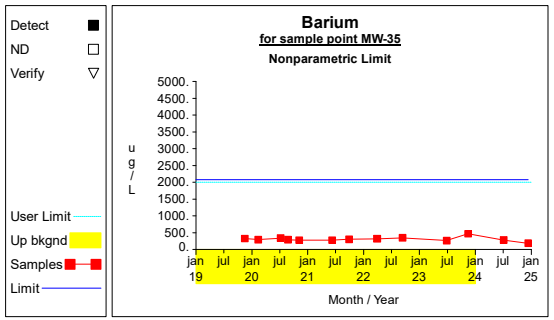
Graph 6



Graph 7

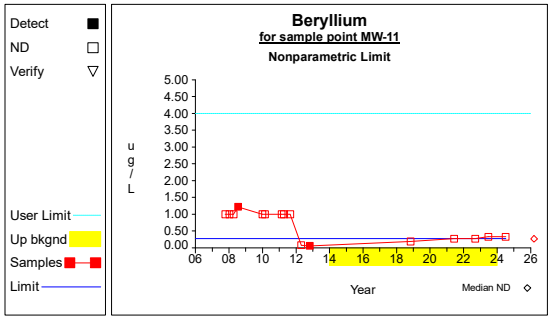


Graph 8

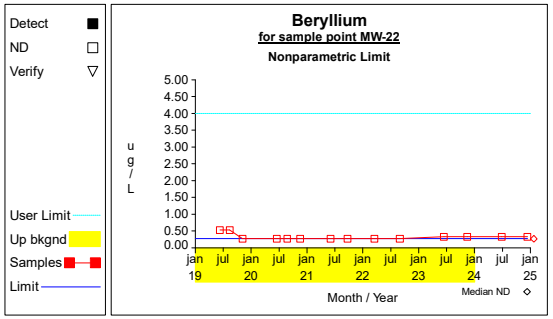


Graph 9

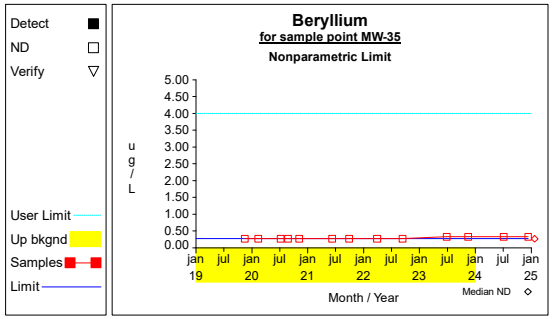
Up vs. Down Prediction Limits



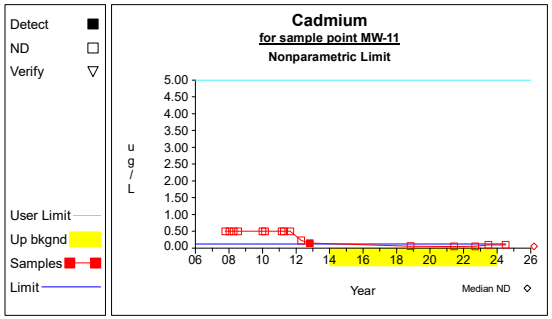
Graph 10



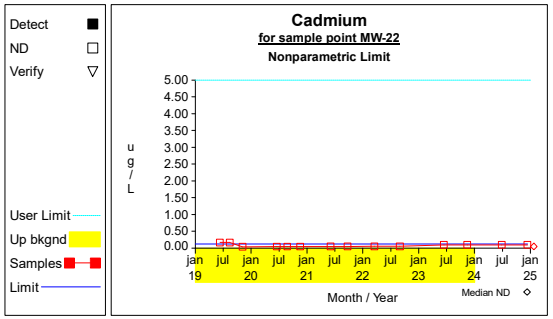
Graph 11



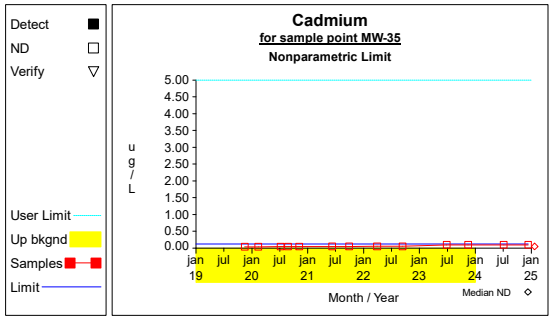
Graph 12



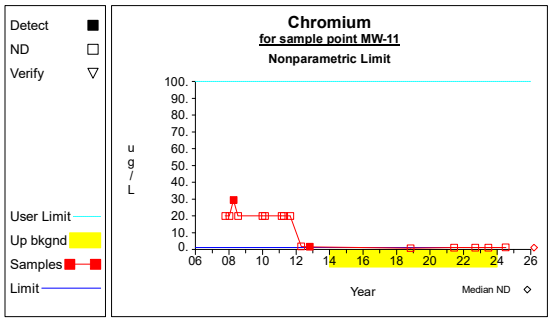
Graph 13



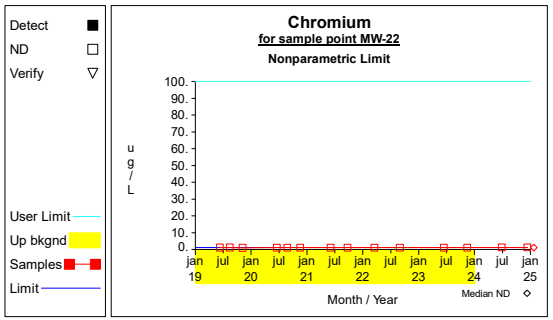
Graph 14



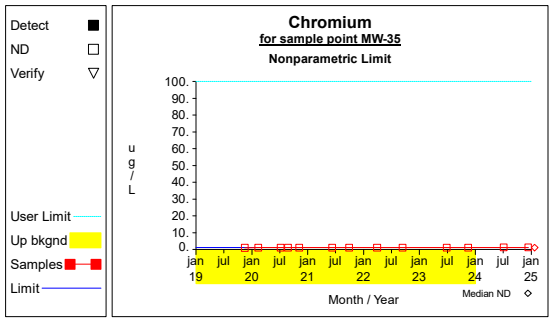
Graph 15



Graph 16

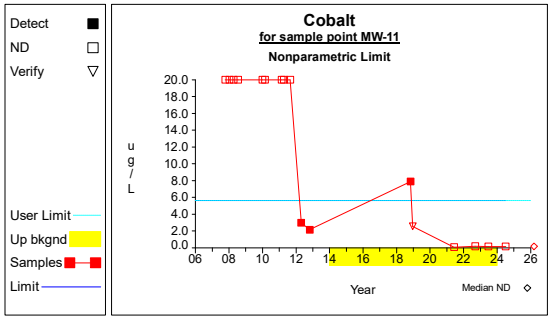


Graph 17

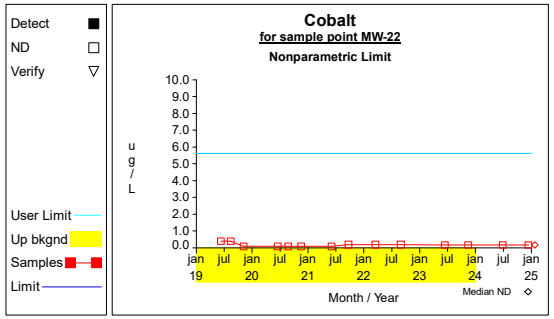


Graph 18

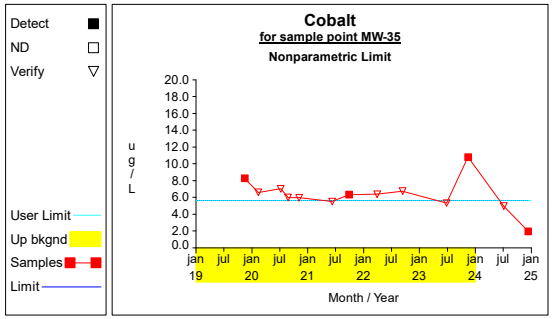
Up vs. Down Prediction Limits



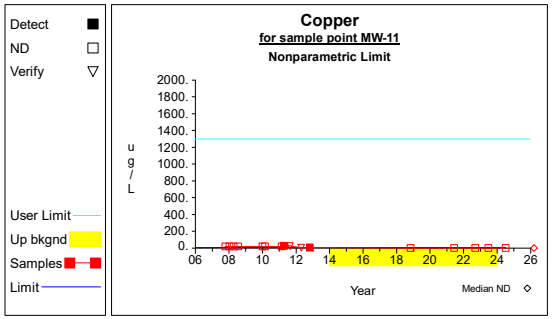
Graph 19



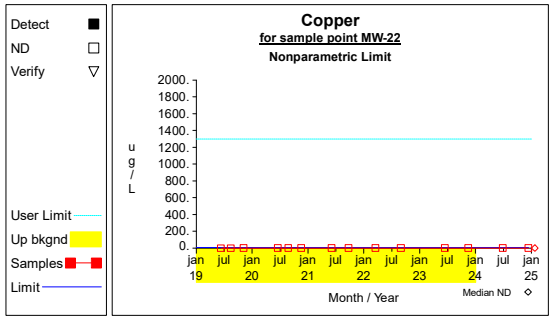
Graph 20



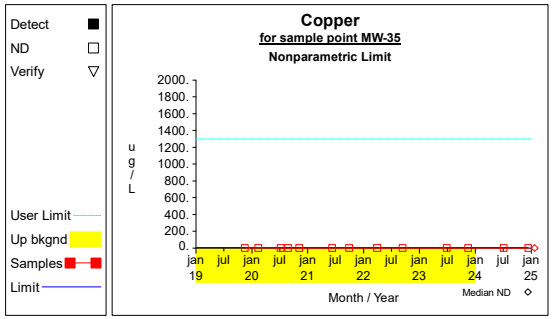
Graph 21



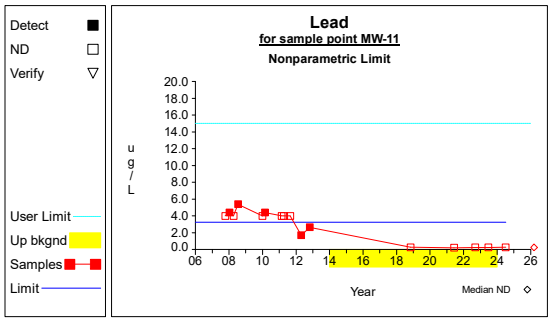
Graph 22



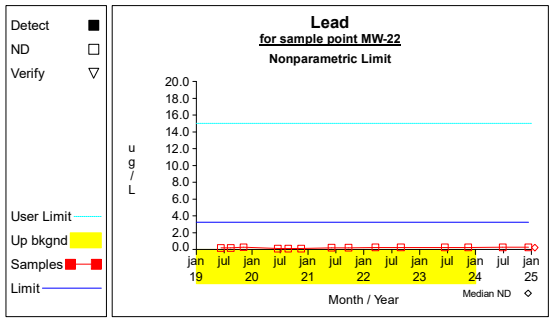
Graph 23



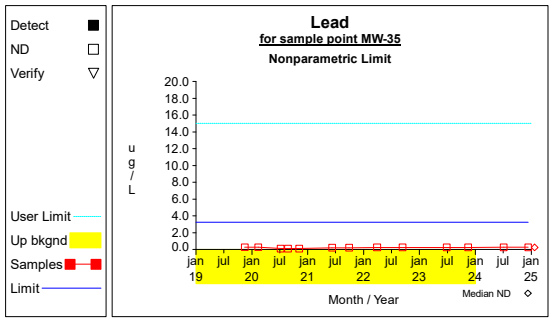
Graph 24



Graph 25

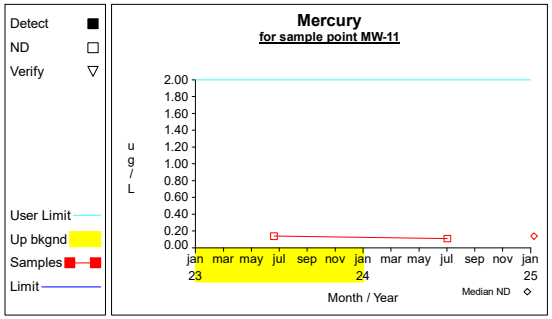


Graph 26

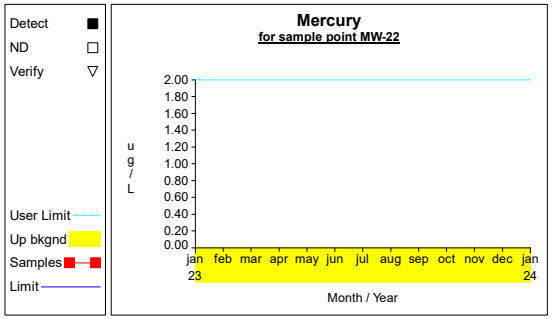


Graph 27

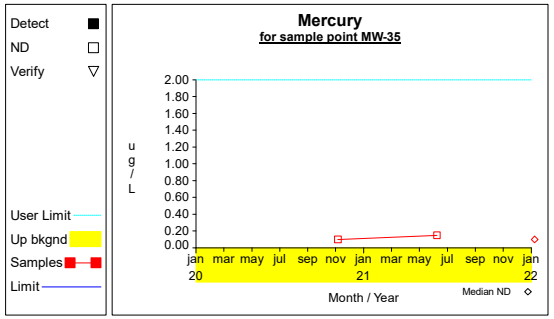
Up vs. Down Prediction Limits



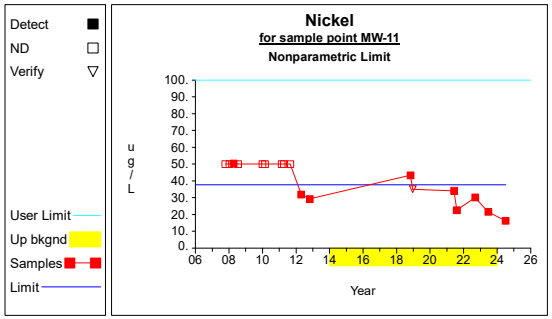
Graph 28



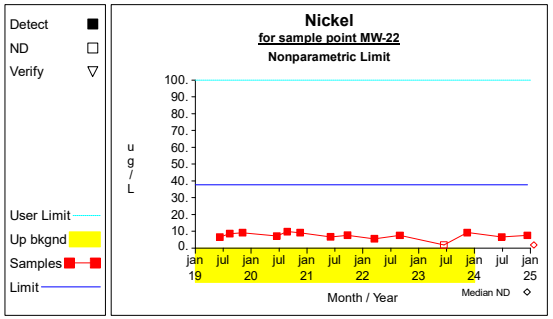
Graph 29



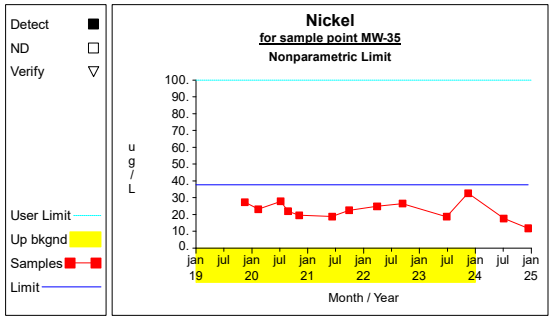
Graph 30



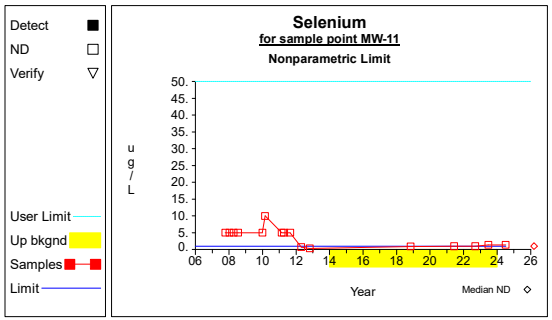
Graph 31



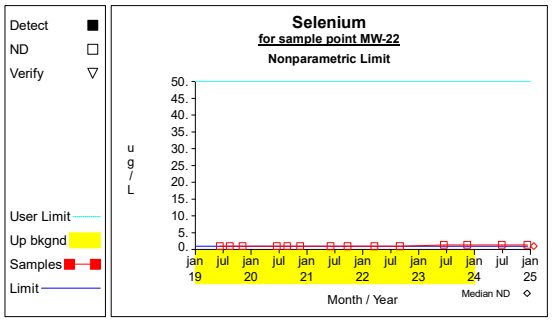
Graph 32



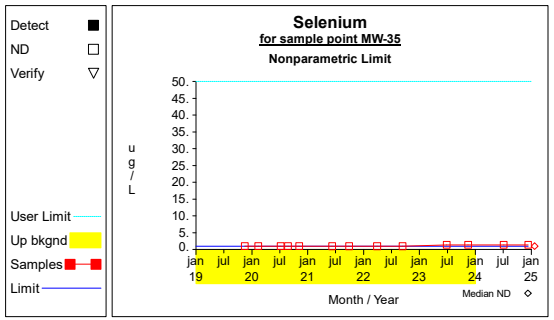
Graph 33



Graph 34

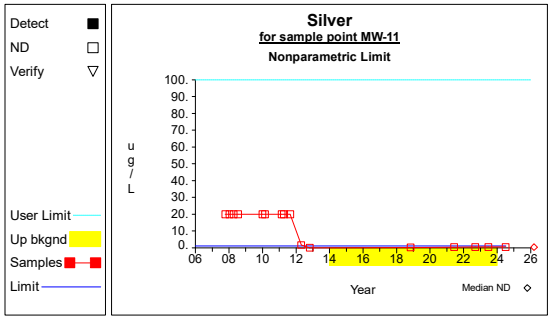


Graph 35

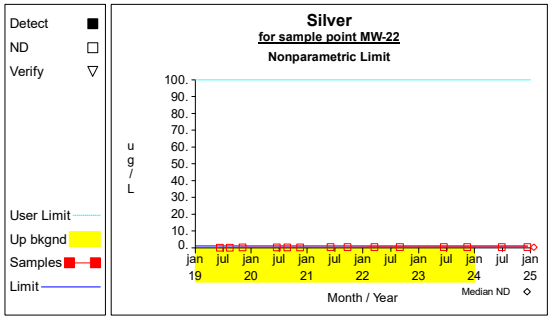


Graph 36

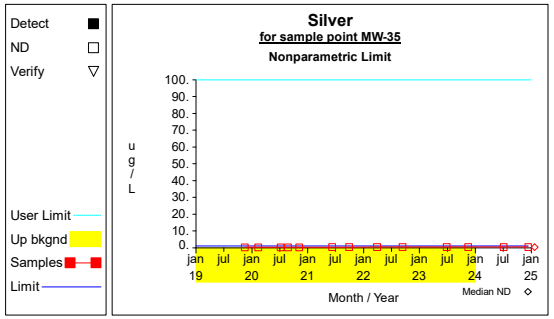
Up vs. Down Prediction Limits



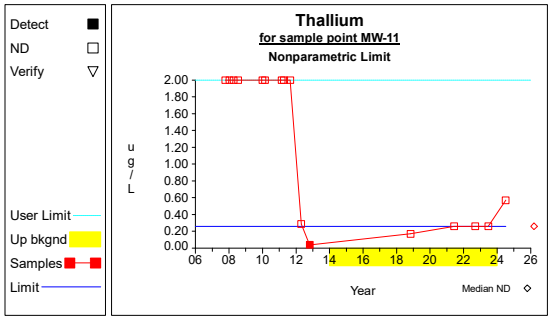
Graph 37



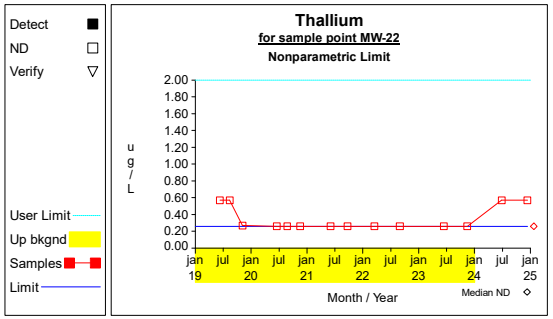
Graph 38



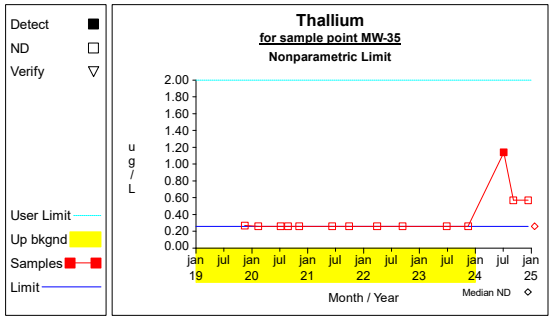
Graph 39



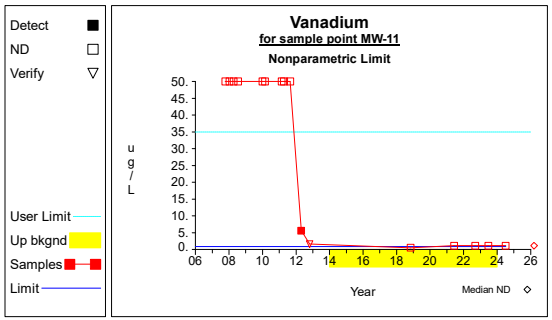
Graph 40



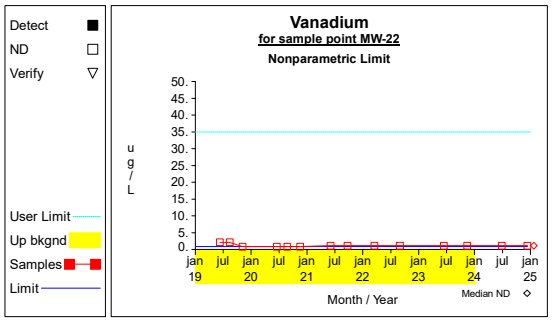
Graph 41



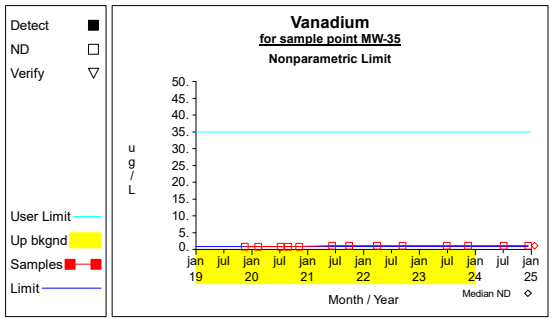
Graph 42



Graph 43

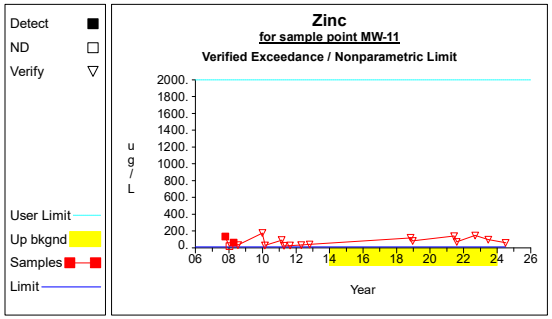


Graph 44

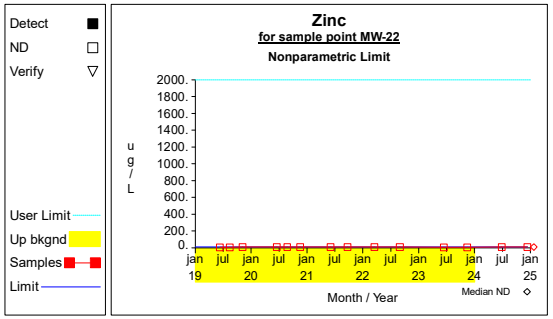


Graph 45

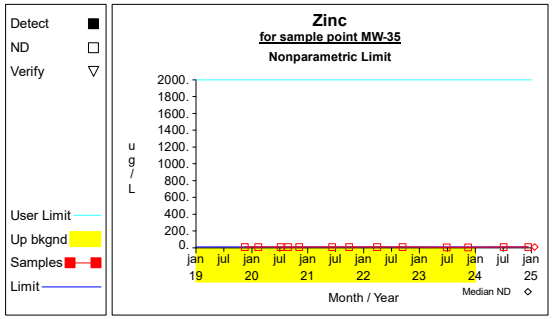
Up vs. Down Prediction Limits



Graph 46



Graph 47



Graph 48

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

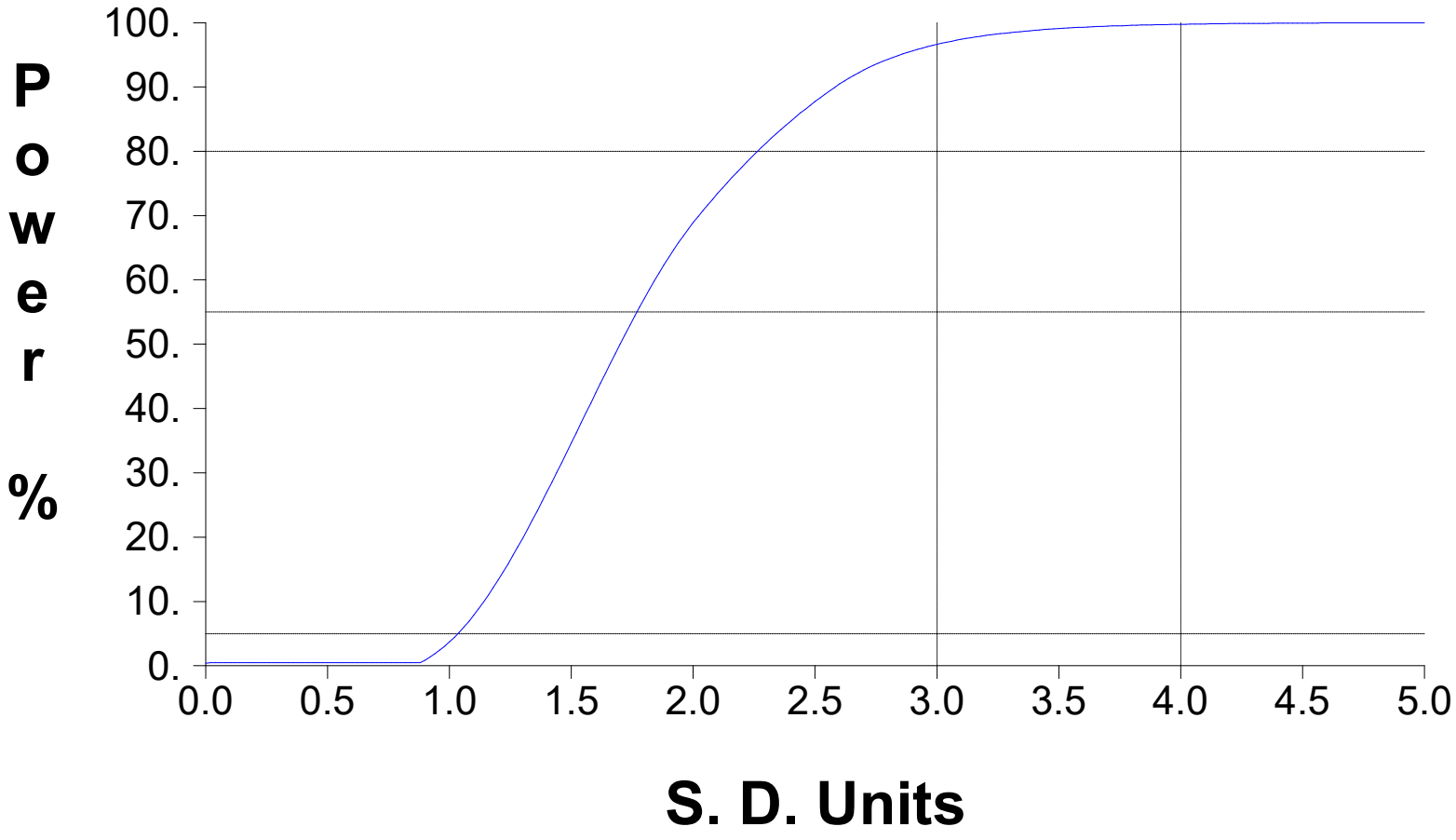


Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	MW-19	05/06/2014	ND	0.4000	0.5300	**
Antimony	ug/L	MW-19	10/31/2014	ND	0.1610	0.5300	**
Antimony	ug/L	MW-19	05/01/2015	ND	0.1610	0.5300	**
Antimony	ug/L	MW-19	09/16/2015	ND	0.1610	0.5300	**
Antimony	ug/L	MW-19	04/11/2016	ND	0.2370	0.5300	**
Antimony	ug/L	MW-19	11/11/2016	ND	0.2370	0.5300	**
Antimony	ug/L	MW-19	05/05/2017	ND	0.1850	0.5300	**
Antimony	ug/L	MW-19	11/14/2017	ND	0.1850	0.5300	**
Antimony	ug/L	MW-19	06/06/2018	ND	0.4200	0.5300	**
Antimony	ug/L	MW-19	10/31/2018	ND	0.4200	0.5300	**
Antimony	ug/L	MW-19	06/04/2019	ND	1.3200	0.5300	**
Antimony	ug/L	MW-19	08/14/2019	ND	1.3200	0.5300	**
Antimony	ug/L	MW-19	11/01/2019	ND	0.5300		
Antimony	ug/L	MW-19	06/16/2020	ND	0.5100	0.5300	**
Antimony	ug/L	MW-19	08/24/2020	ND	2.0400	0.5300	**
Antimony	ug/L	MW-19	11/03/2020	ND	0.5100	0.5300	**
Antimony	ug/L	MW-19	05/17/2021	ND	1.1000	0.5300	**
Antimony	ug/L	MW-19	09/22/2021	ND	1.1000	0.5300	**
Antimony	ug/L	MW-19	12/14/2021	ND	1.1000	0.5300	**
Antimony	ug/L	MW-19	03/16/2022	ND	0.6900	0.5300	**
Antimony	ug/L	MW-19	06/27/2022	ND	0.6900	0.5300	**
Antimony	ug/L	MW-19	08/31/2022	ND	0.6900	0.5300	**
Antimony	ug/L	MW-19	12/07/2022	ND	0.6900	0.5300	**
Antimony	ug/L	MW-19	06/14/2023	ND	1.0000	0.5300	**
Antimony	ug/L	MW-19	11/09/2023	ND	1.0000	0.5300	**

* - 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	
Arsenic	ug/L	MW-19	05/06/2014		0.4200		
Arsenic	ug/L	MW-19	10/31/2014	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-19	05/01/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-19	09/16/2015	ND	0.9450	0.7500	**
Arsenic	ug/L	MW-19	04/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-19	11/11/2016	ND	0.6720	0.7500	**
Arsenic	ug/L	MW-19	05/05/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-19	11/14/2017	ND	0.5050	0.7500	**
Arsenic	ug/L	MW-19	06/06/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-19	10/31/2018	ND	0.5700	0.7500	**
Arsenic	ug/L	MW-19	06/04/2019		1.5500		
Arsenic	ug/L	MW-19	08/14/2019		1.8900		
Arsenic	ug/L	MW-19	11/01/2019	ND	0.7500		
Arsenic	ug/L	MW-19	06/16/2020		2.0100		
Arsenic	ug/L	MW-19	08/24/2020		9.2300		
Arsenic	ug/L	MW-19	11/03/2020		2.4700		
Arsenic	ug/L	MW-19	05/17/2021		2.4800		
Arsenic	ug/L	MW-19	09/22/2021	ND	0.7500		
Arsenic	ug/L	MW-19	12/14/2021	ND	0.7500		
Arsenic	ug/L	MW-19	03/16/2022	ND	0.7500		
Arsenic	ug/L	MW-19	06/27/2022	ND	0.7500		
Arsenic	ug/L	MW-19	08/31/2022	ND	0.7500		
Arsenic	ug/L	MW-19	12/07/2022	ND	0.7500		
Arsenic	ug/L	MW-19	06/14/2023	ND	0.5300	0.7500	**
Arsenic	ug/L	MW-19	11/09/2023	ND	0.5300	0.7500	**

* - 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	
Barium	ug/L	MW-19	05/06/2014		154.0000		
Barium	ug/L	MW-19	10/31/2014		179.0000		
Barium	ug/L	MW-19	05/01/2015		142.0000		
Barium	ug/L	MW-19	09/16/2015		149.0000		
Barium	ug/L	MW-19	04/11/2016		153.0000		
Barium	ug/L	MW-19	11/11/2016		171.0000		
Barium	ug/L	MW-19	05/05/2017		162.0000		
Barium	ug/L	MW-19	11/14/2017		156.0000		
Barium	ug/L	MW-19	06/06/2018		156.0000		
Barium	ug/L	MW-19	10/31/2018		156.0000		
Barium	ug/L	MW-19	06/04/2019		528.0000		
Barium	ug/L	MW-19	08/14/2019		554.0000		
Barium	ug/L	MW-19	11/01/2019		554.0000		
Barium	ug/L	MW-19	06/16/2020		572.0000		
Barium	ug/L	MW-19	08/24/2020		2080.0000		
Barium	ug/L	MW-19	11/03/2020		498.0000		
Barium	ug/L	MW-19	05/17/2021		616.0000		
Barium	ug/L	MW-19	09/22/2021		190.0000		
Barium	ug/L	MW-19	12/14/2021		100.0000		
Barium	ug/L	MW-19	03/16/2022		139.0000		
Barium	ug/L	MW-19	06/27/2022		72.3000		
Barium	ug/L	MW-19	08/31/2022		168.0000		
Barium	ug/L	MW-19	12/07/2022		152.0000		
Barium	ug/L	MW-19	06/14/2023		82.4000		
Barium	ug/L	MW-19	11/09/2023		84.1000		

* - 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	ug/L	MW-19	05/06/2014	ND	0.0800	0.2700	**
Beryllium	ug/L	MW-19	10/31/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-19	05/01/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	MW-19	09/16/2015		0.0400		
Beryllium	ug/L	MW-19	04/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-19	11/11/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	MW-19	05/05/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-19	11/14/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	MW-19	06/06/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-19	10/31/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	MW-19	06/04/2019	ND	0.5300	0.2700	**
Beryllium	ug/L	MW-19	08/14/2019	ND	0.5300	0.2700	**
Beryllium	ug/L	MW-19	11/01/2019	ND	0.2700		
Beryllium	ug/L	MW-19	06/16/2020	ND	0.2700		
Beryllium	ug/L	MW-19	08/24/2020	ND	1.0800	0.2700	**
Beryllium	ug/L	MW-19	11/03/2020	ND	0.2700		
Beryllium	ug/L	MW-19	05/17/2021	ND	0.2700		
Beryllium	ug/L	MW-19	09/22/2021	ND	0.2700		
Beryllium	ug/L	MW-19	12/14/2021	ND	0.2700		
Beryllium	ug/L	MW-19	03/16/2022	ND	0.2700		
Beryllium	ug/L	MW-19	06/27/2022	ND	0.2700		
Beryllium	ug/L	MW-19	08/31/2022	ND	0.2700		
Beryllium	ug/L	MW-19	12/07/2022	ND	0.2700		
Beryllium	ug/L	MW-19	06/14/2023	ND	0.3300	0.2700	**
Beryllium	ug/L	MW-19	11/09/2023	ND	0.3300	0.2700	**

* - 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	ug/L	MW-19	05/06/2014	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-19	10/31/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-19	05/01/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-19	09/16/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	MW-19	04/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-19	11/11/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	MW-19	05/05/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-19	11/14/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	MW-19	06/06/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-19	10/31/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	MW-19	06/04/2019	ND	0.1670	0.0550	**
Cadmium	ug/L	MW-19	08/14/2019	ND	0.1670	0.0550	**
Cadmium	ug/L	MW-19	11/01/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	MW-19	06/16/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-19	08/24/2020	ND	0.1960	0.0550	**
Cadmium	ug/L	MW-19	11/03/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	MW-19	05/17/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-19	09/22/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-19	12/14/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	MW-19	03/16/2022		0.1200		
Cadmium	ug/L	MW-19	06/27/2022	ND	0.0550		
Cadmium	ug/L	MW-19	08/31/2022	ND	0.0550		
Cadmium	ug/L	MW-19	12/07/2022	ND	0.0550		
Cadmium	ug/L	MW-19	06/14/2023	ND	0.1000	0.0550	**
Cadmium	ug/L	MW-19	11/09/2023	ND	0.1000	0.0550	**

* - 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	
Chromium	ug/L	MW-19	05/06/2014		1.0700		
Chromium	ug/L	MW-19	10/31/2014	ND	1.2400	1.1000	**
Chromium	ug/L	MW-19	05/01/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-19	09/16/2015	ND	1.2400	1.1000	**
Chromium	ug/L	MW-19	04/11/2016	ND	0.3550	1.1000	**
Chromium	ug/L	MW-19	11/11/2016	ND	0.3550	1.1000	**
Chromium	ug/L	MW-19	05/05/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-19	11/14/2017	ND	0.7290	1.1000	**
Chromium	ug/L	MW-19	06/06/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-19	10/31/2018	ND	0.7600	1.1000	**
Chromium	ug/L	MW-19	06/04/2019	ND	1.1400	1.1000	**
Chromium	ug/L	MW-19	08/14/2019	ND	1.1400	1.1000	**
Chromium	ug/L	MW-19	11/01/2019	ND	0.9800	1.1000	**
Chromium	ug/L	MW-19	06/16/2020	ND	1.1000		
Chromium	ug/L	MW-19	08/24/2020	ND	4.4000	1.1000	**
Chromium	ug/L	MW-19	11/03/2020	ND	1.1000		
Chromium	ug/L	MW-19	05/17/2021	ND	1.1000		
Chromium	ug/L	MW-19	09/22/2021	ND	1.1000		
Chromium	ug/L	MW-19	12/14/2021	ND	1.1000		
Chromium	ug/L	MW-19	03/16/2022	ND	1.1000		
Chromium	ug/L	MW-19	06/27/2022	ND	1.1000		
Chromium	ug/L	MW-19	08/31/2022	ND	1.1000		
Chromium	ug/L	MW-19	12/07/2022	ND	1.1000		
Chromium	ug/L	MW-19	06/14/2023	ND	1.1000		
Chromium	ug/L	MW-19	11/09/2023	ND	1.1000		

* - 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	
Cobalt	ug/L	MW-19	05/06/2014		0.1000		
Cobalt	ug/L	MW-19	10/31/2014		0.3640		
Cobalt	ug/L	MW-19	05/01/2015	ND	0.0528	0.0610	**
Cobalt	ug/L	MW-19	09/16/2015		0.0930		
Cobalt	ug/L	MW-19	04/11/2016	ND	0.0274	0.0610	**
Cobalt	ug/L	MW-19	11/11/2016		0.1660		
Cobalt	ug/L	MW-19	05/05/2017	ND	0.0453	0.0610	**
Cobalt	ug/L	MW-19	11/14/2017	ND	0.0453	0.0610	**
Cobalt	ug/L	MW-19	06/06/2018	ND	0.0610		
Cobalt	ug/L	MW-19	10/31/2018	ND	0.0610		
Cobalt	ug/L	MW-19	06/04/2019		3.0800		
Cobalt	ug/L	MW-19	08/14/2019		2.1100		
Cobalt	ug/L	MW-19	11/01/2019		2.3800		
Cobalt	ug/L	MW-19	06/16/2020		1.5100		
Cobalt	ug/L	MW-19	08/24/2020		5.6200		
Cobalt	ug/L	MW-19	11/03/2020		1.8000		
Cobalt	ug/L	MW-19	05/17/2021		1.4900		
Cobalt	ug/L	MW-19	09/22/2021		1.4300		
Cobalt	ug/L	MW-19	12/14/2021		0.6240		
Cobalt	ug/L	MW-19	03/16/2022		3.4000		
Cobalt	ug/L	MW-19	06/27/2022	ND	0.1900	0.0610	**
Cobalt	ug/L	MW-19	08/31/2022	ND	0.1900	0.0610	**
Cobalt	ug/L	MW-19	12/07/2022	ND	0.1900	0.0610	**
Cobalt	ug/L	MW-19	06/14/2023	ND	0.1700	0.0610	**
Cobalt	ug/L	MW-19	11/09/2023	ND	0.1700	0.0610	**

* - 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	ug/L	MW-18	06/18/2018	ND	6.0000	1.5000	**
Copper	ug/L	MW-19	05/06/2014	ND	0.5600	1.5000	**
Copper	ug/L	MW-19	10/31/2014	ND	0.4850	1.5000	**
Copper	ug/L	MW-19	05/01/2015	ND	0.4850	1.5000	**
Copper	ug/L	MW-19	09/16/2015	ND	0.4850	1.5000	**
Copper	ug/L	MW-19	04/11/2016	ND	1.2200	1.5000	**
Copper	ug/L	MW-19	11/11/2016	ND	1.2200	1.5000	**
Copper	ug/L	MW-19	05/05/2017	ND	2.1900	1.5000	**
Copper	ug/L	MW-19	11/14/2017	ND	2.1900	1.5000	**
Copper	ug/L	MW-19	06/06/2018	ND	3.8000	1.5000	**
Copper	ug/L	MW-19	10/31/2018	ND	1.6000	1.5000	**
Copper	ug/L	MW-19	06/04/2019	ND	0.4970	1.5000	**
Copper	ug/L	MW-19	08/14/2019	ND	0.4970	1.5000	**
Copper	ug/L	MW-19	11/01/2019	ND	2.0000	1.5000	**
Copper	ug/L	MW-19	06/16/2020	ND	1.5000		
Copper	ug/L	MW-19	08/24/2020	ND	6.0000	1.5000	**
Copper	ug/L	MW-19	11/03/2020	ND	1.5000		
Copper	ug/L	MW-19	05/17/2021	ND	1.4000	1.5000	**
Copper	ug/L	MW-19	09/22/2021	ND	1.4000	1.5000	**
Copper	ug/L	MW-19	12/14/2021	ND	1.4000	1.5000	**
Copper	ug/L	MW-19	03/16/2022		7.6400		
Copper	ug/L	MW-19	06/27/2022	ND	1.8000	1.5000	**
Copper	ug/L	MW-19	08/31/2022	ND	1.8000	1.5000	**
Copper	ug/L	MW-19	12/07/2022	ND	1.8000	1.5000	**
Copper	ug/L	MW-19	06/14/2023	ND	1.8000	1.5000	**

* - 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	ug/L	MW-19	11/09/2023	ND	1.8000	1.5000	**
Lead	ug/L	MW-19	05/06/2014		0.4680		
Lead	ug/L	MW-19	10/31/2014		0.1710		
Lead	ug/L	MW-19	05/01/2015	ND	0.0967	0.2400	**
Lead	ug/L	MW-19	09/16/2015		0.1020		
Lead	ug/L	MW-19	04/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-19	11/11/2016	ND	0.2110	0.2400	**
Lead	ug/L	MW-19	05/05/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-19	11/14/2017	ND	0.3240	0.2400	**
Lead	ug/L	MW-19	06/06/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-19	10/31/2018	ND	0.2500	0.2400	**
Lead	ug/L	MW-19	06/04/2019	ND	0.1860	0.2400	**
Lead	ug/L	MW-19	08/14/2019	ND	0.1860	0.2400	**
Lead	ug/L	MW-19	11/01/2019	ND	0.2700	0.2400	**
Lead	ug/L	MW-19	06/16/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-19	08/24/2020	ND	0.4400	0.2400	**
Lead	ug/L	MW-19	11/03/2020	ND	0.1100	0.2400	**
Lead	ug/L	MW-19	05/17/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-19	09/22/2021		0.5810		
Lead	ug/L	MW-19	12/14/2021	ND	0.2100	0.2400	**
Lead	ug/L	MW-19	03/16/2022		3.2500		
Lead	ug/L	MW-19	06/27/2022	ND	0.2400		
Lead	ug/L	MW-19	08/31/2022	ND	0.2400		
Lead	ug/L	MW-19	12/07/2022	ND	0.2400		
Lead	ug/L	MW-19	06/14/2023	ND	0.2400		

* - 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	ug/L	MW-19	11/09/2023	ND	0.2400		
Mercury	ug/L	MW-19	11/01/2019	ND	0.1000		
Mercury	ug/L	MW-19	06/16/2020	ND	0.1000		
Mercury	ug/L	MW-19	05/17/2021	ND	0.1500	0.1000	**
Nickel	ug/L	MW-19	05/06/2014		0.9690		
Nickel	ug/L	MW-19	10/31/2014		1.1400		
Nickel	ug/L	MW-19	05/01/2015		0.6620		
Nickel	ug/L	MW-19	09/16/2015		0.7750		
Nickel	ug/L	MW-19	04/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-19	11/11/2016	ND	1.5300	1.9000	**
Nickel	ug/L	MW-19	05/05/2017	ND	0.9290	1.9000	**
Nickel	ug/L	MW-19	11/14/2017	ND	0.9290	1.9000	**
Nickel	ug/L	MW-19	06/06/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-19	10/31/2018	ND	1.0000	1.9000	**
Nickel	ug/L	MW-19	06/04/2019		18.8000		
Nickel	ug/L	MW-19	08/14/2019		10.1000		
Nickel	ug/L	MW-19	11/01/2019		10.5000		
Nickel	ug/L	MW-19	06/16/2020		9.2300		
Nickel	ug/L	MW-19	08/24/2020		37.6000		
Nickel	ug/L	MW-19	11/03/2020		13.8000		
Nickel	ug/L	MW-19	05/17/2021		12.2000		
Nickel	ug/L	MW-19	09/22/2021	ND	1.9000		
Nickel	ug/L	MW-19	12/14/2021	ND	1.9000		
Nickel	ug/L	MW-19	03/16/2022		6.5200		
Nickel	ug/L	MW-19	06/27/2022	ND	1.9000		

* - 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	
Nickel	ug/L	MW-19	08/31/2022	ND	1.9000		
Nickel	ug/L	MW-19	12/07/2022	ND	1.9000		
Nickel	ug/L	MW-19	06/14/2023	ND	1.9000		
Nickel	ug/L	MW-19	11/09/2023	ND	1.9000		
Selenium	ug/L	MW-19	05/06/2014	ND	0.7000	0.9600	**
Selenium	ug/L	MW-19	10/31/2014	ND	3.3400	0.9600	**
Selenium	ug/L	MW-19	05/01/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-19	09/16/2015	ND	3.3400	0.9600	**
Selenium	ug/L	MW-19	04/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-19	11/11/2016	ND	0.6300	0.9600	**
Selenium	ug/L	MW-19	05/05/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-19	11/14/2017	ND	0.9280	0.9600	**
Selenium	ug/L	MW-19	06/06/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-19	10/31/2018	ND	0.9000	0.9600	**
Selenium	ug/L	MW-19	06/04/2019	ND	0.9820	0.9600	**
Selenium	ug/L	MW-19	08/14/2019	ND	0.9820	0.9600	**
Selenium	ug/L	MW-19	11/01/2019	ND	1.0000	0.9600	**
Selenium	ug/L	MW-19	06/16/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-19	08/24/2020	ND	4.0000	0.9600	**
Selenium	ug/L	MW-19	11/03/2020	ND	1.0000	0.9600	**
Selenium	ug/L	MW-19	05/17/2021	ND	0.9600		
Selenium	ug/L	MW-19	09/22/2021	ND	0.9600		
Selenium	ug/L	MW-19	12/14/2021	ND	0.9600		
Selenium	ug/L	MW-19	03/16/2022	ND	0.9600		
Selenium	ug/L	MW-19	06/27/2022	ND	0.9600		

* - 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	
Selenium	ug/L	MW-19	08/31/2022	ND	0.9600		
Selenium	ug/L	MW-19	12/07/2022	ND	0.9600		
Selenium	ug/L	MW-19	06/14/2023	ND	1.4000	0.9600	**
Selenium	ug/L	MW-19	11/09/2023	ND	1.4000	0.9600	**
Silver	ug/L	MW-19	05/06/2014	ND	0.0330	0.3700	**
Silver	ug/L	MW-19	10/31/2014	ND	0.0420	0.3700	**
Silver	ug/L	MW-19	05/01/2015	ND	0.0420	0.3700	**
Silver	ug/L	MW-19	09/16/2015		0.1220		
Silver	ug/L	MW-19	04/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-19	11/11/2016	ND	0.1530	0.3700	**
Silver	ug/L	MW-19	05/05/2017	ND	0.1400	0.3700	**
Silver	ug/L	MW-19	11/14/2017		0.1520		
Silver	ug/L	MW-19	06/06/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-19	10/31/2018	ND	0.3000	0.3700	**
Silver	ug/L	MW-19	06/04/2019	ND	0.1150	0.3700	**
Silver	ug/L	MW-19	08/14/2019	ND	0.1150	0.3700	**
Silver	ug/L	MW-19	11/01/2019	ND	0.3700		
Silver	ug/L	MW-19	06/16/2020	ND	0.3700		
Silver	ug/L	MW-19	08/24/2020	ND	1.4800	0.3700	**
Silver	ug/L	MW-19	11/03/2020	ND	0.3700		
Silver	ug/L	MW-19	05/17/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-19	09/22/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-19	12/14/2021	ND	0.4200	0.3700	**
Silver	ug/L	MW-19	03/16/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-19	06/27/2022	ND	0.4900	0.3700	**

* - 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	ug/L	MW-19	08/31/2022	ND	0.4900	0.3700	**
Silver	ug/L	MW-19	12/07/2022		1.2400		
Silver	ug/L	MW-19	06/14/2023	ND	0.5000	0.3700	**
Silver	ug/L	MW-19	11/09/2023	ND	0.5000	0.3700	**
Thallium	ug/L	MW-19	05/06/2014	ND	0.0500	0.2600	**
Thallium	ug/L	MW-19	10/31/2014	ND	0.0325	0.2600	**
Thallium	ug/L	MW-19	05/01/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-19	09/16/2015	ND	0.0325	0.2600	**
Thallium	ug/L	MW-19	04/11/2016	ND	0.0255	0.2600	**
Thallium	ug/L	MW-19	11/11/2016		0.0280		
Thallium	ug/L	MW-19	05/05/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-19	11/14/2017	ND	0.0644	0.2600	**
Thallium	ug/L	MW-19	06/06/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-19	10/31/2018	ND	0.1700	0.2600	**
Thallium	ug/L	MW-19	06/04/2019	ND	0.5700	0.2600	**
Thallium	ug/L	MW-19	08/14/2019	ND	0.5700	0.2600	**
Thallium	ug/L	MW-19	11/01/2019	ND	0.2700	0.2600	**
Thallium	ug/L	MW-19	06/16/2020	ND	0.2600		
Thallium	ug/L	MW-19	08/24/2020	ND	1.0400	0.2600	**
Thallium	ug/L	MW-19	11/03/2020	ND	0.2600		
Thallium	ug/L	MW-19	05/17/2021	ND	0.2600		
Thallium	ug/L	MW-19	09/22/2021	ND	0.2600		
Thallium	ug/L	MW-19	12/14/2021	ND	0.2600		
Thallium	ug/L	MW-19	03/16/2022	ND	0.2600		
Thallium	ug/L	MW-19	06/27/2022	ND	0.2600		

* - 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	ug/L	MW-19	08/31/2022	ND	0.2600		
Thallium	ug/L	MW-19	12/07/2022	ND	0.2600		
Thallium	ug/L	MW-19	06/14/2023	ND	0.2600		
Thallium	ug/L	MW-19	11/09/2023	ND	0.2600		
Vanadium	ug/L	MW-19	05/06/2014	ND	0.5000	0.8500	**
Vanadium	ug/L	MW-19	10/31/2014	ND	0.4490	0.8500	**
Vanadium	ug/L	MW-19	05/01/2015	ND	0.4490	0.8500	**
Vanadium	ug/L	MW-19	09/16/2015	ND	0.4490	0.8500	**
Vanadium	ug/L	MW-19	04/11/2016	ND	0.2550	0.8500	**
Vanadium	ug/L	MW-19	11/11/2016	ND	0.2550	0.8500	**
Vanadium	ug/L	MW-19	05/05/2017	ND	0.8400	0.8500	**
Vanadium	ug/L	MW-19	11/14/2017	ND	0.8400	0.8500	**
Vanadium	ug/L	MW-19	06/06/2018	ND	0.5200	0.8500	**
Vanadium	ug/L	MW-19	10/31/2018	ND	0.5200	0.8500	**
Vanadium	ug/L	MW-19	06/04/2019	ND	2.1500	0.8500	**
Vanadium	ug/L	MW-19	08/14/2019	ND	2.1500	0.8500	**
Vanadium	ug/L	MW-19	11/01/2019	ND	0.8200	0.8500	**
Vanadium	ug/L	MW-19	06/16/2020	ND	0.8500		
Vanadium	ug/L	MW-19	08/24/2020	ND	3.4000	0.8500	**
Vanadium	ug/L	MW-19	11/03/2020	ND	0.8500		
Vanadium	ug/L	MW-19	05/17/2021	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	09/22/2021	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	12/14/2021	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	03/16/2022	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	06/27/2022	ND	1.1000	0.8500	**

* - 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	
Vanadium	ug/L	MW-19	08/31/2022	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	12/07/2022	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	06/14/2023	ND	1.1000	0.8500	**
Vanadium	ug/L	MW-19	11/09/2023	ND	1.1000	0.8500	**
Zinc	ug/L	MW-19	05/06/2014	ND	2.0000	10.0000	**
Zinc	ug/L	MW-19	10/31/2014	ND	6.9500	10.0000	**
Zinc	ug/L	MW-19	05/01/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-19	09/16/2015	ND	6.9500	10.0000	**
Zinc	ug/L	MW-19	04/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-19	11/11/2016	ND	5.2100	10.0000	**
Zinc	ug/L	MW-19	05/05/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-19	11/14/2017	ND	11.5000	10.0000	**
Zinc	ug/L	MW-19	06/06/2018	ND	10.0000		
Zinc	ug/L	MW-19	10/31/2018	ND	10.0000		
Zinc	ug/L	MW-19	06/04/2019	ND	6.9200	10.0000	**
Zinc	ug/L	MW-19	08/14/2019	ND	6.9200	10.0000	**
Zinc	ug/L	MW-19	11/01/2019	ND	10.0000		
Zinc	ug/L	MW-19	06/16/2020	ND	10.0000		
Zinc	ug/L	MW-19	08/24/2020	ND	40.0000	10.0000	**
Zinc	ug/L	MW-19	11/03/2020	ND	10.0000		
Zinc	ug/L	MW-19	05/17/2021	ND	10.0000		
Zinc	ug/L	MW-19	09/22/2021	ND	10.0000		
Zinc	ug/L	MW-19	12/14/2021	ND	10.0000		
Zinc	ug/L	MW-19	03/16/2022	ND	10.0000		
Zinc	ug/L	MW-19	06/27/2022	ND	10.0000		

* - 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	
Zinc	ug/L	MW-19	08/31/2022	ND	10.0000		
Zinc	ug/L	MW-19	12/07/2022	ND	10.0000		
Zinc	ug/L	MW-19	06/14/2023	ND	6.4000	10.0000	**
Zinc	ug/L	MW-19	11/09/2023	ND	6.4000	10.0000	**

* - 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	ug/L	MW-11	07/01/2024	ND	1.0000		0.5300
Antimony	ug/L	MW-22	12/11/2024	ND	1.0000		0.5300
Antimony	ug/L	MW-35	12/11/2024	ND	1.0000		0.5300
Arsenic	ug/L	MW-11	07/01/2024	ND	0.5300		9.2300
Arsenic	ug/L	MW-22	12/11/2024	ND	0.5300		9.2300
Arsenic	ug/L	MW-35	12/11/2024	ND	0.5300		9.2300
Barium	ug/L	MW-11	07/01/2024		14.3000		2080.0000
Barium	ug/L	MW-22	12/11/2024		146.0000		2080.0000
Barium	ug/L	MW-35	12/11/2024		186.0000		2080.0000
Beryllium	ug/L	MW-11	07/01/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-22	12/11/2024	ND	0.3300		0.2700
Beryllium	ug/L	MW-35	12/11/2024	ND	0.3300		0.2700
Cadmium	ug/L	MW-11	07/01/2024	ND	0.1000		0.1200
Cadmium	ug/L	MW-22	12/11/2024	ND	0.1000		0.1200
Cadmium	ug/L	MW-35	12/11/2024	ND	0.1000		0.1200
Chromium	ug/L	MW-11	07/01/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-22	12/11/2024	ND	1.2000		1.1000
Chromium	ug/L	MW-35	12/11/2024	ND	1.2000		1.1000
Cobalt	ug/L	MW-11	07/01/2024	ND	0.1700		5.6200
Cobalt	ug/L	MW-22	12/11/2024	ND	0.1700		5.6200
Cobalt	ug/L	MW-35	12/11/2024		1.9800		5.6200
Copper	ug/L	MW-11	07/01/2024	ND	1.8000		7.6400
Copper	ug/L	MW-22	12/11/2024	ND	1.8000		7.6400

* - 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
Copper	ug/L	MW-35	12/11/2024	ND	1.8000		7.6400
Lead	ug/L	MW-11	07/01/2024	ND	0.2600		3.2500
Lead	ug/L	MW-22	12/11/2024	ND	0.2600		3.2500
Lead	ug/L	MW-35	12/11/2024	ND	0.2600		3.2500
Mercury	ug/L	MW-11	07/01/2024	ND	0.1100		*****
Mercury	ug/L	MW-35	06/08/2021	ND	0.1500		*****
Nickel	ug/L	MW-11	07/01/2024		16.3000		37.6000
Nickel	ug/L	MW-22	12/11/2024		7.6300		37.6000
Nickel	ug/L	MW-35	12/11/2024		11.8000		37.6000
Selenium	ug/L	MW-11	07/01/2024	ND	1.4000		0.9600
Selenium	ug/L	MW-22	12/11/2024	ND	1.4000		0.9600
Selenium	ug/L	MW-35	12/11/2024	ND	1.4000		0.9600
Silver	ug/L	MW-11	07/01/2024	ND	0.5000		1.2400
Silver	ug/L	MW-22	12/11/2024	ND	0.5000		1.2400
Silver	ug/L	MW-35	12/11/2024	ND	0.5000		1.2400
Thallium	ug/L	MW-11	07/01/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-22	12/11/2024	ND	0.5700		0.2600
Thallium	ug/L	MW-35	12/11/2024	ND	0.5700		0.2600
Vanadium	ug/L	MW-11	07/01/2024	ND	1.1000		0.8500
Vanadium	ug/L	MW-22	12/11/2024	ND	1.1000		0.8500
Vanadium	ug/L	MW-35	12/11/2024	ND	1.1000		0.8500
Zinc	ug/L	MW-11	07/01/2024		60.0000	***	10.0000
Zinc	ug/L	MW-22	12/11/2024	ND	9.7000		10.0000

* - 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
Zinc	ug/L	MW-35	12/11/2024	ND	9.7000		10.0000

* - 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 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient Detect	Upgradient N	Upgradient Proportion	Downgradient Detect	Downgradient N	Downgradient Proportion
Antimony	0	25	0.000	3	43	0.070
Arsenic	7	25	0.280	7	43	0.163
Barium	25	25	1.000	43	43	1.000
Beryllium	1	25	0.040	2	43	0.047
Cadmium	1	25	0.040	1	43	0.023
Chromium	1	25	0.040	2	43	0.047
Cobalt	14	25	0.560	17	44	0.386
Copper	1	26	0.038	4	43	0.093
Lead	5	25	0.200	5	43	0.116
Mercury	0	3	0.000	0	4	0.000
Nickel	12	25	0.480	36	45	0.800
Selenium	0	25	0.000	0	43	0.000
Silver	3	25	0.120	0	43	0.000
Thallium	1	25	0.040	2	44	0.045
Vanadium	0	25	0.000	2	43	0.047
Zinc	0	25	0.000	17	45	0.378

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	0	25	0.000	5.704	5.704					2.326	non-norm	nonpar
Arsenic	7	25	0.280	7.645	5.262					2.326	non-norm	nonpar
Barium	25	25	1.000	6.356	3.013					2.326	non-norm	nonpar
Beryllium	1	25	0.040	5.704	5.704					2.326	non-norm	nonpar
Cadmium	1	25	0.040	5.704	5.704					2.326	non-norm	nonpar
Chromium	1	25	0.040	5.704	5.704					2.326	non-norm	nonpar
Cobalt	14	25	0.560	4.580	3.831					2.326	non-norm	nonpar
Copper	1	26	0.038	5.704	5.704					2.326	non-norm	nonpar
Lead	5	25	0.200	9.832	6.593					2.326	non-norm	nonpar
Mercury	0	3	0.000	0.495	0.495					2.326	normal	too few
Nickel	12	25	0.480	5.527	3.056					2.326	non-norm	nonpar
Selenium	0	25	0.000	5.704	5.704					2.326	non-norm	nonpar
Silver	3	25	0.120	8.222	6.782					2.326	non-norm	nonpar
Thallium	1	25	0.040	5.704	5.704					2.326	non-norm	nonpar
Vanadium	0	25	0.000	5.704	5.704					2.326	non-norm	nonpar
Zinc	0	25	0.000	5.704	5.704					2.326	non-norm	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	ug/L	0	25					0.5300	nonpar	***	0.99
Arsenic	ug/L	7	25					9.2300	nonpar		0.99
Barium	ug/L	25	25					2080.0000	nonpar		0.99
Beryllium	ug/L	1	25					0.2700	nonpar	***	0.99
Cadmium	ug/L	1	25					0.1200	nonpar		0.99
Chromium	ug/L	1	25					1.1000	nonpar	***	0.99
Cobalt	ug/L	14	25					5.6200	nonpar		0.99
Copper	ug/L	1	26					7.6400	nonpar		0.99
Lead	ug/L	5	25					3.2500	nonpar		0.99
Mercury	ug/L	0	3							*	
Nickel	ug/L	12	25					37.6000	nonpar		0.99
Selenium	ug/L	0	25					0.9600	nonpar	***	0.99
Silver	ug/L	3	25					1.2400	nonpar		0.99
Thallium	ug/L	1	25					0.2600	nonpar	***	0.99
Vanadium	ug/L	0	25					0.8500	nonpar	***	0.99
Zinc	ug/L	0	25					10.0000	nonpar	***	0.99

Conf = confidence level for passing initial test or one of two verification resamples 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 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	Units	Well	Date	Result	Detects	N	% >= PQL	% >= MDL	Manual RL	Median	>= Med
Beryllium	ug/L	MW-19	09/16/2015	0.0400	1	25	4	4	no	0.2700	no
Cadmium	ug/L	MW-19	03/16/2022	0.1200	1	25	4	4	no	0.0550	yes
Chromium	ug/L	MW-19	05/06/2014	1.0700	1	25	4	16	no	1.1000	no
Copper	ug/L	MW-19	03/16/2022	7.6400	1	25	4	16	no	1.5000	yes
Lead	ug/L	MW-19	05/06/2014	0.4680	5	25	20	40	no	0.2400	
Lead	ug/L	MW-19	10/31/2014	0.1710	5	25	20	40	no	0.2400	
Lead	ug/L	MW-19	09/16/2015	0.1020	5	25	20	40	no	0.2400	
Lead	ug/L	MW-19	09/22/2021	0.5810	5	25	20	40	no	0.2400	
Lead	ug/L	MW-19	03/16/2022	3.2500	5	25	20	40	no	0.2400	
Silver	ug/L	MW-19	09/16/2015	0.1220	3	25	12	12	no	0.3700	
Silver	ug/L	MW-19	11/14/2017	0.1520	3	25	12	12	no	0.3700	
Silver	ug/L	MW-19	12/07/2022	1.2400	3	25	12	12	no	0.3700	
Thallium	ug/L	MW-19	11/11/2016	0.0280	1	25	4	4	no	0.2600	no

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	>= 2x	>= 3x	
Beryllium			
Cadmium			*
Chromium			
Copper			*
Lead	no		
Lead	no		
Lead	no		
Lead	yes		*
Lead	yes		*
Silver	no		
Silver	no		
Silver	yes		*
Thallium			

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL 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
Zinc	ug/L	MW-11	10/12/2007		134.0000	*	10.0000
Zinc	ug/L	MW-11	01/09/2008	ND	20.0000		10.0000
Zinc	ug/L	MW-11	04/08/2008		61.6000	*	10.0000
Zinc	ug/L	MW-11	07/16/2008		31.8000	*	10.0000
Zinc	ug/L	MW-11	12/28/2009		177.0000	*	10.0000
Zinc	ug/L	MW-11	02/25/2010		28.8000	*	10.0000
Zinc	ug/L	MW-11	02/25/2011		92.9000	*	10.0000
Zinc	ug/L	MW-11	04/13/2011		23.5000	*	10.0000
Zinc	ug/L	MW-11	08/25/2011		28.3000	*	10.0000
Zinc	ug/L	MW-11	04/24/2012		32.1000	*	10.0000
Zinc	ug/L	MW-11	10/24/2012		40.7000	*	10.0000
Zinc	ug/L	MW-11	10/31/2018		119.0000	*	10.0000
Zinc	ug/L	MW-11	12/17/2018		82.8000	*	10.0000
Zinc	ug/L	MW-11	06/03/2021		140.0000	*	10.0000
Zinc	ug/L	MW-11	08/03/2021		70.1000	*	10.0000
Zinc	ug/L	MW-11	09/07/2022		146.0000	*	10.0000
Zinc	ug/L	MW-11	06/20/2023		98.5000	*	10.0000
Zinc	ug/L	MW-11	07/01/2024		60.0000	*	10.0000

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

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Antimony (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.53**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Arsenic (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **9.23**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Barium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **2080.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beryllium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.27**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cadmium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.12**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Chromium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.1**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cobalt (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **5.62**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Copper (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **7.64**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Lead (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **3.25**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Nickel (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **37.6**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Selenium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.96**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Silver (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.24**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Thallium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.26**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

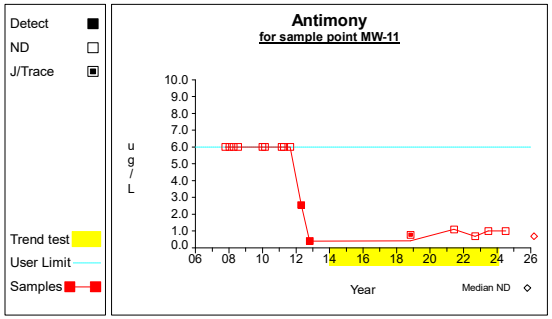
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vanadium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.85**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

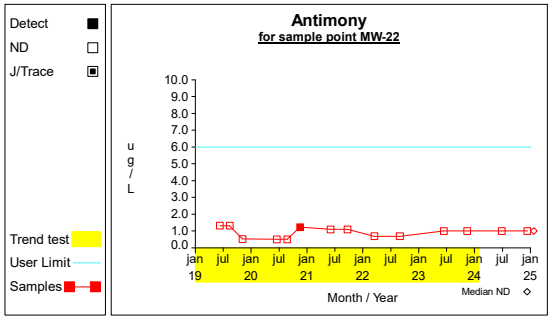
Worksheet 1 - Upgradient vs. Downgradient Comparisons
Zinc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **10.0**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

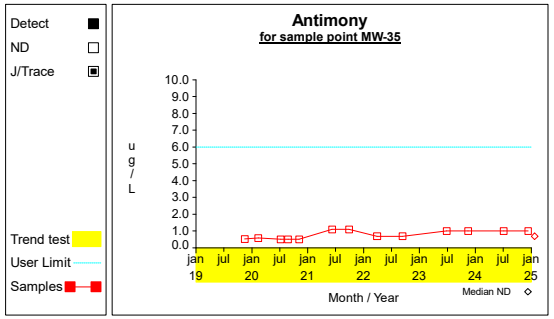
Time Series



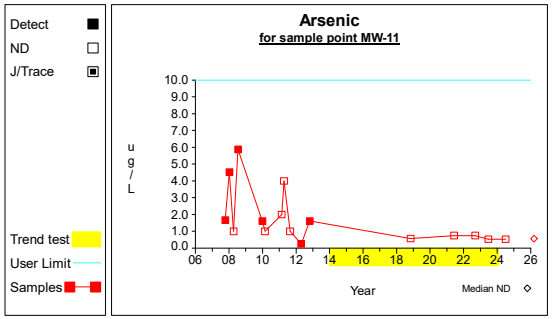
Graph 1



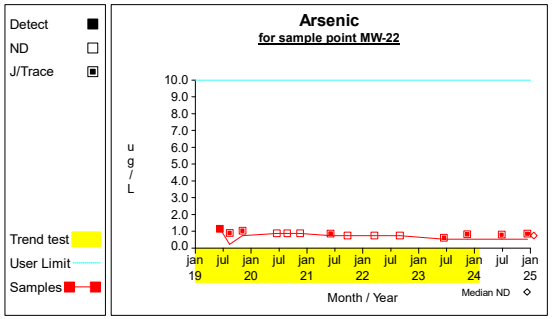
Graph 2



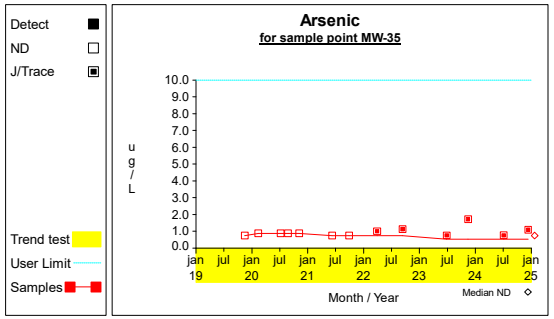
Graph 3



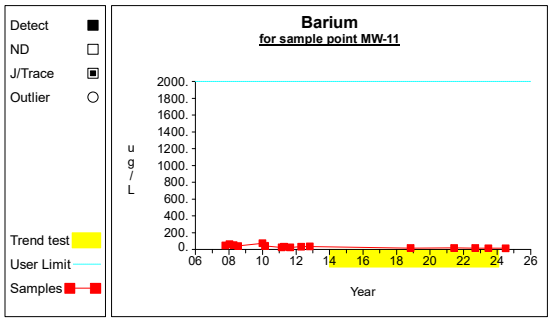
Graph 4



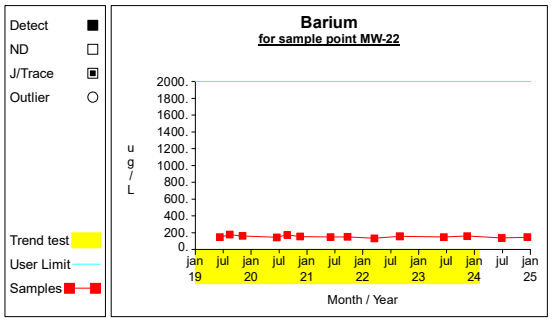
Graph 5



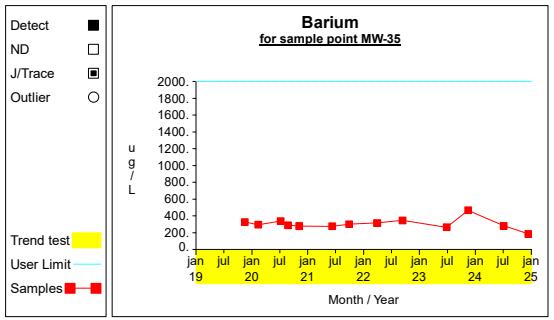
Graph 6



Graph 7

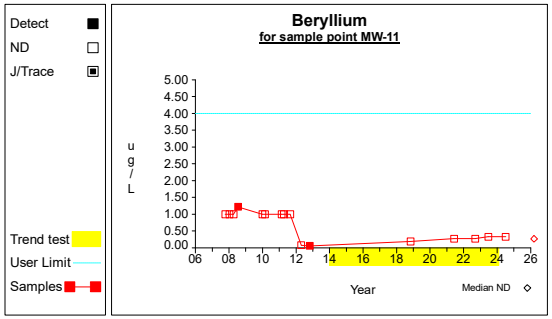


Graph 8

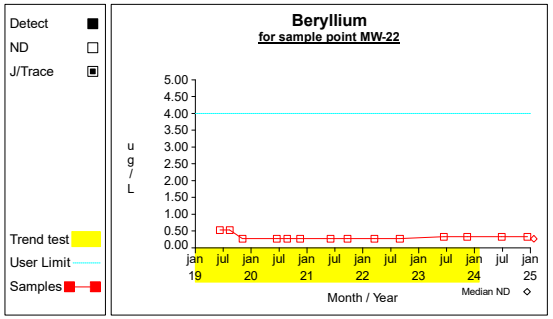


Graph 9

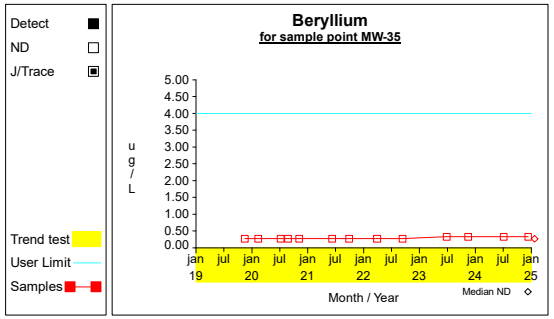
Time Series



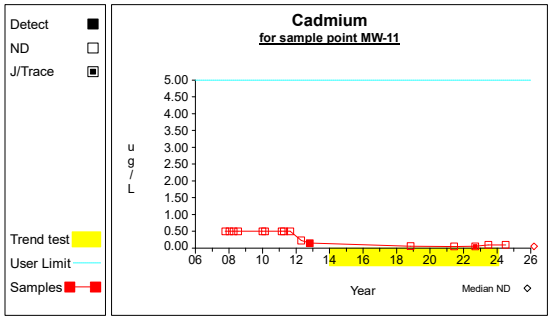
Graph 10



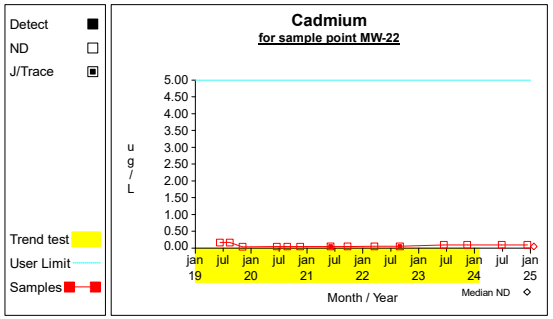
Graph 11



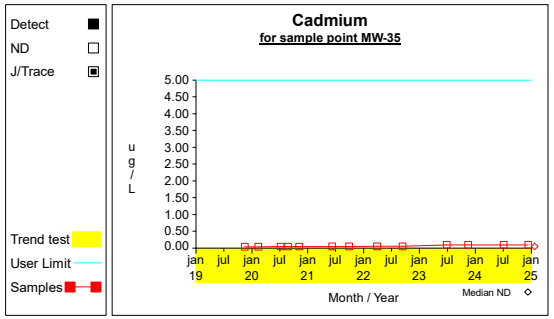
Graph 12



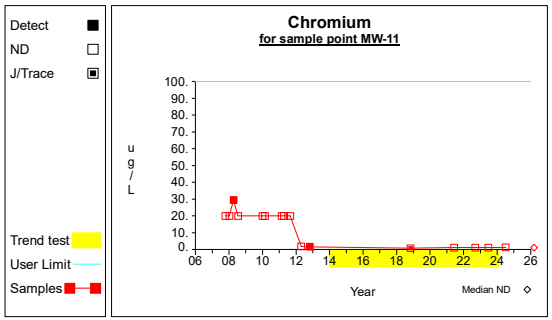
Graph 13



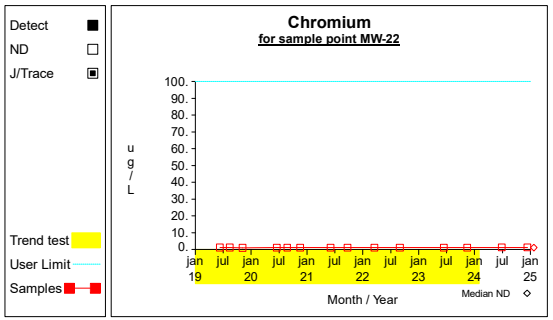
Graph 14



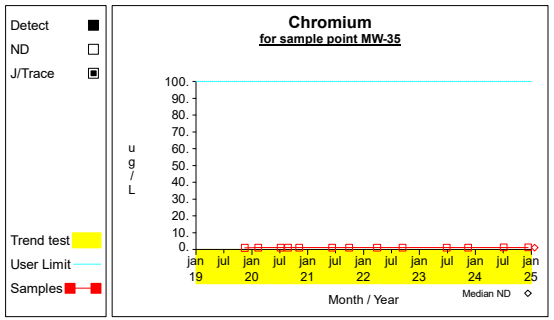
Graph 15



Graph 16

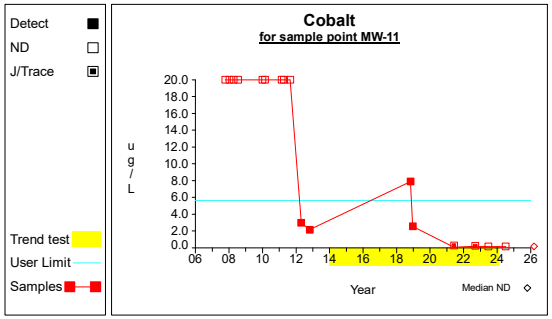


Graph 17

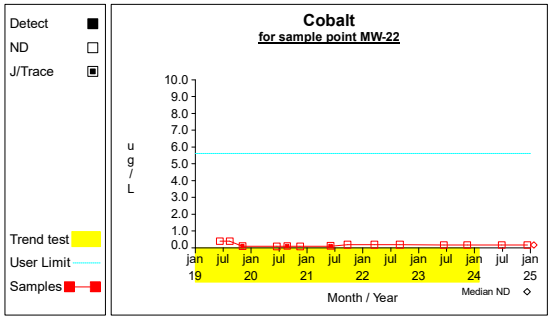


Graph 18

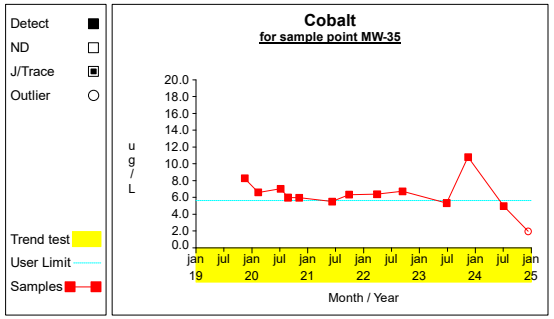
Time Series



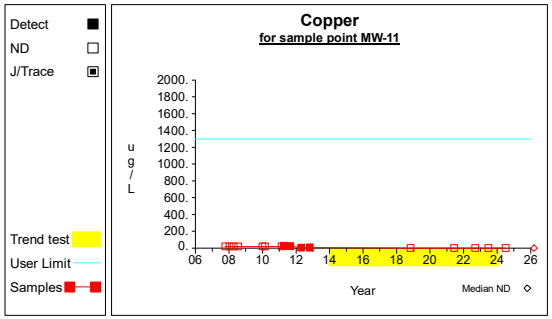
Graph 19



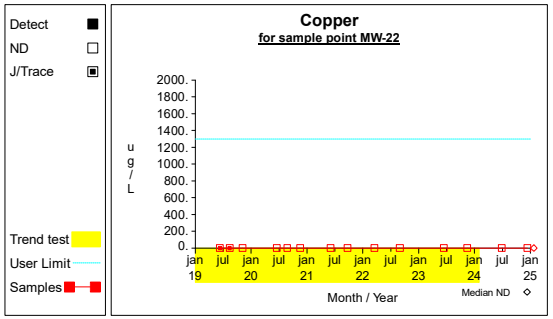
Graph 20



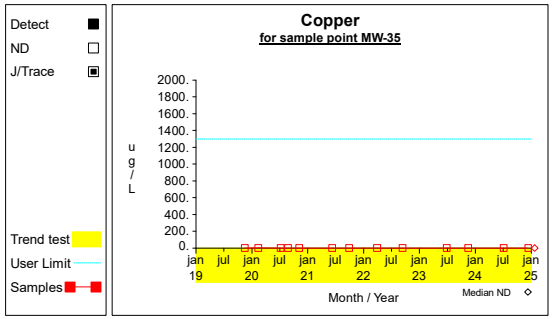
Graph 21



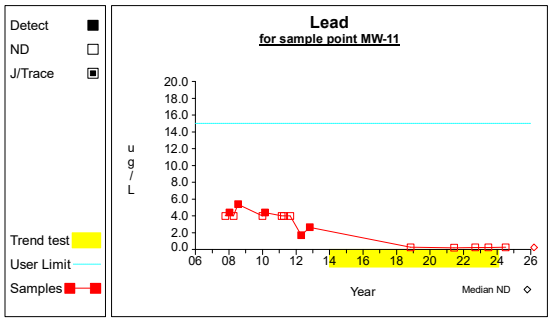
Graph 22



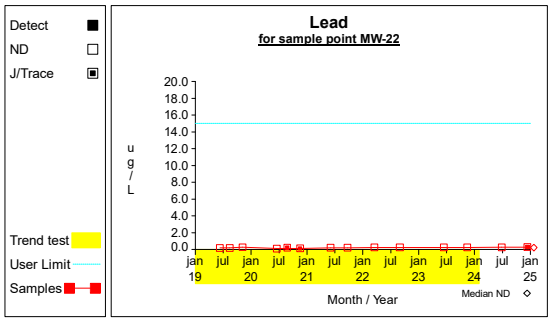
Graph 23



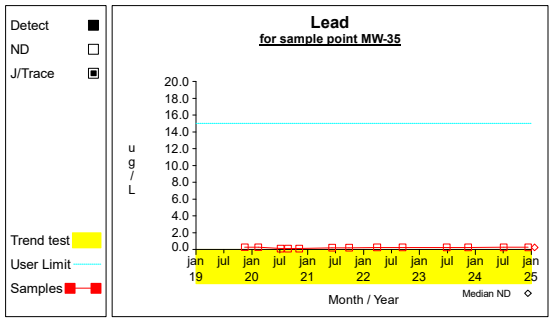
Graph 24



Graph 25

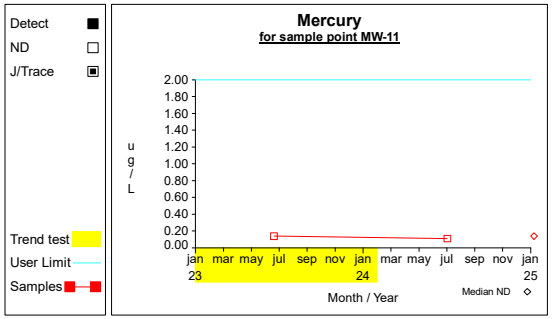


Graph 26

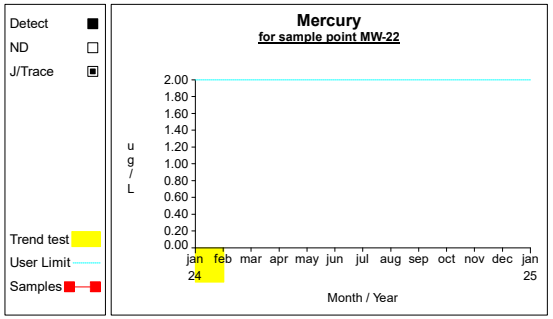


Graph 27

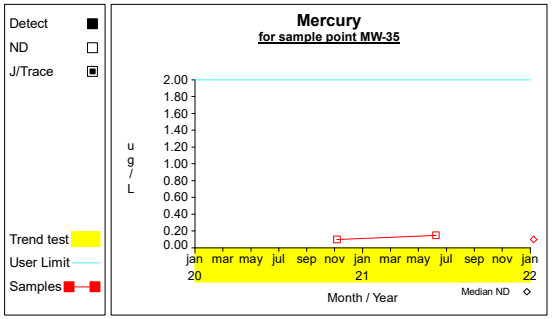
Time Series



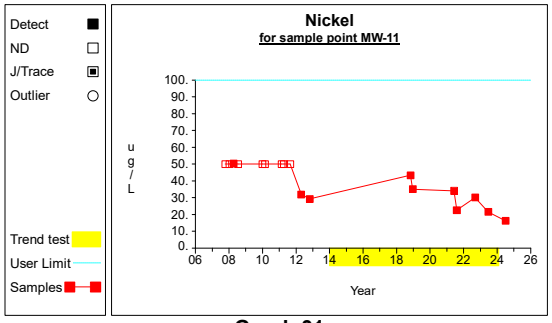
Graph 28



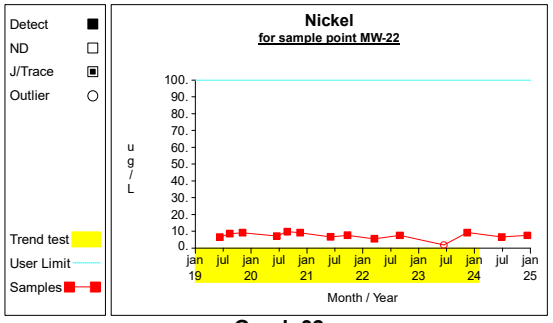
Graph 29



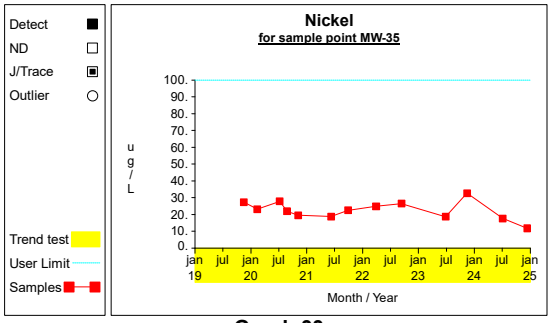
Graph 30



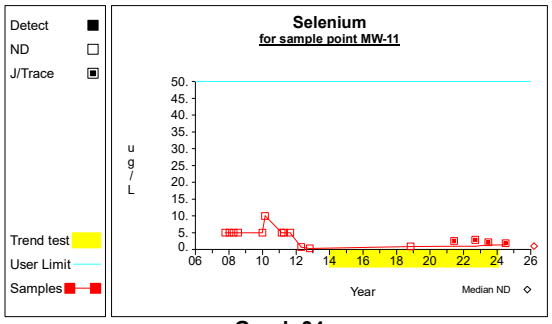
Graph 31



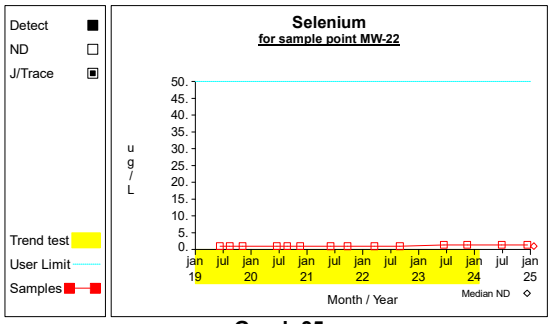
Graph 32



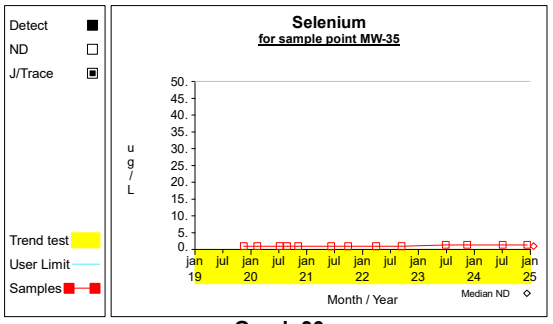
Graph 33



Graph 34

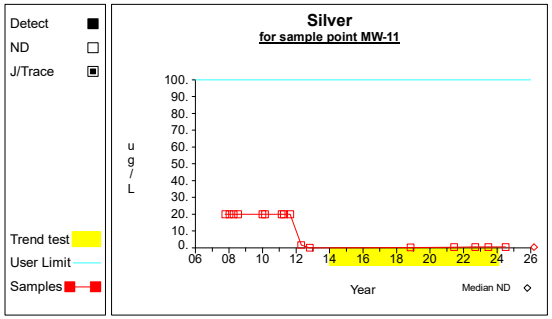


Graph 35

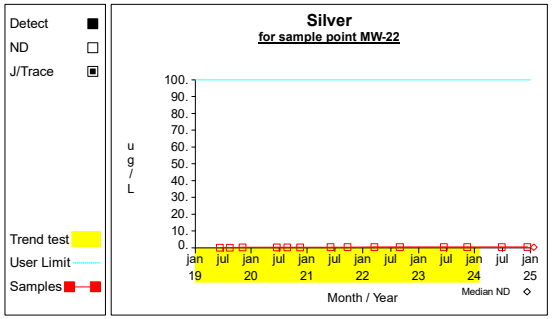


Graph 36

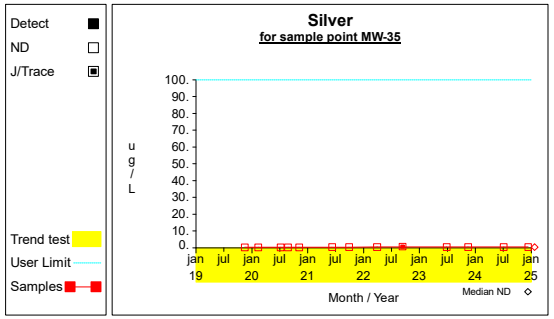
Time Series



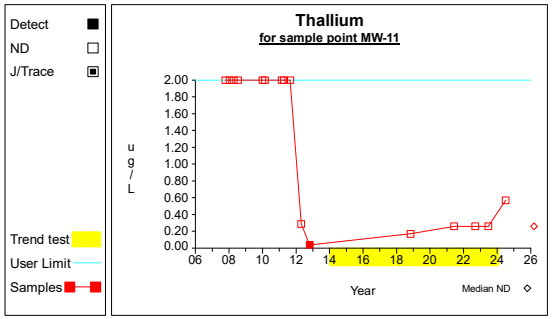
Graph 37



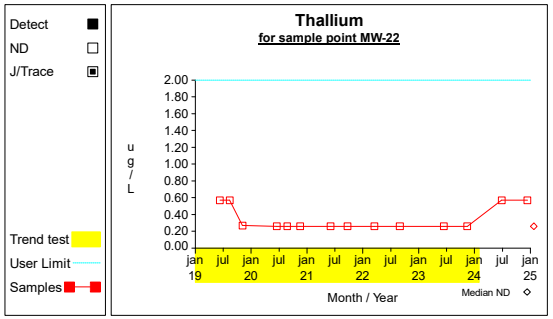
Graph 38



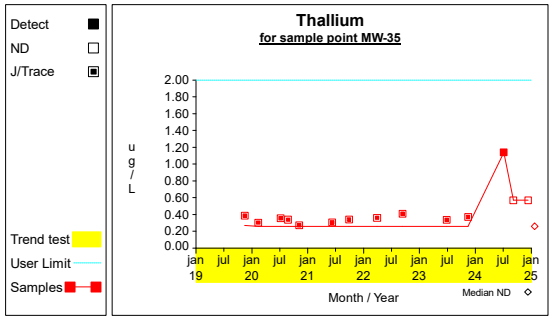
Graph 39



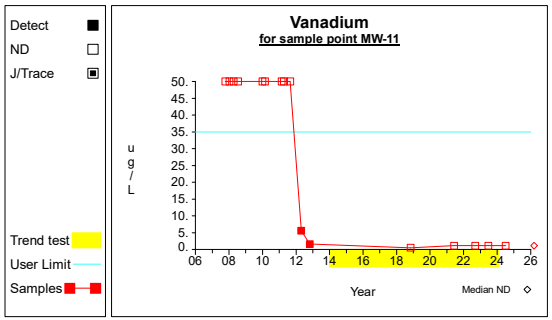
Graph 40



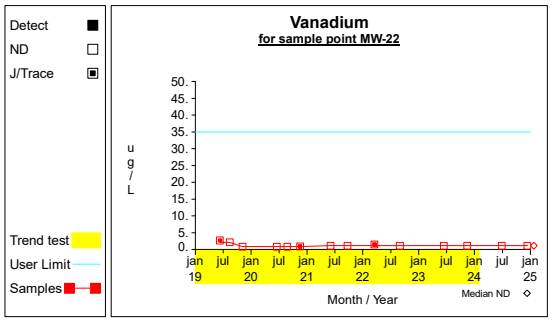
Graph 41



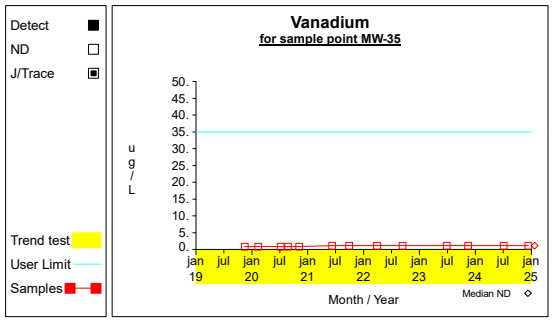
Graph 42



Graph 43

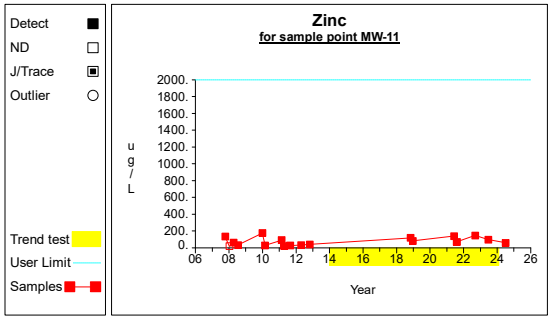


Graph 44

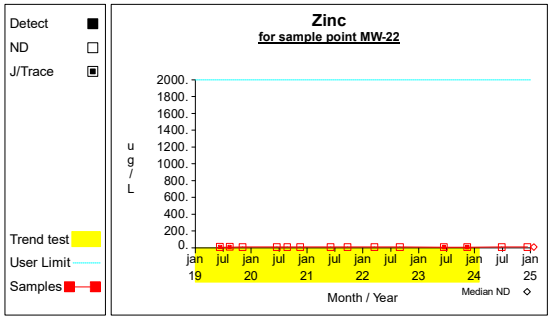


Graph 45

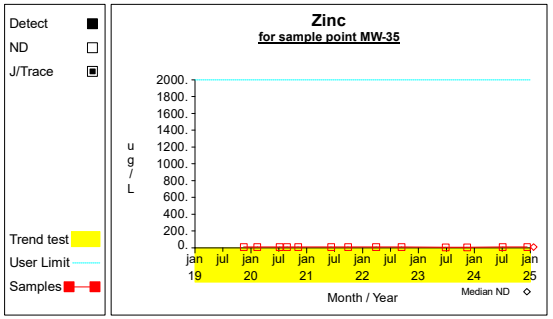
Time Series



Graph 46

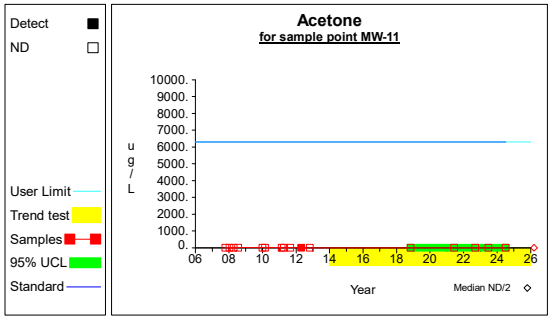


Graph 47

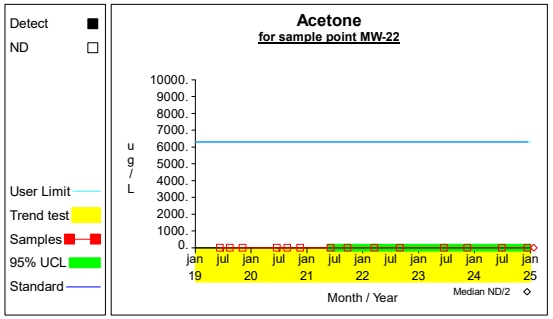


Graph 48

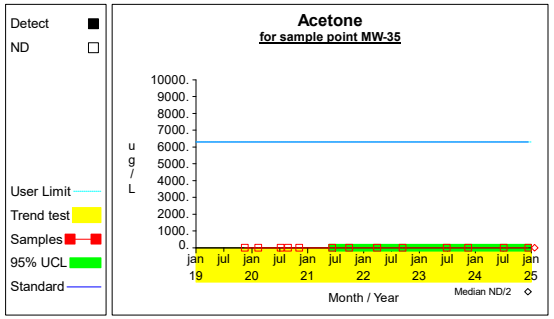
Confidence Limits (Assessment)



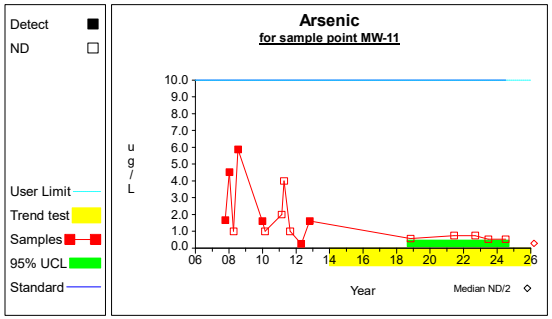
Graph 1



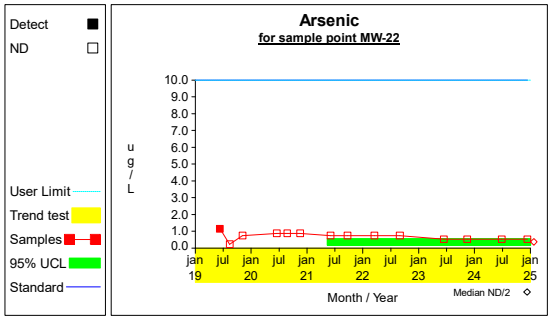
Graph 2



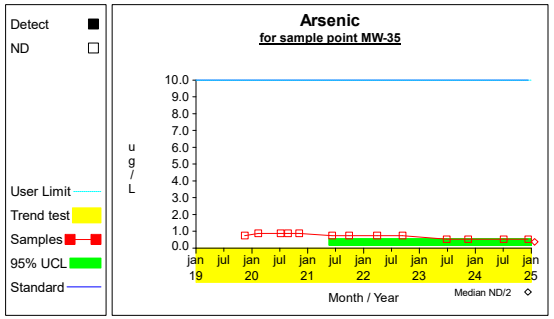
Graph 3



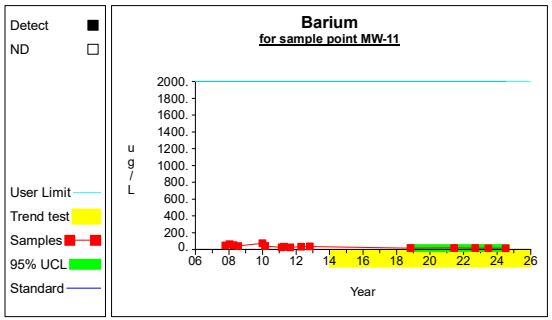
Graph 4



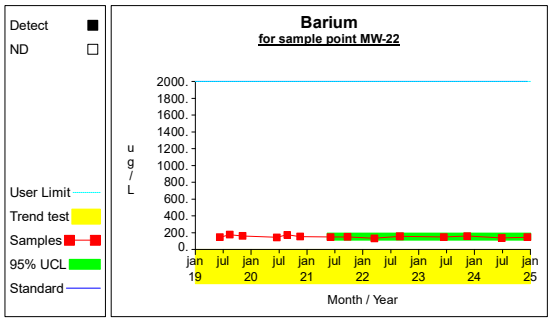
Graph 5



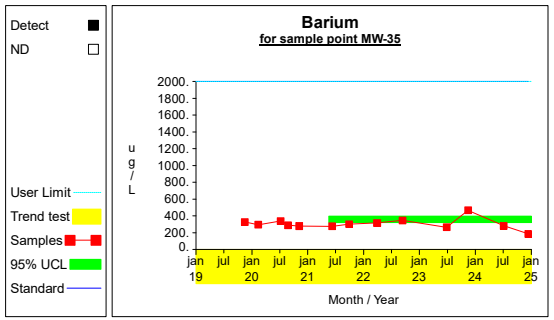
Graph 6



Graph 7

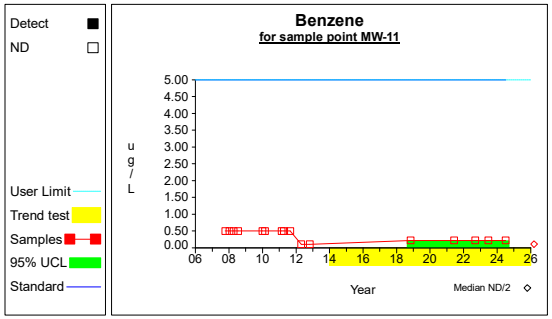


Graph 8

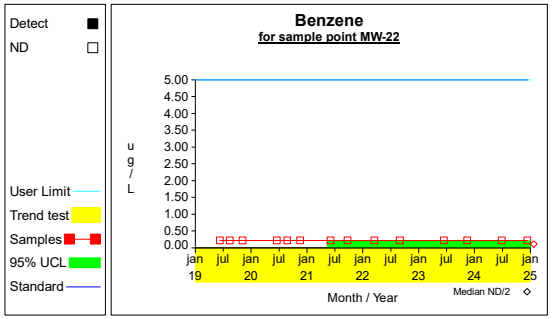


Graph 9

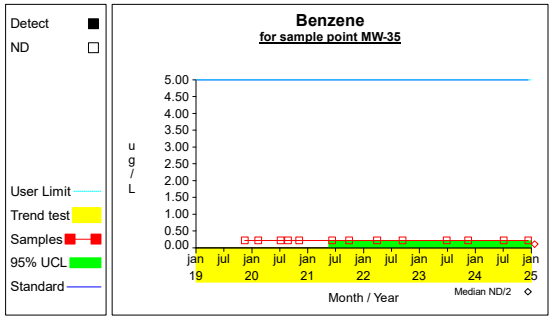
Confidence Limits (Assessment)



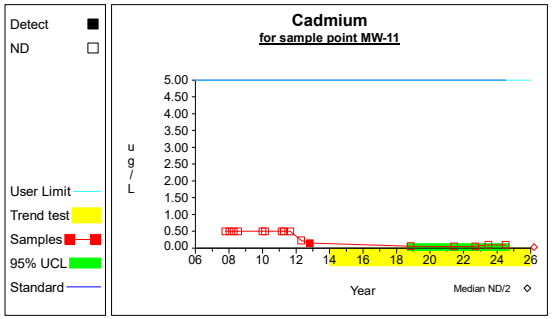
Graph 10



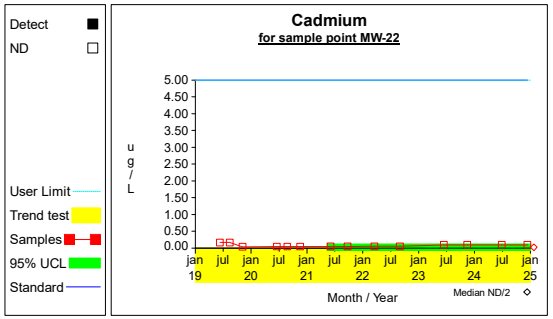
Graph 11



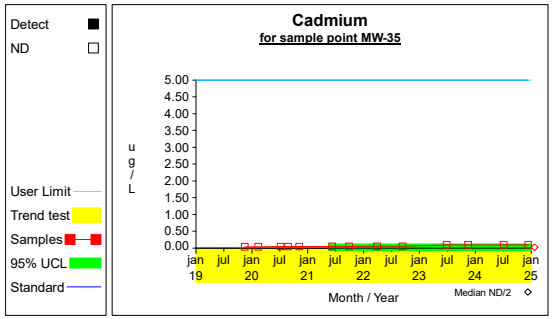
Graph 12



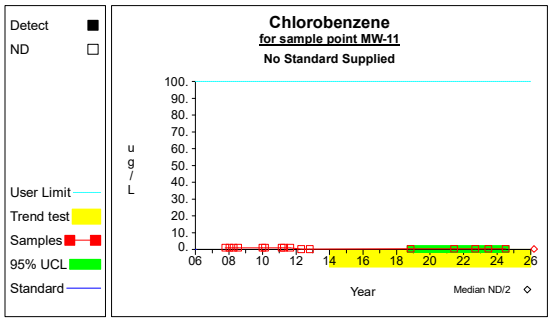
Graph 13



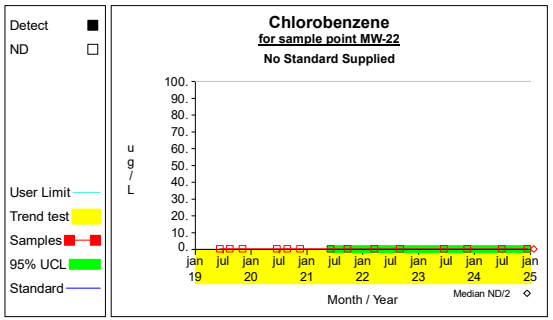
Graph 14



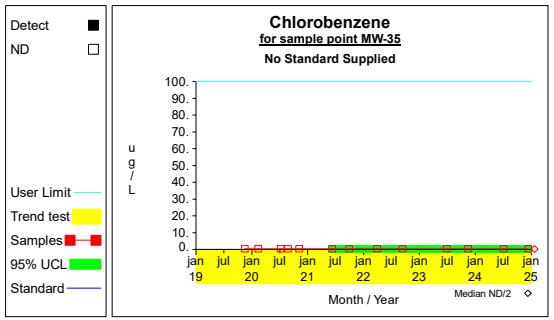
Graph 15



Graph 16

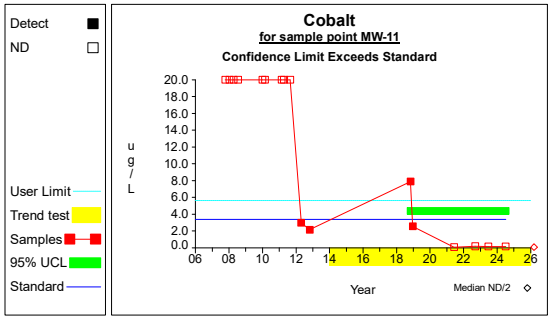


Graph 17

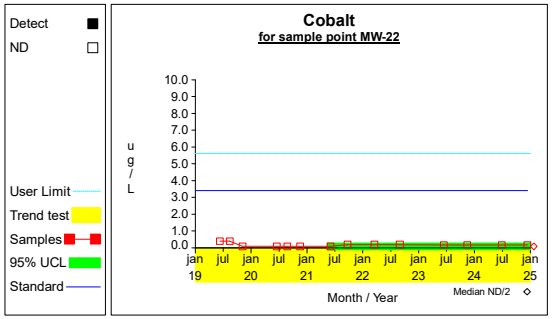


Graph 18

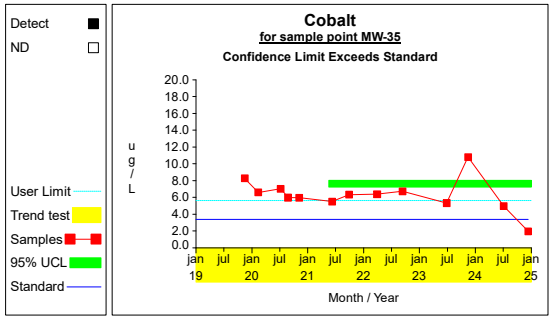
Confidence Limits (Assessment)



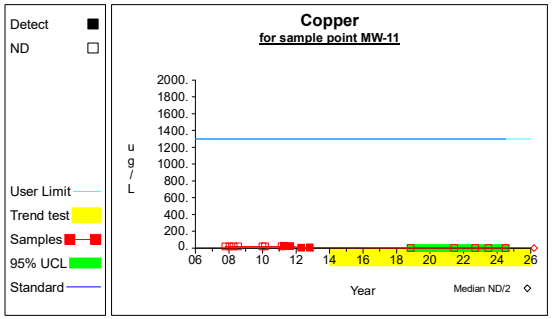
Graph 19



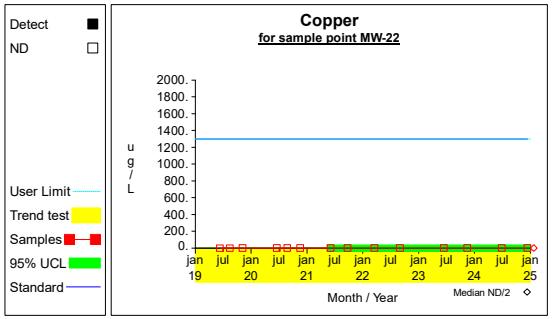
Graph 20



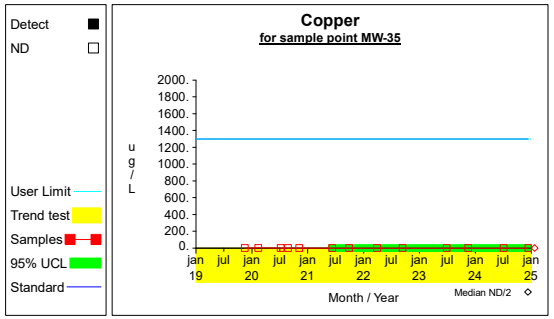
Graph 21



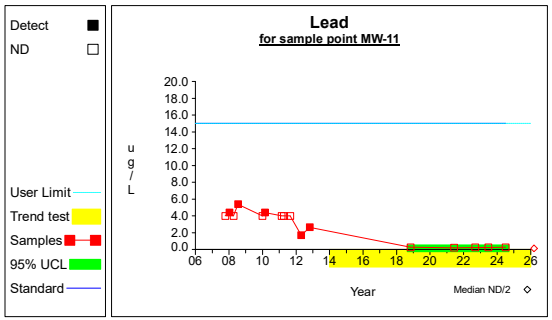
Graph 22



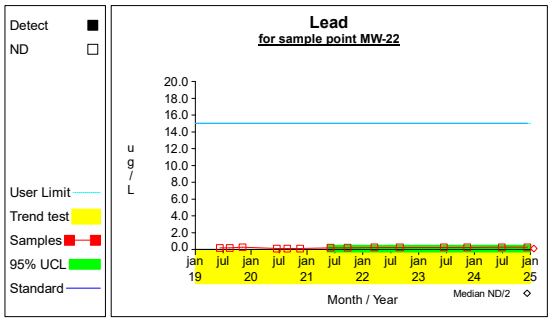
Graph 23



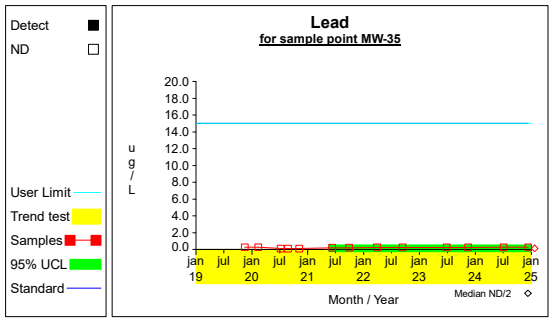
Graph 24



Graph 25

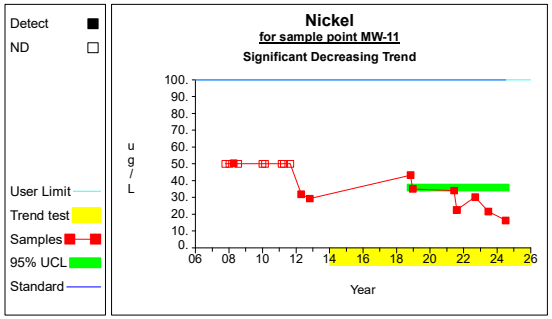


Graph 26

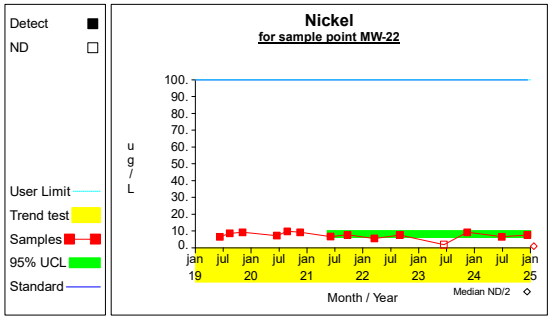


Graph 27

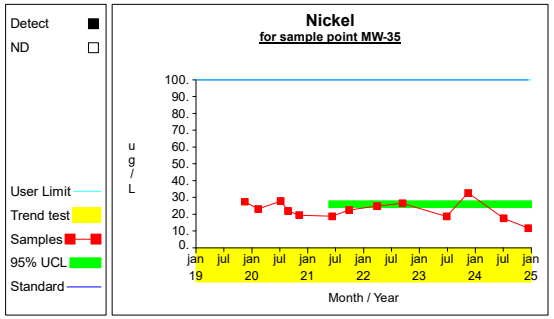
Confidence Limits (Assessment)



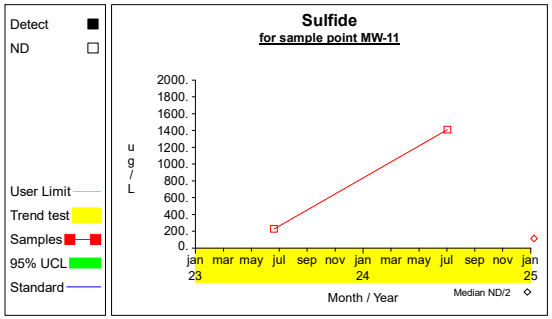
Graph 28



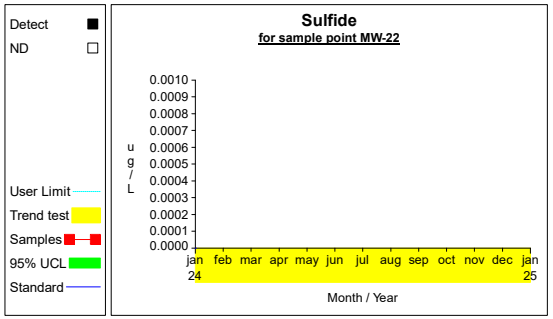
Graph 29



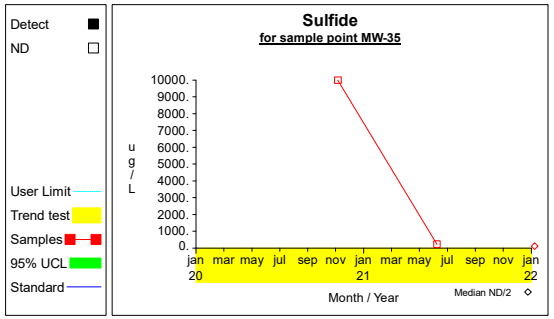
Graph 30



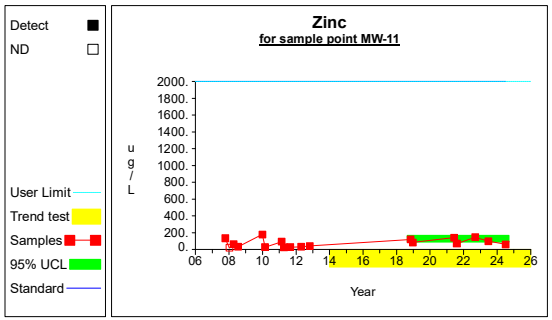
Graph 31



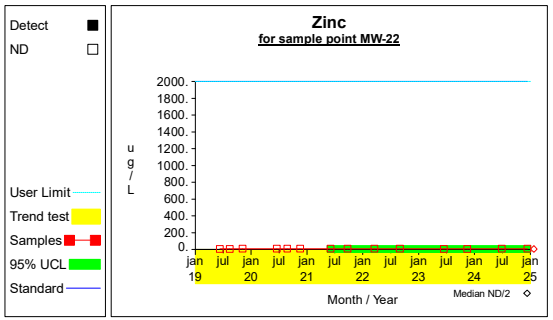
Graph 32



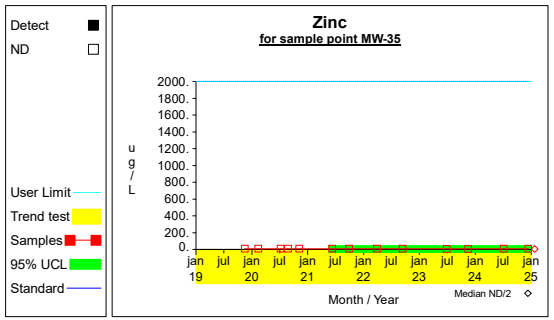
Graph 33



Graph 34



Graph 35



Graph 36

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Acetone	ug/L	MW-11	5	1.550	0.000	0.953	1.550	1.550	6300.000		
Acetone	ug/L	MW-22	8	1.550	0.000	0.670	1.550	1.550	6300.000		
Acetone	ug/L	MW-35	8	1.550	0.000	0.670	1.550	1.550	6300.000		
Arsenic	ug/L	MW-11	5	0.285	0.000	0.953	0.285	0.285	10.000		
Arsenic	ug/L	MW-22	8	0.375	0.000	0.670	0.375	0.375	10.000		
Arsenic	ug/L	MW-35	8	0.375	0.000	0.670	0.375	0.375	10.000		
Barium	ug/L	MW-11	5	16.600	1.764	0.953	14.919	18.281	2000.000		
Barium	ug/L	MW-22	8	147.125	8.774	0.670	141.248	153.002	2000.000		
Barium	ug/L	MW-35	8	304.375	80.433	0.670	250.500	358.250	2000.000		
Benzene	ug/L	MW-11	5	0.110	0.000	0.953	0.110	0.110	5.000		
Benzene	ug/L	MW-22	8	0.110	0.000	0.670	0.110	0.110	5.000		
Benzene	ug/L	MW-35	8	0.110	0.000	0.670	0.110	0.110	5.000		
Cadmium	ug/L	MW-11	5	0.030	0.000	0.953	0.030	0.030	5.000		
Cadmium	ug/L	MW-22	8	0.028	0.000	0.670	0.028	0.028	5.000		
Cadmium	ug/L	MW-35	8	0.026	0.000	0.670	0.026	0.026	5.000		
Chlorobenzene	ug/L	MW-11	5	0.200	0.000	0.953	0.200	0.200			
Chlorobenzene	ug/L	MW-22	8	0.200	0.000	0.670	0.200	0.200			
Chlorobenzene	ug/L	MW-35	8	0.200	0.000	0.670	0.200	0.200			
Cobalt	ug/L	MW-11	6	1.800	3.145	0.822	0.000	4.386	3.400		**
Cobalt	ug/L	MW-22	8	0.085	0.000	0.670	0.085	0.085	3.400		
Cobalt	ug/L	MW-35	8	6.005	2.443	0.670	4.369	7.641	3.400		**
Copper	ug/L	MW-11	5	0.900	0.000	0.953	0.900	0.900	1300.000		
Copper	ug/L	MW-22	8	0.750	0.000	0.670	0.750	0.750	1300.000		
Copper	ug/L	MW-35	8	0.900	0.000	0.670	0.900	0.900	1300.000		

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

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Lead	ug/L	MW-11	5	0.120	0.000	0.953	0.120	0.120	15.000		
Lead	ug/L	MW-22	8	0.105	0.000	0.670	0.105	0.105	15.000		
Lead	ug/L	MW-35	8	0.120	0.000	0.670	0.120	0.120	15.000		
Nickel	ug/L	MW-11	7	29.029	9.364	0.734	22.154	35.903	100.000	dec	
Nickel	ug/L	MW-22	8	6.513	2.491	0.670	4.844	8.181	100.000		
Nickel	ug/L	MW-35	8	21.688	6.405	0.670	17.397	25.978	100.000		
Sulfide	ug/L	MW-11	2								*
Sulfide	ug/L	MW-22	0								*
Sulfide	ug/L	MW-35	2								*
Zinc	ug/L	MW-11	7	102.343	33.741	0.734	77.573	127.112	2000.000		
Zinc	ug/L	MW-22	8	5.000	0.000	0.670	5.000	5.000	2000.000		
Zinc	ug/L	MW-35	8	5.000	0.000	0.670	5.000	5.000	2000.000		

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

Worksheet 6 - Assessment Monitoring
Acetone (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.75** / **5** = **1.55**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**12.013** - **60.063**/**5**) / (**5**-1))^{½} = **1.63**x**10**$^{-8}$	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.55** - **2.132** * **1.63**x**10**$^{-8}$/**5**^{½} = **1.55**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.55** + **2.132** * **1.63**x**10**$^{-8}$/**5**^{½} = **1.55**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Acetone (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.4** / **8** = **1.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**19.22** - **153.76**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.55** - **1.895** * **0.0**/**8**^{½} = **1.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.55** + **1.895** * **0.0**/**8**^{½} = **1.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Acetone (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.4** / **8** = **1.55**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**19.22** - **153.76**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.55** - **1.895** * **0.0**/**8**^{½} = **1.55**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.55** + **1.895** * **0.0**/**8**^{½} = **1.55**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.425** / **5** = **0.285**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.406** - **2.031**/**5**) / (**5**-1))^{½} = **3.86**x**10**$^{-9}$	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.285** - **2.132** * **3.86**x**10**$^{-9}$/**5**^{½} = **0.285**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.285** + **2.132** * **3.86**x**10**$^{-9}$/**5**^{½} = **0.285**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.0** / **8** = **0.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.125** - **9.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.895** * **0.0**/**8**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.895** * **0.0**/**8**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **65.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **65.0**^{½}) / 2 = [**35.116**, **55.884**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Arsenic (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.0** / **8** = **0.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**1.125** - **9.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.375** - **1.895** * **0.0**/**8**^{½} = **0.375**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.375** + **1.895** * **0.0**/**8**^{½} = **0.375**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **83.0** / **5** = **16.6**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**1390.24** - **6889.0**/**5**) / (**5**-1))$^{1/2}$ = **1.764**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$ = **16.6** - **2.132** * **1.764**/**5**$^{1/2}$ = **14.919**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$ = **16.6** + **2.132** * **1.764**/**5**$^{1/2}$ = **18.281**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **-0.929**	Sen's estimator of trend.
7	var(S) = **16.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**10** ± **2.576** * **16.667**$^{1/2}$) / 2 = [**-0.258**, **10.258**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-2.935**, **0.695**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1177.0** / **8** = **147.125**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**173705.0** - **1.39**x**10^6**/**8**) / (**8**-1))^{½} = **8.774**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **147.125** - **1.895** * **8.774**/**8**^{½} = **141.248**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **147.125** + **1.895** * **8.774**/**8**^{½} = **153.002**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **-1.968**	Sen's estimator of trend.
7	var(S) = **332.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **332.667**^{½}) / 2 = [**22.008**, **68.992**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-9.636**, **3.102**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Barium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2435.0** / **8** = **304.375**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**786439.0** - **5.93**x**10^6**/**8**) / (**8**-1))^{½} = **80.433**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **304.375** - **1.895** * **80.433**/**8**^{½} = **250.5**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **304.375** + **1.895** * **80.433**/**8**^{½} = **358.25**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-8.029**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-34.277**, **28.079**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.55** / **5** = **0.11**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.061** - **0.303**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **2.132** * **0.0**/**5**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **2.132** * **0.0**/**5**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.88** / **8** = **0.11**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.097** - **0.774**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.895** * **0.0**/**8**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.895** * **0.0**/**8**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.88** / **8** = **0.11**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.097** - **0.774**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.11** - **1.895** * **0.0**/**8**^{½} = **0.11**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.11** + **1.895** * **0.0**/**8**^{½} = **0.11**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.15** / **5** = **0.03**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.005** - **0.023**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.03** - **2.132** * **0.0**/**5**^{½} = **0.03**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.03** + **2.132** * **0.0**/**5**^{½} = **0.03**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.22** / **8** = **0.028**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.006** - **0.048**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.028** - **1.895** * **0.0**/**8**^{½} = **0.028**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.028** + **1.895** * **0.0**/**8**^{½} = **0.028**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cadmium (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.204** / **8** = **0.026**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.005** - **0.042**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.026** - **1.895** * **0.0**/**8**^{½} = **0.026**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.026** + **1.895** * **0.0**/**8**^{½} = **0.026**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chlorobenzene (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.0** / **5** = **0.2**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.2** - **1.0**/**5**) / (**5**-1))^{½} = **3.12**x**10**$^{-9}$	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.2** - **2.132** * **3.12**x**10**$^{-9}$/**5**^{½} = **0.2**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.2** + **2.132** * **3.12**x**10**$^{-9}$/**5**^{½} = **0.2**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chlorobenzene (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.6** / **8** = **0.2**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.32** - **2.56**/**8**) / (**8**-1))^{½} = **2.93**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.2** - **1.895** * **2.93**x**10**$^{-9}$/**8**^{½} = **0.2**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.2** + **1.895** * **2.93**x**10**$^{-9}$/**8**^{½} = **0.2**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chlorobenzene (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.6** / **8** = **0.2**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.32** - **2.56**/**8**) / (**8**-1))^{½} = **2.93**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.2** - **1.895** * **2.93**x**10**$^{-9}$/**8**^{½} = **0.2**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.2** + **1.895** * **2.93**x**10**$^{-9}$/**8**^{½} = **0.2**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **10.8** / **6** = **1.8**	Compute the mean of the last 6 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**68.886** - **116.64**/**6**) / (**6**-1))^{½} = **3.145**	Compute sd of the last 6 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **1.8** - **2.014** * **3.145**/**6**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 6 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **1.8** + **2.014** * **3.145**/**6**^{½} = **4.386**	Compute upper confidence limit for the mean of the last 6 measurements.
5	N' = **N** * (**N**-1) / 2 = **6** * (**6**-1) / 2 = **15**	Number of sample pairs during trend detection period.
6	S = **-0.551**	Sen's estimator of trend.
7	var(S) = **19.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**15** ± **2.576** * **19.667**^{½}) / 2 = [**1.788**, **13.212**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-11.131**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.68** / **8** = **0.085**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.058** - **0.462**/**8**) / (**8**-1))^{½} = **1.76**x**10**$^{-9}$	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.085** - **1.895** * **1.76**x**10**$^{-9}$/**8**^{½} = **0.085**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.085** + **1.895** * **1.76**x**10**$^{-9}$/**8**^{½} = **0.085**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **48.04** / **8** = **6.005**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**330.26** - **2307.842**/**8**) / (**8**-1))^{½} = **2.443**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.005** - **1.895** * **2.443**/**8**^{½} = **4.369**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.005** + **1.895** * **2.443**/**8**^{½} = **7.641**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-0.507**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.172**, **0.374**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.5** / **5** = **0.9**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.05** - **20.25**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **2.132** * **0.0**/**5**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **2.132** * **0.0**/**5**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **6.0** / **8** = **0.75**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4.5** - **36.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.75** - **1.895** * **0.0**/**8**^{½} = **0.75**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.75** + **1.895** * **0.0**/**8**^{½} = **0.75**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Copper (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **7.2** / **8** = **0.9**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6.48** - **51.84**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.9** - **1.895** * **0.0**/**8**^{½} = **0.9**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.9** + **1.895** * **0.0**/**8**^{½} = **0.9**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.6** / **5** = **0.12**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.072** - **0.36**/**5**) / (**5**-1))^{½} = **0.0**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **2.132** * **0.0**/**5**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **2.132** * **0.0**/**5**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **0.0**^{½}) / 2 = [**5.0**, **5.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.84** / **8** = **0.105**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.088** - **0.706**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.105** - **1.895** * **0.0**/**8**^{½} = **0.105**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.105** + **1.895** * **0.0**/**8**^{½} = **0.105**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Lead (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **0.96** / **8** = **0.12**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.115** - **0.922**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.12** - **1.895** * **0.0**/**8**^{½} = **0.12**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.12** + **1.895** * **0.0**/**8**^{½} = **0.12**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **203.2** / **7** = **29.029**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**6424.76** - **41290.24**/**7**) / (**7**-1))^{½} = **9.364**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **29.029** - **1.942** * **9.364**/**7**^{½} = **22.154**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **29.029** + **1.942** * **9.364**/**7**^{½} = **35.903**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-4.681**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-64.07**, **-0.523**]	Two-sided confidence interval for slope.
10	UCL(S) < 0	**Significant decreasing trend.**

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **52.1** / **8** = **6.513**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**382.753** - **2714.41**/**8**) / (**8**-1))^{½} = **2.491**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **6.513** - **1.895** * **2.491**/**8**^{½} = **4.844**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **6.513** + **1.895** * **2.491**/**8**^{½} = **8.181**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **-0.19**	Sen's estimator of trend.
7	var(S) = **332.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **332.667**^{½}) / 2 = [**22.008**, **68.992**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-1.557**, **0.598**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Nickel (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **173.5** / **8** = **21.688**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**4049.93** - **30102.25**/**8**) / (**8**-1))^{½} = **6.405**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **21.688** - **1.895** * **6.405**/**8**^{½} = **17.397**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **21.688** + **1.895** * **6.405**/**8**^{½} = **25.978**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **-1.306**	Sen's estimator of trend.
7	var(S) = **268.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **268.667**^{½}) / 2 = [**17.888**, **60.112**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-4.746**, **2.234**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-11

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **716.4** / **7** = **102.343**	Compute the mean of the last 7 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**80149.1** - **513228.96**/**7**) / (**7**-1))^{½} = **33.741**	Compute sd of the last 7 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **102.343** - **1.942** * **33.741**/**7**^{½} = **77.573**	Compute lower confidence limit for the mean of the last 7 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **102.343** + **1.942** * **33.741**/**7**^{½} = **127.112**	Compute upper confidence limit for the mean of the last 7 measurements.
5	N' = **N** * (**N**-1) / 2 = **7** * (**7**-1) / 2 = **21**	Number of sample pairs during trend detection period.
6	S = **-4.422**	Sen's estimator of trend.
7	var(S) = **44.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**21** ± **2.576** * **44.333**^{½}) / 2 = [**1.924**, **19.076**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-291.539**, **17.451**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-22

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **14** * (**14**-1) / 2 = **91**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**91** ± **2.576** * **0.0**^{½}) / 2 = [**45.5**, **45.5**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Zinc (ug/L) at MW-35

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **40.0** / **8** = **5.0**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**200.0** - **1600.0**/**8**) / (**8**-1))^{½} = **0.0**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **5.0** - **1.895** * **0.0**/**8**^{½} = **5.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **5.0** + **1.895** * **0.0**/**8**^{½} = **5.0**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **13** * (**13**-1) / 2 = **78**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **0.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**78** ± **2.576** * **0.0**^{½}) / 2 = [**39.0**, **39.0**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
2-butanone	MW-11	4/24/2012		2.29	.47	ug/L
Acetone	MW-11	4/24/2012		3.82	1.79	ug/L
Carbon disulfide	MW-11	10/24/2012		.78	.15	ug/L
Chloromethane	MW-11	10/24/2012		.31	.31	ug/L
2-butanone	MW-19	4/24/2012		1.10	.47	ug/L
2-butanone	MW-19	5/06/2014		2.38	.47	ug/L
Acetone	MW-19	4/24/2012		2.08	1.79	ug/L
Acetone	MW-19	11/14/2017		2.22	1.79	ug/L
Acetone	MW-19	9/22/2021		10.30	3.10	ug/L
Benzene	MW-19	6/04/2019		13.00	.22	ug/L
Benzene	MW-19	8/14/2019		7.29	.22	ug/L
Benzene	MW-19	11/01/2019		6.80	.22	ug/L
Benzene	MW-19	6/16/2020		4.27	.22	ug/L
Benzene	MW-19	8/24/2020		4.11	.22	ug/L
Benzene	MW-19	11/03/2020		6.00	.22	ug/L
Benzene	MW-19	5/17/2021		4.33	.22	ug/L
Bromomethane	MW-19	10/26/2012		.32	.22	ug/L
Carbon disulfide	MW-19	10/31/2014		.914	.150	ug/L
Chlorobenzene	MW-19	6/04/2019		2.06	.40	ug/L
Chlorobenzene	MW-19	8/14/2019		2.31	.40	ug/L
Chlorobenzene	MW-19	11/01/2019		2.51	.40	ug/L
Chlorobenzene	MW-19	6/16/2020		2.30	.40	ug/L
Chlorobenzene	MW-19	8/24/2020		1.88	.40	ug/L
Chlorobenzene	MW-19	11/03/2020		2.03	.40	ug/L
Chlorobenzene	MW-19	5/17/2021		2.72	.40	ug/L
Chloroethane	MW-19	10/18/2011		.15	.15	ug/L
Dichloromethane	MW-19	11/11/2016		.67	.17	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
Tetrachloroethylene	MW-19	5/06/2014		.471	.180	ug/L
Toluene	MW-19	4/15/2013		.266	.150	ug/L
Toluene	MW-19	4/11/2016		.255	.150	ug/L
Tribromomethane	MW-19	4/15/2013		.145	.140	ug/L
1,2-dichlorobenzene	MW-23	10/18/2011		.26	.14	ug/L
2,4-dimethylphenol	MW-23	11/07/2017		3.52	2.36	ug/L
2-butanone	MW-23	10/18/2011		.92	.47	ug/L
2-butanone	MW-23	4/24/2012		1.78	.47	ug/L
2-butanone	MW-23	5/06/2014		6.24	.47	ug/L
3/4-methylphenol	MW-23	11/21/2016		.323	.196	ug/L
3/4-methylphenol	MW-23	11/07/2017		10.600	2.020	ug/L
4,4'-ddt	MW-23	11/21/2016		.02310	.00409	ug/L
4-methyl-2-pentanone	MW-23	11/07/2017		.391	.220	ug/L
Acetone	MW-23	4/24/2012		3.07	1.79	ug/L
Acetone	MW-23	5/25/2017		10.80	1.79	ug/L
Acetonitrile	MW-23	4/15/2013		143	126	ug/L
Acetonitrile	MW-23	11/21/2016		147	126	ug/L
Alpha-bhc	MW-23	11/21/2016		.00556	.00183	ug/L
Benzene	MW-23	11/21/2016		.122	.110	ug/L
Benzyl alcohol	MW-23	11/07/2017		11.20	2.02	ug/L
Beta-bhc	MW-23	11/07/2017		.0311	.0289	ug/L
Bis(2-chloroethyl)ether	MW-23	11/07/2017		112.00	2.02	ug/L
Bis(2-ethylhexyl)phthalate	MW-23	11/21/2016		.792	.424	ug/L
Bromomethane	MW-23	10/26/2012		.36	.22	ug/L
Carbon disulfide	MW-23	11/04/2014		2.45	.15	ug/L
Chloroethane	MW-23	10/18/2011		.20	.15	ug/L
Delta-bhc	MW-23	11/21/2016		.00411	.00247	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
Dichloromethane	MW-23	10/18/2011		.240	.170	ug/L
Dichloromethane	MW-23	10/26/2012		.300	.170	ug/L
Dichloromethane	MW-23	11/21/2016		.544	.170	ug/L
Di-n-octyl phthalate	MW-23	11/21/2016		1.81	.25	ug/L
Endosulfan i	MW-23	4/15/2013		.00349	.00200	ug/L
Endosulfan i	MW-23	6/03/2013		.00367	.00222	ug/L
Endosulfan i	MW-23	8/27/2013		.00612	.00204	ug/L
Endosulfan i	MW-23	11/06/2013		.00312	.00225	ug/L
Endosulfan i	MW-23	5/06/2014		.00631	.00227	ug/L
Endosulfan i	MW-23	5/08/2015		.00233	.00220	ug/L
Endosulfan i	MW-23	11/21/2016		.03920	.00215	ug/L
Endosulfan i	MW-23	11/07/2017		.13500	.01200	ug/L
Endosulfan i	MW-23	10/30/2018		.07360	.00208	ug/L
Endrin	MW-23	11/07/2017		.0127	.0114	ug/L
Endrin aldehyde	MW-23	11/21/2016		.01410	.00785	ug/L
N-nitrosodimethylamine	MW-23	11/07/2017		2.94	1.57	ug/L
Pentachlorophenol	MW-23	11/07/2017		23.4	2.7	ug/L
Phenol	MW-23	11/07/2017		895	27	ug/L
Tetrachloroethylene	MW-23	5/06/2014		.193	.180	ug/L

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

2024 SURFACE WATER

Table 9

Analytical Data Summary for SW-1

Constituents	Units	4/24/2012	4/8/2013 4/16/2013	6/3/2013	8/14/2013 8/27/2013	6/25/2014 6/27/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	3/24/2016 4/13/2016
Antimony	ug/L	<1.4500	.0822	1.0300	.0839	<.1190	<.1610	<.1610	<.2370
Arsenic	ug/L	<.216	1.500	<2.720	.655	<.397	<.945	<.945	<.672
Barium	ug/L	117	104	122	128	122	136	116	124
Beryllium	ug/L	<.0790	<.0696	<.3480	<.0696	<.0142	<.0390	<.0390	<.2210
Cadmium	ug/L	<.2290	<.1060	<.5300	<.1060	<.1080	<.1120	<.1120	<.0351
Chromium	ug/L	<1.810	<.418	3.840	.697	<1.370	<1.240	<1.240	<.355
Cobalt	ug/L	<1.5500	.7280	1.0800	1.1100	.4370	.0850	.1770	.1560
Copper	ug/L	1.940	3.540	2.020	4.710	1.080	.508	.677	<1.220
Lead	ug/L	<.8040	<.2070	<1.0400	1.6300	.1230	<.0967	.2320	<.2110
Nickel	ug/L	<2.580	3.700	4.500	3.350	2.120	<.581	<.581	<1.530
Selenium	ug/L	<.700	<1.460	<7.300	<1.460	<1.790	<3.340	<3.340	.916
Silver	ug/L	<1.7000	<.0789	<.3950	<.0789	<.0396	<.0420	.0630	<.1530
Thallium	ug/L	<.2880	.0338	.1410	.0478	<.0353	<.0325	<.0325	<.0255
Total suspended solids	mg/L						3.17	23.00	17.60
Turbidity, field	NTU						6.130	1.260	
Vanadium	ug/L	<2.100	<.833	<4.170	1.590	2.370	.512	.716	.495
Zinc	ug/L	14.200	<.625	<3.130	12.200	<6.950	<6.950	<6.950	<5.210

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

Table 9

Analytical Data Summary for SW-1

Constituents	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019
Antimony	<.2370	<.1850	<.1850	<.4200	<.4200	<1.3200
Arsenic	<.672	<.505	<.505	<.570	<.570	<.232 .769J
Barium	134	115	143	139	120	121
Beryllium	<.2210	<.1250	<.1250	<.1900	<.1900	<.5300
Cadmium	<.0351	<.0441	<.0441	<.0600	<.0600	<.1670
Chromium	<.355	<.729	<.729	<.760	<.760	<1.140 1.280J
Cobalt	.3280	<.0453 .1210J	.2040	<.0610 .2180J	<.0610 .1070J	<.4020
Copper	1.430	<2.190	<2.190	<3.800 *	<1.600	<.497 1.860J
Lead	.3200	<.3240	<.3240	<.2500	<.2500	.6440
Nickel	<1.530	<.929	<.929	<1.000 1.070J	<1.000	<.625 1.060J
Selenium	<.630	<.928	<.928	<.900	<.900	<.982
Silver	<.1530	<.1400	<.1400	<.3000	<.3000	<.1150
Thallium	<.0255	<.0644	<.0644	<.1700	<.1700	<.5700
Total suspended solids	28.70	15.00	8.25	7.50	5.63	22.60
Turbidity, field	8.670	16.320	11.790	12.570	2.859	28.110
Vanadium	.645	<.840	1.390	<.520 .778J	<.520 .646J	<2.150 3.820J
Zinc	<5.210	<11.500	<11.500	<10.000	<10.000	<6.920 12.900J

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

Table 9

Analytical Data Summary for SW-1

Constituents	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022
Antimony	<.5300	<.5100	<.5100	<1.1000	<1.1000	<.6900
Arsenic	<.750	<.880	<.880	<.750 .951J	<.750	2.540
Barium	136	113	127	121	129	201
Beryllium	<.2700	<.2700	<.2700	<.2700	<.2700	<.2700 .4970J
Cadmium	<.0390	<.0490	<.0490	.1030	<.0510	.2200
Chromium	<.980	<1.100	<1.100	<1.100 1.870J	<1.100	<1.100 1.630J
Cobalt	<.0910 .2640J	<.0910 .3270J	<.0910 .1530J	.7870	<.1900	4.3600
Copper	<2.000	<1.500	<1.500	<1.400 1.840J	<1.400	11.500
Lead	<.2700	.5310	<.1100 .1420J	.8860	<.2100	7.0800
Nickel	<1.700	<1.900	<1.900	<1.900	<1.900	7.850
Selenium	<1.000	<1.000	<1.000	<.960 1.900J	<.960	<.960 .966J
Silver	<.3700	<.3700	<.3700	<.4200	<.4200	<.4900
Thallium	<.2700	<.2600	<.2600	2.1300	<.2600	<.2600 .2810J
Total suspended solids	11.10	20.00	6.25	35.00	12.70	824.00
Turbidity, field	8.210	11.290	17.050	26.390	14.230	984.300
Vanadium	<.820 1.240J	<.850 1.410J	<.850	<1.100 4.300J	<1.100	7.590
Zinc	<10.000	<10.000	<10.000	<10.000	<10.000	20.700

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

Table 9

Analytical Data Summary for SW-1

Constituents	6/22/2022 6/27/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023	8/24/2023 8/29/2023	6/11/2024 7/3/2024
Antimony	<.6900	<.6900	<1.0000		<1.0000
Arsenic	<.750	<.750	<.530 .685J		<.530
Barium	123	112	110		103
Beryllium	<.2700	<.2700	<.3300		<.3300
Cadmium	<.0550	<.0550	.2280	<.1000	<.1000
Chromium	<1.100	<1.100	<1.100		<1.200
Cobalt	<.1900 .2440J	<.1900	<.1700 .4110J		<.1700
Copper	<1.800	<1.800	<1.800		<1.800
Lead	<.2400	<.2400	.6170		<.2600
Nickel	<1.900	<1.900	<1.900		<2.100
Selenium	<.960	<.960	<1.400 1.770J		<1.400
Silver	<.4900	<.4900	1.3600	<.5000	<.5000
Thallium	<.2600	<.2600	4.6700	<.2600	<.5700
Total suspended solids	11.50	2.25	19.30	276.00	4.75
Turbidity, field	12.110	18.730	28.000	143.700	19.740
Vanadium	<1.100	<1.100	<1.100		<1.100
Zinc	<10.000	<10.000	<6.400		<9.700

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

Table 9

Analytical Data Summary for SW-2

Constituents	Units	12/7/2011	2/21/2012	4/24/2012	6/21/2012	8/23/2012	10/24/2012 10/26/2012	4/8/2013 4/16/2013	11/5/2013 11/7/2013
Antimony	ug/L	<2.7300	<.1200	<1.4500	<.1200	<.1200	<.1200	.2270	<.0541
Arsenic	ug/L	<.600	<.730	<.216	1.050	.980	1.130	1.730	.587
Barium	ug/L	125.0	141.0	111.0	151.0	144.0	150.0	114.0	131.0
Beryllium	ug/L	<.0510	.0300	<.0790	.0400	.0200	.0300	<.0696	<.0696
Cadmium	ug/L	<.1240	<.0640	<.2290	<.0640	<.0640	.0700	<.1060	<.1060
Chromium	ug/L	<1.810	<.390	<1.810	<.390	.500	.590	.697	<.418
Cobalt	ug/L	<1.5500	.7700	<1.5500	.9400	.4400	.4400	.8050	.6530
Copper	ug/L	8.340	2.620	<1.510	2.000	1.360	1.290	4.780	1.360
Lead	ug/L	<1.000	.660	<.804	1.250	.830	.400	<.207	<.207
Nickel	ug/L	<2.580	5.560	<2.580	3.860	3.200	3.650	4.750	4.270
Selenium	ug/L	<1.690	<.297	<.700	<.297	<.297	<.297	<1.460	1.660
Silver	ug/L	<1.7000	<.0270	<1.7000	<.0270	<.0270	<.0270	<.0789	<.0789
Thallium	ug/L	<.8400	<.0087	<.2880	<.0087	.0200	<.0087	.0329	<.0267
Total suspended solids	mg/L								
Turbidity, field	NTU								
Vanadium	ug/L	<2.100	.940	2.160	1.120	<.940	<.940	.942	<.833
Zinc	ug/L	<9.110	11.600	18.700	6.370	8.310	4.680	5.620	<.625

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

Table 9

Analytical Data Summary for SW-2

Constituents	6/25/2014 6/27/2014	10/31/2014 11/10/2014	5/1/2015 5/12/2015	3/24/2016 4/13/2016	11/11/2016 11/30/2016	5/5/2017 5/25/2017	11/1/2017 11/22/2017
Antimony	<.1190	<.1610	<.1610	<.2370	<.2370	<.1850	<.1850
Arsenic	2.990	<.945	<.945	<.672	<.672	<.505	.743
Barium	105.0	117.0	105.0	128.0	100.0	60.5	104.0
Beryllium	<.0142	<.0390	.1500	<.2210	<.2210	<.1250	<.1250
Cadmium	<.1080	<.1120	<.1120	<.0351	<.0351	<.0441	<.0441
Chromium	<1.370	<1.240	1.740	<.355	.417	<.729	2.560
Cobalt	.9530	.4140	.7530	.2400	.1930	<.0453 .1380J	.2470
Copper	2.470	.591	1.670	<1.220	<1.220	<2.190	<2.190
Lead	<.420	.320	1.080	.251	.237	<.324	<.324
Nickel	1.140	.969	2.540	<1.530	<1.530	<.929	.982
Selenium	<1.790	<3.340	<3.340	.771	<.630	<.928	<.928
Silver	<.0396	<.0420	.0620	<.1530	<.1530	<.1400	<.1400
Thallium	<.0353	<.0325	.0370	<.0255	<.0255	<.0644	<.0644
Total suspended solids		15.700	79.700	17.100	16.300	20.500	10.200
Turbidity, field		18.36	59.63		16.24	33.21	28.49
Vanadium	2.440	1.280	3.530	.571	.769	<.840	1.490
Zinc	33.900	<6.950	6.970	<5.210	<5.210	<11.500	<11.500

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

Table 9

Analytical Data Summary for SW-2

Constituents	6/4/2018 6/27/2018	10/28/2018 10/31/2018	6/4/2019 6/13/2019	10/30/2019 11/20/2019	6/16/2020 7/7/2020	11/3/2020 11/23/2020
Antimony	<.4200	<.4200	<1.3200	<.5300	<.5100	<.5100
Arsenic	<.570	<.570	<.232 .877J	<.750	<.880 1.020J	<.880
Barium	98.5	99.8	91.8	104.0	195.0	96.2
Beryllium	<.1900	<.1900	<.5300	<.2700	<.2700	<.2700
Cadmium	<.0600	<.0600	<.1670	<.0390	<.0490 .0500J	<.0490
Chromium	<.760	<.760 .781J	<1.140 1.610J	<.980	<1.100	<1.100
Cobalt	<.0610 .2200J	<.0610 .2350J	<.4020	<.0910 .1710J	<.0910 .4950J	<.0910 .1740J
Copper	<3.800 *	<1.600	<.497 1.730J	<2.000	<1.500	<1.500
Lead	<.250	<.250 .354J	.721	.765	<.110	<.110 .158J
Nickel	<1.000	<1.000	<.625 1.350J	<1.700	<1.900 3.030J	<1.900
Selenium	<.900	<.900	<.982	<1.000	<1.000	<1.000
Silver	<.3000	<.3000	<.1150	<.3700	<.3700	<.3700
Thallium	<.1700	<.1700	<.5700	<.2700	<.2600	<.2600
Total suspended solids	13.400	11.000	31.500	6.250	<.638 1.750J	6.750
Turbidity, field	14.11	8.81	28.63	10.11	21.23	18.91
Vanadium	<.520 1.270J	<.520 1.340J	<2.150 4.500J	<.820 .951J	<.850	<.850 1.300J
Zinc	<10.000	<10.000	<6.920 12.000J	<10.000	<10.000	<10.000

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

Table 9

Analytical Data Summary for SW-2

Constituents	5/17/2021 6/8/2021	9/21/2021 9/29/2021	3/2/2022 3/29/2022	6/22/2022 6/27/2022	8/16/2022 9/13/2022	6/6/2023 6/27/2023
Antimony	<1.1000	<1.1000	<.6900	<.6900	<.6900	<1.0000
Arsenic	<.750	<.750	<.750 1.520J	<.750 .806J	<.750	<.530 .840J
Barium	90.0	107.0	156.0	110.0	89.7	101.0
Beryllium	<.2700	<.2700	<.2700 .3210J	<.2700	<.2700	<.3300
Cadmium	<.0510	<.0510	.1810	<.0550	<.0550	<.1000 .1570J
Chromium	<1.100	<1.100	<1.100 1.260J	<1.100 1.730J	<1.100	<1.100
Cobalt	<.0910 .3020J	<.1900 .3610J	3.1700	.6930	<.1900 .2120J	.6220
Copper	<1.400	<1.400	6.760	<1.800	<1.800	<1.800
Lead	<.210 .238J	<.210 .308J	5.300	.939	<.240	.867
Nickel	<1.900	<1.900	6.590	<1.900	<1.900	<1.900
Selenium	<.960 1.280J	<.960	<.960	<.960	<.960	<1.400 1.580J
Silver	<.4200	<.4200	<.4900	<.4900	<.4900	1.4300
Thallium	<.2600	<.2600	<.2600	<.2600	<.2600	3.9300
Total suspended solids	10.300	17.400	564.000	63.800	6.380	37.900
Turbidity, field	21.23	19.32	1009.40	13.24	26.43	22.39
Vanadium	<1.100 2.310J	<1.100 1.440J	5.450	<1.100 3.840J	<1.100 1.190J	<1.100 1.520J
Zinc	<10.000	<10.000	<10.000 16.700J	<10.000	<10.000	<6.400

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

Table 9

Analytical Data Summary for SW-2

Constituents	8/24/2023 8/29/2023	11/1/2023 11/20/2023	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony		<1.0000	<1.0000	<1.0000
Arsenic		<.530 .591J	<.530 .627J	<.530
Barium		94.1	104.0	110.0
Beryllium		<.3300	<.3300	<.3300
Cadmium		<.1000	<.1000	<.1000
Chromium		<1.100	<1.200	<1.200
Cobalt		<.1700	<.1700 .3880J	<.1700 .2370J
Copper		<1.800	<1.800	<1.800
Lead		<.240	.583	<.260
Nickel		<1.900	<2.100	<2.100 3.270J
Selenium		<1.400	<1.400	<1.400
Silver	<.5000	<.5000	<.5000	<.5000
Thallium	<.2600 .2790J	<.2600	<.5700	<.5700
Total suspended solids	17.000	4.880	24.100	<3.700 4.670J
Turbidity, field	28.30	23.11	12.79	4.76
Vanadium		<1.100 1.110J	<1.100 2.140J	<1.100
Zinc		<6.400	<9.700	<9.700

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

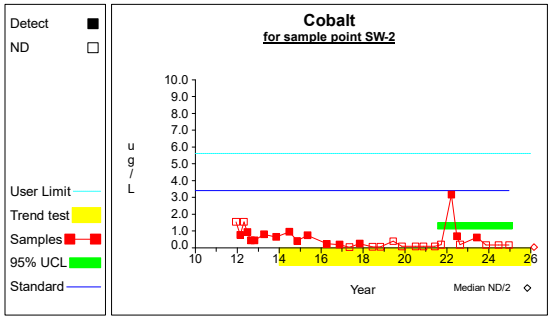
Table 9

Analytical Data Summary for SW-5

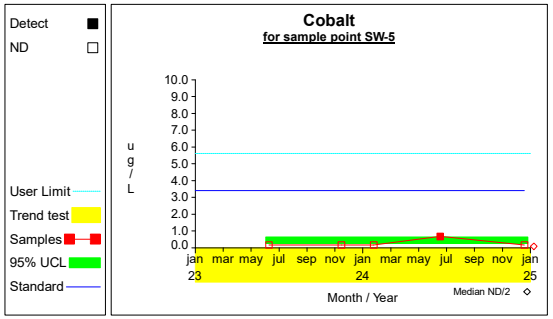
Constituents	Units	6/6/2023 6/27/2023	8/24/2023 8/29/2023	11/1/2023 11/20/2023	1/23/2024 1/25/2024	6/11/2024 7/3/2024	11/19/2024 12/18/2024
Antimony	ug/L	<1		<1	<1	<1	<1
Arsenic	ug/L	<.530 .745J		<.530 .582J	<.530 .569J	<.530 .764J	<.530
Barium	ug/L	91.4		90.0	87.1	70.1	87.2
Beryllium	ug/L	<.33		<.33	<.33	<.33	<.33
Cadmium	ug/L	<.1		<.1	<.1	<.1	<.1
Chromium	ug/L	<1.10		<1.10	<1.10	<1.20 1.27J	<1.20
Cobalt	ug/L	<.170 .287J		<.170 .181J	<.170	.679	<.170
Copper	ug/L	<1.8		<1.8	<1.8	<1.8	<1.8
Lead	ug/L	<.240 .388J		<.240	<.240	.689	<.260
Nickel	ug/L	<1.90		<1.90	<1.90	<2.10 2.33J	<2.10
Selenium	ug/L	<1.40 1.51J		<1.40	<1.40	<1.40	<1.40
Silver	ug/L	1.54	<.50	<.50	<.50	<.50	<.50
Thallium	ug/L	<.26		<.26	<.26	<.57	<.57
Total suspended solids	mg/L	10.400	19.000	5.630	<.638 1.750J	37.000	<3.700
Turbidity, field	NTU	20.19	18.23	18.21	5.29	17.89	4.78
Vanadium	ug/L	<1.10		<1.10 1.61J	<1.10	<1.10 2.40J	<1.10
Zinc	ug/L	<6.4		<6.4	<6.4	<9.7	<9.7

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

Confidence Limits (Assessment)



Graph 1



Graph 2

Table 1

Confidence Intervals for Comparing the Mean of the Last 8 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Cobalt	ug/L	SW-2	8	0.589	1.079	0.670	0.000	1.312	3.400	
Cobalt	ug/L	SW-5	5	0.204	0.266	0.953	0.000	0.457	3.400	

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

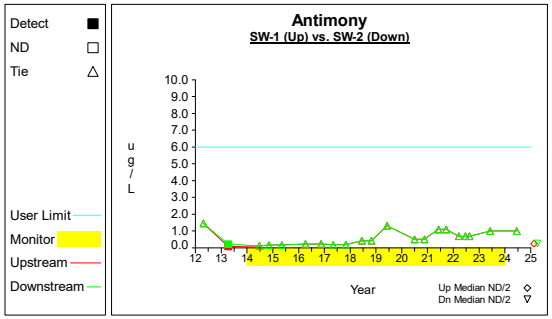
Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at SW-2

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **4.713** / **8** = **0.589**	Compute the mean of the last 8 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**10.926** - **22.208**/**8**) / (**8**-1))$^{1/2}$ = **1.079**	Compute sd of the last 8 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$ = **0.589** - **1.895** * **1.079**/**8**$^{1/2}$ = **0.0**	Compute lower confidence limit for the mean of the last 8 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$ = **0.589** + **1.895** * **1.079**/**8**$^{1/2}$ = **1.312**	Compute upper confidence limit for the mean of the last 8 measurements.
5	N' = **N** * (**N**-1) / 2 = **22** * (**22**-1) / 2 = **231**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **989.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**231** ± **2.576** * **989.0**$^{1/2}$) / 2 = [**74.994**, **156.006**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.056**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

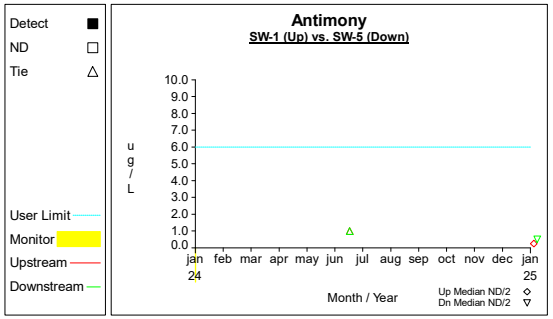
Worksheet 6 - Assessment Monitoring
Cobalt (ug/L) at SW-5

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **1.019** / **5** = **0.204**	Compute the mean of the last 5 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**0.49** - **1.038**/**5**) / (**5**-1))^{½} = **0.266**	Compute sd of the last 5 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.204** - **2.132** * **0.266**/**5**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 5 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.204** + **2.132** * **0.266**/**5**^{½} = **0.457**	Compute upper confidence limit for the mean of the last 5 measurements.
5	N' = **N** * (**N**-1) / 2 = **5** * (**5**-1) / 2 = **10**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **8.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**10** ± **2.576** * **8.0**^{½}) / 2 = [**1.357**, **8.643**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**-0.76**, **0.857**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Surface Water Monitoring



Graph 1



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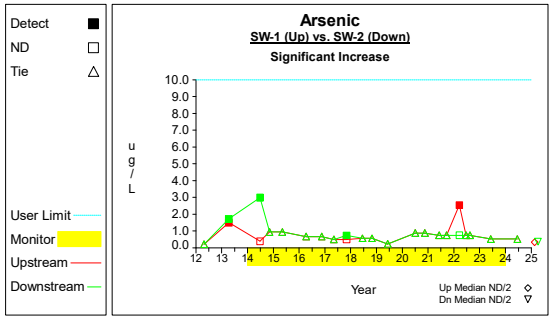

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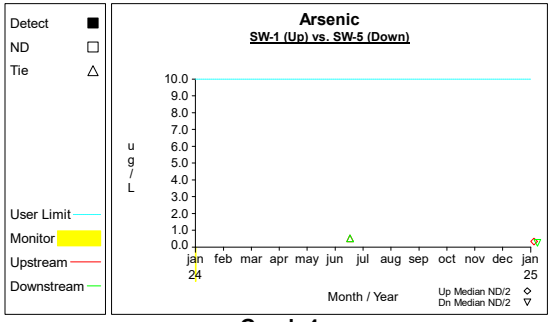

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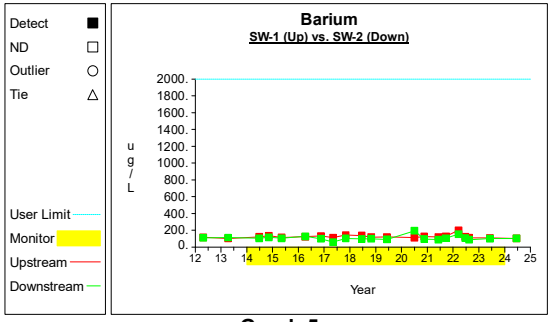

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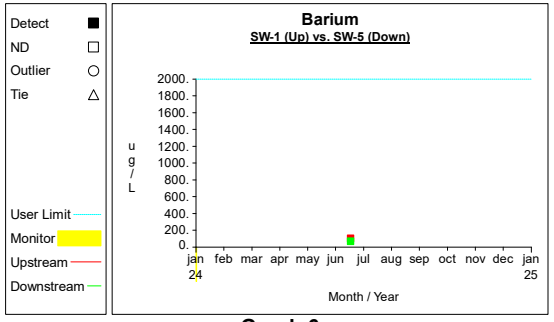

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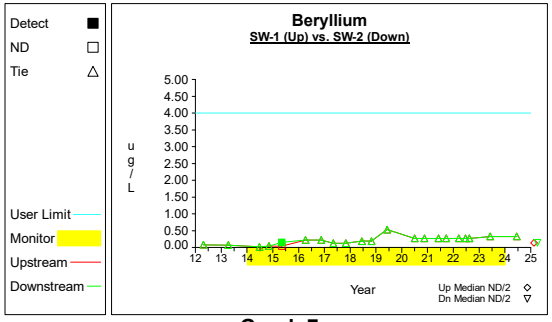

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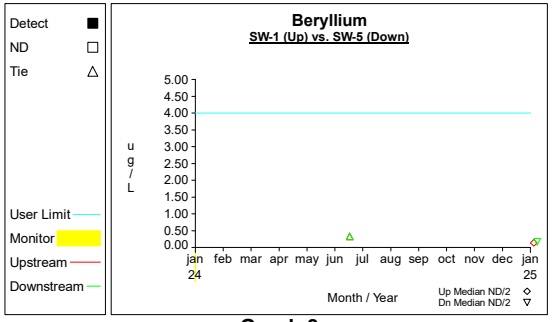

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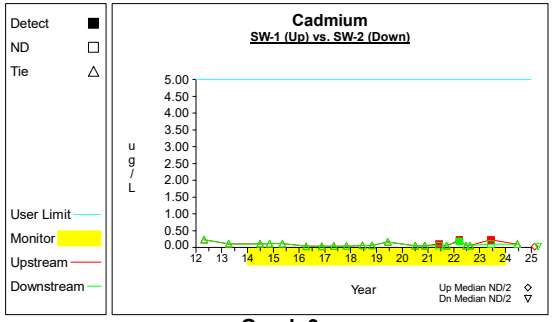
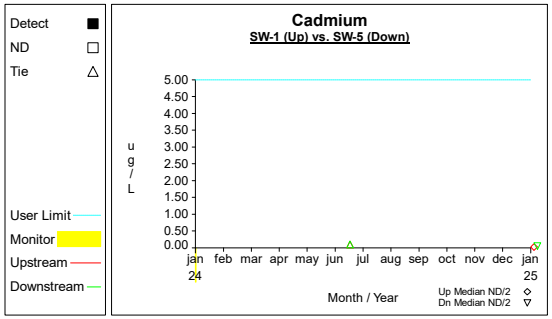


Graph 9

Surface Water Monitoring



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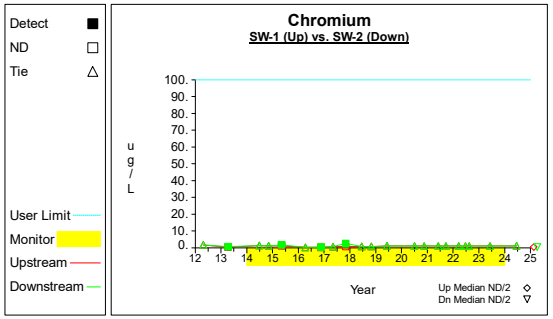

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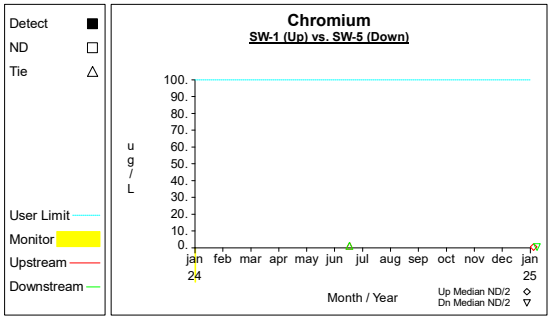

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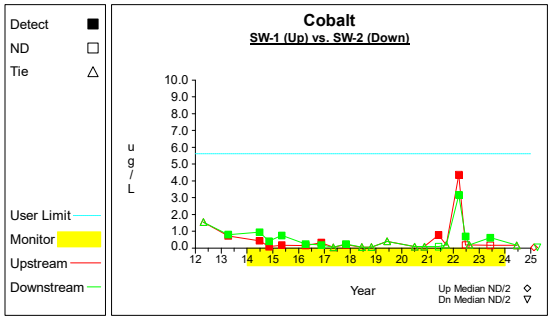

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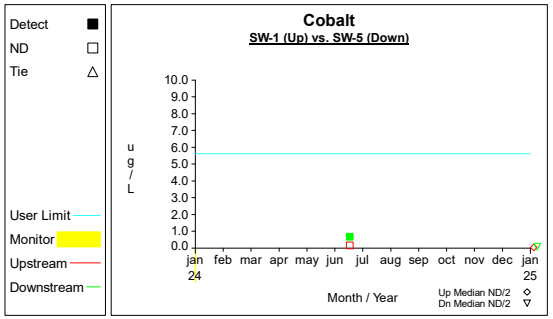

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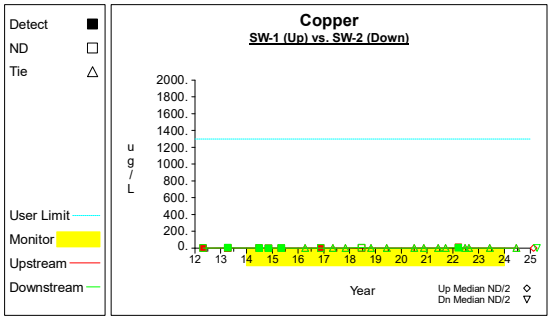

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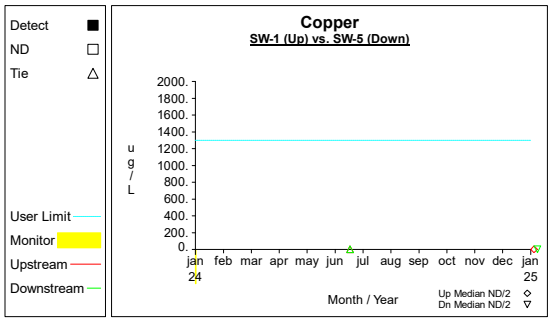

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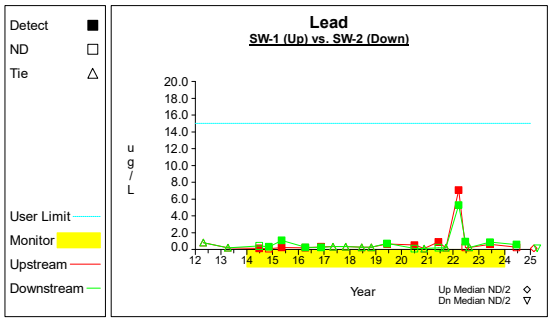

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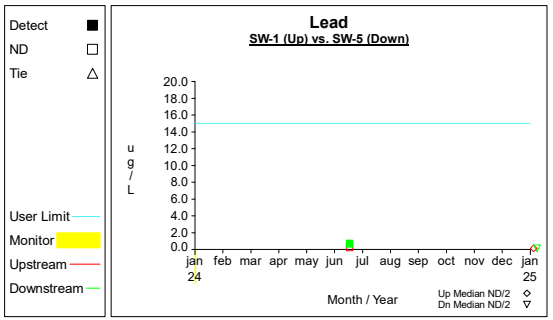
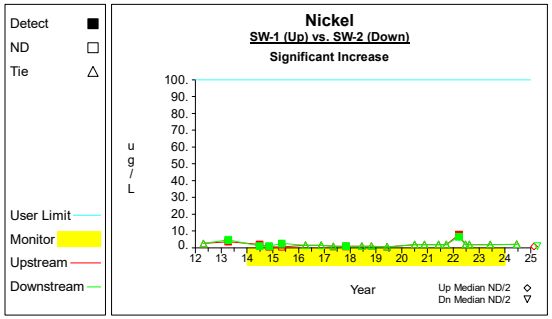


Graph 18

Surface Water Monitoring



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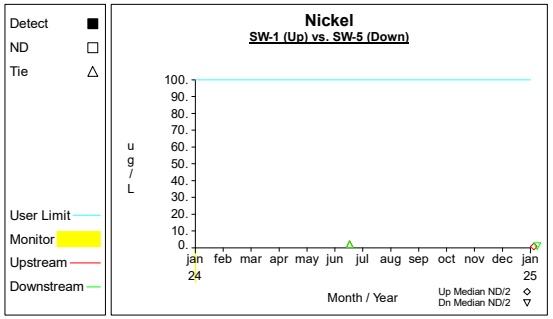

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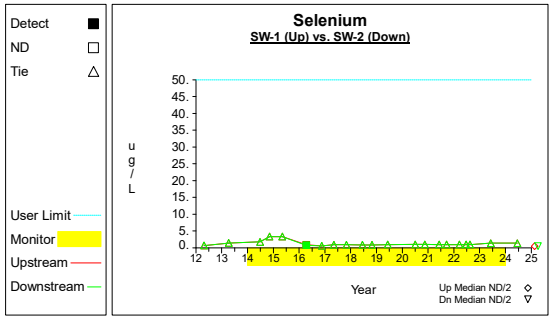

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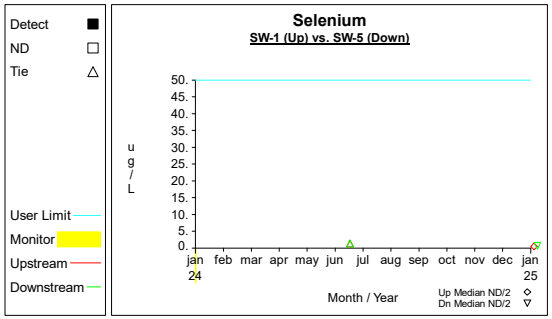

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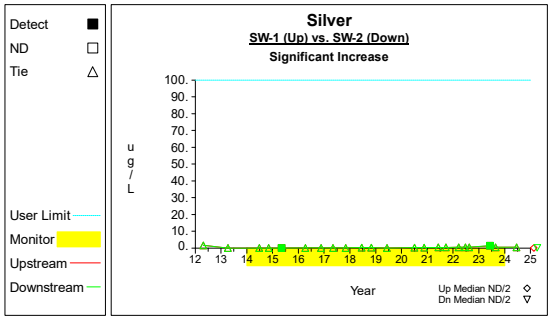

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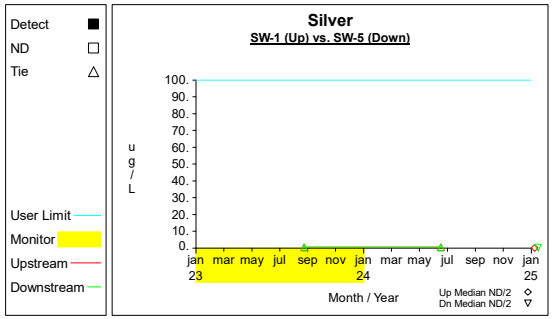

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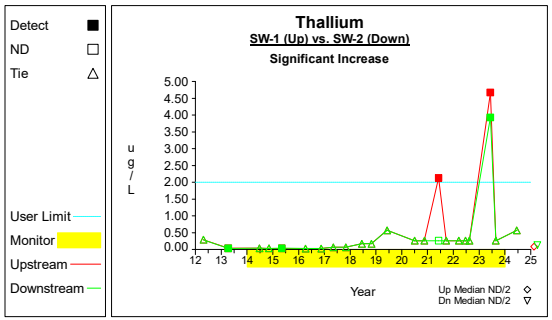

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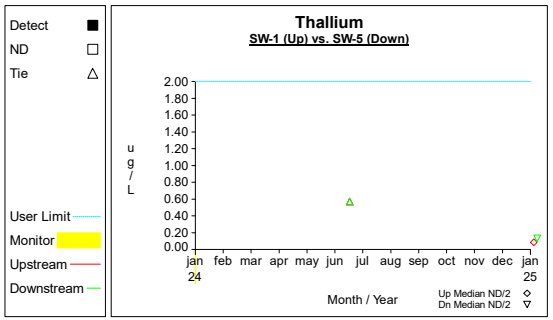

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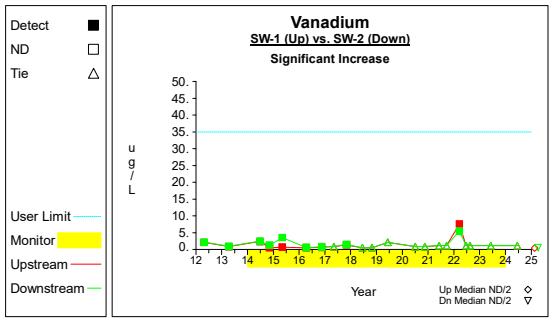
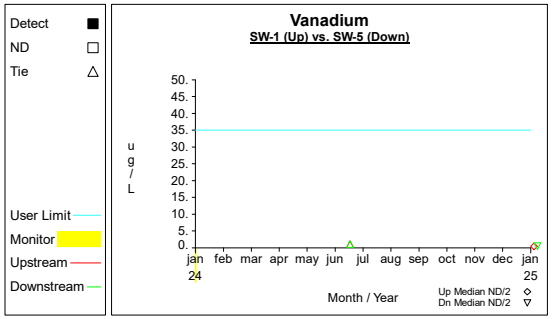
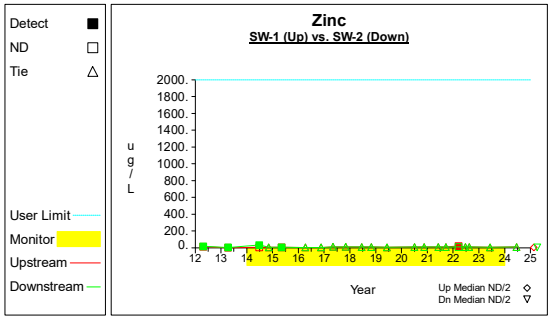


Graph 27

Surface Water Monitoring



Graph 28



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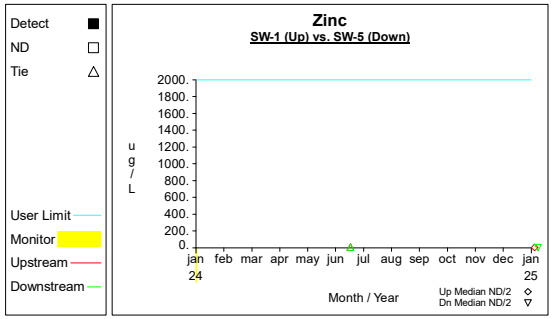
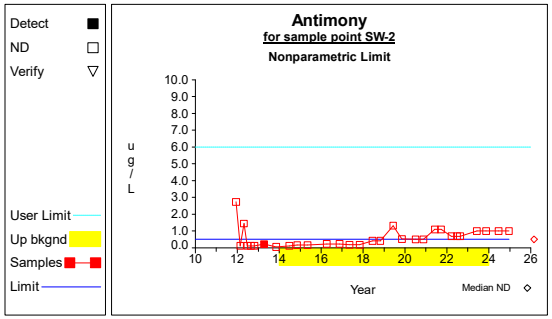


Graph 30

Up vs. Down Prediction Limits



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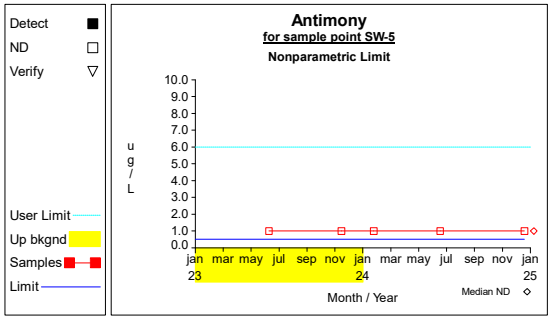
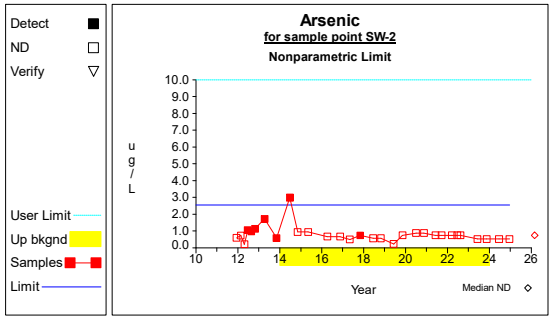
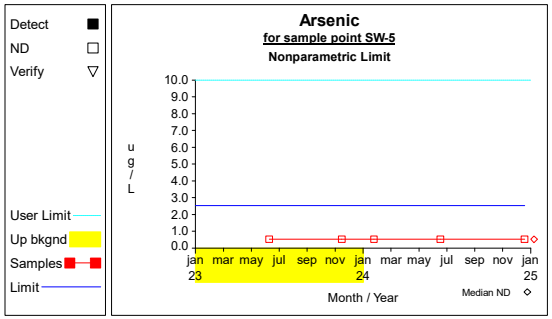


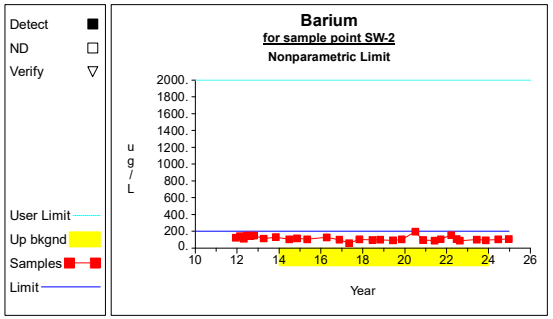
Graph 2



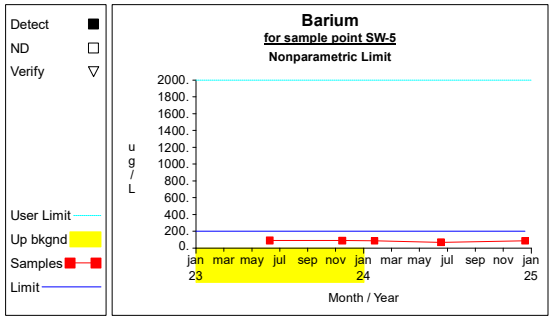
Graph 3



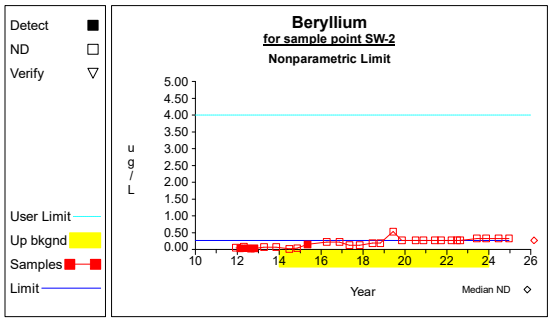
Graph 4



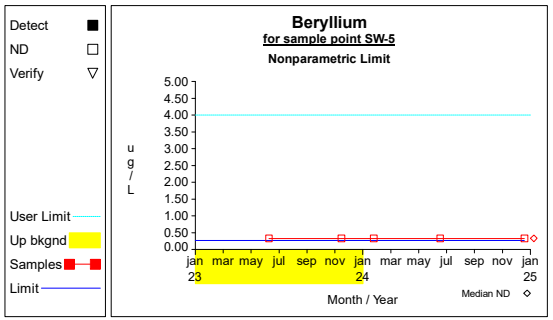
Graph 5



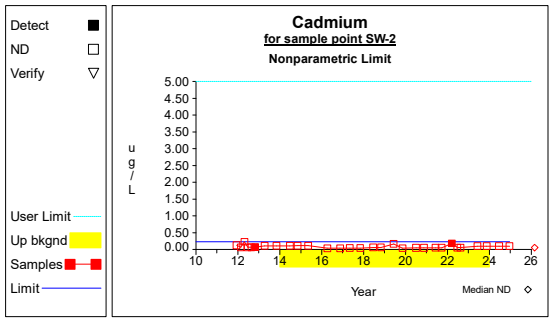
Graph 6



Graph 7

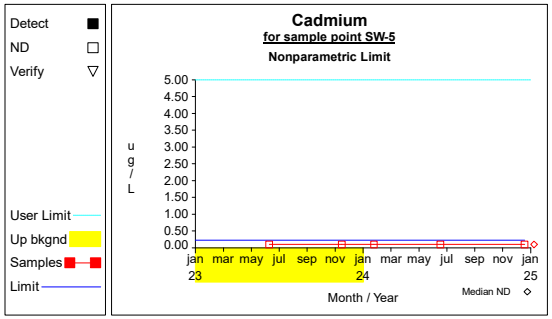


Graph 8

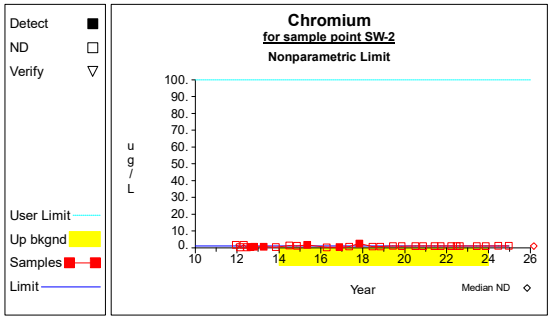


Graph 9

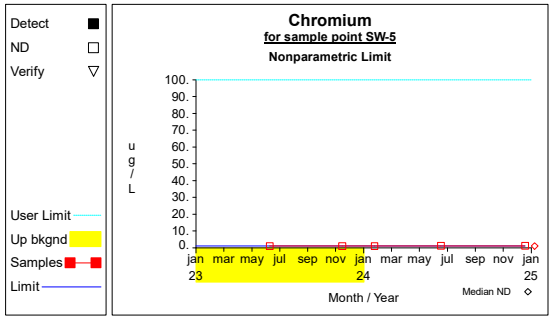
Up vs. Down Prediction Limits



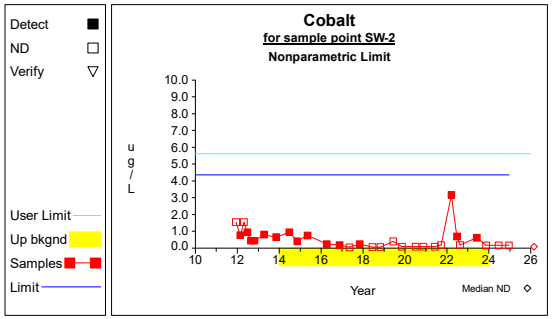
Graph 10



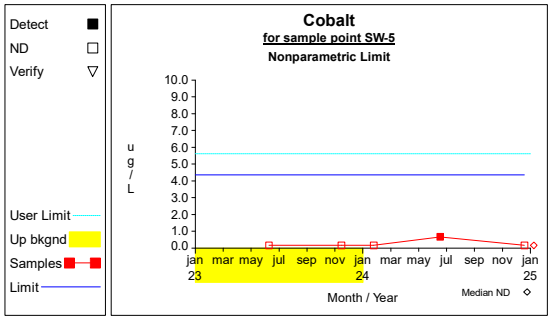
Graph 11



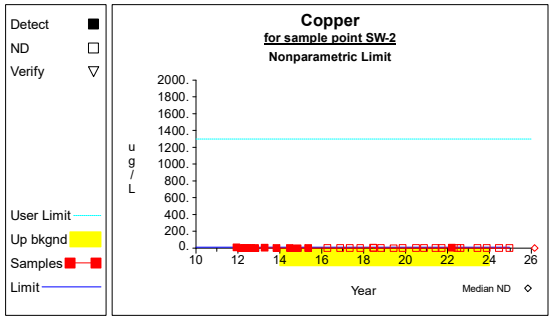
Graph 12



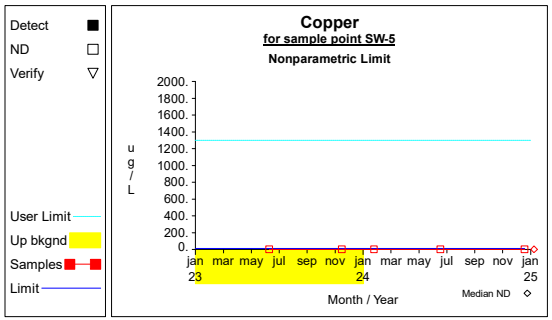
Graph 13



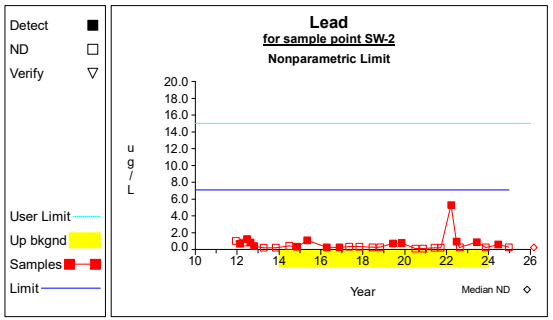
Graph 14



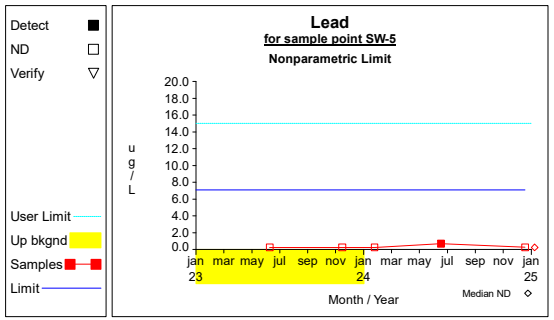
Graph 15



Graph 16

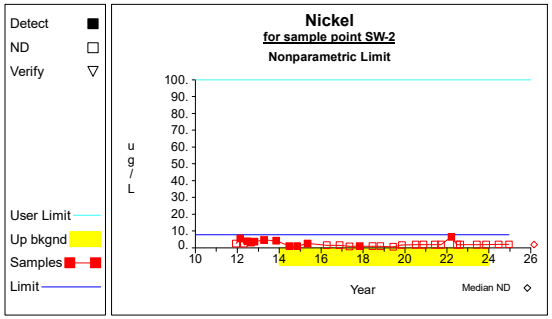


Graph 17

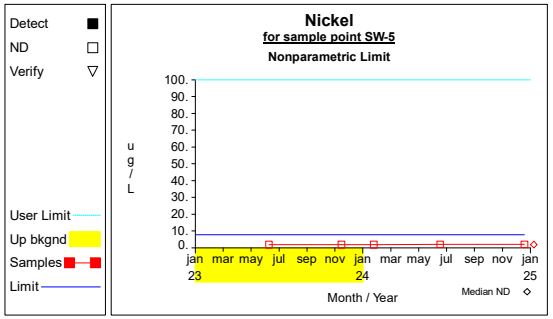


Graph 18

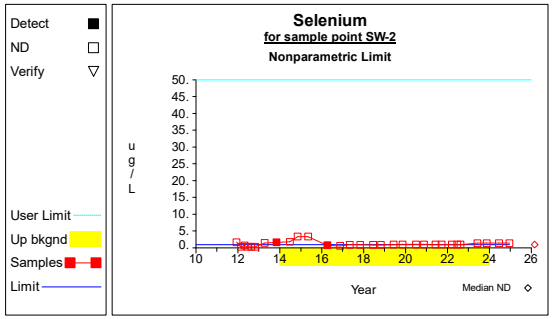
Up vs. Down Prediction Limits



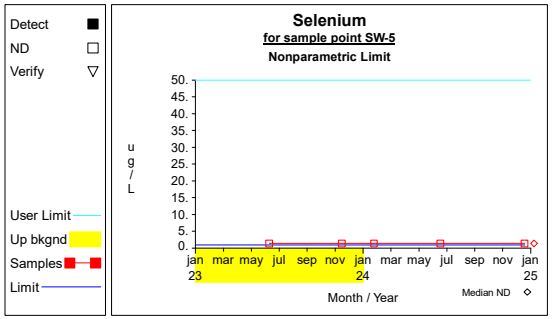
Graph 19



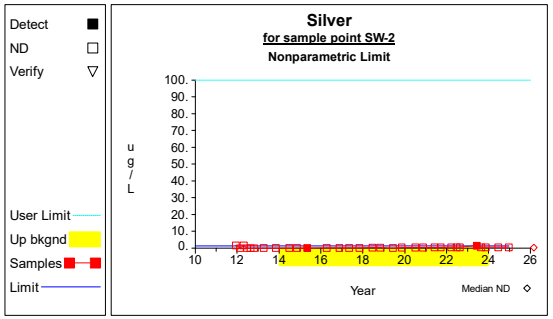
Graph 20



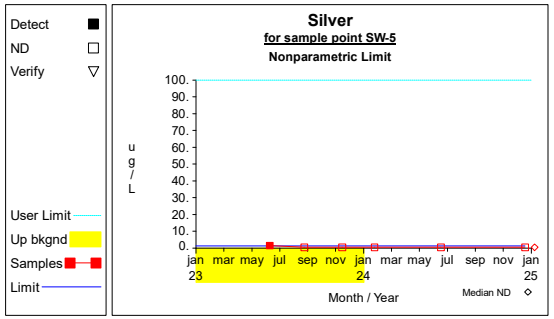
Graph 21



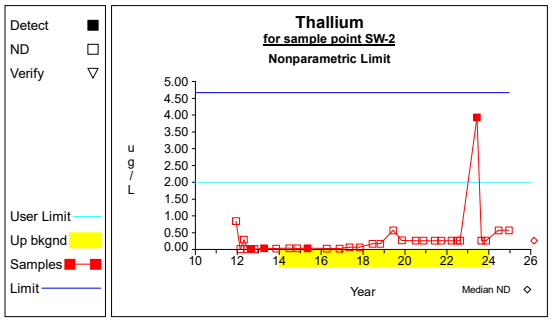
Graph 22



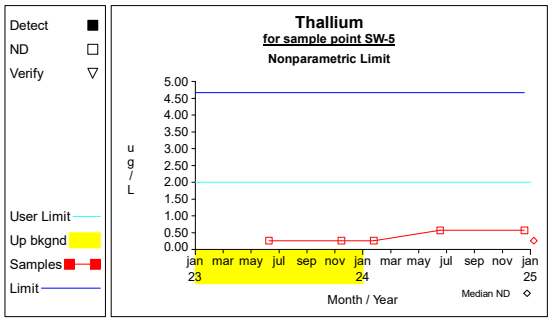
Graph 23



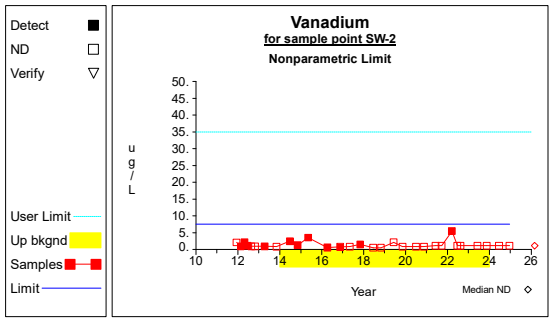
Graph 24



Graph 25

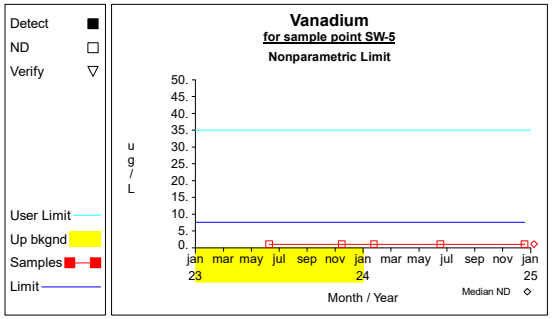


Graph 26

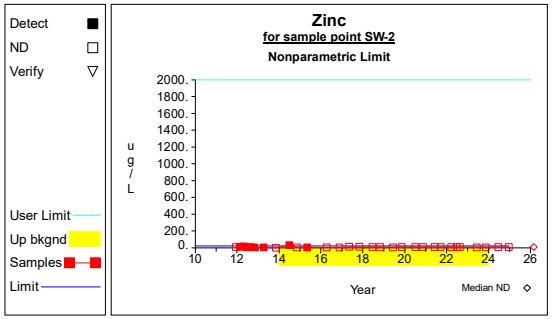


Graph 27

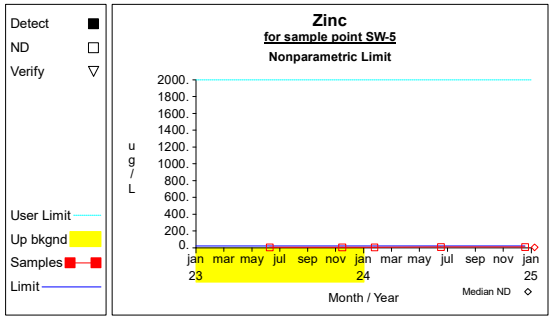
Up vs. Down Prediction Limits



Graph 28



Graph 29



Graph 30

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

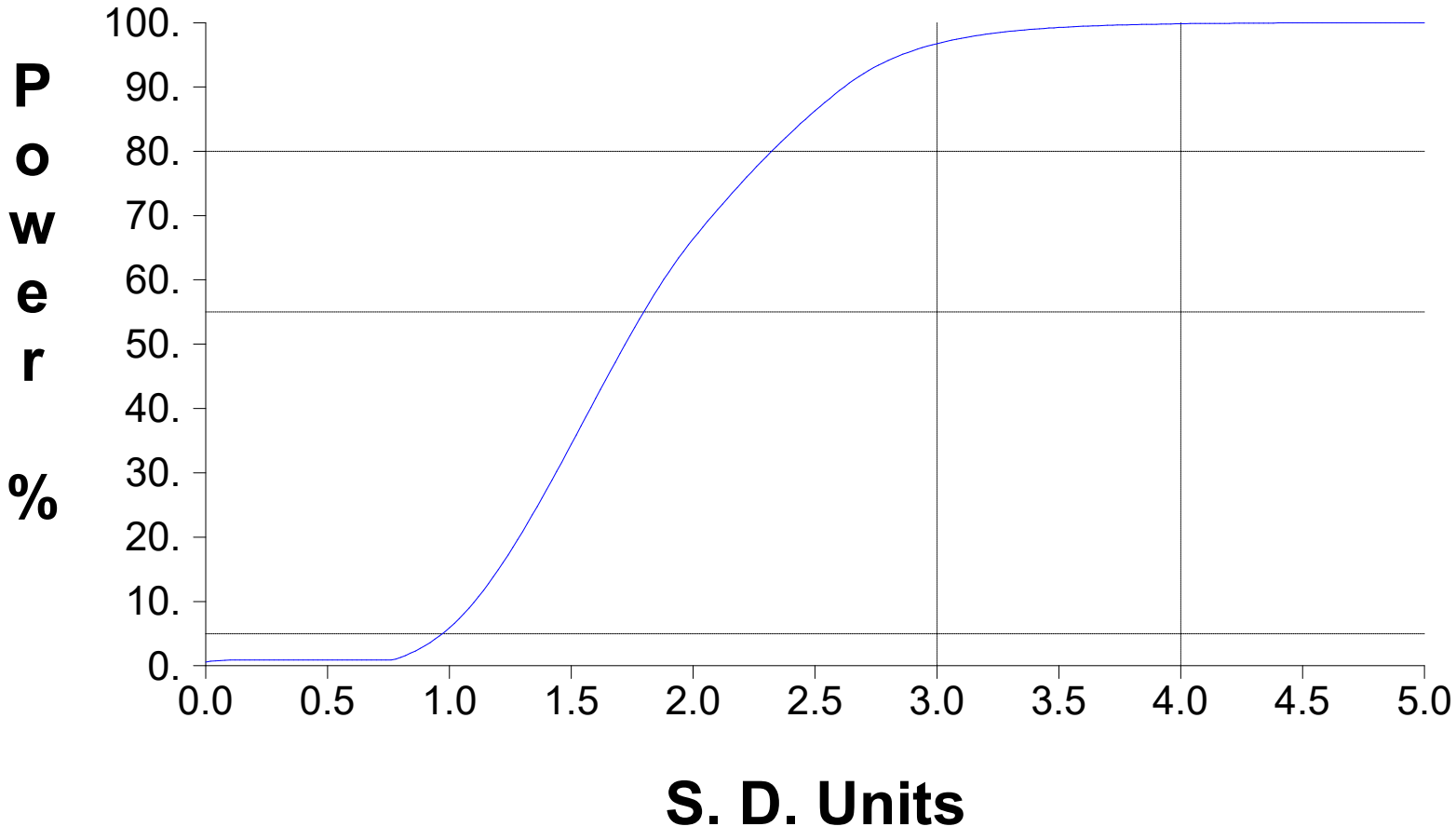


Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony	ug/L	SW-1	06/26/2014	ND	0.1190	0.5100	**
Antimony	ug/L	SW-1	11/07/2014	ND	0.1610	0.5100	**
Antimony	ug/L	SW-1	05/06/2015	ND	0.1610	0.5100	**
Antimony	ug/L	SW-1	04/08/2016	ND	0.2370	0.5100	**
Antimony	ug/L	SW-1	11/17/2016	ND	0.2370	0.5100	**
Antimony	ug/L	SW-1	05/05/2017	ND	0.1850	0.5100	**
Antimony	ug/L	SW-1	11/01/2017	ND	0.1850	0.5100	**
Antimony	ug/L	SW-1	06/15/2018	ND	0.4200	0.5100	**
Antimony	ug/L	SW-1	10/29/2018	ND	0.4200	0.5100	**
Antimony	ug/L	SW-1	06/07/2019	ND	1.3200	0.5100	**
Antimony	ug/L	SW-1	11/01/2019	ND	0.5300	0.5100	**
Antimony	ug/L	SW-1	07/01/2020	ND	0.5100		
Antimony	ug/L	SW-1	11/17/2020	ND	0.5100		
Antimony	ug/L	SW-1	06/04/2021	ND	1.1000	0.5100	**
Antimony	ug/L	SW-1	09/21/2021	ND	1.1000	0.5100	**
Antimony	ug/L	SW-1	03/18/2022	ND	0.6900	0.5100	**
Antimony	ug/L	SW-1	06/22/2022	ND	0.6900	0.5100	**
Antimony	ug/L	SW-1	08/16/2022	ND	0.6900	0.5100	**
Antimony	ug/L	SW-1	06/06/2023	ND	1.0000	0.5100	**
Arsenic	ug/L	SW-1	06/26/2014	ND	0.3970	0.6720	**
Arsenic	ug/L	SW-1	11/07/2014	ND	0.9450	0.6720	**
Arsenic	ug/L	SW-1	05/06/2015	ND	0.9450	0.6720	**
Arsenic	ug/L	SW-1	04/08/2016	ND	0.6720		
Arsenic	ug/L	SW-1	11/17/2016	ND	0.6720		
Arsenic	ug/L	SW-1	05/05/2017	ND	0.5050	0.6720	**

* - 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	
Arsenic	ug/L	SW-1	11/01/2017	ND	0.5050	0.6720	**
Arsenic	ug/L	SW-1	06/15/2018	ND	0.5700	0.6720	**
Arsenic	ug/L	SW-1	10/29/2018	ND	0.5700	0.6720	**
Arsenic	ug/L	SW-1	06/07/2019	ND	0.2320	0.6720	**
Arsenic	ug/L	SW-1	11/01/2019	ND	0.7500	0.6720	**
Arsenic	ug/L	SW-1	07/01/2020	ND	0.8800	0.6720	**
Arsenic	ug/L	SW-1	11/17/2020	ND	0.8800	0.6720	**
Arsenic	ug/L	SW-1	06/04/2021	ND	0.7500	0.6720	**
Arsenic	ug/L	SW-1	09/21/2021	ND	0.7500	0.6720	**
Arsenic	ug/L	SW-1	03/18/2022		2.5400		
Arsenic	ug/L	SW-1	06/22/2022	ND	0.7500	0.6720	**
Arsenic	ug/L	SW-1	08/16/2022	ND	0.7500	0.6720	**
Arsenic	ug/L	SW-1	06/06/2023	ND	0.5300	0.6720	**
Barium	ug/L	SW-1	06/26/2014		122.0000		
Barium	ug/L	SW-1	11/07/2014		136.0000		
Barium	ug/L	SW-1	05/06/2015		116.0000		
Barium	ug/L	SW-1	04/08/2016		124.0000		
Barium	ug/L	SW-1	11/17/2016		134.0000		
Barium	ug/L	SW-1	05/05/2017		115.0000		
Barium	ug/L	SW-1	11/01/2017		143.0000		
Barium	ug/L	SW-1	06/15/2018		139.0000		
Barium	ug/L	SW-1	10/29/2018		120.0000		
Barium	ug/L	SW-1	06/07/2019		121.0000		
Barium	ug/L	SW-1	11/01/2019		136.0000		
Barium	ug/L	SW-1	07/01/2020		113.0000		

* - 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	
Barium	ug/L	SW-1	11/17/2020		127.0000		
Barium	ug/L	SW-1	06/04/2021		121.0000		
Barium	ug/L	SW-1	09/21/2021		129.0000		
Barium	ug/L	SW-1	03/18/2022		201.0000		
Barium	ug/L	SW-1	06/22/2022		123.0000		
Barium	ug/L	SW-1	08/16/2022		112.0000		
Barium	ug/L	SW-1	06/06/2023		110.0000		
Beryllium	ug/L	SW-1	06/26/2014	ND	0.0142	0.2700	**
Beryllium	ug/L	SW-1	11/07/2014	ND	0.0390	0.2700	**
Beryllium	ug/L	SW-1	05/06/2015	ND	0.0390	0.2700	**
Beryllium	ug/L	SW-1	04/08/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	SW-1	11/17/2016	ND	0.2210	0.2700	**
Beryllium	ug/L	SW-1	05/05/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	SW-1	11/01/2017	ND	0.1250	0.2700	**
Beryllium	ug/L	SW-1	06/15/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	SW-1	10/29/2018	ND	0.1900	0.2700	**
Beryllium	ug/L	SW-1	06/07/2019	ND	0.5300	0.2700	**
Beryllium	ug/L	SW-1	11/01/2019	ND	0.2700		
Beryllium	ug/L	SW-1	07/01/2020	ND	0.2700		
Beryllium	ug/L	SW-1	11/17/2020	ND	0.2700		
Beryllium	ug/L	SW-1	06/04/2021	ND	0.2700		
Beryllium	ug/L	SW-1	09/21/2021	ND	0.2700		
Beryllium	ug/L	SW-1	03/18/2022	ND	0.2700		
Beryllium	ug/L	SW-1	06/22/2022	ND	0.2700		
Beryllium	ug/L	SW-1	08/16/2022	ND	0.2700		

* - 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	ug/L	SW-1	06/06/2023	ND	0.3300	0.2700	**
Cadmium	ug/L	SW-1	06/26/2014	ND	0.1080	0.0550	**
Cadmium	ug/L	SW-1	11/07/2014	ND	0.1120	0.0550	**
Cadmium	ug/L	SW-1	05/06/2015	ND	0.1120	0.0550	**
Cadmium	ug/L	SW-1	04/08/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	SW-1	11/17/2016	ND	0.0351	0.0550	**
Cadmium	ug/L	SW-1	05/05/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	SW-1	11/01/2017	ND	0.0441	0.0550	**
Cadmium	ug/L	SW-1	06/15/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	SW-1	10/29/2018	ND	0.0600	0.0550	**
Cadmium	ug/L	SW-1	06/07/2019	ND	0.1670	0.0550	**
Cadmium	ug/L	SW-1	11/01/2019	ND	0.0390	0.0550	**
Cadmium	ug/L	SW-1	07/01/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	SW-1	11/17/2020	ND	0.0490	0.0550	**
Cadmium	ug/L	SW-1	06/04/2021		0.1030		
Cadmium	ug/L	SW-1	09/21/2021	ND	0.0510	0.0550	**
Cadmium	ug/L	SW-1	03/18/2022		0.2200		
Cadmium	ug/L	SW-1	06/22/2022	ND	0.0550		
Cadmium	ug/L	SW-1	08/16/2022	ND	0.0550		
Cadmium	ug/L	SW-1	06/06/2023		0.2280		
Cadmium	ug/L	SW-1	08/24/2023	ND	0.1000	0.0550	**
Chromium	ug/L	SW-1	06/26/2014	ND	1.3700	1.1000	**
Chromium	ug/L	SW-1	11/07/2014	ND	1.2400	1.1000	**
Chromium	ug/L	SW-1	05/06/2015	ND	1.2400	1.1000	**
Chromium	ug/L	SW-1	04/08/2016	ND	0.3550	1.1000	**

* - 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	
Chromium	ug/L	SW-1	11/17/2016	ND	0.3550	1.1000	**
Chromium	ug/L	SW-1	05/05/2017	ND	0.7290	1.1000	**
Chromium	ug/L	SW-1	11/01/2017	ND	0.7290	1.1000	**
Chromium	ug/L	SW-1	06/15/2018	ND	0.7600	1.1000	**
Chromium	ug/L	SW-1	10/29/2018	ND	0.7600	1.1000	**
Chromium	ug/L	SW-1	06/07/2019	ND	1.1400	1.1000	**
Chromium	ug/L	SW-1	11/01/2019	ND	0.9800	1.1000	**
Chromium	ug/L	SW-1	07/01/2020	ND	1.1000		
Chromium	ug/L	SW-1	11/17/2020	ND	1.1000		
Chromium	ug/L	SW-1	06/04/2021	ND	1.1000		
Chromium	ug/L	SW-1	09/21/2021	ND	1.1000		
Chromium	ug/L	SW-1	03/18/2022	ND	1.1000		
Chromium	ug/L	SW-1	06/22/2022	ND	1.1000		
Chromium	ug/L	SW-1	08/16/2022	ND	1.1000		
Chromium	ug/L	SW-1	06/06/2023	ND	1.1000		
Cobalt	ug/L	SW-1	06/26/2014		0.4370		
Cobalt	ug/L	SW-1	11/07/2014		0.0850		
Cobalt	ug/L	SW-1	05/06/2015		0.1770		
Cobalt	ug/L	SW-1	04/08/2016		0.1560		
Cobalt	ug/L	SW-1	11/17/2016		0.3280		
Cobalt	ug/L	SW-1	05/05/2017	ND	0.0453	0.0910	**
Cobalt	ug/L	SW-1	11/01/2017		0.2040		
Cobalt	ug/L	SW-1	06/15/2018	ND	0.0610	0.0910	**
Cobalt	ug/L	SW-1	10/29/2018	ND	0.0610	0.0910	**
Cobalt	ug/L	SW-1	06/07/2019	ND	0.4020	0.0910	**

* - 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	
Cobalt	ug/L	SW-1	11/01/2019	ND	0.0910		
Cobalt	ug/L	SW-1	07/01/2020	ND	0.0910		
Cobalt	ug/L	SW-1	11/17/2020	ND	0.0910		
Cobalt	ug/L	SW-1	06/04/2021		0.7870		
Cobalt	ug/L	SW-1	09/21/2021	ND	0.1900	0.0910	**
Cobalt	ug/L	SW-1	03/18/2022		4.3600		
Cobalt	ug/L	SW-1	06/22/2022	ND	0.1900	0.0910	**
Cobalt	ug/L	SW-1	08/16/2022	ND	0.1900	0.0910	**
Cobalt	ug/L	SW-1	06/06/2023	ND	0.1700	0.0910	**
Copper	ug/L	SW-1	06/26/2014		1.0800		
Copper	ug/L	SW-1	11/07/2014		0.5080		
Copper	ug/L	SW-1	05/06/2015		0.6770		
Copper	ug/L	SW-1	04/08/2016	ND	1.2200	1.6000	**
Copper	ug/L	SW-1	11/17/2016		1.4300		
Copper	ug/L	SW-1	05/05/2017	ND	2.1900	1.6000	**
Copper	ug/L	SW-1	11/01/2017	ND	2.1900	1.6000	**
Copper	ug/L	SW-1	06/15/2018	ND	3.8000	1.6000	**
Copper	ug/L	SW-1	10/29/2018	ND	1.6000		
Copper	ug/L	SW-1	06/07/2019	ND	0.4970	1.6000	**
Copper	ug/L	SW-1	11/01/2019	ND	2.0000	1.6000	**
Copper	ug/L	SW-1	07/01/2020	ND	1.5000	1.6000	**
Copper	ug/L	SW-1	11/17/2020	ND	1.5000	1.6000	**
Copper	ug/L	SW-1	06/04/2021	ND	1.4000	1.6000	**
Copper	ug/L	SW-1	09/21/2021	ND	1.4000	1.6000	**
Copper	ug/L	SW-1	03/18/2022		11.5000		

* - 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	ug/L	SW-1	06/22/2022	ND	1.8000	1.6000	**
Copper	ug/L	SW-1	08/16/2022	ND	1.8000	1.6000	**
Copper	ug/L	SW-1	06/06/2023	ND	1.8000	1.6000	**
Lead	ug/L	SW-1	06/26/2014		0.1230		
Lead	ug/L	SW-1	11/07/2014	ND	0.0967	0.2400	**
Lead	ug/L	SW-1	05/06/2015		0.2320		
Lead	ug/L	SW-1	04/08/2016	ND	0.2110	0.2400	**
Lead	ug/L	SW-1	11/17/2016		0.3200		
Lead	ug/L	SW-1	05/05/2017	ND	0.3240	0.2400	**
Lead	ug/L	SW-1	11/01/2017	ND	0.3240	0.2400	**
Lead	ug/L	SW-1	06/15/2018	ND	0.2500	0.2400	**
Lead	ug/L	SW-1	10/29/2018	ND	0.2500	0.2400	**
Lead	ug/L	SW-1	06/07/2019		0.6440		
Lead	ug/L	SW-1	11/01/2019	ND	0.2700	0.2400	**
Lead	ug/L	SW-1	07/01/2020		0.5310		
Lead	ug/L	SW-1	11/17/2020	ND	0.1100	0.2400	**
Lead	ug/L	SW-1	06/04/2021		0.8860		
Lead	ug/L	SW-1	09/21/2021	ND	0.2100	0.2400	**
Lead	ug/L	SW-1	03/18/2022		7.0800		
Lead	ug/L	SW-1	06/22/2022	ND	0.2400		
Lead	ug/L	SW-1	08/16/2022	ND	0.2400		
Lead	ug/L	SW-1	06/06/2023		0.6170		
Nickel	ug/L	SW-1	06/26/2014		2.1200		
Nickel	ug/L	SW-1	11/07/2014	ND	0.5810	1.5300	**
Nickel	ug/L	SW-1	05/06/2015	ND	0.5810	1.5300	**

* - 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	
Nickel	ug/L	SW-1	04/08/2016	ND	1.5300		
Nickel	ug/L	SW-1	11/17/2016	ND	1.5300		
Nickel	ug/L	SW-1	05/05/2017	ND	0.9290	1.5300	**
Nickel	ug/L	SW-1	11/01/2017	ND	0.9290	1.5300	**
Nickel	ug/L	SW-1	06/15/2018	ND	1.0000	1.5300	**
Nickel	ug/L	SW-1	10/29/2018	ND	1.0000	1.5300	**
Nickel	ug/L	SW-1	06/07/2019	ND	0.6250	1.5300	**
Nickel	ug/L	SW-1	11/01/2019	ND	1.7000	1.5300	**
Nickel	ug/L	SW-1	07/01/2020	ND	1.9000	1.5300	**
Nickel	ug/L	SW-1	11/17/2020	ND	1.9000	1.5300	**
Nickel	ug/L	SW-1	06/04/2021	ND	1.9000	1.5300	**
Nickel	ug/L	SW-1	09/21/2021	ND	1.9000	1.5300	**
Nickel	ug/L	SW-1	03/18/2022		7.8500		
Nickel	ug/L	SW-1	06/22/2022	ND	1.9000	1.5300	**
Nickel	ug/L	SW-1	08/16/2022	ND	1.9000	1.5300	**
Nickel	ug/L	SW-1	06/06/2023	ND	1.9000	1.5300	**
Selenium	ug/L	SW-1	06/26/2014	ND	1.7900	0.9600	**
Selenium	ug/L	SW-1	11/07/2014	ND	3.3400	0.9600	**
Selenium	ug/L	SW-1	05/06/2015	ND	3.3400	0.9600	**
Selenium	ug/L	SW-1	04/08/2016		0.9160		
Selenium	ug/L	SW-1	11/17/2016	ND	0.6300	0.9600	**
Selenium	ug/L	SW-1	05/05/2017	ND	0.9280	0.9600	**
Selenium	ug/L	SW-1	11/01/2017	ND	0.9280	0.9600	**
Selenium	ug/L	SW-1	06/15/2018	ND	0.9000	0.9600	**
Selenium	ug/L	SW-1	10/29/2018	ND	0.9000	0.9600	**

* - 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	
Selenium	ug/L	SW-1	06/07/2019	ND	0.9820	0.9600	**
Selenium	ug/L	SW-1	11/01/2019	ND	1.0000	0.9600	**
Selenium	ug/L	SW-1	07/01/2020	ND	1.0000	0.9600	**
Selenium	ug/L	SW-1	11/17/2020	ND	1.0000	0.9600	**
Selenium	ug/L	SW-1	06/04/2021	ND	0.9600		
Selenium	ug/L	SW-1	09/21/2021	ND	0.9600		
Selenium	ug/L	SW-1	03/18/2022	ND	0.9600		
Selenium	ug/L	SW-1	06/22/2022	ND	0.9600		
Selenium	ug/L	SW-1	08/16/2022	ND	0.9600		
Selenium	ug/L	SW-1	06/06/2023	ND	1.4000	0.9600	**
Silver	ug/L	SW-1	06/26/2014	ND	0.0396	0.3000	**
Silver	ug/L	SW-1	11/07/2014	ND	0.0420	0.3000	**
Silver	ug/L	SW-1	05/06/2015		0.0630		
Silver	ug/L	SW-1	04/08/2016	ND	0.1530	0.3000	**
Silver	ug/L	SW-1	11/17/2016	ND	0.1530	0.3000	**
Silver	ug/L	SW-1	05/05/2017	ND	0.1400	0.3000	**
Silver	ug/L	SW-1	11/01/2017	ND	0.1400	0.3000	**
Silver	ug/L	SW-1	06/15/2018	ND	0.3000		
Silver	ug/L	SW-1	10/29/2018	ND	0.3000		
Silver	ug/L	SW-1	06/07/2019	ND	0.1150	0.3000	**
Silver	ug/L	SW-1	11/01/2019	ND	0.3700	0.3000	**
Silver	ug/L	SW-1	07/01/2020	ND	0.3700	0.3000	**
Silver	ug/L	SW-1	11/17/2020	ND	0.3700	0.3000	**
Silver	ug/L	SW-1	06/04/2021	ND	0.4200	0.3000	**
Silver	ug/L	SW-1	09/21/2021	ND	0.4200	0.3000	**

* - 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	ug/L	SW-1	03/18/2022	ND	0.4900	0.3000	**
Silver	ug/L	SW-1	06/22/2022	ND	0.4900	0.3000	**
Silver	ug/L	SW-1	08/16/2022	ND	0.4900	0.3000	**
Silver	ug/L	SW-1	06/06/2023		1.3600		
Silver	ug/L	SW-1	08/24/2023	ND	0.5000	0.3000	**
Thallium	ug/L	SW-1	06/26/2014	ND	0.0353	0.1700	**
Thallium	ug/L	SW-1	11/07/2014	ND	0.0325	0.1700	**
Thallium	ug/L	SW-1	05/06/2015	ND	0.0325	0.1700	**
Thallium	ug/L	SW-1	04/08/2016	ND	0.0255	0.1700	**
Thallium	ug/L	SW-1	11/17/2016	ND	0.0255	0.1700	**
Thallium	ug/L	SW-1	05/05/2017	ND	0.0644	0.1700	**
Thallium	ug/L	SW-1	11/01/2017	ND	0.0644	0.1700	**
Thallium	ug/L	SW-1	06/15/2018	ND	0.1700		
Thallium	ug/L	SW-1	10/29/2018	ND	0.1700		
Thallium	ug/L	SW-1	06/07/2019	ND	0.5700	0.1700	**
Thallium	ug/L	SW-1	11/01/2019	ND	0.2700	0.1700	**
Thallium	ug/L	SW-1	07/01/2020	ND	0.2600	0.1700	**
Thallium	ug/L	SW-1	11/17/2020	ND	0.2600	0.1700	**
Thallium	ug/L	SW-1	06/04/2021		2.1300		
Thallium	ug/L	SW-1	09/21/2021	ND	0.2600	0.1700	**
Thallium	ug/L	SW-1	03/18/2022	ND	0.2600	0.1700	**
Thallium	ug/L	SW-1	06/22/2022	ND	0.2600	0.1700	**
Thallium	ug/L	SW-1	08/16/2022	ND	0.2600	0.1700	**
Thallium	ug/L	SW-1	06/06/2023		4.6700		
Thallium	ug/L	SW-1	08/24/2023	ND	0.2600	0.1700	**

* - 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	
Vanadium	ug/L	SW-1	06/26/2014		2.3700		
Vanadium	ug/L	SW-1	11/07/2014		0.5120		
Vanadium	ug/L	SW-1	05/06/2015		0.7160		
Vanadium	ug/L	SW-1	04/08/2016		0.4950		
Vanadium	ug/L	SW-1	11/17/2016		0.6450		
Vanadium	ug/L	SW-1	05/05/2017	ND	0.8400	0.8500	**
Vanadium	ug/L	SW-1	11/01/2017		1.3900		
Vanadium	ug/L	SW-1	06/15/2018	ND	0.5200	0.8500	**
Vanadium	ug/L	SW-1	10/29/2018	ND	0.5200	0.8500	**
Vanadium	ug/L	SW-1	06/07/2019	ND	2.1500	0.8500	**
Vanadium	ug/L	SW-1	11/01/2019	ND	0.8200	0.8500	**
Vanadium	ug/L	SW-1	07/01/2020	ND	0.8500		
Vanadium	ug/L	SW-1	11/17/2020	ND	0.8500		
Vanadium	ug/L	SW-1	06/04/2021	ND	1.1000	0.8500	**
Vanadium	ug/L	SW-1	09/21/2021	ND	1.1000	0.8500	**
Vanadium	ug/L	SW-1	03/18/2022		7.5900		
Vanadium	ug/L	SW-1	06/22/2022	ND	1.1000	0.8500	**
Vanadium	ug/L	SW-1	08/16/2022	ND	1.1000	0.8500	**
Vanadium	ug/L	SW-1	06/06/2023	ND	1.1000	0.8500	**
Zinc	ug/L	SW-1	06/26/2014	ND	6.9500	10.0000	**
Zinc	ug/L	SW-1	11/07/2014	ND	6.9500	10.0000	**
Zinc	ug/L	SW-1	05/06/2015	ND	6.9500	10.0000	**
Zinc	ug/L	SW-1	04/08/2016	ND	5.2100	10.0000	**
Zinc	ug/L	SW-1	11/17/2016	ND	5.2100	10.0000	**
Zinc	ug/L	SW-1	05/05/2017	ND	11.5000	10.0000	**

* - 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	
Zinc	ug/L	SW-1	11/01/2017	ND	11.5000	10.0000	**
Zinc	ug/L	SW-1	06/15/2018	ND	10.0000		
Zinc	ug/L	SW-1	10/29/2018	ND	10.0000		
Zinc	ug/L	SW-1	06/07/2019	ND	6.9200	10.0000	**
Zinc	ug/L	SW-1	11/01/2019	ND	10.0000		
Zinc	ug/L	SW-1	07/01/2020	ND	10.0000		
Zinc	ug/L	SW-1	11/17/2020	ND	10.0000		
Zinc	ug/L	SW-1	06/04/2021	ND	10.0000		
Zinc	ug/L	SW-1	09/21/2021	ND	10.0000		
Zinc	ug/L	SW-1	03/18/2022		20.7000		
Zinc	ug/L	SW-1	06/22/2022	ND	10.0000		
Zinc	ug/L	SW-1	08/16/2022	ND	10.0000		
Zinc	ug/L	SW-1	06/06/2023	ND	6.4000	10.0000	**

* - 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	ug/L	SW-2	12/18/2024	ND	1.0000	0.5100
Antimony	ug/L	SW-5	12/18/2024	ND	1.0000	0.5100
Arsenic	ug/L	SW-2	12/18/2024	ND	0.5300	2.5400
Arsenic	ug/L	SW-5	12/18/2024	ND	0.5300	2.5400
Barium	ug/L	SW-2	12/18/2024		110.0000	201.0000
Barium	ug/L	SW-5	12/18/2024		87.2000	201.0000
Beryllium	ug/L	SW-2	12/18/2024	ND	0.3300	0.2700
Beryllium	ug/L	SW-5	12/18/2024	ND	0.3300	0.2700
Cadmium	ug/L	SW-2	12/18/2024	ND	0.1000	0.2280
Cadmium	ug/L	SW-5	12/18/2024	ND	0.1000	0.2280
Chromium	ug/L	SW-2	12/18/2024	ND	1.2000	1.1000
Chromium	ug/L	SW-5	12/18/2024	ND	1.2000	1.1000
Cobalt	ug/L	SW-2	12/18/2024	ND	0.1700	4.3600
Cobalt	ug/L	SW-5	12/18/2024	ND	0.1700	4.3600
Copper	ug/L	SW-2	12/18/2024	ND	1.8000	11.5000
Copper	ug/L	SW-5	12/18/2024	ND	1.8000	11.5000
Lead	ug/L	SW-2	12/18/2024	ND	0.2600	7.0800
Lead	ug/L	SW-5	12/18/2024	ND	0.2600	7.0800
Nickel	ug/L	SW-2	12/18/2024	ND	2.1000	7.8500
Nickel	ug/L	SW-5	12/18/2024	ND	2.1000	7.8500
Selenium	ug/L	SW-2	12/18/2024	ND	1.4000	0.9600
Selenium	ug/L	SW-5	12/18/2024	ND	1.4000	0.9600
Silver	ug/L	SW-2	12/18/2024	ND	0.5000	1.3600

* - 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
Silver	ug/L	SW-5	12/18/2024	ND	0.5000	1.3600
Thallium	ug/L	SW-2	12/18/2024	ND	0.5700	4.6700
Thallium	ug/L	SW-5	12/18/2024	ND	0.5700	4.6700
Vanadium	ug/L	SW-2	12/18/2024	ND	1.1000	7.5900
Vanadium	ug/L	SW-5	12/18/2024	ND	1.1000	7.5900
Zinc	ug/L	SW-2	12/18/2024	ND	9.7000	20.7000
Zinc	ug/L	SW-5	12/18/2024	ND	9.7000	20.7000

* - 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	0	19	0.000	1	35	0.029
Arsenic	1	19	0.053	7	35	0.200
Barium	19	19	1.000	35	35	1.000
Beryllium	0	19	0.000	5	35	0.143
Cadmium	3	20	0.150	2	35	0.057
Chromium	0	19	0.000	6	35	0.171
Cobalt	8	19	0.421	16	35	0.457
Copper	5	19	0.263	11	36	0.306
Lead	8	19	0.421	15	35	0.429
Nickel	2	19	0.105	11	35	0.314
Selenium	1	19	0.053	2	35	0.057
Silver	2	20	0.100	3	37	0.081
Thallium	2	20	0.100	4	36	0.111
Vanadium	7	19	0.368	11	35	0.314
Zinc	1	19	0.053	8	35	0.229

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
Antimony	0	19	0.000	5.018	5.018					2.326	non-norm
Arsenic	1	19	0.053	24.856	24.856					2.326	non-norm
Barium	19	19	1.000	4.264	3.330					2.326	non-norm
Beryllium	0	19	0.000	5.018	5.018					2.326	non-norm
Cadmium	3	20	0.150	7.265	7.012					2.326	non-norm
Chromium	0	19	0.000	5.018	5.018					2.326	non-norm
Cobalt	8	19	0.421	8.232	4.707					2.326	non-norm
Copper	5	19	0.263	8.486	5.292					2.326	non-norm
Lead	8	19	0.421	8.711	4.662					2.326	non-norm
Nickel	2	19	0.105	10.585	9.258					2.326	non-norm
Selenium	1	19	0.053	24.856	24.856					2.326	non-norm
Silver	2	20	0.100	8.712	6.875					2.326	non-norm
Thallium	2	20	0.100	8.362	8.079					2.326	non-norm
Vanadium	7	19	0.368	7.478	4.832					2.326	non-norm
Zinc	1	19	0.053	24.856	24.856					2.326	non-norm

* - 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 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Model Type
Antimony	nonpar
Arsenic	nonpar
Barium	nonpar
Beryllium	nonpar
Cadmium	nonpar
Chromium	nonpar
Cobalt	nonpar
Copper	nonpar
Lead	nonpar
Nickel	nonpar
Selenium	nonpar
Silver	nonpar
Thallium	nonpar
Vanadium	nonpar
Zinc	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	ug/L	0	19					0.5100	nonpar	***	0.99
Arsenic	ug/L	1	19					2.5400	nonpar		0.99
Barium	ug/L	19	19					201.0000	nonpar		0.99
Beryllium	ug/L	0	19					0.2700	nonpar	***	0.99
Cadmium	ug/L	3	20					0.2280	nonpar		0.99
Chromium	ug/L	0	19					1.1000	nonpar	***	0.99
Cobalt	ug/L	8	19					4.3600	nonpar		0.99
Copper	ug/L	5	19					11.5000	nonpar		0.99
Lead	ug/L	8	19					7.0800	nonpar		0.99
Nickel	ug/L	2	19					7.8500	nonpar		0.99
Selenium	ug/L	1	19					0.9600	nonpar	***	0.99
Silver	ug/L	2	20					1.3600	nonpar		0.99
Thallium	ug/L	2	20					4.6700	nonpar		0.99
Vanadium	ug/L	7	19					7.5900	nonpar		0.99
Zinc	ug/L	1	19					20.7000	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples 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 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	Units	Well	Date	Result	Detects	N	% >= PQL	% >= MDL	Manual RL	Median	>= Med
Arsenic	ug/L	SW-1	03/18/2022	2.5400	1	19	5	21	no	0.6720	yes
Cadmium	ug/L	SW-1	06/04/2021	0.1030	3	20	15	15	no	0.0550	
Cadmium	ug/L	SW-1	03/18/2022	0.2200	3	20	15	15	no	0.0550	
Cadmium	ug/L	SW-1	06/06/2023	0.2280	3	20	15	15	no	0.0550	
Nickel	ug/L	SW-1	06/26/2014	2.1200	2	19	11	21	no	1.5300	
Nickel	ug/L	SW-1	03/18/2022	7.8500	2	19	11	21	no	1.5300	
Selenium	ug/L	SW-1	04/08/2016	0.9160	1	19	5	21	no	0.9600	no
Silver	ug/L	SW-1	05/06/2015	0.0630	2	20	10	10	no	0.3000	
Silver	ug/L	SW-1	06/06/2023	1.3600	2	20	10	10	no	0.3000	
Thallium	ug/L	SW-1	06/04/2021	2.1300	2	20	10	15	no	0.1700	
Thallium	ug/L	SW-1	06/06/2023	4.6700	2	20	10	15	no	0.1700	
Zinc	ug/L	SW-1	03/18/2022	20.7000	1	19	5	11	no	10.0000	yes

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Table 7

Censored Data Outliers Test
for datasets with 75% or more NDs

Constituent	>= 2x	>= 3x	
Arsenic			*
Cadmium	no		
Cadmium	yes		*
Cadmium	yes		*
Nickel	no		
Nickel	yes		*
Selenium			
Silver	no		
Silver	yes		*
Thallium	yes		*
Thallium	yes		*
Zinc			*

* Failed test - potential outlier.
Potential outliers are not removed from statistical analyses.
>= Med - indicates if the result is greater than or equal to the median PQL value.
>= 2x - indicates if the result is greater than or equal to 2 x the median PQL value.
>= 3x - indicates if the result is greater than or equal to 3 x the median PQL value.

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Antimony (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.51**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Arsenic (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **2.54**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Barium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **201.0**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Beryllium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **0.27**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cadmium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.228**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Chromium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = median(X) = **1.1**	Compute nonparametric prediction limit as median reporting limit in background.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Cobalt (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **4.36**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Copper (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **11.5**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Lead (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **7.08**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Nickel (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **7.85**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Selenium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **0.96**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Silver (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **1.36**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Thallium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **4.67**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Vanadium (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **7.59**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Worksheet 1 - Upgradient vs. Downgradient Comparisons
Zinc (ug/L)
Nonparametric Prediction Limit

Step	Equation	Description
1	PL = max(X) = **20.7**	Compute nonparametric prediction limit as largest background measurement.
2	Conf = **0.99**	Confidence level is based on N, K and resampling strategy (see Gibbons 1994).

Table 1

Confidence Intervals and Sign Test for Comparing Upstream and Downstream Concentrations

Constituent	Units	Upstream	Downstream	# of Pairs	# of Ties	# DN > UP	Critical #		UP UCL	DN UCL
Antimony	ug/L	SW-1	SW-2	18	18	0	5		0.255	0.255
Antimony	ug/L	SW-1	SW-5	0				*		
Arsenic	ug/L	SW-1	SW-2	18	0	17	13	**	0.653	0.751
Arsenic	ug/L	SW-1	SW-5	0				*		
Barium	ug/L	SW-1	SW-2	18	0	2	13		136.478	118.194
Barium	ug/L	SW-1	SW-5	0				*		
Beryllium	ug/L	SW-1	SW-2	18	17	1	5		0.135	0.137
Beryllium	ug/L	SW-1	SW-5	0				*		
Cadmium	ug/L	SW-1	SW-2	18	15	0	5		0.075	0.048
Cadmium	ug/L	SW-1	SW-5	0				*		
Chromium	ug/L	SW-1	SW-2	18	15	2	5		0.550	0.902
Chromium	ug/L	SW-1	SW-5	0				*		
Cobalt	ug/L	SW-1	SW-2	18	8	7	9		0.762	0.666
Cobalt	ug/L	SW-1	SW-5	0				*		
Copper	ug/L	SW-1	SW-2	18	13	3	5		2.366	1.699
Copper	ug/L	SW-1	SW-5	0				*		
Lead	ug/L	SW-1	SW-2	18	7	6	9		1.248	1.037
Lead	ug/L	SW-1	SW-5	0				*		
Nickel	ug/L	SW-1	SW-2	18	0	16	13	**	1.861	1.822
Nickel	ug/L	SW-1	SW-5	0				*		
Selenium	ug/L	SW-1	SW-2	18	17	0	5		0.543	0.520
Selenium	ug/L	SW-1	SW-5	0				*		
Silver	ug/L	SW-1	SW-2	19	0	18	14	**	0.311	0.342
Silver	ug/L	SW-1	SW-5	1				*		
Thallium	ug/L	SW-1	SW-2	19	0	16	14	**	0.842	0.619

* - Insufficient Data
** - Downstream Significantly > Upstream
UCL = Upper Confidence Limit

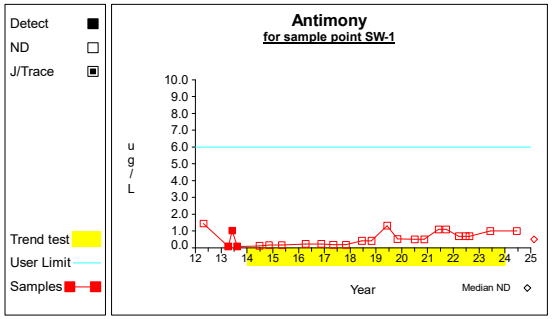
Table 1

Confidence Intervals and Sign Test for Comparing Upstream and Downstream Concentrations

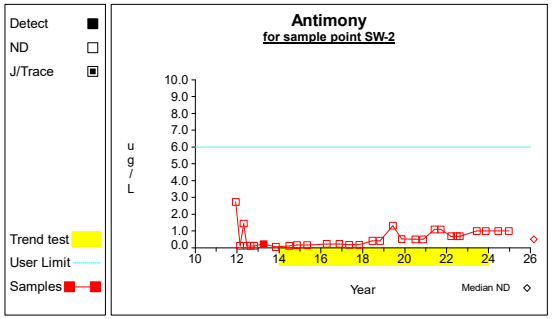
Constituent	Units	Upstream	Downstream	# of Pairs	# of Ties	# DN > UP	Critical #		UP UCL	DN UCL
Thallium	ug/L	SW-1	SW-5	0				*		
Vanadium	ug/L	SW-1	SW-2	18	0	17	13	**	1.654	1.629
Vanadium	ug/L	SW-1	SW-5	0				*		
Zinc	ug/L	SW-1	SW-2	18	15	2	5		7.259	9.039
Zinc	ug/L	SW-1	SW-5	0				*		

* - Insufficient Data
** - Downstream Significantly > Upstream
UCL = Upper Confidence Limit

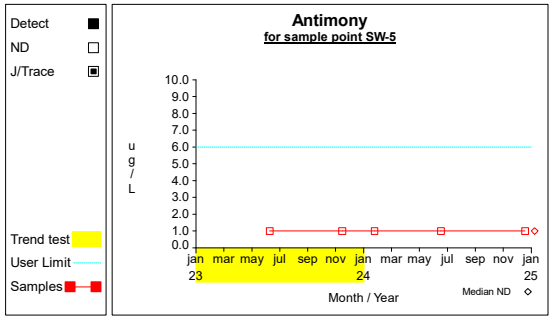
Time Series



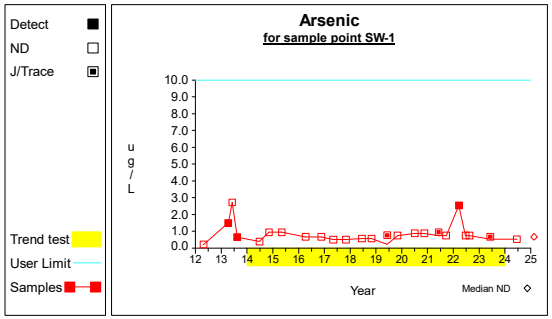
Graph 1



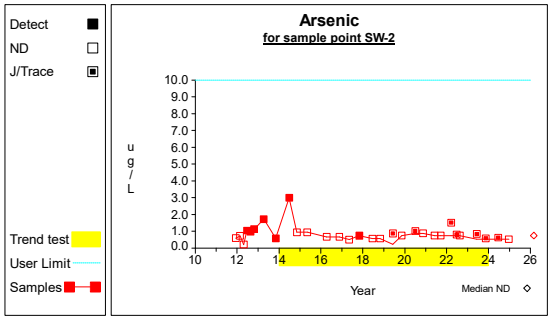
Graph 2



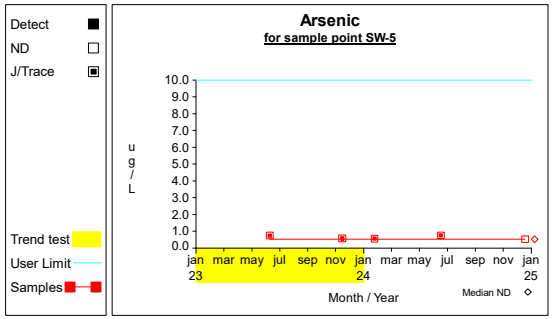
Graph 3



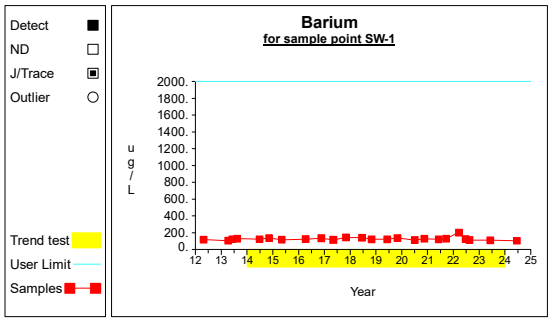
Graph 4



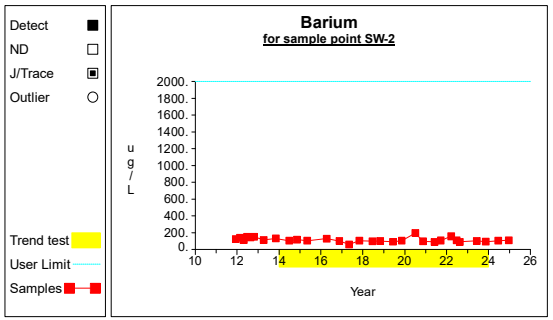
Graph 5



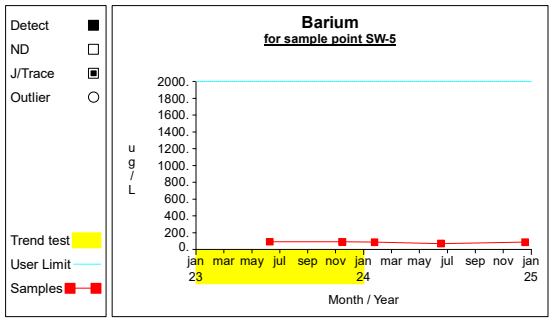
Graph 6



Graph 7

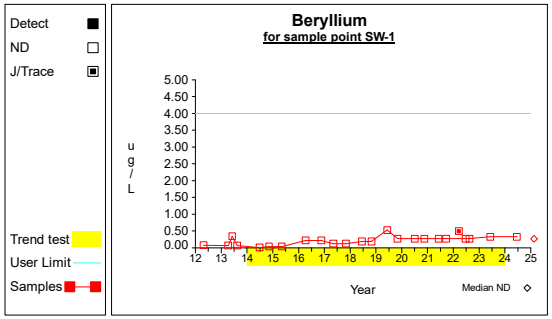


Graph 8

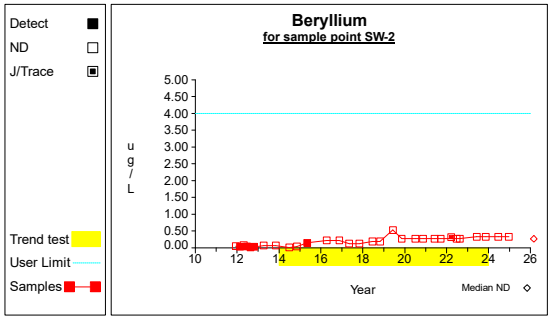


Graph 9

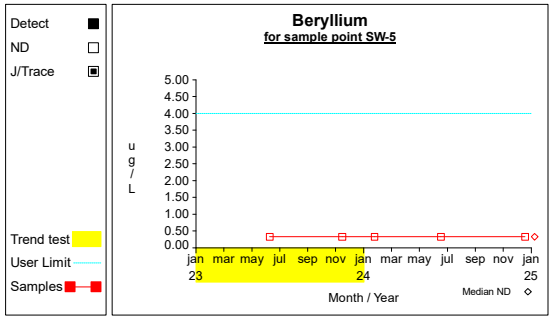
Time Series



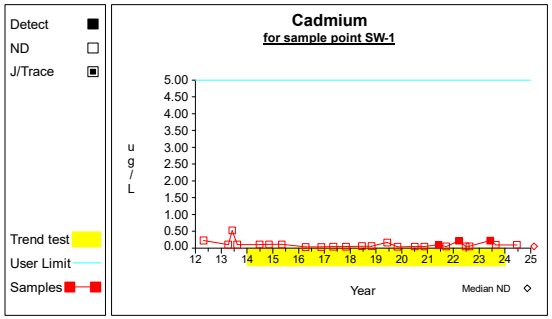
Graph 10



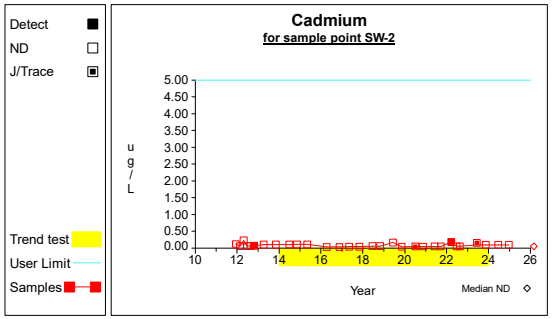
Graph 11



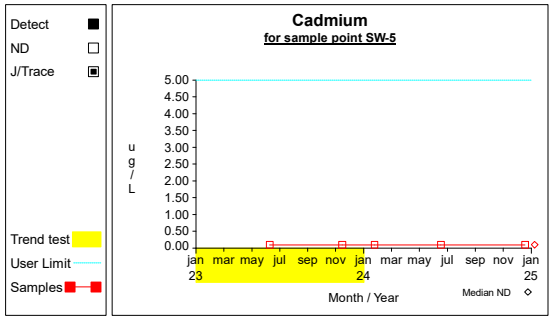
Graph 12



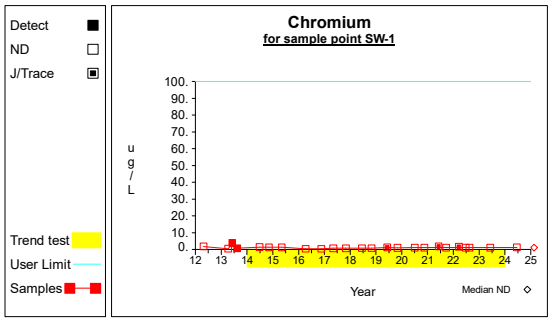
Graph 13



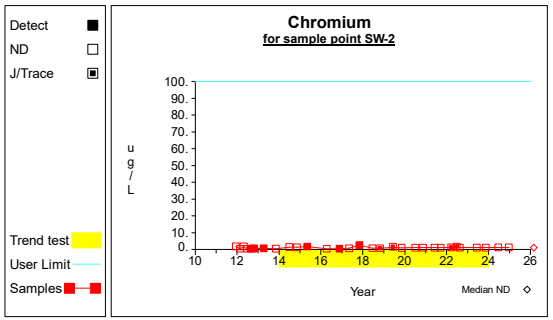
Graph 14



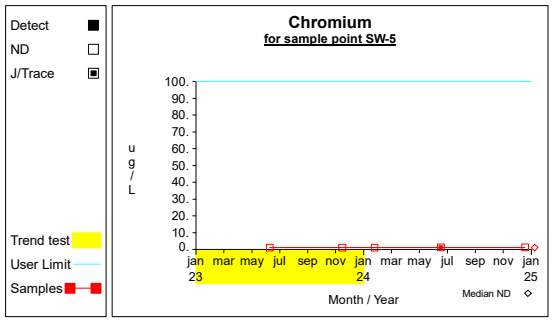
Graph 15



Graph 16

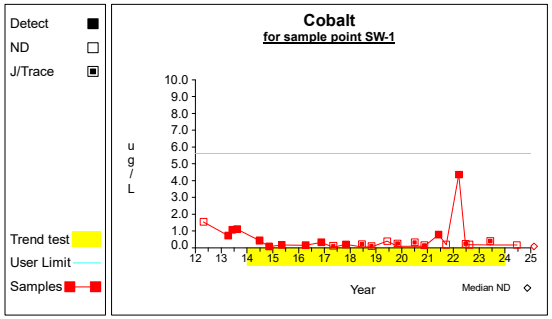


Graph 17

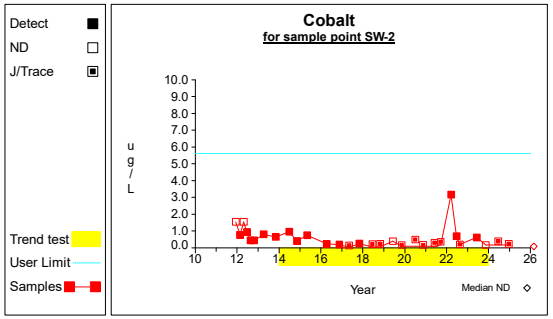


Graph 18

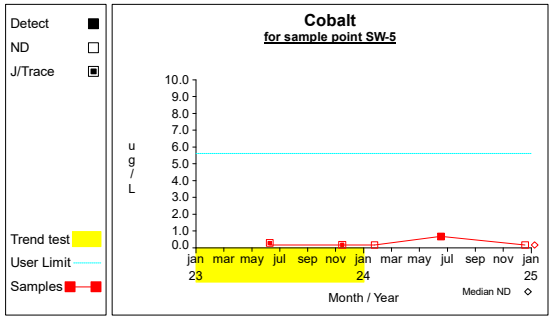
Time Series



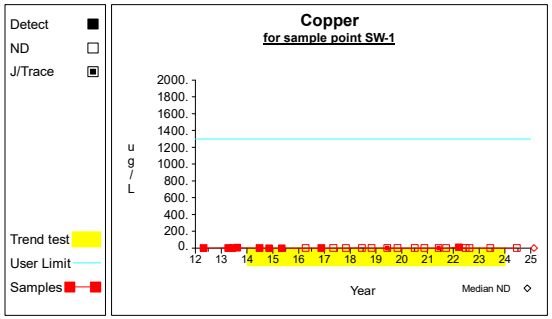
Graph 19



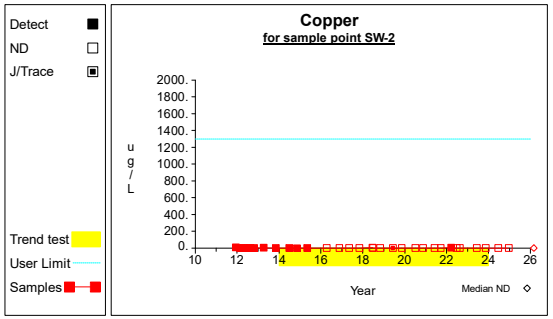
Graph 20



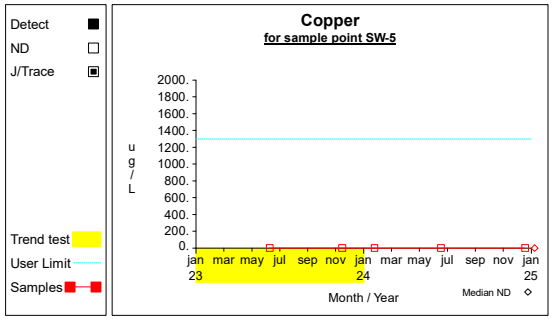
Graph 21



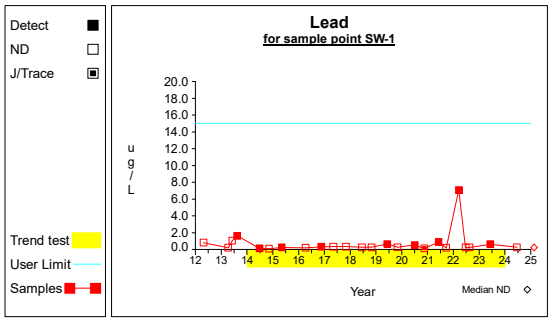
Graph 22



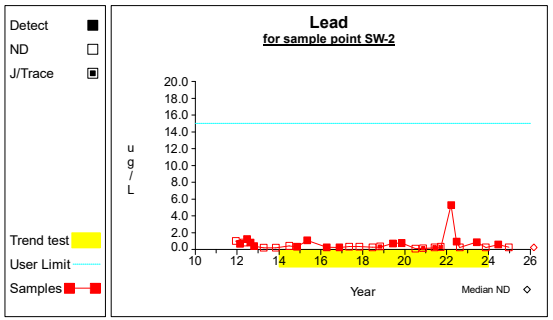
Graph 23



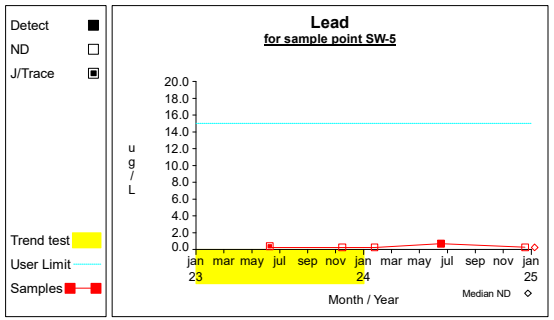
Graph 24



Graph 25

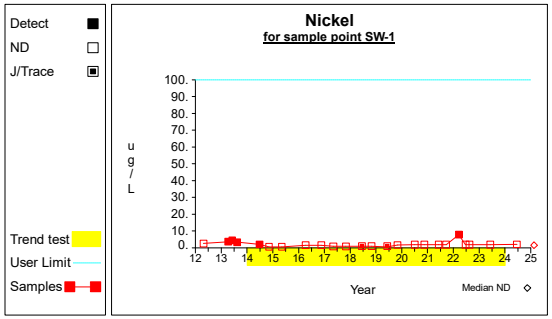


Graph 26

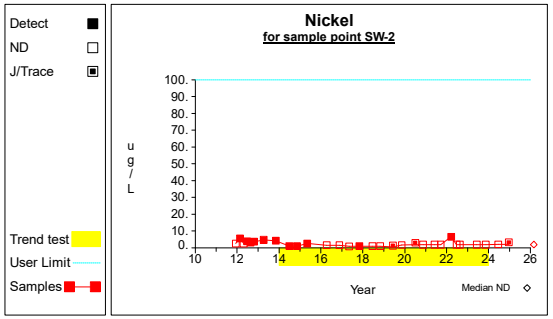


Graph 27

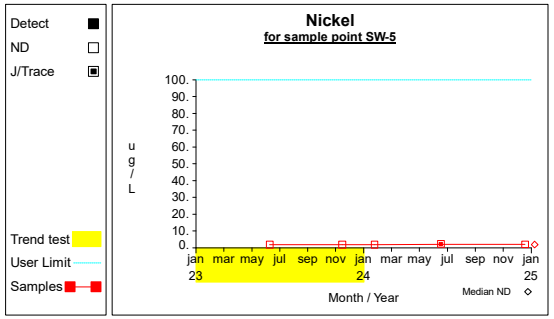
Time Series



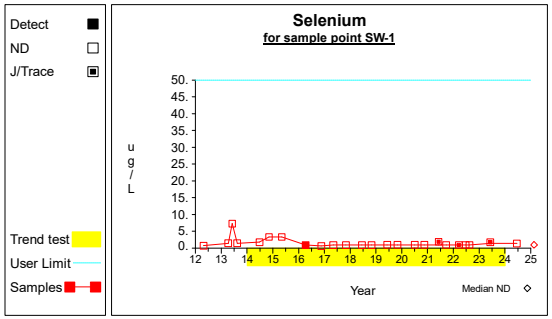
Graph 28



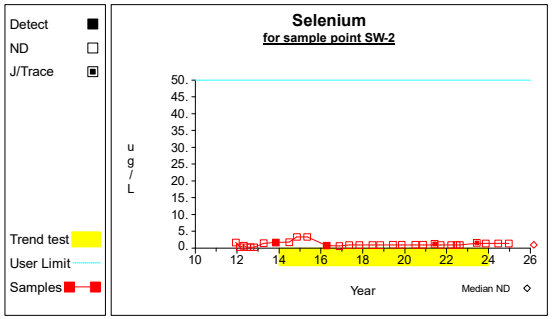
Graph 29



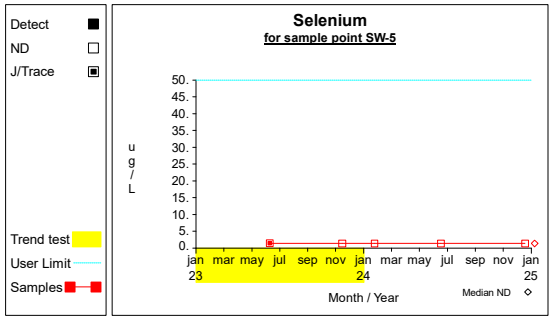
Graph 30



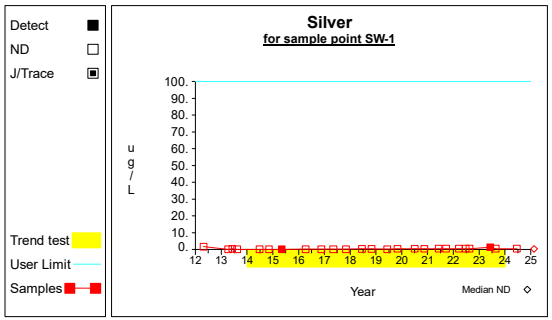
Graph 31



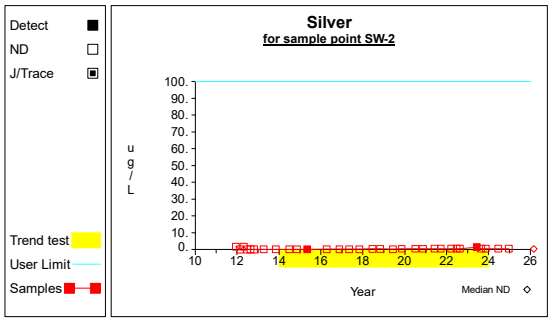
Graph 32



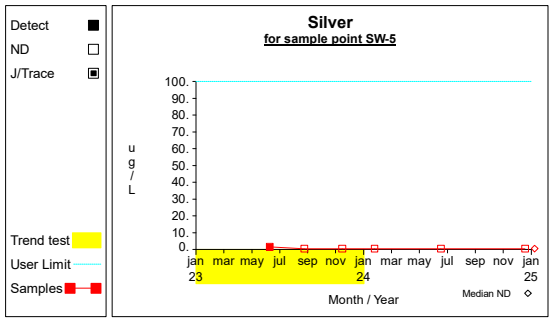
Graph 33



Graph 34

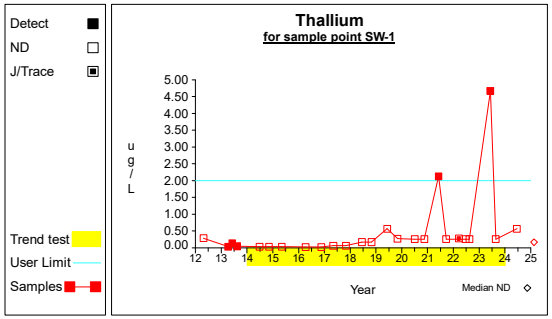


Graph 35

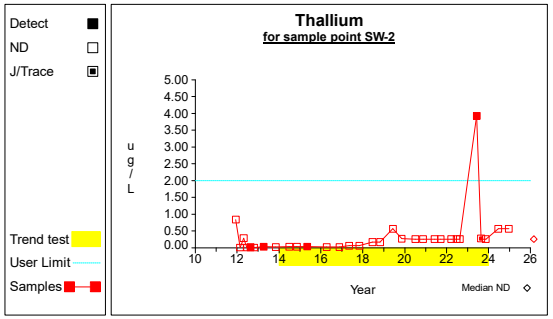


Graph 36

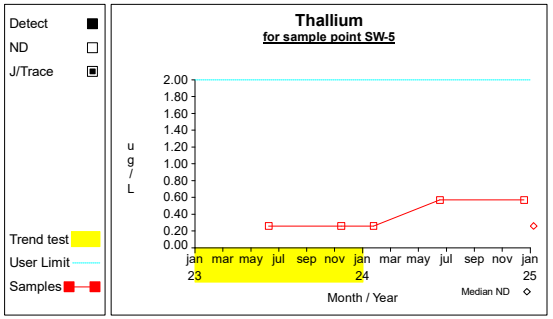
Time Series



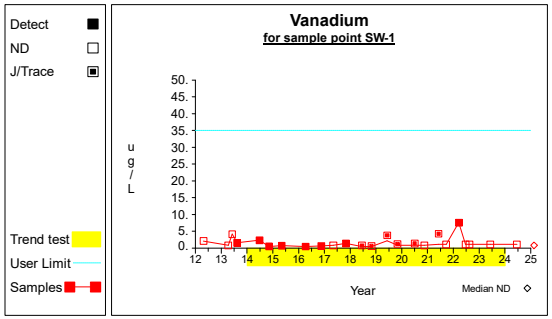
Graph 37



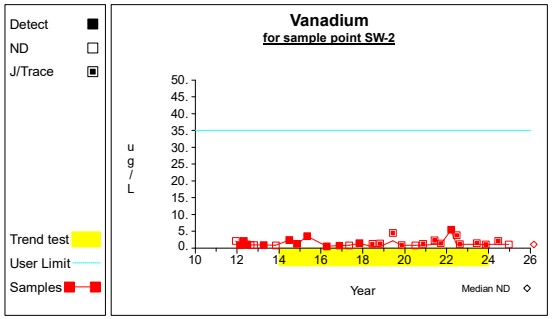
Graph 38



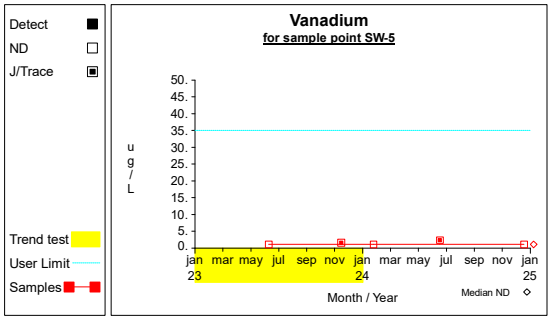
Graph 39



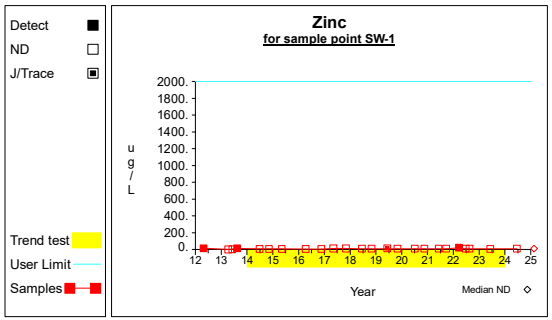
Graph 40



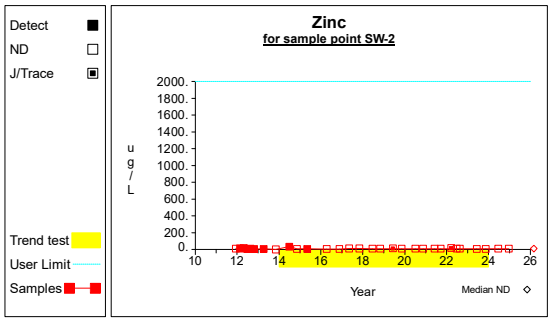
Graph 41



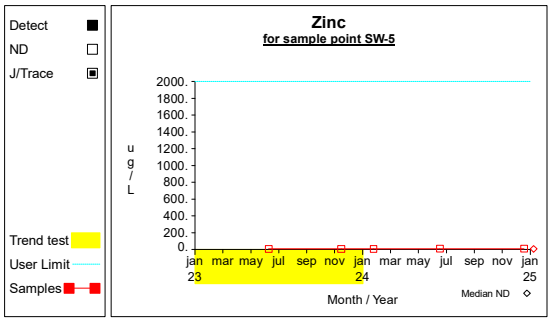
Graph 42



Graph 43



Graph 44



Graph 45

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,2-dichlorobenzene	SW-1	4/08/2013		.40	.14	ug/L
1,4-dichlorobenzene	SW-1	4/08/2013		.38	.20	ug/L
2-butanone	SW-1	4/24/2012		1.15	.47	ug/L
2-butanone	SW-1	4/08/2013		1.32	.47	ug/L
2-butanone	SW-1	6/03/2013		1.17	.47	ug/L
2-butanone	SW-1	6/26/2014		2.34	.47	ug/L
Acetone	SW-1	4/08/2013		2.19	1.79	ug/L
Acetone	SW-1	6/26/2014		3.85	1.79	ug/L
Acetone	SW-1	11/01/2017		2.88	1.79	ug/L
Dichloromethane	SW-1	6/03/2013		.391	.170	ug/L
Dichloromethane	SW-1	11/17/2016		.786	.170	ug/L
Dichloromethane	SW-1	11/01/2017		.830	.170	ug/L
Toluene	SW-1	6/03/2013		.654	.150	ug/L
1,2-dichlorobenzene	SW-2	4/08/2013		.147	.140	ug/L
2-butanone	SW-2	12/07/2011		1.24	.47	ug/L
2-butanone	SW-2	4/24/2012		1.21	.47	ug/L
2-butanone	SW-2	4/08/2013		8.70	.47	ug/L
2-butanone	SW-2	6/27/2014		1.99	.47	ug/L
Acetone	SW-2	2/21/2012		2.37	1.79	ug/L
Acetone	SW-2	4/24/2012		3.08	1.79	ug/L
Acetone	SW-2	8/23/2012		3.15	1.79	ug/L
Acetone	SW-2	4/08/2013		15.80	1.79	ug/L
Acetone	SW-2	6/27/2014		4.00	1.79	ug/L
Acetone	SW-2	4/08/2016		2.59	1.79	ug/L
Acetone	SW-2	11/14/2017		2.82	1.79	ug/L
Bromomethane	SW-2	6/27/2014		.250	.220	ug/L
Bromomethane	SW-2	5/11/2015		.249	.220	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
Chloroethane	SW-2	12/07/2011		.18	.15	ug/L
Chloromethane	SW-2	11/17/2016		.507	.310	ug/L
Dichloromethane	SW-2	2/21/2012		.780	.170	ug/L
Dichloromethane	SW-2	8/23/2012		.210	.170	ug/L
Dichloromethane	SW-2	10/24/2012		.620	.170	ug/L
Dichloromethane	SW-2	11/17/2016		.707	.170	ug/L

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

Worksheet 7 - Surface Water Monitoring
Antimony (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{\mathbf{X}}$ + **tS** / **N**$^{1/2}$ = **0.255** + **1.734** * **7.08**x**10**$^{-9}$ / **19**$^{1/2}$ = **0.255**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{\mathbf{X}}$ + **tS** / **N**$^{1/2}$ = **0.255** + **1.729** * **7.50**x**10**$^{-9}$ / **20**$^{1/2}$ = **0.255**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **18**	
5	Number of Downstream > Upstream = **0**	
6	Critical number for Downstream > Upstream = **5**	

Worksheet 7 - Surface Water Monitoring
Arsenic (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{\mathbf{X}}$ + **tS** / $\mathbf{N}^{1/2}$ = **0.452** + **1.734** * **0.506** / $\mathbf{19}^{1/2}$ = **0.653**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{\mathbf{X}}$ + **tS** / $\mathbf{N}^{1/2}$ = **0.524** + **1.729** * **0.586** / $\mathbf{20}^{1/2}$ = **0.751**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **0**	
5	Number of Downstream > Upstream = **17**	
6	Critical number for Downstream > Upstream = **13**	

Worksheet 7 - Surface Water Monitoring
Barium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{\mathbf{X}}$ + **tS** / $\mathbf{N}^{1/2}$ = **128.526** + **1.734** * **19.99** / $\mathbf{19}^{1/2}$ = **136.478**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{\mathbf{X}}$ + **tS** / $\mathbf{N}^{1/2}$ = **107.63** + **1.729** * **27.325** / $\mathbf{20}^{1/2}$ = **118.194**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **0**	
5	Number of Downstream > Upstream = **2**	
6	Critical number for Downstream > Upstream = **13**	

Worksheet 7 - Surface Water Monitoring
Beryllium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.135** + **1.734** * **2.09**x**10**$^{-9}$ / **19**$^{1/2}$ = **0.135**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.136** + **1.729** * **0.003** / **20**$^{1/2}$ = **0.137**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **17**	
5	Number of Downstream > Upstream = **1**	
6	Critical number for Downstream > Upstream = **5**	

Worksheet 7 - Surface Water Monitoring
Cadmium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{\mathbf{X}}$ + **tS** / **N**$^{1/2}$ = **0.051** + **1.729** * **0.062** / **20**$^{1/2}$ = **0.075**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{\mathbf{X}}$ + **tS** / **N**$^{1/2}$ = **0.035** + **1.729** * **0.034** / **20**$^{1/2}$ = **0.048**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **15**	
5	Number of Downstream > Upstream = **0**	
6	Critical number for Downstream > Upstream = **5**	

Worksheet 7 - Surface Water Monitoring
Chromium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{X}$ + **tS** / **N**$^{1/2}$ = **0.55** + **1.734** * **7.82x10**$^{-9}$ / **19**$^{1/2}$ = **0.55**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{X}$ + **tS** / **N**$^{1/2}$ = **0.703** + **1.729** * **0.513** / **20**$^{1/2}$ = **0.902**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **15**	
5	Number of Downstream > Upstream = **2**	
6	Critical number for Downstream > Upstream = **5**	

Worksheet 7 - Surface Water Monitoring
Cobalt (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{\mathbf{X}}$ + **tS** / $\mathbf{N}^{1/2}$ = **0.37** + **1.734** * **0.985** / $\mathbf{19}^{1/2}$ = **0.762**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{\mathbf{X}}$ + **tS** / $\mathbf{N}^{1/2}$ = **0.389** + **1.729** * **0.715** / $\mathbf{20}^{1/2}$ = **0.666**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **8**	
5	Number of Downstream > Upstream = **7**	
6	Critical number for Downstream > Upstream = **9**	

Worksheet 7 - Surface Water Monitoring
Copper (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **1.389** + **1.734** * **2.455** / **19**$^{1/2}$ = **2.366**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **1.195** + **1.725** * **1.339** / **21**$^{1/2}$ = **1.699**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **13**	
5	Number of Downstream > Upstream = **3**	
6	Critical number for Downstream > Upstream = **5**	

Worksheet 7 - Surface Water Monitoring
Lead (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.619** + **1.734** * **1.582** / **19**$^{1/2}$ = **1.248**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.59** + **1.729** * **1.157** / **20**$^{1/2}$ = **1.037**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **7**	
5	Number of Downstream > Upstream = **6**	
6	Critical number for Downstream > Upstream = **9**	

Worksheet 7 - Surface Water Monitoring
Nickel (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **1.209** + **1.734** * **1.638** / **19**$^{1/2}$ = **1.861**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **1.324** + **1.729** * **1.289** / **20**$^{1/2}$ = **1.822**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **0**	
5	Number of Downstream > Upstream = **16**	
6	Critical number for Downstream > Upstream = **13**	

Worksheet 7 - Surface Water Monitoring
Selenium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.503** + **1.734** * **0.1** / **19**$^{1/2}$ = **0.543**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.495** + **1.729** * **0.065** / **20**$^{1/2}$ = **0.52**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **17**	
5	Number of Downstream > Upstream = **0**	
6	Critical number for Downstream > Upstream = **5**	

Worksheet 7 - Surface Water Monitoring
Silver (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.206** + **1.729** * **0.272** / **20**$^{1/2}$ = **0.311**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.238** + **1.725** * **0.274** / **21**$^{1/2}$ = **0.342**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **19**	
4	Number of ties = **0**	
5	Number of Downstream > Upstream = **18**	
6	Critical number for Downstream > Upstream = **14**	

Worksheet 7 - Surface Water Monitoring
Thallium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\overline{X}$ + **tS** / **N**$^{1/2}$ = **0.417** + **1.729** * **1.1** / **20**$^{1/2}$ = **0.842**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\overline{X}$ + **tS** / **N**$^{1/2}$ = **0.307** + **1.725** * **0.83** / **21**$^{1/2}$ = **0.619**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **19**	
4	Number of ties = **0**	
5	Number of Downstream > Upstream = **16**	
6	Critical number for Downstream > Upstream = **14**	

Worksheet 7 - Surface Water Monitoring
Vanadium (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **0.99** + **1.734** * **1.669** / **19**$^{1/2}$ = **1.654**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **1.134** + **1.729** * **1.28** / **20**$^{1/2}$ = **1.629**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **0**	
5	Number of Downstream > Upstream = **17**	
6	Critical number for Downstream > Upstream = **13**	

Worksheet 7 - Surface Water Monitoring
Zinc (ug/L) for SW-1 (Up) vs. SW-2 (Down)

Step	Equation	Description
1	UCL(Upstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **5.826** + **1.734** * **3.602** / **19**$^{1/2}$ = **7.259**	Upper confidence limit for all Upstream data.
2	UCL(Downstream) = $\bar{X}$ + **tS** / **N**$^{1/2}$ = **6.544** + **1.729** * **6.454** / **20**$^{1/2}$ = **9.039**	Upper confidence limit for all Downstream data.
3	Number of paired observations = **18**	
4	Number of ties = **15**	
5	Number of Downstream > Upstream = **2**	
6	Critical number for Downstream > Upstream = **5**	

Appendix B1 – Historical Data

WATER TABLE

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-1

Parameter Name	Units	GPS	DL	RL	Oct-07	Jan-08	Apr-08	Jul-08	Oct-08	Apr-09	Jul-09	Oct-09	Feb-10	Apr-10	Oct-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Jun-20	Nov-20	May-21	Sep-21	Mar-22	Aug-22	Jun-23	Nov-23	Jan-24	Jun-24	Dec-24
Appendix I Inorganics																																												
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***2.17 J***	<1.2	<3.2	<0.581	***0.875 J***	***1.75 J***	***6.87***	<0.638	***2.88***	<0.638	<0.638	***1.25 J***	<1.7	***1.5 J***	***0.75 J***	<0.638	<0.638	<0.638	***276***	--	<1.39	***3.86***
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***2.835***	***0.3223***	***3.463***	***0.0104***	***0.154***	***6.993***	***1.698***	***1.741***	***0.26***	***0.44***	***0.64***	***1.01***	***1.37***	***3.44***	***10.97***	0	***0.57***	***146.72***	***0.58***	***1.73***	***10.6***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	<0.7	<0.7	<0.4	<0.4	***0.4 J***	***0.6 J***	***0.4 J***	***1.6***	***0.56 J***	<0.4	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.6	***0.136 J***	***0.0993 J***	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<1.32	<0.53	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<6	<6	<2.73	<1.45	***0.17 J***	***0.134 J***	<0.0541	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<1	***1.81***	<1	***1.95***	<1	***6.88***	<1	<1	<1	<1	<1	<1	<0.6	<0.216	***3.95 J***	***2.31***	***1.45***	***0.354 J***	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	***0.662 J***	<0.57	<0.57	***0.604 J***	<0.75	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	***1.03 J***	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<1	<1	<1	<1	<1	<1	<1	<0.47	<0.216	***1.95***	***1.95***	<0.544	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***170***	***185***	***137***	***165***	***317***	***279***	***163***	***290***	***153***	***144***	***195***	***128***	***273***	***123***	***448***	***282***	***186***	***124***	***190***	***104***	***166***	***93.8***	***114***	***95.1***	***130***	***119***	***142***	***93.8***	***124***	***94.9***	***184***	***146***	***111***	***112***	***112***	***106***	***282***	--	***94.7***	***201***
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***182***	***124***	***178***	***134***	***136***	***116***	***124***	***212***	***101***	***358***	***284***	***189***	***125***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	***1.12***	<1	***0.276 J***	<0.079	<0.089	<0.0696	<0.0696	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	<0.0178	<0.0696	<0.0696	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	***0.4 J***	***0.12 J***	<0.106	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	<0.039	<0.049	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	***0.209***	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	***0.27 J***	<0.106	<0.106	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***2.8 J***	<1.81	***2.55 J***	***0.643 J***	<0.418	***0.816 J***	<1.24	<1.24	<1.24	***0.852 J***	***0.423 J***	***0.87 J***	<0.729	<0.76	***1.15 J***	<1.14	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2	--	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<0.39	***0.439 J***	<0.418	***0.715 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***5.19 J***	<1.55	***4.7***	***0.857***	***0.745***	***0.231 J***	***0.168 J***	<0.0528	***0.182 J***	***0.052 J***	<0.0274	***0.065 J***	***0.083 J***	<0.061	***0.096 J***	<0.402	<0.091	<0.091	***0.105 J***	<0.091	<0.19	***0.317 J***	<0.19	<0.17	***0.844 J***	--	<0.17	***0.225 J***
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***1.24***	***0.688***	***0.612***	***0.145 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***19 J***	***3.94 J***	***18.2***	***7.01***	***2.25***	***1.04 J***	***0.906 J***	<0.485	***0.526 J***	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	***0.991 J***	<2	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	***5.27***	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	***13.8 J***	<1.51	***4.61***	***3.8***	***2.01***	***1.20 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	<4	<4	***5.04***	***8.1***	<4	***5.38***	<4	<4	<4	<4	***3.44 J***	***1.84 J***	***4.6***	<0.207	***0.212 J***	<0.18	<0.0967	<0.0967	***0.303 J***	<0.211	<0.211	<0.324	<0.324	<0.25	***0.459 J***	<0.186	<0.27	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	***0.994***	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<4	<4	<4	<4	<4	<4	<4	<1	<0.804	<0.029	<0.207	<0.207	***0.2 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***19.4 J***	***4.8 J***	***46***	***21***	***12.9***	***4.01***	***6.2***	***1.49 J***	***5.87***	<1.53	<1.53	***0.971 J***	***1.53 J***	***1.32 J***	***1.84 J***	***1.88 J***	<1.7	<1.9	***3.25 J***	<1.9	<1.9	<1.9	<1.9	***20.9***	--	<2.1	***9.01***
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	<50	***11.8 J***	***5.05 J***	***36.2***	***21***	***12.9***	***5.37***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<1.48	***4.98 J***	***4.17 J***	***1.15 J***	<3.34	<3.34	<3.34	***1.41 J***	<0.63	<0.928	<0.928	<0.9	<0.9	<0.982	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	***6.12***	<1.46	***1.14 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.135	<0.0789	<0.0789	<0.033	<0.042	<0.042	***0.117 J***	<0.153	<0.153	***0.142 J***	<0.14	<0.3	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	***0.0665 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	<0.0435	***0.0796 J***	<0.0267	<0.05	<0.0325	<0.0325	***0.038 J***	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.02 J***	<0.0267	<0.0267	***0.0566 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***3.59 J***	***2.74 J***	***6.35***	***0.904 J***	<0.833	***0.676 J***	***0.51 J***	<0.449	***0.542 J***	***0.466 J***	***0.394 J***	<0.84	<0.84	<0.52	***0.973 J***	<2.15	***1.04 J***	<0.85	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	***1.53 J***	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	<50	<2.1	<2.1	<0.94	<0.833	<0.833	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***51.2***	<20	***22.6***	<20	***42.9***	***51.2***	***36.6***	***50.8***	<20	***24***	***44.9***	<20	***13.9 J***	<9.11	***18 J***	***1.71 J***	<0.625	<2	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<6.92	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***34.8***	***33.1***	***36.9***	<20	***20.5***	***29.9***	<20	<9.11	***21.6***	***5.65***	***3.12 J***	<0.625	***2.01 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																											
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<4	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<10	<1	<1	<0.1	<0.1	***0.21 J***	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	1400	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<1	<1	<1	<1	<1	<1	<1	<2	<10	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	***1.17 J***	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.13	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	***0.48 J***	***0.185 J***	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	***0.18 J***	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	***3.09***	***1.52***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.27	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	***0.516 J***	***0.256 J***
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	***0.65 J***	***0.8 J***	***0.709 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	***2.07 J***	<1.79	<1.79	***1.94 J***	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***1.98 J***	***3.88 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.17 J***	<0.11	***0.65***	***0.287 J***	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	***0.26 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<10	<1	<0.15	<0.15	***0.17 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5	<5	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	***1.82***	***1.33***	<1	***1.06***	<1	<1	<1	<1	<1	***1.63***	***0.43 J***	***9.15***	***4.66***	<0.19	<0.19	***1.42***	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	***2.89***	***4.64***	<0.4	***0.966 J***
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	***0.57 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	***0.28 J***	<0.17	***0.26 J***	<0.17	<0.17	***0.228 J***	<0.17	<0.17	<0.17	<0.17	<0.17	***0.341 J***	***0.286 J***	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7
Ethylbenzene

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-1

Parameter Name	Units	GPS	Jul-09	Apr-10	May-14	Jun-14	Nov-14	Dec-14	May-15	Sep-15	Dec-15	Apr-16	Nov-16
Alcohols/Gycols by GC													
Acetonitrile	µg/L	NS	<10000	<10000	<126	--	--	--	--	<126	--	--	***166 J***
Isobutanol	µg/L	2100	<10000	<10000	<177	--	--	--	--	<177	--	--	<177
Herbicides (GC)													
2,4,5-T	µg/L	70	<0.21	<0.5	<0.475	--	--	--	--	<0.487	--	--	<0.508
2,4-D	µg/L	70	<1	<1	<0.51	--	--	--	--	<0.523	--	--	<0.546
Silvex (2,4,5-TP)	µg/L	50	<0.21	<0.5	<0.317	--	--	--	--	<0.325	--	--	<0.339
Inorganics													
Cyanide	µg/L	200	<10	<10	<3.1	--	--	--	--	<3.04	--	--	<3.52
Mercury	µg/L	2	<0.2	<0.2	<0.071	--	--	--	--	<0.0926	--	--	<0.142
Sulfide	µg/L	NS	<1000	<1000	<219	--	--	--	--	<219	--	--	<180
Tin	µg/L	4200	<100	<100	<12.1	--	--	--	--	<1.8	--	--	<0.832
PCBs (EPA Method 8082)													
PCB-1016	µg/L	NS	<0.8	<0.8	<0.0457	--	--	--	--	<0.0482	--	--	<0.0477
PCB-1221	µg/L	NS	<0.8	<0.8	<0.168	--	--	--	--	<0.178	--	--	<0.176
PCB-1232	µg/L	NS	<0.8	<0.8	<0.116	--	--	--	--	<0.122	--	--	<0.121
PCB-1242	µg/L	NS	<0.8	<0.8	<0.137	--	--	--	--	<0.144	--	--	<0.143
PCB-1248	µg/L	NS	<0.8	<0.8	<0.116	--	--	--	--	<0.122	--	--	<0.121
PCB-1254	µg/L	NS	<0.8	<0.8	<0.0968	--	--	--	--	<0.102	--	--	<0.101
PCB-1260	µg/L	NS	<0.8	<0.8	<0.0463	--	--	--	--	<0.0489	--	--	<0.0484
Pesticides (EPA Method 8081A)													
4,4'-DDD	µg/L	0.73	<0.032	<0.032	<0.00191	--	--	--	--	<0.00205	--	--	<0.00198
4,4'-DDE	µg/L	0.51	<0.032	<0.032	<0.00223	--	--	--	--	***0.00427 J***	***0.00671 J***	--	<0.00231
4,4'-DDT	µg/L	0.51	<0.032	<0.032	<0.00404	--	--	--	--	***0.00632 J***	***0.00947 J***	--	<0.00418
Aldrin	µg/L	0.01	<0.032	<0.032	<0.00479	--	--	--	--	<0.00511	--	--	<0.00495
alpha-BHC	µg/L	0.028	<0.032	<0.032	<0.00181	--	--	--	--	***0.00287 J***	<0.00189	--	<0.00187
beta-BHC	µg/L	0.042	<0.032	<0.032	***0.00594 J***	<0.00533	<0.00552	<0.00522	<0.0049	<0.00545	--	--	<0.00527
Chlordane	µg/L	2	<2	<2	<0.0681	--	--	--	--	<0.0727	--	--	<0.0703
delta-BHC	µg/L	2.1	<0.032	<0.032	<0.00245	--	--	--	--	***0.00458 J***	<0.00256	--	<0.00253
Dieldrin	µg/L	0.011	<0.032	<0.032	<0.00213	--	--	--	--	***0.00683 J***	<0.00222	--	<0.0022
Endosulfan I	µg/L	42	<0.032	<0.032	<0.00213	--	--	--	--	<0.00227	--	--	<0.0022
Endosulfan II	µg/L	42	<0.032	<0.032	***0.00375 J***	<0.00211	***0.00589 J***	<0.00207	<0.00194	<0.00216	--	--	<0.00209
Endosulfan sulfate	µg/L	NS	<0.032	<0.032	<0.00266	--	--	--	--	***0.00544 J***	***0.00772 J***	--	<0.00275
Endrin	µg/L	2	<0.032	<0.032	<0.00202	--	--	--	--	***0.00247 J***	<0.00211	--	<0.00209
Endrin aldehyde	µg/L	2.1	<0.032	<0.032	<0.00777	--	--	--	--	<0.0083	--	--	<0.00802
gamma-BHC (Lindane)	µg/L	0.2	<0.032	<0.032	<0.00202	--	--	--	--	***0.00267 J***	<0.00211	--	<0.00209
Heptachlor	µg/L	0.4	<0.032	<0.032	<0.00277	--	--	--	--	***0.00335 J***	***0.0049 J***	--	<0.00286
Heptachlor epoxide	µg/L	0.2	<0.032	<0.032	<0.00649	--	--	--	--	<0.00693	--	--	<0.0067
Methoxychlor	µg/L	40	<0.032	<0.032	***0.0171***	<0.00233	<0.00241	***0.00889 J***	***0.0117 J***	<0.00239	--	<0.00231	<0.00231
Toxaphene	µg/L	3	<2	<2	<0.0617	--	--	--	--	<0.0659	--	--	<0.0637
Semivolatile Organics by GC/MS													
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<10	<10	<0.126	--	--	--	--	<0.126	--	--	<0.132
1,3,5-Trinitrobenzene	µg/L	NS	<10	<10	<1.35	--	--	--	--	<1.35	--	--	<1.41
1,3-Dinitrobenzene	µg/L	1	<10	<10	<0.179	--	--	--	--	<0.179	--	--	<0.187
1,4-Naphthoquinone	µg/L	NS	<10	<10	<0.147	--	--	--	--	<0.147	--	--	<0.154
1,4-Phenylenediamine	µg/L	NS	<10	<10	<8.84	--	--	--	--	<8.84	--	--	<9.23
1-Naphthylamine	µg/L	NS	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
2,3,4,6-Tetrachlorophenol	µg/L	NS	<10	<10	<0.211	--	--	--	--	<0.211	--	--	<0.22
2,4,5-Trichlorophenol	µg/L	700	<10	<10	<0.337	--	--	--	--	<0.337	--	--	<0.352
2,4,6-Trichlorophenol	µg/L	16	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
2,4-Dichlorophenol	µg/L	20	<10	<10	<0.158	--	--	--	--	<0.158	--	--	<0.165
2,4-Dimethylphenol	µg/L	100	<10	<10	<0.221	--	--	--	--	<0.221	--	--	<0.231
2,4-Dinitrophenol	µg/L	14	<20	<20	<1.41	--	--	--	--	<1.41	--	--	<1.47
2,4-Dinitrotoluene	µg/L	0.25	<10	<10	<0.2	--	--	--	--	<0.2	--	--	<0.209
2,6-Dichlorophenol	µg/L	NS	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
2,6-Dinitrotoluene	µg/L	0.26	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
2-Acetylaminofluorene	µg/L	NS	<10	<10	<0.295	--	--	--	--	<0.295	--	--	<0.308
2-Chloronaphthalene	µg/L	560	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
2-Chlorophenol	µg/L	40	<10	<10	<0.158	--	--	--	--	<0.158	--	--	<0.165
2-Methylnaphthalene	µg/L	28	<10	<10	<0.2	--	--	--	--	<0.2	--	--	<0.209
2-Methylphenol (o-Cresol)	µg/L	35	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
2-Naphthylamine	µg/L	0.097	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
2-Nitroaniline	µg/L	NS	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
2-Nitrophenol	µg/L	NS	<10	<10	<0.168	--	--	--	--	<0.168	--	--	<0.176
3,3'-Dichlorobenzidine	µg/L	0.39	<10	<10	<0.484	--	--	--	--	<0.484	--	--	<0.505
3,3'-Dimethylbenzidine	µg/L	NS	<10	<10	<0.221	--	--	--	--	<0.221	--	--	<0.231
3/4-Methylphenol	µg/L	70	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
3-Methylcholanthrene	µg/L	NS	<10	<10	<0.326	--	--	--	--	<0.326	--	--	<0.341
3-Nitroaniline	µg/L	NS	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
4,6-Dinitro-2-methylphenol	µg/L	NS	<10	<10	<2.34	--	--	--	--	<2.34	--	--	<2.44
4-Aminobiphenyl	µg/L	0.0083	<10	<10	<0.316	--	--	--	--	<0.316	--	--	<0.33
4-Bromophenyl phenyl ether	µg/L	NS	<10	<10	<0.305	--	--	--	--	<0.305	--	--	<0.319
4-Chloro-3-methylphenol	µg/L	700	<10	<10	<0.2	--	--	--	--	<0.2	--	--	<0.209
4-Chloroaniline	µg/L	28	<10	<10	<0.147	--	--	--	--	<0.147	--	--	<0.154
4-Chlorophenyl phenyl ether	µg/L	NS	<10	<10	<0.263	--	--	--	--	<0.263	--	--	<0.275
4-Nitroaniline	µg/L	NS	<10	<10	<0.337	--	--	--	--	<0.337	--	--	<0.352
4-Nitrophenol	µg/L	60	<10	<10	<0.126	--	--	--	--	<0.126	--	--	<0.132
5-Nitro-o-toluidine	µg/L	NS	<10	<10	<0.179	--	--	--	--	<0.179	--	--	<0.187
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<10	<10	<0.263	--	--	--	--	<0.263	--	--	<0.275
Acenaphthene	µg/L	420	<10	<10	<0.316	--	--	--	--	<0.316	--	--	<0.33
Acenaphthylene	µg/L	210	<10	<10	<0.221	--	--	--	--	<0.221	--	--	<0.231
Acetophenone	µg/L	NS	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
Anthracene	µg/L	2100	<10	<10	<0.179	--	--	--	--	<0.179	--	--	<0.187
Benzo (a) anthracene	µg/L	0.24	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
Benzo (a) pyrene	µg/L	0.2	<10	<10	<0.263	--	--	--	--	<0.263	--	--	<0.275
Benzo (b) fluoranthene	µg/L	0.24	<10	<10	<0.326	--	--	--	--	<0.326	--	--	<0.341
Benzo (g,h,i) perylene	µg/L	21	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
Benzo (k) fluoranthene	µg/L	2.4	<10	<10	<0.211	--	--	--	--	<0.211	--	--	<0.22
Benzyl alcohol	µg/L	700	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
Bis(2-chloroethoxy)methane	µg/L	NS	<10	<10	<0.274	--	--	--	--	<0.274	--	--	<0.286
Bis(2-chloroethyl)ether	µg/L	0.16	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
Bis(2-chloroisopropyl) ether	µg/L	300	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
Bis(2-ethylhexyl)phthalate	µg/L	6	<10	<10	<0.411	--	--	--	--	<0.411	--	--	<0.429
Butyl benzyl phthalate	µg/L	140	<10	<10	<0.358	--	--	--	--	<0.358	--	--	<0.374
Chlorobenzilate	µg/L	NS	<10	<10	<0.221	--	--	--	--	<0.221	--	--	<0.231
Chrysene	µg/L	24	<10	<10	<0.305	--	--	--	--	<0.305	--	--	<0.319
Diallate (cis or trans)	µg/L	NS	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
Dibenzo (a,h) anthracene	µg/L	0.024	<10	<10	<0.263	--	--	--	--	<0.263	--	--	<0.275
Dibenzofuran	µg/L	7	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
Diethyl phthalate	µg/L	5600	<10	<10	***0.361 J***	<2.99	***1.06 J***	***0.263 J***	<0.265	***0.453 J***	--	--	<0.286
Dimethoate	µg/L	1.4	<10	<10	<0.284	--	--	--	--	<0.284	--	--	<0.297
Dimethyl phthalate	µg/L	NS	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
Di-n-butyl phthalate	µg/L	700	<10	<10	<0.537	--	--	--	--	<0.537	--	--	<0.56
Di-n-octyl phthalate	µg/L	140	<10	<10	***0.255 J***	<2.64	<0.256	<0.232	***1.08 J***	<0.242	--	--	***1.79 J***
Dinoseb	µg/L	7	<10	<10	<0.453	--	--	--	--	<0.453	--	--	<0.473
Diphenylamine	µg/L	180	<10	<10	<0.695	--	--	--	--	<0.695	--	--	<0.725
Disulfoton	µg/L	0.7	<10	<10	<0.305	--	--	--	--	<0.305	--	--	<0.319
Ethyl Methanesulfonate	µg/L	NS	<10	<10	<0.158	--	--	--	--	<0.158	--	--	<0.165
Famphur	µg/L	NS	<20	<20	<0.495	--	--	--	--	<0.495	--	--	<0.516
Fluoranthene	µg/L	280	<10	<10	<0.347	--	--	--	--	<0.347	--	--	<0.363
Fluorene	µg/L	280	<10	<10	<0.305	--	--	--	--	<0.305	--	--	<0.319
Hexachlorobenzene	µg/L	1	<10	<10	<0.284	--	--	--	--	<0.284	--	--	<0.297
Hexachlorobutadiene	µg/L	1	<10	<10	<0.137	--	--	--	--	<0.137	--	--	<0.143
Hexachlorocyclopentadiene	µg/L	50	<10	<10	<1.99	--	--	--	--	<1.99	--	--	<2.08
Hexachloroethane	µg/L	1	<10	<10	<0.137	--	--	--	--	<0.137	--	--	<0.143
Hexachloropropene	µg/L	NS	<10	<10	<1.73	--	--	--	--	<1.73	--	--	<1.8
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
Isodrin	µg/L	NS	<10	<10	<0.4	--	--	--	--	<0.4	--	--	<0.418
Isophorone	µg/L	100	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
Isosafrole	µg/L	NS	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
Kepone	µg/L	NS	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
Methapyrilene	µg/L	NS	<10	<10	<0.305	--	--	--	--	<0.305	--	--	<0.319
Methyl Methanesulfonate	µg/L	1.8	<10	<10	<0.147	--	--	--	--	<0.147	--	--	<0.154
Nitrobenzene	µg/L	14	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
N-Nitrosodiethylamine	µg/L	NS	<10	<10	<0.316	--	--	--	--	<0.316	--	--	<0.33
N-Nitrosodimethylamine	µg/L	0.0034	<10	<10	<0.147	--	--	--	--	<0.147	--	--	<0.154
N-Nitrosodi-n-butylamine	µg/L	0.032	<10	<10	<0.305	--	--	--	--	<0.305	--	--	<0.319
N-Nitrosodi-n-propylamine	µg/L	NS	<10	<10	<0.274	--	--	--	--	<0.274	--	--	<0.286
N-Nitrosodiphenylamine	µg/L	36	<10	<10	<0.695	--	--	--	--	<0.695	--	--	<0.725
N-Nitrosomethylethylamine	µg/L	0.008	<10	<10	<0.211	--	--	--	--	<0.211	--	--	<0.22
N-Nitrosopiperidine	µg/L	NS	<10	<10	<0.158	--	--	--	--	<0.158	--	--	<0.165
N-Nitrosopyrrolidine	µg/L	0.083	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
O,O,O-Triethyl phosphorothioate	µg/L	NS	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
o-Toluidine	µg/L	11	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
p-(Dimethylamino)azobenzene	µg/L	NS	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
Parathion-ethyl	µg/L	NS	<10	<10	<0.189	--	--	--	--	<0.189	--	--	<0.198
Parathion-methyl	µg/L	1	<10	<10	<0.158	--	--	--	--	<0.158	--	--	<0.165
Pentachlorobenzene	µg/L	NS	<10	<10	<0.232	--	--	--	--	<0.232	--	--	<0.242
Pentachloronitrobenzene	µg/L	NS	<10	<10	<0.347	--	--	--	--	<0.347	--	--	<0.363
Pentachlorophenol	µg/L	1	<10	<10	<0.253	--	--	--	--	<0.253	--	--	<0.264
Phenacetin	µg/L	NS	<10	<10	<0.179	--	--	--	--	<0.179	--	--	<0.187
Phenanthrene	µg/L	210	<10	<10	<0.632	--	--	--	--	<0.632	--	--	<0.659
Phenol	µg/L	2000	<10	<10	<2.53	--	--	--	--	<2.53	--	--	<2.64
Phorate	µg/L	1.4	<10	<10	<0.179	--	--	--	--	<0.179	--	--	<0.187
Pronamide	µg/L	5	<10	<10	<0.274	--	--	--	--	<0.274	--	--	<0.286
Pyrene	µg/L	210	<10	<10	<0.242	--	--	--	--	<0.242	--	--	<0.253
Safrole	µg/L	NS	<10	<10	<0.211	--	--	--	--	<0.211	--	--	<0.22
Thionazin	µg/L	NS	<10	<10	<0.326	--	--	--	--	<0.326	--	--	<0.341
Volatile Organic Compounds													
1,1-Dichloropropene	µg/L	NS	<1	<1	<0.15	--	--	--	--	<0.15	--	--	<0.15
1,2,4-Trichlorobenzene	µg/L	70	<5	<5	<0.16	--	--	--	--	<0.16	--	--	<0.16
1,3-Dichlorobenzene	µg/L	600	<1	<1	<0.17	--	--	--	--	<0.17	--	--	<0.17
1,3-Dichloropropane	µg/L	NS	<1	<1	<0.16	--	--	--	--	<0.16	--	--	<0.16
2,2-Dichloropropane	µg/L	NS	<4	<4	<0.18	--	--	--	--	<0.18	--	--	<0.18
Acrolein	µg/L	NS	<10	<10	<1.5	--	--	--	--	<1.5	--	--	<1.5
Allyl chloride	µg/L	NS	<2	<2	<0.27	--	--	--	--	<0.27	--	--	<0.27
Chloroprene	µg/L	NS	<1	<1	<0.19	--	--	--	--	<0.19	--	--	<0.19
Dichlorodifluoromethane	µg/L	1000	<3	<3	<0.2	--	--	--	--	<0.2	--	--	<0.2
Ethyl Methacrylate	µg/L	NS	<2	<4	<0.15	--	--	--	--	<0.15	--	--	<0.15
Methacrylonitrile	µg/L	NS	<1	<1	<0.25	--	--	--	--	<0.25	--	--	<0.25
Methyl Methacrylate	µg/L	NS	<2	<4	<0.15	--	--	--	--	<0.15	--	--	<0.15
Naphthalene	µg/L	100	<5	<5	<0.37	--	--	--	--	<0.37	--	--	<0.37
Propionitrile	µg/L	NS	<10	<10	<2	--	--	--	--	<2	--	--	<2

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-2R

Parameter Name	Units	GPS	DL	RL	Oct-07	Jan-08	Apr-08	Jul-08	Oct-08	Apr-09	Oct-09	Apr-10	Oct-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Jun-20	Nov-20	May-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jan-24	Jul-24	Nov-24
Appendix I Inorganics																																										
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1.5 J***	<1.2	***1.38 J***	***2.13***	***2.13***	***1.75 J***	***1 J***	<1.02	***1.38 J***	***0.875 J***	***1.25 J***	<0.638	<0.638	***0.875 J***	***0.75 J***	***0.75 J***	<0.638	***1.5 J***	***1.38 J***	***1.75 J***	<1.39	***2.63***
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***0.8694***	***0.1373***	***3.299***	***1.752***	***1.473***	***2.242***	***0.9645***	***2.144***	***4.283***	***13.49***	***1.67***	***0.47***	0	***0.52***	***4.16***	***5.16***	***6.33***	***0.79***	***0.38***	0	***1.37***	***1.35***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1***	<0.7	<0.7	***0.9 J***	***1.3***	***0.6 J***	<0.4	***1.1***	***0.4 J***	***0.8 J***	***0.43 J***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.6	<0.541	***0.422 J***	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<1.32	<0.53	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<0.51	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<2.73	<1.45	<0.12	***0.06 J***	***0.283 J***	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<1	<1	<1	<1	***1.73***	<1	<1	<2	<2	<1	<0.6	<0.216	***3.95 J***	<5.44	***0.571 J***	<0.33	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	***0.533 J***	<0.57	<0.57	***0.486 J***	<0.75	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	--	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<1	<1	<1	<1	<2	<0.47	<0.216	<0.73	***1.04***	***0.829 J***	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***137***	***118***	***127***	***101***	***197***	***108***	***114***	***108***	***113***	***93.2***	***101***	***136***	***133***	***132***	***128***	***115***	***127***	***107***	***123***	***103***	***128***	***119***	***121***	***103***	***97.5***	***82.8***	***86.2***	***79***	***124***	***120***	***129***	***120***	***86.6***	***96.7***	***118***	--	***91***	***129***
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***107***	***115***	***99.3***	***87.6***	***90.2***	***110***	***123***	***121***	***122***	***127***	***119***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	<0.089	<0.696	<0.0696	<0.08	<0.039	***0.039 J***	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<1	<1	***1.24***	<1	<1	<0.051	<0.079	<0.0178	<0.0696	<0.0696	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***0.24 J***	<0.229	<0.32	<1.06	***0.116 J***	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	<0.039	<0.049	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	<0.064	<0.106	<0.106	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<1.95	<4.18	***0.448 J***	<0.5	<1.24	<1.24	<1.24	<0.355	<0.355	<0.729	<0.729	<0.76	<0.76	<1.14	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<1.81	<1.81	<0.39	<0.418	***0.512 J***	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***0.5 J***	<0.554	***1.03***	***0.238 J***	***0.162 J***	***0.099 J***	***0.141 J***	***0.093 J***	***0.163 J***	***0.176 J***	***0.114 J***	***0.067 J***	***0.095 J***	<0.402	<0.091	<0.091	<0.091	***0.107 J***	<0.19	<0.19	<0.19	<0.17	***0.17 J***	--	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<1.55	<1.55	***0.31 J***	***0.33 J***	***0.444 J***	***0.153 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	***26.9***	<20	<20	<20	<20	<20	<20	<20	***5.58 J***	***4.1 J***	***3.75***	***2.39 J***	***3.36***	***1.02 J***	***0.669 J***	***0.825 J***	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	***2.25***	<2	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	***2.66 J***	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	***6.4 J***	<1.51	***1.09***	***2.1***	***3.07***	***1.21 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	<4	<4	***6.2***	<4	<4	<4	<4	<4	<1	***2.68 J***	<0.145	<2.07	***0.346 J***	<0.18	<0.0967	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	***0.52***	<0.27	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<4	<4	<4	<4	<4	<1	<0.804	<0.029	<0.207	<0.207	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***3.21 J***	***6.82 J***	***11.9***	***4.57***	***5.91***	***2.42***	***2.04 J***	***1.9 J***	***2.16 J***	***1.6 J***	***3.51 J***	***2.64 J***	***2.68 J***	***1.47 J***	<1	***0.921 J***	<1.7	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	--	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<2.58	***5.32 J***	***6.73***	***3.92***	***4.76***	***3.72***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	***5.25 J***	<14.6	<1.46	<0.7	<3.34	<3.34	<3.34	***1.15 J***	<0.63	***0.986 J***	<0.928	***1.17 J***	***0.989 J***	<0.982	***1.01 J***	<1	***1.14 J***	***1.4 J***	***2.04 J***	***1.51 J***	***1 J***	***2.08 J***	<1.4	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	***1.79 J***	<1.46	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.135	<0.789	<0.0789	<0.033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	<0.0435	<0.267	<0.0267	<0.05	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<0.84	<0.288	***0.02 J***	<0.0267	<0.0267	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***2.25 J***	<4.7	<8.33	<0.833	<0.5	<0.449	<0.449	<0.449	<0.255	<0.255	<0.84	<0.84	<0.52	***0.534 J***	***2.4 J***	<0.82	<0.85	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<2.1	<0.94	<0.833	<0.833	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***52.3***	<20	***27.2***	<20	***52.7***	***28.7***	***34.6***	<20	<20	<20	<9.11	***17.1 J***	<4.6	<3.13	<0.625	<2	<6.95	<6.95	<6.95	***5.35 J***	<5.21	<11.5	<11.5	<10	<10	***7.24 J***	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	***21***	***8.48 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	***29***	***36.6***	<20	<20	<20	<20	<9.11	***18.7 J***	<0.92	<0.625	<0.625	***2.38 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																									
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<1	<1	<1	<1	<1	<4	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	***1.11 J***	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.01 J***	***4.35 J***	<1.79	***4.19 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.313 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<1	<1	<5	<10	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***1.97***	<0.15	<0.15	<0.15	<0.15	***0.777 J***	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.25 J***	<0.17	***0.361 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	***0.637 J***	***0.293 J***	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<10	<10	<10	<10	<10	<20	<10	<10	<20	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--	<7	<7
Styrene	µg/L	100	0.1	1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	1

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-3

Parameter Name	Units	GPS	DL	RL	Oct-07	Jan-08	Apr-08	Jul-08	Oct-08	Apr-09	Oct-09	Apr-10	Oct-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Jun-20	Nov-20	Jun-21	Aug-21	Sep-21	Mar-22	Jun-22	Sep-22	Jun-23	Nov-23	Jan-24	Jul-24	Dec-24
Appendix I Inorganics																																												
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***9.17***	***7.67***	***5.63***	***6.5***	***3.25***	***2***	***5.63***	***1.38 J***	***11***	***3.63***	***4.13***	***9.5***	***3.38***	***4.13***	***3.75***	***3.13***	***14.3***	***5.88***	***3.25***	***2.63***	***2.88***	--	***2.38***	***5***
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***8.389***	***12.2***	***9.094***	***10.02***	***7.028***	***0.5395***	***2.988***	***7.042***	***5.241***	***18.73***	***2.01***	***21.01***	***17.41***	***7.47***	***4.69***	***4.36***	***20.38***	***10.82***	***35.64***	***6.36***	***3.09***	***1.34***	***4.19***	***14.78***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***12.9***	***13.4***	***14.1***	***19.5***	***10.8***	***17***	***12.6***	***2.1***	***10.9***	***6.8***	***7.78***	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.6	<0.0541	<0.0541	<0.4	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	***0.207 J***	<0.42	<0.42	<1.32	<0.53	<0.51	<0.51	<1.1	--	<1.1	<0.69	--	<0.69	<1	<1	--	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.12	<0.0541	<0.0541	***0.765 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	***1.78***	***1.18***	<1	***1.42***	<1	<1	<1	<1	<1	<0.6	***0.782 J***	***4.15 J***	***1.6***	***1.52***	***1.32 J***	***2.03***	***2.03***	***1.61 J***	***2.09***	***1.3 J***	***0.61 J***	***0.992 J***	<0.57	***2.28***	***1.11***	***0.988 J***	***2.24***	***1.22 J***	***1.39 J***	--	<0.75	***3.7***	<0.75	***0.858 J***	<0.53	***1.06 J***	--	<0.53	***1.34 J***
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<1	***1.04***	<1	***0.652 J***	<0.216	<0.73	***1.35***	***1.22***	***0.752 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	*2*	***153***	***140***	***154***	***151***	***140***	***143***	***128***	***147***	***146***	***140***	***132***	***172***	***147***	***160***	***176***	***148***	***193***	***170***	***180***	***180***	***184***	***168***	***166***	***176***	***189***	***158***	***163***	***176***	***193***	***199***	***171***	***188***	***210***	--	***205***	***176***	***193***	--	***146***	***205***
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***145***	***121***	***145***	***130***	***147***	***150***	***170***	***151***	***156***	***182***	***147***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	<0.089	<0.0696	<0.0696	<0.08	<0.039	***0.049 J***	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.33	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	<0.051	<0.079	<0.0178	<0.0696	<0.0696	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	<0.32	<0.106	<0.106	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	<0.039	<0.049	<0.049	<0.051	--	<0.051	<0.055	--	<0.055	<0.1	<0.1	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	<0.064	<0.106	<0.106	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<1.95	<0.418	***0.92 J***	<0.5	<1.24	<1.24	<1.24	<0.355	<0.355	<0.729	<0.729	<0.76	***1.12 J***	<1.14	<0.98	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	<1.1	--	<1.2	<2.1
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<0.39	<0.418	<0.418	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.55	<1.55	<0.075	***0.324 J***	***0.473 J***	***0.107 J***	***0.083 J***	***0.082 J***	***0.079 J***	***0.091 J***	***0.051 J***	***0.049 J***	***0.068 J***	***0.283 J***	***0.289 J***	<0.402	<0.091	***0.114 J***	<0.091	<0.091	--	<0.19	<0.19	--	<0.19	<0.17	<0.17	--	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***0.23 J***	***0.296 J***	***0.323 J***	***0.104 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	***38.5***	<20	<20	<20	<20	<20	<20	<20	***6.6 J***	<1.51	<0.6	***1.1***	***1.6***	<0.56	<0.485	<0.485	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	<0.497	<2	<1.5	<1.5	<1.4	--	<1.4	<1.8	--	<1.8	<1.8	<1.8	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	***7.86 J***	<1.51	***0.57***	***1.11***	***0.812***	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.804	<0.145	<0.207	<0.207	***0.182 J***	***0.097 J***	***0.172 J***	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	***0.408 J***	***0.206 J***	<0.27	***0.122 J***	<0.11	<0.21	--	<0.21	<0.24	--	<0.24	<0.24	<0.24	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<4	<4	<4	<4	<4	<4	<1	<0.804	<0.029	<0.207	<0.207	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.58	<2.58	<1.2	***1.84***	***1.44***	***0.931 J***	<0.581	<0.581	***0.788***	<1.53	<1.53	<0.929	<0.929	***1.39 J***	***2.15 J***	***0.888 J***	<1.7	<1.9	<1.9	<1.9	--	<1.9	<1.9	--	<1.9	<1.9	<1.9	--	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<50	<50	<50	<50	<50	<50	<2.58	<2.58	***1.49***	***2***	***1.32***	***1.8 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<1.48	<1.46	<1.46	<0.7	<3.34	<3.34	<3.34	***0.785 J***	<0.63	<0.928	<0.928	<0.9	<0.9	<0.982	<1	<1	<1	<0.96	--	<0.96	<0.96	--	<0.96	<1.4	<1.4	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	<1.46	<1.46	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.135	<0.0789	<0.0789	<0.033	<0.042	***0.06 J***	***0.091 J***	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	--	<0.42	<0.49	--	<0.49	***0.702 J***	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	<0.0435	<0.0267	<0.0267	***0.149 J***	<0.0325	<0.0325	<0.0325	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	<0.26	<0.26	<0.26	--	<0.26	<0.26	--	<0.26	<0.26	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<2	<2	<2	<2	<2	<2	<0.84	<0.288	<0.0087	<0.0267	<0.0267	***0.161 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	<2.1	<4.7	<0.833	<0.833	<0.5	<0.449	<0.449	<0.449	<0.255	<0.255	<0.84	<0.84	<0.52	***1.18 J***	***2.78 J***	<0.82	<0.85	<0.85	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	<1.1	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<50	<50	<50	<50	<50	<50	<2.1	<2.1	<0.94	<0.833	<0.833	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***35.9***	<20	***40.3***	<20	<20	***27.4***	***23***	***21.2***	<20	<20	<9.11	***17.4 J***	<4.6	<0.625	<0.625	<2	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<6.92	<10	<10	<10	<10	--	<10	<10	--	<10	<6.4	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***27.4***	***25.5***	***21.5***	***25.5***	<20	<9.11	***12.4 J***	<0.92	<0.625	<0.625	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																												
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<1	<1	<1	<1	<1	<4	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	<0.38	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	--	<0.19	<0.19	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	--	<0.47	<0.47	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	<0.56	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	--	<0.59	<0.59	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	--	<1.2	<1.2	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.13	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	<0.34	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	<0.37	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	--	<0.23	<0.23	<0.23	--	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2	--	<2	<2	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***3.16 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	--	<3.1	<3.1	<3.1	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	--	<2.2	<2.2	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	***0.613***	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	<0.22	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	--	<0.54	<0.54	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.676 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<1	<1	<5	<10	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***1.08***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<2	<2	<5	<5	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	--	<0.65	<0.65	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	<0.4	<0.4	--	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	--	<0.79	<0.79	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	***0.366 J***	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	--	<0.61	<0.61	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	--	<0.21	<0.21	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	--	<0.25	<0.25	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	--	<0.75	<0.75	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	--	<0.33	<0.33	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	***0.38 J***	***0.38 J***	<0.17	***0.352 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	--	<1.7	<1.7	<1.7	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	--	<0.31	<0.31	<0.31	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<10	<10	<10	<10	<10	<20	<10	<20	<20	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-4

Parameter Name	Units	GPS	DL	RL	Oct-07	Jan-08	Apr-08	Jul-08	Oct-08	Apr-09	Oct-09	Feb-10	Apr-10	Oct-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Mar-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Oct-19	Jun-20	Nov-20	May-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jun-24	Nov-24	Feb-25
Appendix I Inorganics																																										
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***4.83***	<1.2	<1.2	<0.581	<0.581	***2.88***	***1.88***	***2.5***	***2.75***	<0.638	***0.75 J***	***0.75 J***	<0.638	***1 J***	***1.38 J***	<1.7	***1.63 J***	***1.38 J***	***8.5***	***2.25***	***2.45***	--
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***10.58***	***0.0997***	***1.081***	***0.149***	***1.843***	***8.78***	***0.7597***	***1.418***	***7.767***	***5.27***	***0.49***	***1.25***	0	***1.18***	***3.81***	0	0	***1.15***	***1.14***	***0.88***	***1.17***	***0.84***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***4.2***	<0.7	<0.7	<0.4	<0.4	***0.5 J***	<0.4	***3.3***	***1.4***	***0.44 J***	***1.58***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.12	***3.74***	***0.108 J***	***0.422 J***	<0.161	<0.161	<0.161	<0.237	<0.237	<0.185	***0.691 J***	<0.42	<0.42	<1.32	<0.53	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.12	***0.173 J***	***0.0954 J***	***0.762 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	***23.6***	***16.6***	***21.4***	***7.64***	***4.72***	***3.4***	***5.9***	***7.85***	***6.44***	***8.54***	***6.57***	***4.05***	***2.1***	***2.46***	***16.4***	***1.87***	***1.24 J***	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	***0.784 J***	***0.637 J***	<0.57	***0.653 J***	<0.75	<0.88	<0.88	<0.75	<0.75	<0.75	***0.762 J***	<0.53	***1.15 J***	***0.792 J***	***1.05 J***	--
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***3.31***	***4.79***	***5.63***	***9.49***	***5.68***	***5.67***	***4.61***	***1.47***	***1.52***	<0.544	***1.96***	***1.31 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***742***	***603***	***793***	***544***	***514***	***549***	***623***	***564***	***580***	***529***	***542***	***513***	***533***	***710***	***774***	***514***	***513***	***469***	***463***	***479***	***484***	***539***	***482***	***40.6***	***530***	***464***	***451***	***191***	***421***	***409***	***425***	***482***	***503***	***536***	***134***	***514***	***485***	***518***	--
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***545***	***534***	***534***	***585***	***425***	***540***	***491***	***527***	***588***	***623***	***501***	***503***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	***0.06 J***	<0.0696	<0.0696	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<1	<1	<1	<1	<1	<1	<0.051	<0.079	<0.0178	<0.0696	<0.0696	***0.223 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	0.5	***1.21***	***0.834***	***1.36***	<0.5	<0.5	<0.5	<0.5	***0.53***	<0.5	<0.5	<0.5	***0.236 J***	<0.229	***0.41 J***	***0.43 J***	***0.198 J***	***0.144 J***	***0.117 J***	***0.149 J***	***0.133 J***	***0.17 J***	***0.142 J***	<0.0441	***0.273 J***	***0.124 J***	***0.158 J***	<0.167	<0.0139	***0.139***	***0.163***	***0.184***	***0.122***	***0.118***	***0.076 J***	<0.1	<0.1	<0.1	***0.254***	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	***0.26 J***	***0.287 J***	***0.215 J***	***0.244 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	***28***	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	***0.42 J***	***6.89***	<0.418	***147***	<1.24	<1.24	<1.24	<0.355	<0.355	<0.729	***2.28 J***	<0.76	<0.76	<1.14	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2	<1.2	<1.2	--
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.81	<1.81	<0.39	<0.418	<0.418	***4.97***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***8.27 J***	***5.85 J***	***10.1***	***10***	***4.37***	***6.09***	***0.967***	***0.448 J***	***0.33 J***	***0.411 J***	***0.441 J***	<0.0453	***3.75***	***1.44***	***0.458 J***	<0.402	<0.0991	***0.264 J***	***1.48***	***0.937***	***1.07***	***1.44***	***1.61***	<0.17	***1.54***	***1.85***	***2.04***	--
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	***8.5 J***	***5.46 J***	***10***	***8.82***	***4.61***	***4.97***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	***23.6***	***12 J***	<1.51	***2.08***	***6.13***	***2.39***	***4.71***	***0.52 J***	<0.485	<0.485	<1.22	<1.22	<2.19	***5.84***	<1.6	<1.6	***0.966 J***	<2	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	--
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	***12.3 J***	<1.51	***0.96***	***1.1***	***2.61***	***0.935 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	***4.15***	<4	<4	<4	<4	<4	<4	<4	<4	<1	***0.9 J***	***0.78***	***2.45***	***0.324 J***	<0.18	***0.109 J***	<0.0967	<0.0967	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.186	<0.27	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	***0.27 J***	<0.26	--
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<4	<4	<4	<4	<4	<4	<1	<0.804	***0.05 J***	<0.207	<0.207	***0.353 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***14 J***	***13.3 J***	***12.8***	***18.2***	***15.8***	***105***	***5.99***	***5.63***	***4.31 J***	***5.7***	***4.28 J***	***3.22 J***	***11.9***	***5.78***	***3.99 J***	***5.23***	<1.7	***3.58 J***	***11.9***	***5.36***	***5.05***	***7.47***	***7.16***	<1.9	***5.36***	***6.27***	***6.17***	--
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	***14.3 J***	***14 J***	***11.3***	***14.9***	***16.4***	***23.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	***1.64 J***	***1.52 J***	<0.7	<3.34	<3.34	<3.34	<0.63	<0.63	<0.928	***31.6***	<0.9	<0.9	<0.982	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	<1.46	<1.46	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	<0.042	<0.042	<0.042	***0.165 J***	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	***1.21***	<0.5	--
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.01 J***	***0.148 J***	***0.0371 J***	***0.079 J***	<0.0325	<0.0325	<0.0325	***0.031 J***	***0.028 J***	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57	--
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.03 J***	***0.087***	***0.0313***	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***3.66 J***	***3.25***	***9.47***	***0.843 J***	***7.18***	***1.02 J***	***0.695 J***	***0.787 J***	***0.785 J***	***0.948 J***	<0.84	***1.07 J***	***0.913 J***	***1.23 J***	<2.15	***1.23 J***	***0.892 J***	***1.06 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<50	<2.1	***2.24 J***	<0.94	<0.833	<0.833	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***69.1***	<20	***36.5***	<20	***21.1***	***50.7***	***52.6***	<20	***41***	***47.1***	<20	<9.11	***14.2 J***	***4.5 J***	***13.6***	<0.625	***2.01 J***	<6.95	<6.95	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<6.92	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***44.3***	***46.7***	<20	***45.6***	***39.9***	***51.7***	<9.11	***14.8 J***	***4.69 J***	***4.77 J***	***6.66***	***3.05 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																										
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	0.21	1	***2.94***	***2.24***	***1.5***	***1.18***	<1	<1	<1	***1.67***	***1.01***	<1	<1	***0.58 J***	***0.56 J***	***0.34 J***	***0.812 J***	<0.21	<0.21	<0.21	<0.21	<0.21	***0.32 J***	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	0.19	1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	***0.38 J***	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	***0.208 J***	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	0.87	1	***1.21***	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	0.2	1	***3.41***	***2.66***	***4.37***	***2.14***	***2.54***	***2.93***	***3.35***	***4.88***	***3.12***	***3.77***	***3.68***	***3.83***	***4.33***	***2.62***	***4.84***	***1.72***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	***0.55 J***	***0.405 J***	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	***0.293 J***	***0.425 J***	<0.23	--
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	<0.47	<0.47	***0.816 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***3.88 J***	***4.28 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	0.11	0.5	***2.29***	***1.45***	***1.63***	***0.58***	***0.61***	***0.65***	***0.92***	***2.01***	***1.07***	***1.7***	***1.3***	***0.95***	***1.08***	***0.48 J***	***1.48***	***0.459 J***	***0.48 J***	<0.11	<0.11	<0.11	***0.269 J***	***0.141 J***	<0.11	***0.156 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.372 J***	<0.22	***0.413 J***	***0.223 J***	<0.22	--
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5	<5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	0.19	1	***3.43***	***1.95***	***2.93***	***1.04***	***1.03***	***1.21***	***2.01***	***3.95***	***1.98***	***2.19***	***2.05***	***1.62***	***2.2***	***1.08***	***2.46***	<0.19	<0.19	***0.236 J***	<0.19	<0.19	<0.19	<0.19	<0.19	***0.205 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	***0.402 J***	<0.4	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	***0.82 J***	***0.53 J***	<0.15	***1.01 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	***0.37 J***	***0.19 J***	***0.21 J***	***0.302 J***	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	***0.355 J***	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-4

Parameter Name	Units	GPS	Apr-09	Apr-10	May-14	Jun-14	Nov-14	Dec-14	May-15	Sep-15	Nov-16	Nov-17	Jun-23
Alcohols/Gycols by GC													
Acetonitrile	µg/L	NS	<10000	<10000	<126	--	--	--	--	<126	<252	<126	<570
Isobutanol	µg/L	2100	<10000	<10000	<177	--	--	--	--	<177	<354	<177	<550
Herbicides (GC)													
2,4,5-T	µg/L	70	<0.21	<0.5	<0.476	--	--	--	--	<0.525	<0.515	<0.527	<0.07
2,4-D	µg/L	70	<1	<1	<0.511	--	--	--	--	<0.564	<0.553	<0.566	<0.2
Silvex (2,4,5-TP)	µg/L	50	<0.21	<0.5	<0.318	--	--	--	--	<0.35	<0.344	<0.352	<0.07
Inorganics													
Cyanide	µg/L	200	<10	<10	<3.1	--	--	--	--	<3.04	<3.52	<3.46	<4.3
Mercury	µg/L	2	<0.2	<0.2	<0.071	--	--	--	--	<0.0926	<0.142	<0.112	<0.14
Sulfide	µg/L	NS	<1000	<1000	<219	--	--	--	--	<219	<180	<231	<231
Tin	µg/L	4200	<100	<100	<12.1	--	--	--	--	<1.8	<0.832	<1.62	<2.3
PCBs (EPA Method 8082)													
PCB-1016	µg/L	NS	<0.8	<0.8	<0.0457	--	--	--	--	<0.0482	<0.0457	<0.0472	<0.17
PCB-1221	µg/L	NS	<0.8	<0.8	<0.168	--	--	--	--	<0.178	<0.168	<0.174	<0.17
PCB-1232	µg/L	NS	<0.8	<0.8	<0.116	--	--	--	--	<0.122	<0.116	<0.12	<0.17
PCB-1242	µg/L	NS	<0.8	<0.8	<0.137	--	--	--	--	<0.144	<0.137	<0.141	<0.17
PCB-1248	µg/L	NS	<0.8	<0.8	<0.116	--	--	--	--	<0.122	<0.116	<0.12	<0.11
PCB-1254	µg/L	NS	<0.8	<0.8	<0.0968	--	--	--	--	<0.102	<0.0968	<0.1	<0.11
PCB-1260	µg/L	NS	<0.8	<0.8	<0.0463	--	--	--	--	<0.0489	<0.0463	<0.0478	<0.11
Pesticides (EPA Method 8081A)													
4,4'-DDD	µg/L	0.73	<0.032	<0.032	<0.002	--	--	--	--	<0.00184	<0.00198	<0.00196	<0.027
4,4'-DDE	µg/L	0.51	<0.032	<0.032	<0.00233	--	--	--	--	<0.00214	<0.00231	<0.00228	<0.027
4,4'-DDT	µg/L	0.51	<0.032	<0.032	<0.00422	--	--	--	--	<0.00388	<0.00418	<0.00413	<0.042
Aldrin	µg/L	0.01	<0.032	<0.032	<0.005	--	--	--	--	<0.00459	<0.00495	<0.00489	<0.032
alpha-BHC	µg/L	0.028	<0.032	<0.032	<0.00189	--	--	--	--	<0.00173	<0.00187	<0.00185	<0.029
beta-BHC	µg/L	0.042	<0.032	<0.032	<0.00533	--	--	--	--	<0.0049	<0.00527	<0.00522	<0.037
Chlordane	µg/L	2	<2	<2	<0.0711	--	--	--	--	<0.0653	<0.0703	<0.0696	<0.81
delta-BHC	µg/L	2.1	<0.032	<0.032	<0.00256	--	--	--	--	<0.00235	<0.00253	<0.0025	<0.027
Dieldrin	µg/L	0.011	<0.032	<0.032	<0.00222	--	--	--	--	<0.00204	<0.0022	<0.00217	<0.026
Endosulfan I	µg/L	42	<0.032	<0.032	<0.00222	--	--	--	--	<0.00204	<0.0022	<0.00217	<0.033
Endosulfan II	µg/L	42	<0.032	<0.032	<0.00211	--	--	--	--	<0.00194	<0.00209	<0.00207	<0.029
Endosulfan sulfate	µg/L	NS	<0.032	<0.032	<0.00278	--	--	--	--	<0.00255	<0.00275	***0.00282 J***	<0.03
Endrin	µg/L	2	<0.032	<0.032	<0.00211	--	--	--	--	<0.00194	<0.00209	<0.00207	<0.026
Endrin aldehyde	µg/L	2.1	<0.032	<0.032	<0.00811	--	--	--	--	<0.00745	<0.00802	***0.00884 J***	<0.029
gamma-BHC (Lindane)	µg/L	0.2	<0.032	<0.032	<0.00211	--	--	--	--	<0.00194	<0.00209	<0.00207	<0.036
Heptachlor	µg/L	0.4	<0.032	<0.032	<0.00289	--	--	--	--	<0.00265	<0.00286	<0.00283	<0.033
Heptachlor epoxide	µg/L	0.2	<0.032	<0.032	<0.00678	--	--	--	--	<0.00622	<0.0067	<0.00663	<0.029
Methoxychlor	µg/L	40	<0.032	<0.032	<0.00233	--	--	--	--	<0.00214	<0.00231	<0.00228	<0.041
Toxaphene	µg/L	3	<2	<2	<0.0644	--	--	--	--	<0.0592	<0.0637	<0.063	<0.69
Semivolatile Organics by GC/MS													
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<10	<10	<0.129	--	--	--	--	<0.135	<0.132	<0.141	<0.628
1,3,5-Trinitrobenzene	µg/L	NS	<10	<10	<1.38	--	--	--	--	<1.44	<1.41	<1.51	<2.67
1,3-Dinitrobenzene	µg/L	1	<10	<10	<0.183	--	--	--	--	<0.191	<0.187	<0.2	<3.72
1,4-Naphthoquinone	µg/L	NS	<10	<10	<0.151	--	--	--	--	<0.157	<0.154	<0.165	<4.19
1,4-Phenylenediamine	µg/L	NS	<10	<10	<9.03	--	--	--	--	<9.44	<9.23	<9.88	<2.21
1-Naphthylamine	µg/L	NS	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<2.91
2,3,4,6-Tetrachlorophenol	µg/L	NS	<10	<10	<0.215	--	--	--	--	<0.225	<0.22	<0.235	<6.16
2,4,5-Trichlorophenol	µg/L	700	<10	<10	<0.344	--	--	--	--	<0.36	<0.352	<0.376	<6.16
2,4,6-Trichlorophenol	µg/L	16	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<5.81
2,4-Dichlorophenol	µg/L	20	<10	<10	<0.161	--	--	--	--	<0.169	<0.165	<0.176	<0.988
2,4-Dimethylphenol	µg/L	100	<10	<10	<0.226	--	--	--	--	<0.236	<0.231	<0.247	<0.674
2,4-Dinitrophenol	µg/L	14	<20	<20	<1.44	--	--	--	--	<1.51	<1.47	<1.58	<15.1
2,4-Dinitrotoluene	µg/L	0.25	<10	<10	<0.204	--	--	--	--	<0.213	<0.209	<0.224	<7.44
2,6-Dichlorophenol	µg/L	NS	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<0.802
2,6-Dinitrotoluene	µg/L	0.26	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<0.605
2-Acetylaminofluorene	µg/L	NS	<10	<10	<0.301	--	--	--	--	<0.315	<0.308	<0.329	<3.14
2-Chloronaphthalene	µg/L	560	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<0.744
2-Chlorophenol	µg/L	40	<10	<10	<0.161	--	--	--	--	<0.169	<0.165	<0.176	<0.628
2-Methylnaphthalene	µg/L	28	<10	<10	<0.204	--	--	--	--	<0.213	<0.209	<0.224	<0.686
2-Methylphenol (o-Cresol)	µg/L	35	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<0.756
2-Naphthylamine	µg/L	0.097	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<2.44
2-Nitroaniline	µg/L	NS	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<6.86
2-Nitrophenol	µg/L	NS	<10	<10	<0.172	--	--	--	--	<0.18	<0.176	<0.188	<7.91
3,3'-Dichlorobenzidine	µg/L	0.39	<85	<10	<0.495	--	--	--	--	<0.517	<0.505	<0.541	<1.63
3,3'-Dimethylbenzidine	µg/L	NS	<20	<10	<0.226	--	--	--	--	<0.236	<0.231	<0.247	<1.74
3/4-Methylphenol	µg/L	70	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<0.814
3-Methylcholanthrene	µg/L	NS	<10	<10	<0.333	--	--	--	--	<0.348	<0.341	<0.365	<0.372
3-Nitroaniline	µg/L	NS	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<3.14
4,6-Dinitro-2-methylphenol	µg/L	NS	<10	<10	<2.39	--	--	--	--	<2.49	<2.44	<2.61	<8.02
4-Aminobiphenyl	µg/L	0.0083	<20	<10	<0.323	--	--	--	--	<0.337	<0.33	<0.353	<2.56
4-Bromophenyl phenyl ether	µg/L	NS	<10	<10	<0.312	--	--	--	--	<0.326	<0.319	<0.341	<0.814
4-Chloro-3-methylphenol	µg/L	700	<10	<10	<0.204	--	--	--	--	<0.213	<0.209	<0.224	<0.977
4-Chloroaniline	µg/L	28	<10	<10	<0.151	--	--	--	--	<0.157	<0.154	<0.165	<0.721
4-Chlorophenyl phenyl ether	µg/L	NS	<10	<10	<0.269	--	--	--	--	<0.281	<0.275	<0.294	<0.802
4-Nitroaniline	µg/L	NS	<10	<10	<0.344	--	--	--	--	<0.36	<0.352	<0.376	<1.51
4-Nitrophenol	µg/L	60	<10	<10	<0.129	--	--	--	--	<0.135	<0.132	<0.141	<8.84
5-Nitro-o-toluidine	µg/L	NS	<10	<10	<0.183	--	--	--	--	<0.191	<0.187	<0.2	<3.26
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<10	<10	<0.269	--	--	--	--	<0.281	<0.275	<0.294	<2.21
Acenaphthene	µg/L	420	<10	<10	<0.323	--	--	--	--	<0.337	<0.33	<0.353	<0.744
Acenaphthylene	µg/L	210	<10	<10	<0.226	--	--	--	--	<0.236	<0.231	<0.247	<0.837
Acetophenone	µg/L	NS	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<0.802
Anthracene	µg/L	2100	<10	<10	<0.183	--	--	--	--	<0.191	<0.187	<0.2	<1.01
Benzo (a) anthracene	µg/L	0.24	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<0.988
Benzo (a) pyrene	µg/L	0.2	<10	<10	<0.269	--	--	--	--	<0.281	<0.275	<0.294	<9.42
Benzo (b) fluoranthene	µg/L	0.24	<10	<10	<0.333	--	--	--	--	<0.348	<0.341	<0.365	<5.7
Benzo (g,h,i) perylene	µg/L	21	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<7.33
Benzo (k) fluoranthene	µg/L	2.4	<10	<10	<0.215	--	--	--	--	<0.225	<0.22	<0.235	<2.56
Benzyl alcohol	µg/L	700	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<1.51
Bis(2-chloroethoxy)methane	µg/L	NS	<10	<10	<0.28	--	--	--	--	<0.292	<0.286	<0.306	<0.884
Bis(2-chloroethyl)ether	µg/L	0.16	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<0.953
Bis(2-chloroisopropyl) ether	µg/L	300	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<0.628
Bis(2-ethylhexyl)phthalate	µg/L	6	<10	<10	<0.419	--	--	--	--	<0.438	<0.429	<0.459	<6.4
Butyl benzyl phthalate	µg/L	140	<10	<10	<0.366	--	--	--	--	<0.382	<0.374	<0.4	<6.28
Chlorobenzilate	µg/L	NS	<10	<10	<0.226	--	--	--	--	<0.236	<0.231	<0.247	<4.19
Chrysene	µg/L	24	<10	<10	<0.312	--	--	--	--	<0.326	<0.319	<0.341	<1.01
Diallate (cis or trans)	µg/L	NS	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<4.65
Dibenzo (a,h) anthracene	µg/L	0.024	<10	<10	<0.269	--	--	--	--	<0.281	<0.275	<0.294	<4.53
Dibenzofuran	µg/L	7	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<0.86
Diethyl phthalate	µg/L	5600	<10	<10	***0.504 J***	***0.735 J***	<0.286	<0.283	<0.271	<0.292	<0.286	<0.306	<1.98
Dimethoate	µg/L	1.4	<10	<10	<0.29	--	--	--	--	<0.303	<0.297	<0.318	<4.19
Dimethyl phthalate	µg/L	NS	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<1.16
Di-n-butyl phthalate	µg/L	700	<10	<10	<0.548	--	--	--	--	<0.573	<0.56	<0.6	<6.51
Di-n-octyl phthalate	µg/L	140	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	***13.6 J***
Dinoseb	µg/L	7	<10	<10	<0.462	--	--	--	--	<0.483	<0.473	<0.506	<2.79
Diphenylamine	µg/L	180	<10	<10	<0.71	--	--	--	--	<0.742	<0.725	<0.776	<6.98
Disulfoton	µg/L	0.7	<70	<10	<0.312	--	--	--	--	<0.326	<0.319	<0.341	<2.79
Ethyl Methanesulfonate	µg/L	NS	<10	<10	<0.161	--	--	--	--	<0.169	<0.165	<0.176	<4.19
Famphur	µg/L	NS	<20	<20	<0.505	--	--	--	--	<0.528	<0.516	<0.553	<4.42
Fluoranthene	µg/L	280	<10	<10	<0.355	--	--	--	--	<0.371	<0.363	<0.388	<1.98
Fluorene	µg/L	280	<10	<10	<0.312	--	--	--	--	<0.326	<0.319	<0.341	<0.919
Hexachlorobenzene	µg/L	1	<10	<10	<0.29	--	--	--	--	<0.303	<0.297	<0.318	<0.814
Hexachlorobutadiene	µg/L	1	<10	<10	<0.14	--	--	--	--	<0.146	<0.143	<0.153	<1
Hexachlorocyclopentadiene	µg/L	50	<10	<10	<2.03	--	--	--	--	<2.12	<2.08	<2.22	<5.93
Hexachloroethane	µg/L	1	<10	<10	<0.14	--	--	--	--	<0.146	<0.143	<0.153	<1.13
Hexachloropropene	µg/L	NS	<10	<10	<1.76	--	--	--	--	<1.84	<1.8	<1.93	<3.02
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<4.88
Isodrin	µg/L	NS	<10	<10	<0.409	--	--	--	--	<0.427	<0.418	<0.447	<5.47
Isophorone	µg/L	100	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<1.08
Isosafrole	µg/L	NS	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<2.67
Kepone	µg/L	NS	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<1.16
Methapyrilene	µg/L	NS	<10	<10	<0.312	--	--	--	--	<0.326	<0.319	<0.341	<0.884
Methyl Methanesulfonate	µg/L	1.8	<10	<10	<0.151	--	--	--	--	<0.157	<0.154	<0.165	<3.84
Nitrobenzene	µg/L	14	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<0.93
N-Nitrosodiethylamine	µg/L	NS	<10	<10	<0.323	--	--	--	--	<0.337	<0.33	<0.353	<3.95
N-Nitrosodimethylamine	µg/L	0.0034	<10	<10	<0.151	--	--	--	--	<0.157	<0.154	<0.165	<0.837
N-Nitrosodi-n-butylamine	µg/L	0.032	<10	<10	<0.312	--	--	--	--	<0.326	<0.319	<0.341	<4.53
N-Nitrosodi-n-propylamine	µg/L	NS	<10	<10	<0.28	--	--	--	--	<0.292	<0.286	<0.306	<1.07
N-Nitrosodiphenylamine	µg/L	36	<10	<10	<0.71	--	--	--	--	<0.742	<0.725	<0.776	<0.872
N-Nitrosomethylethylamine	µg/L	0.008	<10	<10	<0.215	--	--	--	--	<0.225	<0.22	<0.235	<5.7
N-Nitrosopiperidine	µg/L	NS	<10	<10	<0.161	--	--	--	--	<0.169	<0.165	<0.176	<3.14
N-Nitrosopyrrolidine	µg/L	0.083	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<4.19
O,O,O-Triethyl phosphorothioate	µg/L	NS	<30	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<3.72
o-Toluidine	µg/L	11	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<3.37
p-(Dimethylamino)azobenzene	µg/L	NS	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<2.56
Parathion-ethyl	µg/L	NS	<10	<10	<0.194	--	--	--	--	<0.202	<0.198	<0.212	<2.56
Parathion-methyl	µg/L	1	<10	<10	<0.161	--	--	--	--	<0.169	<0.165	<0.176	<2.67
Pentachlorobenzene	µg/L	NS	<10	<10	<0.237	--	--	--	--	<0.247	<0.242	<0.259	<3.26
Pentachloronitrobenzene	µg/L	NS	<10	<10	<0.355	--	--	--	--	<0.371	<0.363	<0.388	<6.74
Pentachlorophenol	µg/L	1	<10	<10	<0.258	--	--	--	--	<0.27	<0.264	<0.282	<11.2
Phenacetin	µg/L	NS	<10	<10	<0.183	--	--	--	--	<0.191	<0.187	<0.2	<2.21
Phenanthrene	µg/L	210	<10	<10	<0.645	--	--	--	--	<0.674	<0.659	<0.706	<0.919
Phenol	µg/L	2000	<20	<10	<2.58	--	--	--	--	<2.7	<2.64	<2.82	<1.28
Phorate	µg/L	1.4	<60	<10	<0.183	--	--	--	--	<0.191	<0.187	<0.2	<3.72
Pronamide	µg/L	5	<10	<10	<0.28	--	--	--	--	<0.292	<0.286	<0.306	<3.14
Pyrene	µg/L	210	<10	<10	<0.247	--	--	--	--	<0.258	<0.253	<0.271	<0.919
Safrole	µg/L	NS	<10	<10	<0.215	--	--	--	--	<0.225	<0.22	<0.235	<3.26
Thionazin	µg/L	NS	<10	<10	<0.333	--	--	--	--	<0.348	<0.341	<0.365	<4.07
Volatile Organic Compounds													
1,1-Dichloropropene	µg/L	NS	<1	<1	<0.15	--	--	--	--	<0.15	<0.15	<0.15	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<5	<5	<0.16	--	--	--	--	<0.16	<0.16	<0.16	<0.75
1,3-Dichlorobenzene	µg/L	600	<1	<1	<0.17	--	--	--	--	<0.17	<0.17	<0.17	<0.3
1,3-Dichloropropane	µg/L	NS	<1	<1	<0.16	--	--	--	--	<0.16	<0.16	<0.16	<0.4
2,2-Dichloropropane	µg/L	NS	<4	<4	<0.18	--	--	--	--	<0.18	<0.18	<0.18	<0.69
Acrolein	µg/L	NS	<10	<10	<1.5	--	--	--	--	<1.5	<1.5	<1.5	<3.6
Allyl chloride	µg/L	NS	<2	<2	<0.27	--	--	--	--	<0.27	<0.27	<0.27	<0.7
Chloroprene	µg/L	NS	<1	<1	<0.19	--	--	--	--	<0.19	<0.19	<0.19	<0.23
Dichlorodifluoromethane	µg/L	1000	<3	<5	<0.2	--	--	--	--	<0.2	<0.2	<0.2	<0.25
Ethyl Methacrylate	µg/L	NS	<2	<2	<0.15	--	--	--	--	<0.15	<0.15	<0.15	<0.68
Methacrylonitrile	µg/L	NS	<1	<2	<0.25	--	--	--	--	<0.25	<0.25	<0.25	<3.3
Methyl Methacrylate	µg/L	NS	<2	<2	<0.15	--	--	--	--	<0.15	<0.15	<0.15	<0.76
Naphthalene	µg/L	100	<10	<5	<0.37	--	--	--	--	<0.37	<0.37	<0.37	<3
Propionitrile	µg/L	NS	<10	<200	<2	--	--	--	--	<2	<2	<2	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-4B

Parameter Name	Units	GPS	DL	RL	Oct-07	Jan-08	Apr-08	Jul-08	Oct-08	Apr-09	Oct-09	Feb-10	Apr-10	Oct-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Oct-14	May-15	Jul-15	Sep-15	Mar-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Oct-19	Feb-20	Jun-20	Nov-20	May-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jan-24	Jun-24	Aug-24	Nov-24
Appendix I Inorganics																																													
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***2.13***	***6.83***	***15.5***	***6***	***14.4***	<0.581	<0.581	***1.38 J***	***5.37***	***1 J***	***1.25 J***	<0.638	***0.875 J***	***1.25 J***	***0.75 J***	<0.638	***1.13 J***	<1.7	<0.638	***0.75 J***	***1.75 J***	***2.13***	<1.39	<1.39	<1.43
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***10.87***	***0.8004***	***1.147***	***9.4***	***75.09***	***1.571***	***1.342***	***9.311***	***7.859***	***9.43***	***3.77***	***0.89***	***1.67***	***0.82***	***3.98***	***1.23***	***5.15***	***0.06***	0	***0.67***	***1.95***	***0.87***	***1.75***	***2.37***	***1.14***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	***27.4***	***87***	***15.6***	***37.6***	<0.4	***0.5 J***	***1.3***	***7.2***	***0.6 J***	***1.14***	***0.59 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	***10.6***	<6	<6	<6	<2.73	<1.45	***0.22 J***	***0.698 J***	***0.256 J***	***0.994 J***	<0.161	<0.161	--	<0.161	<0.237	<0.237	<0.185	<0.185	<0.42	***0.503 J***	<1.32	<0.53	--	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	--	<1	--	<1
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<6	<6	<6	<6	<6	<2.73	<1.45	***0.17 J***	***0.3 J***	***0.199 J***	***0.448 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<1	***2.26***	<1	<1	<1	***2.29***	***1.45***	***2.34***	<1	<1	<1	***1.14***	***2.51***	***14.1***	***15.3***	***1.19***	***1.19 J***	<0.945	<0.945	--	<0.945	***1.17 J***	<0.672	<0.505	<0.505	<0.57	<0.57	***0.547 J***	<0.75	--	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	--	<0.53	--	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<1	<1	<1	<1	<1	<1	***2.16***	<0.216	***9.74***	***9.92***	***1.06***	***1.17 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***344***	***358***	***337***	***264***	***343***	***447***	***372***	***441***	***339***	***346***	***211***	***404***	***540***	***920***	***644***	***333***	***462***	***144***	***307***	--	***237***	***396***	***205***	***213***	***217***	***305***	***206***	***187***	***455***	***168***	***180***	***178***	***176***	***189***	***184***	***209***	***183***	***267***	***413***	***184***	--	***225***
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***393***	***277***	***314***	***216***	***189***	***229***	***445***	***495***	***665***	***474***	***312***	***467***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	***0.12 J***	***0.109 J***	<0.0696	***0.114 J***	<0.039	<0.039	--	***0.052 J***	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	--	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	<0.051	<0.079	<0.0178	<0.0696	<0.0696	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	***0.25 J***	***0.189 J***	***0.137 J***	<0.1	<0.112	<0.112	--	<0.112	***0.121 J***	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	***0.135***	<0.039	<0.049	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	--	<0.1	--	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	***0.07 J***	<0.106	***0.135 J***	***0.164 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***3.5 J***	***4.47 J***	***8.6***	***36***	<0.418	***0.63 J***	<1.24	<1.24	--	<1.24	***0.4 J***	<0.355	<0.729	<0.729	<0.76	***1.04 J***	<1.14	<0.98	--	<1.1	<1.1	<1.1	<1.1	***1.67 J***	<1.1	<1.1	<1.1	<1.1	--	<1.2	--	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	<1.81	<1.81	***1.37 J***	***0.959 J***	<0.418	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***4.43 J***	***8.7 J***	***18.7***	***15.1***	***4.67***	***6.79***	***0.968***	***2.05***	--	***1.77***	***6.05***	***0.035 J***	<0.0453	***0.362 J***	***0.834***	***0.068 J***	<0.402	***0.221 J***	--	<0.091	***0.149 J***	<0.091	<0.19	<0.19	<0.19	<0.17	***0.213 J***	--	<0.17	--	<0.17
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<20	<20	<20	<20	<20	***7.7 J***	***8.28 J***	***15.6***	***11.6***	***4.39***	***6.49***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	***11.8 J***	<1.51	***11.8***	***12.1***	***3.76***	***2.39***	***4.11***	***1.67 J***	--	***0.618 J***	***1.88 J***	<1.22	<2.19	<2.19	***1.6 J***	<1.6	***2.09***	<2	--	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	--	<1.8	--	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	***12.3 J***	<1.51	***0.61***	<0.17	***3.13***	***2.04***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	<4	<4	<4	***7.68***	<4	<4	***13.8***	***5.32***	<4	<1	***0.91 J***	***3.68***	***3.97***	***5.55***	<0.18	***0.117 J***	<0.0967	--	***0.141 J***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.186	<0.27	--	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	--	<0.26	--	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<4	<4	***4.4***	<4	<4	<4	<1	<0.804	***0.22 J***	<0.207	***0.9***	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	***24.4 J***	***38.7 J***	***57.6***	***62.4***	***16***	***22.3***	***2.51 J***	***9.83***	--	***4.5 J***	***13.4***	<1.53	<0.929	***2.91 J***	***5.11***	<1	***1.57 J***	***3.57 J***	--	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	***3.5 J***	--	<2.1	--	<2.1
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	***29.4 J***	***35.3 J***	***46.8***	***42.6***	***15.1***	***22.4***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	***1.74 J***	***2.24 J***	<0.7	<3.34	<3.34	--	<3.34	<0.63	<0.63	<0.928	<0.928	<0.9	<0.9	<0.982	<1	--	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	--	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	<1.46	<1.46	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	<0.042	***0.053 J***	--	<0.042	***0.173 J***	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	--	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	--	***5.37***	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.01 J***	***0.155***	***0.0384 J***	***0.308 J***	<0.0325	<0.0325	--	<0.0325	***0.03 J***	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<2	<2	<2	<2	<2	<0.84	<0.288	***0.03 J***	***0.0349 J***	***0.0473 J***	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	<2.1	***8.18***	***11.3***	***1.55***	***0.783 J***	***1.11 J***	***0.782 J***	--	***0.707 J***	***0.709 J***	***1.06 J***	***1.09 J***	***1.01 J***	***0.99 J***	***1.36 J***	<2.15	***0.956 J***	--	***1.06 J***	***1.41 J***	***1.14 J***	<1.1	<1.1	***1.15 J***	<1.1	***1.5 J***	--	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	<50	<50	<50	<50	<50	<2.1	<2.1	<0.94	<0.833	***0.912 J***	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***52.2***	<20	***26.2***	<20	<20	***36.3***	***31.7***	<20	***27.1***	***22***	<20	<9.11	***10.8 J***	***7.01***	***13.3***	<0.625	***3.49 J***	<6.95	<6.95	--	<6.95	<5.21	<5.21	<11.5	<11.5	<10	<10	<6.92	<10	--	<10	<10	<10	<10	<10	<10	<6.4	<6.4	--	<9.7	--	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***30.6***	<20	<20	<20	<20	<20	<9.11	***9.99 J***	***2.02 J***	***1.75 J***	<0.625	***2.46 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																														
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<1	<1	<1	<1	<1	<2	<10	<5	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<1	***1.28***	***1.01***	<1	<1	<1	<1	***1.02***	***1.27***	***1.94***	***2.16***	***0.21***	***1.52***	<0.21	<0.21	--	<0.21	***0.58 J***	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	***0.292 J***	<0.14	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	***0.18 J***	<0.18	***0.204 J***	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<1	***1.17***	***1.57***	<1	<1	<1	<1	<0.2	<0.12	***2.55***	***3.78***	***0.23***	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	***0.326 J***	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	***0.554 J***	<0.23	--	<0.23	--	<0.23
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	***0.54 J***	<0.47	***0.635 J***	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	--	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	--	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	***2.04 J***	***2.04 J***	<1.79	<1.79	<1.79	<1.79	<1.79	--	<1.79	<1.79	<1.79	<1.79	<1.79	<3.1	<3.1	***3.97 J***	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	--	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	--	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.5	***0.5***	<0.5	***1.04***	***0.56***	<0.5	<0.5	<0.5	***0.89***	***0.98***	***1.25***	***1.15***	***0.313 J***	***0.724***	<0.11	***0.481 J***	--	<0.11	***0.496 J***	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	--	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	***0.549 J***	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<2	<2	<2	<5	<5	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	--	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<1	<1	***1.06***	***1.91***	<1	<1	<1	***2.51***	***2.87***	***3.66***	***3.2***	<0.19	<0.19	<0.19	***1.29***	--	<0.19	<0.19	<0.19	<0.19	***0.254 J***	***0.525 J***	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	***0.607 J***	--	<0.4	--	<0.4
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	***0.45 J***	***0.4 J***	<0.15	***0.487 J***	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	--	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	--	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-4R

Constituent Name	Units	CPL	4/16/19	6/25/19	9/16/19	12/16/19	3/24/20	6/22/20	9/28/20	12/16/20	3/30/21	6/22/21
Alcohols/Glycols by GC												
Acetonitrile	ug/L	NA	< 10000	< 126	--	--	--	< 126	--	< 252	< 126	
Isobutanol	ug/L	2100	< 10000	< 277	--	--	--	< 277	--	< 554	< 277	
Pesticides (GC)												
4,4'-DDT	ug/L	70	< 0.25	< 0.16	--	--	--	< 0.162	--	< 0.648	< 0.487	
4,4'-DDE	ug/L	70	< 0.25	< 0.0813	--	--	--	< 0.0813	--	< 0.325	< 0.0813	
Mirex (1,3,4,5+ TP)	ug/L	50	< 0.25	< 0.367	--	--	--	< 0.367	--	< 0.367	< 0.332	
Inorganics												
N-nitrite	ug/L	200	< 50	< 3.5	--	--	--	< 3.5	--	< 3.5	< 3.46	
Mercury	ug/L	2	< 0.2	< 0.057	--	--	--	< 0.0926	--	< 0.148	< 0.112	
Sulfide	ug/L	NA	< 2000	< 219	--	--	--	< 219	--	< 198	< 211	
Tin	ug/L	4200	< 100	*75.4 J*	*90.3 J*	< 1.8	< 2.1	< 1.8	--	< 0.832	< 1.42	
PCBs (EPA Method 8082)												
PCB-1016	ug/L	NA	< 0.8	< 0.0647	--	--	--	< 0.0488	--	< 0.0488	< 0.0467	
PCB-1221	ug/L	NA	< 0.8	< 0.176	--	--	--	< 0.38	--	< 0.176	< 0.172	
PCB-1232	ug/L	NA	< 0.8	< 0.143	--	--	--	< 0.144	--	< 0.144	< 0.138	
PCB-1242	ug/L	NA	< 0.8	< 0.127	--	--	--	< 0.128	--	< 0.128	< 0.118	
PCB-1248	ug/L	NA	< 0.8	< 0.127	--	--	--	< 0.128	--	< 0.128	< 0.118	
PCB-1254	ug/L	NA	< 0.8	< 0.103	--	--	--	< 0.103	--	< 0.103	< 0.0988	
PCB-1260	ug/L	NA	< 0.8	< 0.0493	--	--	--	< 0.0493	--	< 0.0493	< 0.0473	
Pesticides (EPA Method 8081A)												
4,4'-DDD	ug/L	0.73	< 0.012	< 0.0045	--	--	--	< 0.005	--	< 0.0045	< 0.00194	
4,4'-DDE	ug/L	0.52	< 0.012	< 0.0021	--	--	--	< 0.00135	--	< 0.00259	< 0.00226	
4,4'-DDT	ug/L	0.91	< 0.012	< 0.0038	--	--	--	< 0.00422	--	< 0.00422	< 0.00493	
Aldrin	ug/L	0.05	< 0.012	< 0.0045	--	--	--	< 0.005	--	< 0.0045	< 0.00184	
Alpha-BHC	ug/L	0.038	< 0.012	< 0.0053	--	--	--	< 0.00586	--	< 0.00592	< 0.00183	
beta-BHC	ug/L	0.042	< 0.012	< 0.0048	--	--	--	< 0.00533	--	< 0.00545	< 0.00254	
delta-BHC	ug/L	NA	< 0.012	< 0.0045	--	--	--	< 0.00497	--	< 0.00497	< 0.00226	
Alpha-BHC	ug/L	1.1	< 0.012	< 0.0053	--	--	--	< 0.00586	--	< 0.00592	< 0.00183	
Dieldrin	ug/L	0.011	< 0.024	< 0.002	--	--	--	< 0.00229	--	< 0.00507	< 0.00215	
Endosulfan I	ug/L	42	< 0.012	< 0.002	--	--	--	*0.00107 J*	*0.00107 J*	< 0.00222	< 0.00215	
Endosulfan II	ug/L	42	< 0.012	< 0.0033	--	--	--	< 0.00213	--	< 0.00374	< 0.00204	
Endosulfan sulfate	ug/L	NA	< 0.012	< 0.0033	--	--	--	< 0.00278	--	< 0.00361	< 0.00204	
Endrin	ug/L	2	< 0.012	< 0.0037	--	--	--	< 0.00215	--	< 0.00374	< 0.00204	
Endrin aldehyde	ug/L	2.1	< 0.012	< 0.0073	--	--	--	< 0.00451	--	< 0.0081	< 0.00784	
gamma-BHC (Lindane)	ug/L	0.2	< 0.012	< 0.0033	--	--	--	< 0.00213	--	< 0.00374	< 0.00204	
Heptachlor	ug/L	0.4	< 0.012	< 0.0033	--	--	--	< 0.00289	--	< 0.00363	< 0.0028	
Heptachlor Epoxide	ug/L	0.2	< 0.012	< 0.0043	--	--	--	< 0.00678	--	< 0.00431	< 0.00924	
Methoxychlor	ug/L	40	< 0.012	< 0.0024	--	--	--	< 0.00243	--	< 0.00243	< 0.00226	
Toxaphene	ug/L	3	< 2	< 0.0588	--	--	--	< 0.0644	--	< 0.0658	< 0.0624	
Semivolatile Organics by GC/MS												
1,2,4,5-Tetrachlorobenzene	ug/L	1.1	< 10	< 0.133	--	--	--	< 0.129	--	< 0.132	< 0.13	
1,2,4-Trimethylbenzene	ug/L	NA	< 10	< 1.42	--	--	--	< 1.38	--	< 1.42	< 1.39	
1,3-Dinitrobenzene	ug/L	3	< 10	< 0.189	--	--	--	< 0.183	--	< 0.189	< 0.186	
1,4-Naphthoquinone	ug/L	NA	< 10	< 0.126	--	--	--	< 0.121	--	< 0.126	< 0.122	
1,4-Phenylenediamine	ug/L	NA	< 20	< 9.31	--	--	--	< 9.03	--	< 9.23	< 9.12	
1-Naphthylamine	ug/L	NA	< 10	< 0.267	--	--	--	< 0.259	--	< 0.266	< 0.262	
2,4,5,6+ Tetrachlorophenol	ug/L	NA	< 10	< 0.252	--	--	--	< 0.243	--	< 0.251	< 0.217	
2,4,5+ Trichlorophenol	ug/L	700	< 10	< 0.356	--	--	--	< 0.344	--	< 0.354	< 0.348	
2,4,6+ Trichlorophenol	ug/L	16	< 10	< 0.268	--	--	--	< 0.257	--	< 0.342	< 0.239	
2,4-Dichlorophenol	ug/L	60	< 10	< 0.193	--	--	--	< 0.163	--	< 0.191	< 0.163	
2,4-Dimethylphenol	ug/L	140	< 10	< 0.267	--	--	--	< 0.259	--	< 0.266	< 0.262	
2,4-Dinitrophenol	ug/L	14	< 10	< 1.48	--	--	--	< 1.38	--	< 1.47	*1.84 J*	
2,4-Dinitrotoluene	ug/L	0.45	< 10	< 0.311	--	--	--	< 0.298	--	< 0.309	< 0.297	
2,6-Dichlorophenol	ug/L	NA	< 10	< 0.2685	--	--	--	< 0.257	--	< 0.266	< 0.238	
2,6-Dinitrotoluene	ug/L	0.36	< 10	< 0.267	--	--	--	< 0.259	--	< 0.266	< 0.262	
2-Acetylaminofluorene	ug/L	NA	< 10	< 0.311	--	--	--	< 0.301	--	< 0.309	< 0.304	
2-Chloronaphthalene	ug/L	560	< 10	< 0.226	--	--	--	< 0.217	--	< 0.225	< 0.25	
2-Chlorophenol	ug/L	40	< 10	< 0.163	--	--	--	< 0.163	--	< 0.161	< 0.161	
2-Methylnaphthalene	ug/L	28	< 10	< 0.217	--	--	--	< 0.204	--	< 0.209	< 0.207	
2-Methylphenol (o-Cresol)	ug/L	35	< 10	< 0.2	--	--	--	< 0.194	--	< 0.198	< 0.196	
2-Naphthylamine	ug/L	0.057	< 10	< 0.266	--	--	--	< 0.257	--	< 0.242	< 0.238	
2-Nitroaniline	ug/L	60	< 10	< 0.163	--	--	--	< 0.163	--	< 0.161	< 0.161	
2-Nitrophenol	ug/L	NA	< 10	< 0.178	--	--	--	< 0.172	--	< 0.176	< 0.174	
2-p-Dimethylaminoazobenzene	ug/L	0.35	< 10	< 0.423	--	--	--	< 0.409	--	< 0.421	< 0.1	
2,3,4,6-Tetrachlorophenol	ug/L	NA	< 10	< 0.223	--	--	--	< 0.226	--	< 0.235	< 0.228	
2,6-Dimethylnaphthalene	ug/L	70	< 10	< 0.2	--	--	--	< 0.194	--	< 0.198	< 0.196	
2-Methylnaphthalene	ug/L	28	< 10	< 0.217	--	--	--	< 0.204	--	< 0.209	< 0.207

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-7A

Parameter Name	Units	GPS	DL	RL	Oct-07	Jan-08	Apr-08	Jul-08	Oct-08	Apr-09	Oct-09	Apr-10	Oct-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Oct-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Feb-20	Jun-20	Nov-20	Feb-21	May-21	Sep-21	Mar-22	Aug-22	Jun-23	Aug-23	Nov-23	Jun-24	Nov-24	Feb-25
Appendix I Inorganics																																												
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.41	<1.13	<1.2	***0.75 J***	***0.875 J***	***1.13 J***	***0.75 J***	***1.25 J***	***2.5***	<0.638	***2.63***	<0.638	***2.5***	***1 J***	***0.875 J***	<0.638	***1 J***	<0.638	***1.88***	<0.638	***5.13***	***3.13***	<1.39	<1.54	--
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***0.7896***	***0.6573***	***1.002***	***0.5112***	***0.6805***	***5.661***	***1.116***	***0.371***	***4.211***	***12.89***	***1.04***	0	***4.41***	***0.76***	***0.51***	***1.3***	***3.32***	0	***2.24***	***0.84***	***1.11***	***1.42***	***1.83***	***0.22***	***0.75***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	<0.7	***0.7 J***	<0.4	<0.4	***0.6 J***	<0.4	***0.5 J***	***1.5***	<0.4	***1.93***	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	***1.84 J***	<0.12	***0.435 J***	***0.0751 J***	***0.988 J***	***0.164 J***	<0.161	<0.161	<0.237	<0.237	<0.185	<0.185	<0.442	<0.42	<1.32	<0.53	--	<0.51	***1.67***	<1.1	<1.1	<1.1	<0.69	<0.69	<1	--	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<6	<6	<6	<6	<6	<6	<2.73	<1.45	<0.12	***0.135 J***	<0.0541	***0.78 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<1	***1.45***	***1.15***	<1	***2.23***	<1	<1	<2	<1	<1	<0.6	***0.876 J***	***0.81 J***	***0.97 J***	<0.544	<0.33	<0.945	<0.945	<0.945	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	***0.43 J***	<0.75	--	<0.88	<0.88	--	<0.75	<0.75	<0.75	<0.75	<0.53	--	<0.53	<0.53	<0.53	--
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<1	<1	<1	<1	<2	<1	<0.47	<0.216	***3.17***	***1.26***	<0.544	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	*2*	***191***	***202***	***301***	***185***	***381***	***195***	***220***	***181***	***263***	***197***	***319***	***307***	***316***	***155***	***326***	***149***	***184***	***152***	***240***	***165***	***315***	***150***	***172***	***166***	***171***	***160***	***185***	***174***	***139***	***160***	--	***166***	***156***	***143***	***71.9***	***323***	***366***	***451***	***190***	***425***	***196***
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	***174***	***197***	***170***	***181***	***192***	***294***	***178***	***305***	***148***	***287***	***149***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	***0.159 J***	***0.782 J***	***0.06 J***	<0.0696	<0.0696	<0.08	<0.039	<0.039	<0.039	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.33	--	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	<0.051	<0.079	<0.0178	<0.0696	<0.0696	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	***0.08 J***	<0.106	<0.106	<0.1	<0.112	<0.112	<0.112	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	***0.061 J***	--	<0.049	***0.058 J***	--	<0.051	<0.051	<0.055	<0.055	<0.1	--	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	<0.064	<0.106	<0.106	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	***64.5***	<20	<20	<20	<20	<20	<20	<20	***1.99 J***	***4.53 J***	***0.52 J***	***6.59***	***0.771 J***	***4.6***	***4.2 J***	***3.75 J***	<1.24	***4.02 J***	<0.355	***2.45 J***	***3.22 J***	***5.26***	***3.27 J***	<1.14	***2.95 J***	--	***2.12 J***	***2.39 J***	--	***3.29 J***	***3.38 J***	***3.01 J***	<1.1	<1.1	--	<1.1	***3.34 J***	<1.2	--
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<20	<20	<20	<20	<20	<20	***8.35 J***	***2.13 J***	<0.39	***3.7 J***	***0.68 J***	***4.2***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<20	<20	***21.4***	<20	<20	<20	<20	<20	<20	<20	***3.68 J***	***7.51 J***	***1.03***	***0.661***	***0.604***	***0.15 J***	<0.0528	<0.0528	***0.078 J***	<0.0274	***0.029 J***	<0.0453	<0.0453	***0.066 J***	<0.061	<0.402	<0.091	--	<0.091	<0.091	--	<0.091	<0.19	<0.19	***0.339 J***	<0.17	--	***0.257 J***	<0.17	<0.17	--
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.55	<1.55	***0.45 J***	***0.199 J***	***0.612***	<0.054	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	***50.7***	<20	<20	<20	<20	<20	<20	<20	***18.7 J***	***16.6 J***	***2.25***	***4.7***	***1.86***	***0.579 J***	<0.485	<0.485	<0.485	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	***1.02 J***	<2	--	<1.5	<1.5	--	<1.4	<1.4	<1.8	<1.8	<1.8	--	<1.8	<1.8	<1.8	--
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	***11.6 J***	<1.51	***1.84***	***1.49***	***2.32***	<0.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	***4.16***	<4	***9.46***	<4	<4	<4	***5.41***	<4	***4.72***	***8.96***	***0.84***	***1.52***	***0.211 J***	***0.224 J***	***0.113 J***	<0.0967	***0.8***	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	<0.186	<0.27	--	<0.11	<0.11	--	<0.21	<0.21	<0.24	<0.24	<0.24	--	<0.24	<0.26	<0.26	--
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<4	<4	<4	<4	<4	<1	<0.804	***1.97***	<0.207	<0.207	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	***53.6***	<50	<50	<50	<50	<50	<50	<50	***9.7 J***	***9.51 J***	***7.27***	***3.35***	***6.39***	***0.459 J***	***0.586 J***	<0.581	***3.6 J***	<1.53	***6.7***	***1.11 J***	<0.929	***1.68 J***	<1	***2.07***	<1.7	--	<1.9	<1.9	--	<1.9	<1.9	<1.9	<1.9	***5.11***	--	***12.8***	<2.1	***8.81***	--
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<50	<50	<50	<50	<50	<50	***8.09 J***	***4.72 J***	***5.59***	***1.77***	***9.21***	***0.498 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	<1.46	<1.46	<0.7	<3.34	<3.34	<3.34	***0.821 J***	<0.63	<0.928	<0.928	<0.9	<0.9	<0.982	<1	--	<1	<1	--	<0.96	<0.96	<0.96	<0.96	<1.4	--	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	***1.64 J***	<1.46	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	<0.042	<0.042	<0.042	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	--	<0.37	<0.37	--	<0.42	<0.42	<0.49	<0.49	<0.5	--	<0.5	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.01 J***	***0.084 J***	<0.0267	***0.151 J***	<0.0325	<0.0325	<0.0325	<0.0255	***0.05 J***	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	--	<0.26	<0.26	--	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.26	<0.57	<0.57	--
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.03 J***	***0.0433 J***	<0.0267	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	***75.6***	<50	<50	<50	<50	<50	<50	<50	***2.14***	***11.5 J***	***1.44***	***1.63***	<0.833	***1.2 J***	***0.727 J***	***0.459 J***	***0.666 J***	***0.429 J***	***0.377 J***	<0.84	***0.917 J***	***0.603 J***	***0.673 J***	<2.15	<0.82	--	<1.1	<1.1	***1.21 J***	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	<50	<50	<50	<50	<50	<50	<2.1	<2.1	<0.94	<0.833	<0.833	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***45.8***	<20	***94.9***	<20	***67***	***35***	***41.8***	***25.9***	***38.6***	<20	***15.2 J***	***17.6 J***	***2.42 J***	***8.06***	<0.625	***3.26 J***	***7.01 J***	<6.95	***26.5***	<5.21	<5.21	<11.5	<11.5	<10	<10	***6.99 J***	***35.8***	<10	<10	<10	--	<10	<10	<10	<10	<6.4	--	<6.4	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	***30.9***	***44.5***	***22.9***	***29.4***	<20	<20	<9.11	***13.8 J***	***3.53 J***	***2.45 J***	<0.625	<2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																													
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<1	<1	<1	<1	<1	<10	<4	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.13	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<0.14	<0.14	<0.14	***0.15 J***	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<0.2	<0.2	<0.2	***0.236 J***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	***1.27 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	--	<2	<2	--	<2	<2	<2	<2	<2	--	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	***2.04 J***	<1.79	<1.79	***2.2 J***	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	--
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	***0.242 J***	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	--	***0.404 J***	<0.22	<0.22	--
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<1	<0.15	<0.15	***0.15 J***	<0.15	<0.15	<0.15	***0.642 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<2	<2	<5	<5	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	***0.21 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<10	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.25 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	***0.348 J***	<0.17	<1.7	<1.7	<1.7	<1.7	--	<1.7

Winneshiek County Landfill
Appendix H Results
Monitoring Well MW-5A-SAR

Constituent Name	Units	UPL	102-24
Alcohols/Glycols by GC			
Acetonitrile	ug/L	NS	<2600
Methanol	ug/L	21193	<1000
Pesticides (GC)			
2,4,5-T	ug/L	70	<0.0713
2,4-D	ug/L	70	<0.0713
Silvex (2,4,5-TP)	ug/L	50	<0.0241
Inorganics			
Al, soluble	ug/L	200	<3.5
Mercury	ug/L	2	<0.11
Sulfide	ug/L	NS	<1810
Zn	ug/L	4260	<2.3
PCBs (EPA Method 8082)			
PCB-1016	ug/L	NS	<0.746
PCB-1221	ug/L	NS	<0.746
PCB-1232	ug/L	NS	<0.746
PCB-1242	ug/L	NS	<0.527
PCB-1248	ug/L	NS	<0.527
PCB-1254	ug/L	NS	<0.527
PCB-1260	ug/L	NS	<0.667
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	0.79	<0.0227
4,4'-DDE	ug/L	0.32	<0.0272
4,4'-DDT	ug/L	0.31	<0.0182
Aldrin	ug/L	0.05	<0.02
Alpha-BHC	ug/L	0.038	<0.00909
beta-BHC	ug/L	0.042	<0.0182
Delta-BHC	ug/L	1.1	<0.0182
Alpha-BHC	ug/L	2.4	<0.0191
Dieldrin	ug/L	0.033	<0.0191
Endosulfan I	ug/L	42	<0.0252
Endosulfan II	ug/L	42	<0.0226
Endosulfan sulfate	ug/L	NS	<0.0164
Endrin	ug/L	2	<0.0292
Endrin aldehyde	ug/L	2.1	<0.0585
gamma-BHC (Lindane)	ug/L	0.2	<0.00909
Heptachlor	ug/L	0.4	<0.0209
Heptachlor epoxide	ug/L	0.2	<0.0201
Methoxychlor	ug/L	40	<0.0201
Toxaphene	ug/L	3	<0.909
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.614
1,2,4-Trimethylbenzene	ug/L	NS	<2.43
1,3-Dinitrobenzene	ug/L	3	<3.68
1,4-Naphthoquinone	ug/L	NS	<2.69
1,4-Phenylenediamine	ug/L	NS	<2.16
1-Naphthylamine	ug/L	NS	<2.84
2,4,5,6-Tetrachlorophenol	ug/L	NS	<6.97
2,4,5-Trichlorophenol	ug/L	700	<6.42
2,4,6-Trichlorophenol	ug/L	16	<2.48
2,4-Dichlorophenol	ug/L	60	<0.966
2,4-Dimethylphenol	ug/L	140	<3.19
2,4-Dinitrophenol	ug/L	14	<14.8
2,4-Dinitrotoluene	ug/L	0.49	<1.47
2,6-Dichlorophenol	ug/L	NS	<0.788
2,6-Dinitrotoluene	ug/L	0.26	<0.569
2-Acetylaminofluorene	ug/L	NS	<3.07
2-Chloronaphthalene	ug/L	560	<0.727
2-Chlorophenol	ug/L	40	<0.614
2-Methylnaphthalene	ug/L	28	<0.62
2-Methylphenol (o-Cresol)	ug/L	31	<0.739
2-Naphthylamine	ug/L	0.057	<2.39
2-Nitroaniline	ug/L	60	<2.16
2-Nitrophenol	ug/L	NS	<7.72
3,3'-Dichlorobenzidine	ug/L	0.39	<1.59
3,3'-Dimethylbenzidine	ug/L	NS	<1.7
3/4-Methylphenol	ug/L	70	<0.742
3-Methylcholanthrene	ug/L	NS	<2.364
3-Nitroaniline	ug/L	NS	<3.07
4,6-Dinitro-2-methylphenol	ug/L	NS	<7.88
4-Aminobiphenyl	ug/L	0.0083	<2.5
4-Bromophenyl phenyl ether	ug/L	NS	<0.795
4-Chloro-3-methylphenol	ug/L	700	<0.956
4-Chloroaniline	ug/L	20	<0.709
4-Chlorophenyl phenyl ether	ug/L	NS	<0.784
4-Nitroaniline	ug/L	60	<0.709
4-Nitrophenol	ug/L	60	<16.61
4-Nitroquinoline	ug/L	NS	<2.18
5,12-Dimethylbenz(a)anthracene	ug/L	NS	<2.39
Acenaphthene	ug/L	420	<0.722
Acenaphthylene	ug/L	210	<0.818
Acetophenone	ug/L	NS	<0.784
Anthracene	ug/L	2100	<0.589
Benzo (a) anthracene	ug/L	0.24	<0.966
Benzo (a) pyrene	ug/L	0.2	<0.2
Benzo (b) fluoranthene	ug/L	0.24	<0.57
Benzo (g,h,i) perylene	ug/L	210	<0.52
Benzo (k) fluoranthene	ug/L	2.4	<2.5
Benzyl alcohol	ug/L	700	<1.48
Bis(2-chloroethoxy)methane	ug/L	NS	<0.868
Bis(2-chloroethyl) ether	ug/L	0.16	<0.932
Bis(2-chloroisopropyl) ether	ug/L	200	<0.614
Bis(2-ethylhexyl)phthalate	ug/L	6	<6.25
Butyl benzyl phthalate	ug/L	140	<6.14
Chrysene	ug/L	NS	<0.09
Diallate	ug/L	2.1	<0.909
Dibenz (a,h) anthracene	ug/L	NS	<6.55
Dibenzofuran	ug/L	0.123	<0.614
Diethylether	ug/L	7	<0.818
Diethyl Carbonate	ug/L	6600	<1.59
Dimethoate	ug/L	1.4	<2.09
Dimethyl phthalate	ug/L	NS	<1.18
Di-n-butyl phthalate	ug/L	700	<6.36
Di-n-octyl phthalate	ug/L	140	<7.95
Ethinesh	ug/L	7	<2.73
Ethyl methanesulfonate	ug/L	100	<6.82
Fluoranthene	ug/L	0.7	<2.73
Fluorene	ug/L	NS	<0.09
Hexachlorobenzene	ug/L	NS	<0.92
Hexachlorobutadiene	ug/L	280	<1.59
Hexachlorocyclopentadiene	ug/L	50	<0.795
Hexachloroethane	ug/L	3	<0.977
Hexachlorophene	ug/L	35	<3.9
Hexachloropropene	ug/L	1	<1.1
Indeno (1,2,3-cd) pyrene	ug/L	NS	<2.95
Isodrin	ug/L	0.16	<0.77
Isophorone	ug/L	100	<1.06
Isosafrole	ug/L	NS	<2.69
Kepone	ug/L	NS	<1.14
Methapyrilene	ug/L	7.3	<0.795
Methyl Methanesulfonate	ug/L	1.8	<6.59
Naphthalene	ug/L	14	<0.909
N-Nitrosodiethylamine	ug/L	NS	<3.86
N-Nitrosodiethylamine	ug/L	0.0054	<0.818
N-Nitrosodi-n-butylamine	ug/L	0.032	<1.43
N-Nitrosodi-n-propylamine	ug/L	NS	<1.05
N-Nitrosodiphenylamine	ug/L	16	<0.854
N-Nitrosomethylethylamine	ug/L	0.008	<1.32
N-Nitrosopiperidine	ug/L	NS	<3.07
N-Nitrosopyrrolidine	ug/L	0.063	<4.09
O,O,O-Triethylphosphorothioate	ug/L	NS	<2.59
o-Toluidine	ug/L	13	<3.3
p-Dimethylaminoazobenzene	ug/L	NS	<2.5
Pentachlorobenzene	ug/L	NS	<2.5
Pentachloroethane	ug/L	3	<2.43
Pentachloronitrobenzene	ug/L	NS	<2.18
Pentachlorophenol	ug/L	NS	<6.19
Phenacetin	ug/L	3	<0.61
Phenanthrene	ug/L	NS	<2.36
Phenanthridine	ug/L	210	<0.868
Phenol	ug/L	2000	<1.25
Pronamide	ug/L	5.4	<0.68
Pyrene	ug/L	210	<0.807
Pyridine	ug/L	37	<1.59
Safrole	ug/L	NS	<1.18
Thionazin	ug/L	NS	<1.98
Volatile Organic Compounds			
1,1,1,2-Tetrachloroethane	ug/L	NS	<0.43
1,1,1-Trichloroethane	ug/L	70	<0.75
1,1,2,2-Tetrachloroethane	ug/L	600	<0.3
1,1,2-Trichloroethane	ug/L	NS	<0.3
1,1-Dichloroethane	ug/L	NS	<0.68
1,1-Dichloroethene	ug/L	NS	<1.6
1,2,3-Trichloropropane	ug/L	NS	<0.7
1,2-Dibromo-3-chloropropane	ug/L	0.0083	<0.22
1,2-Dibromoethane	ug/L	NS	<0.48
1,2-Dichlorobenzene	ug/L	600	<0.3
1,2-Dichloroethane	ug/L	NS	<0.3
1,2-Dichloropropane	ug/L	NS	<0.4
1,3-Dichlorobenzene	ug/L	600	<0.3
1,4-Dichlorobenzene	ug/L	75	<0.3
1,4-Dioxane	ug/L	NS	<3.6
2-Butanone	ug/L	4200	<0.7
2-Hexanone	ug/L	NS	<0.22
4-Methyl-2-pentanone	ug/L	NS	<0.48
Acetone	ug/L	NS	<3.3
Acrylonitrile	ug/L	NS	<0.76
Benzene	ug/L	5	<0.4
Bromochloromethane	ug/L	NS	<0.4
Bromodichloromethane	ug/L	NS	<0.4
Bromoform	ug/L	NS	<0.4
Bromomethane	ug/L	NS	<0.4
Carbon disulfide	ug/L	NS	<0.4
Carbon tetrachloride	ug/L	NS	<0.4
Chlorobenzene	ug/L	NS	<0.4
Chloroethane	ug/L	NS	<0.4
Chloroform	ug/L	NS	<0.4
Chloromethane	ug/L	NS	<0.4
cis-1,2-Dichloroethene	ug/L	NS	<0.4
cis-1,3-Dichloropropene	ug/L	NS	<0.4
Cyclohexane	ug/L	NS	<0.4
Dibromomethane	ug/L	NS	<0.4
Dichlorodifluoromethane	ug/L	NS	<0.4
Ethylbenzene	ug/L	700	<0.4
Isopropylbenzene	ug/L	NS	<0.4
Methyl acetate	ug/L	NS	<0.4
Methyl cyclohexane	ug/L	NS	<0.4
Methylene chloride	ug/L	NS	<0.4
Styrene	ug/L	100	<0.4
Tetrachloroethene	ug/L	NS	<0.4
Toluene	ug/L	1000	<0.4
trans-1,2-Dichloroethene	ug/L	NS	<0.4
trans-1,3-Dichloropropene	ug/L	NS	<0.4
Trichloroethene	ug/L	NS	<0.4
Trichlorofluoromethane	ug/L	NS	<0.4
Vinyl chloride	ug/L	NS	<0.4
Xylenes, Total	ug/L	10000	<0.4

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-24A

Parameter Name	Units	GPS	DL	RL	Feb-11	Apr-11	Jun-11	Dec-11	Feb-12	Apr-12	Jun-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Aug-19	Nov-19	Jun-20	Nov-20	May-21	Sep-21	Mar-22	Aug-22	Dec-22	Jun-23	Nov-23	Jun-24	Nov-24
Appendix I Inorganics																																						
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	<1.41	<1.2	Dry	<0.581	Dry	<0.581	Dry	<0.887	***1.63 J***	<0.638	<0.638	***1.88***	<0.638	***1.13 J***	***0.875 J***	Dry	Dry	Dry	<0.638	Dry	***1.13 J***	Dry	<1.39	<1.48
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	***2.467***	***0.027***	--	***0.0912***	--	***1.33***	--	***0.3474***	***1.339***	***5.01***	***15.61***	***0.45***	***1.06***	***0.03***	***2.31***	--	--	***0.49***	--	***1.7***	--	***4.69***	***1.34***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	<0.6	<0.7	--	<0.4	--	***0.4 J***	--	<0.4	***0.9 J***	***0.75 J***	***0.63 J***	***0.63 J***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<2.73	***0.2 J***	***4.41 J***	<0.12	<0.12	***0.356 J***	***0.243 J***	***0.602 J***	<0.161	<0.161	--	<0.237	--	<0.185	--	<0.42	<0.42	<1.32	--	<0.53	<0.51	***1.99***	<1.1	--	--	<0.69	--	<1	--	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	<6	<6	<6	<2.73	***0.12 J***	<1.45	<0.12	<0.12	***0.215 J***	***0.212 J***	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<1	<2	<2	***0.679 J***	<0.73	<0.216	<0.73	<0.73	***1.67***	***0.836 J***	<0.33	<0.945	<0.945	--	<0.672	--	<0.505	--	<0.57	<0.57	***0.498 J***	--	<0.75	<0.88	<0.88	<0.75	--	--	<0.75	--	<0.53	--	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	<1	<3	<2	<0.47	***1.33***	<0.216	***1.09***	***0.87 J***	***1.69***	***0.759 J***	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***177***	***274***	***139***	***196***	***210***	***156***	***192***	***180***	***164***	***169***	***135***	***187***	***168***	--	***124***	--	***142***	--	***130***	***145***	***94.1***	--	***122***	***97.8***	***108***	***105***	--	--	***109***	--	***132***	--	***152***	***117***
Barium, Dissolved	µg/L	NS	NS	NS	***182***	***225***	***147***	***154***	***194***	***146***	***162***	***190***	***150***	***160***	***116***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<0.051	***0.09 J***	<0.079	***0.02 J***	***0.05 J***	<0.0696	<0.0696	<0.08	<0.039	<0.039	--	<0.221	--	<0.125	--	<0.19	<0.19	<0.53	--	<0.27	<0.27	<0.27	<0.27	--	--	<0.27	--	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	<1	<1	<1	<0.051	***0.04 J***	<0.079	<0.0178	<0.0178	<0.0696	<0.0696	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.5	<0.5	<0.5	***0.147 J***	***0.09 J***	<0.229	<0.064	<0.064	***0.224 J***	***0.371 J***	<0.1	***0.372 J***	***0.188 J***	--	***0.084 J***	--	<0.0441	--	***0.077 J***	***0.144 J***	<0.167	--	***0.128***	***0.053 J***	***0.333***	<0.051	--	--	***0.08 J***	--	<0.1	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	<0.5	<0.5	<0.5	<0.124	***0.16 J***	<0.229	<0.064	***0.12 J***	***0.211 J***	***0.295 J***	***0.285 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	***3.15 J***	<0.39	***2.69 J***	<0.39	***2.08 J***	***1.3 J***	***0.824 J***	***1.17 J***	<1.24	<1.24	--	***1.42 J***	--	***1.91 J***	--	***1.35 J***	***1.08 J***	<1.14	--	***1.24 J***	<1.1	<1.1	<1.1	--	--	<1.1	--	***1.18 J***	--	<1.2	***1.91 J***
Chromium, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<1.81	<0.39	***1.86 J***	***0.89 J***	***1.98 J***	<0.418	***0.465 J***	***1.07 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<20	<20	<20	***1.79 J***	***3.6***	<1.55	***1.07***	***1.03***	***5.56***	***3***	***1.12***	***0.549***	***0.351 J***	--	***0.306 J***	--	<0.0453	--	***0.339 J***	***0.44 J***	<0.402	--	***0.383 J***	***0.32 J***	***0.57***	***0.363 J***	--	--	***0.361 J***	--	***0.411 J***	--	***0.407 J***	***0.204 J***
Cobalt, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<1.55	***2.7***	<1.55	***0.48 J***	***0.31 J***	***4.33***	***1.74***	***0.427 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	***26.6***	<20	***13.7 J***	***5.19***	***2.55 J***	***1.45***	***2.88***	***3.34***	***4.18***	***2.74***	***1.25 J***	***1.25 J***	--	***2.27 J***	--	<2.19	--	***5.26***	***1.68 J***	***2.12***	--	<2	***1.79 J***	***1.8 J***	***1.78 J***	--	--	<1.8	--	***2.82 J***	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	<20	***24.4***	<20	***10.1 J***	***5.33***	<1.51	***1.65***	***2.26***	***1.67***	***2.93***	***2.1***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	***4.17***	<4	***2.19 J***	***2.7***	***2.21 J***	***0.63 J***	***0.73***	***0.631***	***0.671***	***0.552 J***	<0.0967	***0.103 J***	--	<0.211	--	<0.324	--	<0.25	<0.25	<0.186	--	<0.27	<0.11	***0.295 J***	<0.21	--	--	<0.24	--	<0.24	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	<4	<4	<4	<1	***1.36***	<0.804	***0.09***	***0.99***	<0.207	<0.207	***0.219 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	***6.15 J***	***12.6***	***6.6 J***	***5.89***	***6.7***	***16.5***	***27.8***	***15.7***	***17.5***	***14.6***	--	***8.78***	--	***8.8***	--	***9.67***	***10.6***	***8.67***	***6.78***	***7.39***	***5.83***	***5.28***	***5.49***	--	--	***6.42***	--	***7.85***	--	***8.53***	***2.95 J***
Nickel, Dissolved	µg/L	NS	NS	NS	<50	<50	<50	***3.89 J***	***13.9***	***6.78 J***	***6.47***	***5.26***	***14.7***	***26.1***	***11.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<1.69	<0.297	<0.7	<0.297	<0.297	<1.46	<1.46	<0.7	<3.34	<3.34	--	***0.653 J***	--	<0.928	--	***1.17 J***	<0.9	<0.982	--	***1.03 J***	<1	***1.39 J***	<0.96	--	--	<0.96	--	<1.4	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	<5	<5	<5	<1.69	<0.297	<0.7	<0.297	<0.297	<1.46	<1.46	<0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<1.7	<0.027	<1.7	<0.027	<0.027	<0.0789	<0.0789	<0.033	<0.042	<0.042	--	<0.153	--	<0.14	--	***0.34 J***	<0.3	<0.115	--	<0.37	<0.37	<0.37	<0.42	--	--	<0.49	--	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<1.7	<0.027	<1.7	<0.027	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<2	<2	<2	<0.84	<0.0087	<0.288	<0.0087	<0.0087	***0.0402 J***	<0.0267	<0.05	<0.0325	<0.0325	--	<0.0255	--	<0.0644	--	<0.17	<0.17	<0.57	--	<0.27	<0.26	***0.352 J***	<0.26	--	--	<0.26	--	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	<2	<2	<2	<0.84	***0.01 J***	<0.288	<0.0087	***0.01 J***	<0.0267	<0.0267	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<2.1	***3.09***	***2.9 J***	***1.3***	***1.34***	***1.52***	***1.18***	***1.58 J***	***0.923 J***	***0.759 J***	--	***0.674 J***	--	<0.84	--	***0.848 J***	***1.3 J***	<2.15	--	<0.82	<0.85	***1.23 J***	<1.1	--	--	<1.1	--	<1.1	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	<50	<50	<50	<2.1	***3.35***	***2.45 J***	***1.4***	<0.94	<0.833	<0.833	***0.974 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***43.5***	***28.1***	<20	<9.11	***22.9***	***15.3 J***	***1.84 J***	***7.62***	<0.625	***7.48***	<2	***7.53 J***	<6.95	--	<5.21	--	<11.5	--	<10	<10	<6.92	--	***65.4***	<10	<10	<10	--	--	<10	--	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	***47.4***	<20	<20	***25.2***	***13.4***	<9.11	<0.92	***7.3***	***1.24 J***	***5.86***	***3.2 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																						
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<2	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	--	--	<0.38	--	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	--	<0.12	--	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	--	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	--	<0.1	--	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	--	--	<0.47	--	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	--	<0.12	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	--	--	<0.45	--	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21	--	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	--	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	--	<0.15	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	--	--	<0.56	--	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	--	<0.19	--	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	--	--	<0.59	--	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<0.12	***0.12 J***	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	--	<0.5	--	<0.5	--	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	--	--	<1.2	--	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	<0.13	--	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	--	--	<0.34	--	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.14	--	<0.14	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	--	--	<0.37	--	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	--	<0.18	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	--	--	<0.39	--	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.87	--	<0.87	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	--	--	<0.27	--	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	***0.246 J***	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	--	--	<0.23	--	<0.23	--	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	***1.29 J***	<0.47	***2.96 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	--	<1.04	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	--	--	<2.1	--	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	<2	<2	<2	--	<2	<2	<2	<2	--	--	<2	--	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	--	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	--	--	<2.1	--	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<1.79	***1.89 J***	***3.97 J***	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	--	***1.94 J***	--	<1.79	--	<3.1	<3.1	***3.49 J***	--	<3.1	<3.1	<3.1	<3.1	--	--	<3.1	--	<3.1	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<0.53	--	<0.53	--	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	--	--	<2.2	--	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	--	<0.11	--	<0.11	--	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	--	<0.22	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	--	<0.12	--	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	--	--	<0.54	--	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	--	<0.12	--	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	--	--	<0.39	--	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<20	<0.22	***0.3 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	--	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	--	--	<1.1	--	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	***0.16 J***	<0.15	<0.15	<0.15	***0.451 J***	<0.15	--	<0.15	--	<0.15	--	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	--	--	<0.45	--	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.24	--	<0.24	--	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	--	--	<0.65	--	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	--	<0.19	--	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	--	--	<0.4	--	<0.4	--	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	***0.45 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	--	<0.15	--	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	--	--	<0.79	--	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	--	<0.31	--	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	--	--	<0.61	--	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	<0.13	--	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	--	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	--	<0.15	--	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	--	--	<0.25	--	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	--	--	<0.75	--	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	--	<0.18	--	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	--	--	<0.33	--	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<0.17	***0.63 J***	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	<0.17	--	<0.17	--	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	--	--	<1.7	--	<1.7	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21	--	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	--	--	<0.31	--	<0.31	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<20	<10	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	<0.8	--	<0.8	--	<7	<7	<7	--	<7	<7	<7	<7	--	--	<7	--	<7	--	<7	<7
Styrene	µg/L	100	0.1	1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	--	<0.1	--	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	--	--	<0.37	--	<0.37	--	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	--	<0.18	--	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	--	--	<0.48	--	<0.48	--	<0.48	<0.48
Toluene	µg/L	1000	0.15	1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	***0.184 J***	<0.15	<0.15	<0.15	<0.15	--	<0.15	--	<0.15	--	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	--	--	<0.43	--	<0.43	--	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21	--	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	--	--	<0.27	--	<0.27	--	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	5	<5	<5	<5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	--	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	--	--	<0.56	--	<0.56	--	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	<0.13	--	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	--	--	<1.1	--	<1.1	--	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	5	<5	<5	<5	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.14	--	<0.14	--	<0.78	<0.78	<0.78	--	<0.78	<0.78	<0.78	<0.78	--	--	<0.78	--	<0.78	--	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	--	<0.19	--	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	--	--	<0.43	--	<0.43	--	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	4	<4	<4	<4	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	<0.17	--	<0.17	--	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-24A

Parameter Name	Units	GPS	Jan-20	Jun-24
Alcohols/Glycols by GC				
Acrocrylin	ug/L	NS	<404	<2600
Isobutanol	ug/L	4300	<551	<2400
Herbicides (GC)				
2,4,5-T	ug/L	70	<0.525	<0.0758
2,4-D	ug/L	70	<0.563	<0.293
Silvex (2,4,5-TP)	ug/L	50	<0.35	<0.0253
Inorganics				
Cyanide	ug/L	200	<5	<3.5
Mercury	ug/L	2	<0.1	<0.11
Sulfate	ug/L	NS	<10000	<14100
TC	ug/L	4300	<2.4	<2.3
PCBs (EPA Method 8082)				
PCB-1016	ug/L	NS	<0.274	<0.79
PCB-1221	ug/L	NS	<0.274	<0.79
PCB-1232	ug/L	NS	<0.274	<0.79
PCB-1242	ug/L	NS	<0.274	<0.79
PCB-1248	ug/L	NS	<0.223	<0.622
PCB-1254	ug/L	NS	<0.223	<0.622
PCB-1260	ug/L	NS	<0.223	<0.622
Pesticides (EPA Method 8081A)				
4,4'-DDD	ug/L	0.73	***0.00195 J***	<0.0226
4,4'-DDE	ug/L	0.51	<0.00221	<0.0273
4,4'-DDT	ug/L	0.51	<0.004	<0.0368
Aldrin	ug/L	0.01	<0.00047	<0.0195
alpha-BHC	ug/L	0.028	***0.00189 J***	<0.00963
beta-BHC	ug/L	0.042	<0.005695	<0.0379
Chlordane	ug/L	2	<0.0674	<0.352
delta-BHC	ug/L	2.1	<0.002442	<0.0289
Dieldrin	ug/L	0.011	<0.002111	<0.0169
Endosulfan I	ug/L	42	<0.002017	<0.0253
Endosulfan II	ug/L	42	***0.00412 J***	<0.0235
Endosulfan sulfate	ug/L	NS	<0.002823	<0.0162
Endrin	ug/L	2	<0.002	<0.0253
Endrin aldehyde	ug/L	2.1	<0.007958	<0.02443
gamma-BHC (Lindane)	ug/L	0.2	<0.002	<0.00963
Heptachlor	ug/L	0.4	<0.002574	<0.0203
Heptachlor epoxide	ug/L	0.2	<0.006421	<0.0289
Methoxychlor	ug/L	40	<0.002023	<0.0289
Toxaphene	ug/L	3	<0.0611	<0.902
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<1.84	<0.569
1,3,5-Trinitrobenzene	ug/L	NS	<1.48	<2.4
1,3-Dinitrobenzene	ug/L	1	<1.15	<3.33
1,4-Naphthoquinone	ug/L	NS	<1.13	<3.75
1,4-Phenylenediamine	ug/L	NS	<0.575	<1.98
1-Naphthylamine	ug/L	NS	<1.01	<2.6
2,3,4,6-Tetrachlorophenol	ug/L	NS	<1.14	<5.52
2,4,5-Trichlorophenol	ug/L	700	<1.26	<5.52
2,4,6-Trichlorophenol	ug/L	16	<1.38	<5.23
2,4-Dichlorophenol	ug/L	20	<1.26	<0.886
2,4-Dimethylphenol	ug/L	100	<1.15	<0.604
2,4-Dinitrophenol	ug/L	14	<8.55	<13.5
2,4-Dinitrotoluene	ug/L	0.25	<1.26	<0.67
2,6-Dichlorophenol	ug/L	765	<1.26	<0.719
2,6-Dinitrotoluene	ug/L	0.26	<1.26	<0.549
2-Acetylaminofluorene	ug/L	NS	<1.38	<2.85
2-Chloronaphthalene	ug/L	560	<1.49	<0.669
2-Chlorophenol	ug/L	40	<1.26	<0.563
2-Methylnaphthalene	ug/L	40	<1.49	<0.669
2-Methylphenol (o-Cresol)	ug/L	35	<1.15	<0.677
2-Naphthylamine	ug/L	0.057	<0.589	<2.85
2-Nitroaniline	ug/L	NS	<1.38	<6.15
2-Nitrophenol	ug/L	NS	<1.84	<7.98
3,3'-Dichlorobenzidine	ug/L	0.39	<2.07	<1.46
3,3'-Dimethylbenzidine	ug/L	NS	<2.3	<1.56
3/4-Methylphenol	ug/L	70	<0.874	<0.729
3-Methylcholanthrene	ug/L	NS	<2.07	<0.103
3-Nitroaniline	ug/L	NS	<1.15	<2.83
4,6-Dinitro-2-methylphenol	ug/L	NS	<2.07	<7.28
4-Aminobiphenyl	ug/L	0.0083	<1.1	<2.25
4-Bromophenyl phenyl ether	ug/L	NS	<2.18	<0.729
4-Chloro-3-methylphenol	ug/L	700	<1.09	<0.875
4-Chloroaniline	ug/L	20	<1.38	<0.646
4-Chlorophenyl phenyl ether	ug/L	NS	<1.49	<0.719
4-Nitroaniline	ug/L	NS	<1.95	<1.35
4-Nitrophenol	ug/L	60	<2.07	<7.92
4-Nitro-o-toluidine	ug/L	NS	<3.56	<2.92
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<1.66	<1.98
Acenaphthene	ug/L	420	<1.49	<0.667
Acenaphthylene	ug/L	210	<1.49	<0.75
Acetophenone	ug/L	NS	<1.45	<0.719
Anthracene	ug/L	2100	<1.26	<0.909
Benzo (a) anthracene	ug/L	0.24	<1.26	<0.886
Benzo (a) pyrene	ug/L	0.2	<1.72	<0.44
Benzo (b) fluoranthene	ug/L	0.24	<1.38	<5.1
Benzo (g,h,i) perylene	ug/L	21	<1.84	<0.56
Benzo (k) fluoranthene	ug/L	2.4	<1.38	<2.29
Benzyl alcohol	ug/L	760	<1.26	<1.36
Bis(2-chloroethoxy)methane	ug/L	NS	<1.26	<0.792
Bis(2-chloroethyl)ether	ug/L	0.16	<1.26	<0.854
Bis(2-chloroisopropyl) ether	ug/L	980	<1.38	<0.969
Bis(2-ethylhexyl)phthalate	ug/L	6	<2.08	<5.73
Butyl benzyl phthalate	ug/L	140	<1.72	<5.65
Chlorobenzilate	ug/L	NS	<3.33	<3.75
Chrysene	ug/L	24	<1.26	<0.906
Dalkon (cis or trans)	ug/L	765	<1.49	<4.17
Dibenzo (a,h) anthracene	ug/L	0.024	<2.18	<4.06
Dibenzofuran	ug/L	7	<1.38	<0.773
Diethyl phthalate	ug/L	5600	<1.38	<1.56
Dimethoate	ug/L	1.4	<1.15	<3.75
Dimethyl phthalate	ug/L	NS	<2.07	<1.04
Di-n-butyl phthalate	ug/L	700	<1.38	<5.83
Di-n-octyl phthalate	ug/L	140	<1.45	<7.29
Dinoseb	ug/L	7	<0.575	<2.5
Diphenylamine	ug/L	180	<1.01	<6.25
Disulfoton	ug/L	0.7	<0.736	<2.5
Ethyl Methanesulfonate	ug/L	NS	<0.575	<3.75
Famphur	ug/L	NS	<0.736	<3.96
Fluoranthene	ug/L	280	<1.08	<1.77
Fluorene	ug/L	280	<1.49	<0.869
Hexachlorobenzene	ug/L	1	<1.03	<0.729
Hexachlorobutadiene	ug/L	1	<1.38	<0.896
Hexachlorocyclopentadiene	ug/L	50	<2.41	<5.36
Hexachloroethane	ug/L	1	<1.49	<1.69
Hexachloropropene	ug/L	NS	<1.84	<2.71
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<2.3	<4.38
Isodrin	ug/L	NS	<0.607	<4.5
Isophorone	ug/L	100	<1.14	<0.999
Isosafrole	ug/L	NS	<0.575	<2.4
Kepone	ug/L	NS	<2.07	<1.04
Methapyrilene	ug/L	NS	<2.18	<0.792
Methyl Methanesulfonate	ug/L	1.8	<0.575	<1.44
Naphthalene	ug/L	14	<1.26	<0.833
N-Nitrosodiethylamine	ug/L	NS	<0.575	<3.54
N-Nitrosodimethylamine	ug/L	0.0034	<1.05	<0.75
N-Nitroso-di-n-butylamine	ug/L	0.032	<0.575	<4.06
N-Nitroso-di-n-propylamine	ug/L	NS	<1.15	<0.959
N-Nitrosodiphenylamine	ug/L	36	<1.09	<0.786
N-Nitrosomethylethylamine	ug/L	0.008	<1.49	<5.1
N-Nitrosopiperidine	ug/L	NS	<0.575	<2.82
N-Nitrosopyrrolidine	ug/L	0.183	<0.575	<3.75
O,O,O-Triethyl phosphorothioate	ug/L	NS	<0.575	<1.33
o-Toluidine	ug/L	11	<0.77	<3.02
p-Dimethylaminoazobenzene	ug/L	NS	<0.897	<2.29
Parathion-ethyl	ug/L	NS	<1.84	<2.29
Parathion-methyl	ug/L	1	<0.862	<2.4
Pentachlorobenzene	ug/L	NS	<0.667	<2.56
Pentachloronitrobenzene	ug/L	NS	<0.575	<6.04
Pentachlorophenol	ug/L	1	<2.64	<10
Phenacetin	ug/L	NS	<2.07	<1.98
Phenanthrene	ug/L	210	<1.26	<0.823
Phenol	ug/L	2000	<2.76	<1.35
Pronamide	ug/L	1.4	<0.575	<1.33
Pyrene	ug/L	5	<0.575	<2.83
Safrole	ug/L	210	<1.61	<0.823
Thionazin	ug/L	NS	<0.874	<3.65
Volatile Organic Compounds				
1,1-Dichloropropene	ug/L	NS	<0.48	<0.48
1,2,4-Trichlorobenzene	ug/L	70	<0.75	<0.75
1,3-Dichlorobenzene	ug/L	600	<0.3	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4	<0.4
2,2-Dichloropropane	ug/L	NS	<0.88	<0.88
Acrolein	ug/L	NS	<3.6	<3.6
Allyl chloride	ug/L	NS	<0.7	<0.7
Benzonene	ug/L	NS	<0.23	<0.23
Dichlorodifluoromethane	ug/L	1000	<0.25	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68	<0.68
Methacrylonitrile	ug/L	NS	<3.3	<3.3
Methyl Methacrylate	ug/L	NS	<0.76	<0.76
Naphthalene	ug/L	100	<3	<3
Propionitrile	ug/L	NS	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-25A

Parameter Name	Units	GPS	DL	RL	Dec-10	Feb-11	Apr-11	Jun-11	Aug-11	Oct-11	Dec-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Feb-20	Jun-20	Nov-20	May-21	Sep-21	Mar-22	Aug-22	Jun-23	Nov-23	Jan-24	Jun-24	Nov-24
Appendix I Inorganics																																							
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	<1.41	<1.2	Dry	<0.581	***1.63***	***0.625 J***	***1.13 J***	<0.638	***3.13***	***4.13***	***0.875 J***	<0.638	***0.75 J***	<0.638	<0.638	<0.638	***1.38 J***	***1.13 J***	<0.638	<0.638	<1.39	<1.48
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	***0.3307***	***2.571***	--	***0.1175***	***0.0964***	***2.055***	***1.035***	***1.556***	***3.178***	***2.73***	***0.94***	0	***0.76***	***0.65***	***0.89***	***3.97***	***2.24***	***0.94***	***0.95***	***0.69***	***0.43***	***2.82***	***3.38***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	<0.6	<0.7	--	***0.6 J***	***1.4***	<0.4	<0.4	<0.4	***1.7***	***0.56 J***	***1.14***	***0.64***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<12	<6	<6	<6	<2.73	<2.73	***3.9 J***	***0.39 J***	***0.374 J***	***0.0911 J***	***0.415 J***	<0.161	<0.161	--	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<1.32	<0.53	--	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	--	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	<6	<6	<6	<6	<6	<2.73	<2.73	<1.45	<0.12	***0.188 J***	***0.0703 J***	<0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<1	<1	<2	<2	<2	<0.6	<0.6	***0.877 J***	***0.98 J***	***1.17***	***0.662 J***	<0.33	<0.945	<0.945	--	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	***0.796 J***	<0.75	--	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	--	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	<1	<1	<3	<2	<2	<0.47	<0.47	<0.216	<0.73	***0.935 J***	<0.544	<0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***250***	***181***	***235***	***206***	***208***	***217***	***218***	***246***	***246***	***149***	***218***	***126***	***212***	***160***	--	***150***	***208***	***176***	***205***	***163***	***190***	***153***	***188***	***174***	***147***	***197***	***199***	***192***	***154***	***159***	***189***	***219***	--	***178***	***229***
Barium, Dissolved	µg/L	NS	NS	NS	***215***	***185***	***211***	***193***	***195***	***213***	***206***	***206***	***209***	***127***	***196***	***123***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	***0.654 J***	<0.051	***0.29 J***	***0.13 J***	<0.0606	<0.0606	<0.08	<0.039	<0.039	--	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	<1	<1	<1	<1	<1	<0.051	<0.051	<0.079	<0.0178	<0.0606	<0.0606	<0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	***0.13 J***	<0.229	***0.35 J***	***0.175 J***	***0.189 J***	<0.1	<0.112	<0.112	--	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	***0.094 J***	<0.167	***0.039 J***	--	<0.049	<0.049	<0.051	<0.051	<0.055	***0.064 J***	<0.1	<0.1	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.124	<0.229	<0.064	<0.106	***0.133 J***	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	<20	<20	<1.81	***3.88 J***	***2.6 J***	***1.68 J***	***2.06 J***	***0.99 J***	***1.38 J***	<1.24	<1.24	--	***1.82 J***	<0.355	<0.729	<0.729	***1.59 J***	***1.42 J***	***1.84 J***	***1.81 J***	--	***1.52 J***	<1.1	<1.1	***1.58 J***	***1.65 J***	***1.36 J***	<1.1	<1.1	--	***2.64 J***	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<1.81	***2.27 J***	<1.81	***0.46 J***	***0.944 J***	***0.465 J***	***0.894 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	0.5	<20	<20	<20	<20	<20	<1.55	***3.36 J***	***6.49 J***	***3.15***	***1.38***	***1.02***	<0.054	<0.0528	***0.073 J***	--	***0.094 J***	***0.075***	<0.0453	***0.058 J***	***0.074 J***	***0.32 J***	<0.402	<0.091	--	<0.091	<0.091	***0.135 J***	<0.19	<0.19	***0.19 J***	***0.176 J***	***0.391 J***	--	<0.17	***0.276 J***
Cobalt, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<1.55	***1.9 J***	<1.55	***0.29 J***	***0.339 J***	***0.486 J***	***0.142 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	***24.9***	<20	***20.4***	***13.4 J***	***15 J***	***6.56 J***	***5.85***	***5.52***	***1.9***	***1.66 J***	<0.485	<0.485	--	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	<0.497	<2	--	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	<20	<20	***22.4***	<20	<20	***13.7 J***	***13.9 J***	<1.51	***1.49***	***2***	***1.94***	***1.05 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	***4***	<4	<4	<4	<4	<1	***1.61 J***	***4.18***	***2.69***	***0.377 J***	<0.207	***0.395 J***	<0.0967	***0.252 J***	--	<0.211	<0.211	<0.324	<0.324	<0.25	<0.25	***0.357 J***	<0.27	--	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	<4	<4	<4	<4	<4	<1	<1	<0.804	<0.029	<0.207	<0.207	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	***3.21 J***	***7.37 J***	***8.7 J***	***13.1***	***7.1***	***4.86***	***1.8 J***	***1.4 J***	***0.972 J***	--	<1.53	<1.53	***2.06***	***1.72 J***	***1.17 J***	***3.8 J***	***1.13 J***	<1.7	--	<1.9	<1.9	<1.9	<1.9	***2.26 J***	<1.9	***17***	***3.93 J***	<2.1	***9.12***
Nickel, Dissolved	µg/L	NS	NS	NS	<50	<50	<50	<50	<50	***5.73 J***	***7.13 J***	***6.19 J***	***2.91***	***3.47***	***4.64***	***2.75***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<1.69	<1.69	<0.7	<0.297	***2.96 J***	<1.46	***1.36 J***	<3.34	<3.34	--	***1.97 J***	***0.696***	<0.928	***1.4 J***	***1.19 J***	***0.994 J***	***1.07 J***	***1.36 J***	--	***1.3 J***	***1.08 J***	***2.69 J***	***1.96 J***	***1.76 J***	<0.96	<1.4	<1.4	--	***2.02 J***	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	<5	<5	<5	<5	<5	<1.69	<1.69	<0.7	<0.297	***1.64 J***	<1.46	***1.46 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	<0.042	<0.042	--	<0.153	<0.153	<0.14	***0.146 J***	<0.3	<0.3	<0.115	<0.37	--	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<1.7	<1.7	<1.7	<0.027	<0.0789	<0.0789	<0.033	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	1	<2	<2	<2	<2	<2	<0.84	<0.84	<0.288	<0.0087	***0.0629 J***	<0.0267	<0.05	<0.0325	<0.0325	--	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	--	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	<2	<2	<2	<2	<2	<0.84	<0.84	<0.288	***0.01 J***	<0.0267	<0.0267	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<2.1	<2.1	***7.51 J***	***3.05***	***1.8***	***0.972 J***	***1.39 J***	***0.71 J***	***0.622 J***	--	***0.75 J***	***0.599***	<0.84	<0.84	***0.763 J***	***1.09 J***	***3 J***	<0.82	--	<0.85	***0.948 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	<50	<50	<50	<50	<50	<2.1	<2.1	***2.16 J***	<0.94	<0.833	<0.833	***1.08 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***106***	***51.1***	<20	<20	<20	<9.11	***11.1 J***	<9.11	***14.9***	***4.11 J***	<0.625	<2	<6.95	<6.95	--	<5.21	<5.21	<11.5	<11.5	<10	<10	***14.7 J***	***85.2***	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	***80.6***	***48.2***	<20	<20	<20	<9.11	***11.2 J***	***19.8 J***	***3.55 J***	***1.06 J***	***8.51***	***3.14 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																							
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<2	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	--	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<4	<1	<1	<1	<1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<4	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	***0.97 J***	<0.47	***1.51 J***	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<1.79	<1.79	***2.55 J***	<1.79	<1.79	<1.79	<1.79	<1.79	<1.79	--	<1.79	<1.79	<1.79	***2.39 J***	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	***0.11 J***	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	--	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	***0.751 J***	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	***0.27 J***	***0.19 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	***0.21 J***	<0.17	<0.17	<0.17	***0.179 J***	<0.17	<0.17	<0.17	<0.17	--	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	***0.316 J***	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<10	<20	<10	<10	<10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	--	<7	<7	<7	<7	<7	<7	<7	<7	--	<7	<7
Styrene	µg/L	100	0.1	1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48
Toluene	µg/L	1000	0.15	1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	***2.86***	<0.43	<0.43	--	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	5	<5	<5	<5	<5	<5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-29A

Parameter Name	Units	GPS	DL	Nov-19	Feb-20	Jun-20	Aug-20	Nov-20	May-21	Sep-21	Mar-22	Jun-22	Sep-22	Dec-22	Jun-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics																		
Total Suspended Solids	mg/L	NS	0.581	***3.25 J***	***5***	***6.25***	***10.4***	***4.8***	***5.38***	***7.5***	***4.33 J***	--	***14.3***	--	***3.87***	***4***	***7***	***13.7***
Turbidity, Field	NTU	NS	NS	***1.33***	***4.47***	***22.71***	***63.02***	***45.29***	***56.29***	***43.58***	***48.96***	***74.41***	***5.11***	***21.07***	***59.78***	***15.27***	***55.13***	***32.22***
Turbidity, Lab	NTU	NS	0.4	***3.71***	***6.57***	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.53	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	--	<2.76	--	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***1.74 J***	***2.28***	***3.4***	***6.84***	***4.59***	***4.09***	***6.09***	***5.57***	--	***10.2***	--	***4.37***	***6.49***	***4.54***	***6.75***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***272***	***217***	***168***	***180***	***138***	***150***	***173***	***182***	--	***191***	--	***187***	***163***	***151***	***161***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<1.08	--	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	***0.131***	***0.104***	<0.049	***0.18***	<0.049	<0.051	***0.059 J***	***0.066 J***	--	***0.092 J***	--	***0.12 J***	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	***1.67 J***	--	<1.1	--	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***8.43***	***9.64***	***9.98***	***10.7***	***10.1***	***11.9***	***7.9***	***7.38***	--	***10.1***	--	***12.5***	***18.7***	***11.2***	***16.5***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<2	<3.2	<1.5	<1.5	<1.5	<1.4	<1.4	<1.8	--	<1.8	--	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.27	<0.27	<0.11	<0.11	<0.11	<0.21	<0.21	<0.24	--	<0.24	--	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***49.7***	***49.2***	***51.1***	***57***	***47.2***	***55.5***	***51***	***63.6***	--	***69.1***	--	***76***	***87***	***63.9***	***69.6***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<1	<1	<1	<1	<1	<0.96	<0.96	<0.96	--	<0.96	--	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	--	<1.96	--	<0.5	<0.5	***1.1***	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.26	--	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<0.82	<0.82	<0.85	<0.85	<0.85	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<10	***42.1***	--	<10	--	***7.9 J***	***8.31 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																		
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	--	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	--	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	--	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	--	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	--	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	--	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	--	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	--	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	--	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	--	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	--	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	--	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	--	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	--	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	--	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	--	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	--	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	--	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	--	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	--	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	--	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	--	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	--	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	--	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	--	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	--	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	--	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	--	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	--	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	--	<7	--	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	--	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	--	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	--	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	--	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	--	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	--	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	--	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	--	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	--	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	--	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	--	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	--	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-29A

Parameter Name	Units	GPS	Nov-20	May-21	Mar-22	Jun-22	Sep-22	Dec-22	Jun-23	Nov-23	Jun-24	Dec-24
Alcohols/Gycols by GC												
Acetonitrile	µg/L	NS	<404	<0.404	<404	--	--	--	--	--	--	--
Isobutanol	µg/L	2100	<553	<0.553	<553	--	--	--	--	--	--	--
Herbicides (GC)												
2,4,5-T	µg/L	70	<0.48	<0.509	<0.159	--	--	--	--	--	--	--
2,4-D	µg/L	70	<0.516	<0.546	<0.624	--	--	--	--	--	--	--
Silvex (2,4,5-TP)	µg/L	50	<0.321	<0.34	<0.147	--	--	--	--	--	--	--
Inorganics												
Cyanide	µg/L	200	<5	<0.0053	<4.3	--	--	--	--	--	--	--
Mercury	µg/L	2	<0.1	<0.00015	<0.11	--	--	--	--	--	--	--
Sulfide	µg/L	NS	<10000	***21***	<231	<231	<231	<231	<231	<231	<1410	***2930 J***
Tin	µg/L	4200	<2.4	<3	<3	--	--	--	--	--	--	--
PCBs (EPA Method 8082)												
PCB-1016	µg/L	NS	<0.313	<0.289	<0.177	--	--	--	--	--	--	--
PCB-1221	µg/L	NS	<0.313	<0.289	<0.177	--	--	--	--	--	--	--
PCB-1232	µg/L	NS	<0.313	<0.289	<0.177	--	--	--	--	--	--	--
PCB-1242	µg/L	NS	<0.313	<0.289	<0.177	--	--	--	--	--	--	--
PCB-1248	µg/L	NS	<0.253	<0.233	<0.115	--	--	--	--	--	--	--
PCB-1254	µg/L	NS	<0.253	<0.233	<0.115	--	--	--	--	--	--	--
PCB-1260	µg/L	NS	<0.253	<0.233	<0.115	--	--	--	--	--	--	--
Pesticides (EPA Method 8081A)												
4,4'-DDD	µg/L	0.73	<0.00217	<0.00933	<0.0281	--	--	--	--	--	--	--
4,4'-DDE	µg/L	0.51	<0.00253	<0.00944	<0.0281	--	--	--	--	--	--	--
4,4'-DDT	µg/L	0.51	<0.00458	<0.0133	<0.0438	--	--	--	--	--	--	--
Aldrin	µg/L	0.01	<0.00542	<0.0133	<0.0333	--	--	--	--	--	--	--
alpha-BHC	µg/L	0.028	<0.00205	<0.0111	<0.0302	--	--	--	--	--	--	--
beta-BHC	µg/L	0.042	<0.00578	<0.0144	<0.0385	--	--	--	--	--	--	--
Chlordane	µg/L	2	<0.0771	<0.244	<0.844	--	--	--	--	--	--	--
delta-BHC	µg/L	2.1	<0.00277	<0.0167	<0.0281	--	--	--	--	--	--	--
Dieldrin	µg/L	0.011	<0.00241	<0.0133	<0.0271	--	--	--	--	--	--	--
Endosulfan I	µg/L	42	<0.00241	<0.0122	<0.0344	--	--	--	--	--	--	--
Endosulfan II	µg/L	42	<0.00229	<0.009	<0.0302	--	--	--	--	--	--	--
Endosulfan sulfate	µg/L	NS	<0.00301	<0.00933	<0.0313	--	--	--	--	--	--	--
Endrin	µg/L	2	<0.00229	<0.0111	<0.0271	--	--	--	--	--	--	--
Endrin aldehyde	µg/L	2.1	<0.0088	<0.0107	<0.0302	--	--	--	--	--	--	--
gamma-BHC (Lindane)	µg/L	0.2	***0.00384 J***	<0.0156	<0.0375	--	--	--	--	--	--	--
Heptachlor	µg/L	0.4	<0.00313	<0.0133	<0.0344	--	--	--	--	--	--	--
Heptachlor epoxide	µg/L	0.2	<0.00735	<0.0101	<0.0302	--	--	--	--	--	--	--
Methoxychlor	µg/L	40	<0.00253	<0.0156	<0.0427	--	--	--	--	--	--	--
Toxaphene	µg/L	3	<0.0699	<0.456	<0.719	--	--	--	--	--	--	--
Semivolatile Organics by GC/MS												
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<1.88	<1.8	<0.643	--	--	--	--	--	--	--
1,3,5-Trinitrobenzene	µg/L	NS	<1.53	<1.46	<2.74	--	--	--	--	--	--	--
1,3-Dinitrobenzene	µg/L	1	<1.18	<1.12	<3.81	--	--	--	--	--	--	--
1,4-Naphthoquinone	µg/L	NS	<1.15	<1.1	<4.29	--	--	--	--	--	--	--
1,4-Phenylenediamine	µg/L	NS	<0.588	<0.562	<2.26	--	--	--	--	--	--	--
1-Naphthylamine	µg/L	NS	<1.04	<0.989	<2.98	--	--	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	µg/L	NS	<1.16	<1.11	<6.31	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	µg/L	700	<1.29	<1.24	<6.31	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	µg/L	16	<1.41	<1.35	<5.95	--	--	--	--	--	--	--
2,4-Dichlorophenol	µg/L	20	<1.29	<1.24	<1.01	--	--	--	--	--	--	--
2,4-Dimethylphenol	µg/L	100	<1.18	<1.12	<0.69	--	--	--	--	--	--	--
2,4-Dinitrophenol	µg/L	14	<6.71	<6.4	<15.5	--	--	--	--	--	--	--
2,4-Dinitrotoluene	µg/L	0.25	<1.29	<1.24	<7.62	--	--	--	--	--	--	--
2,6-Dichlorophenol	µg/L	NS	<1.29	<1.24	<0.821	--	--	--	--	--	--	--
2,6-Dinitrotoluene	µg/L	0.26	<1.29	<1.24	<0.619	--	--	--	--	--	--	--
2-Acetylaminofluorene	µg/L	NS	<1.41	<1.35	<3.21	--	--	--	--	--	--	--
2-Chloronaphthalene	µg/L	560	<1.53	<1.46	<0.762	--	--	--	--	--	--	--
2-Chlorophenol	µg/L	40	<1.29	<1.24	<0.643	--	--	--	--	--	--	--
2-Methylnaphthalene	µg/L	28	<1.53	<1.46	<0.702	--	--	--	--	--	--	--
2-Methylphenol (o-Cresol)	µg/L	35	<1.18	<1.12	<0.774	--	--	--	--	--	--	--
2-Naphthylamine	µg/L	0.097	<1.01	<0.966	<2.5	--	--	--	--	--	--	--
2-Nitroaniline	µg/L	NS	<1.41	<1.35	<7.02	--	--	--	--	--	--	--
2-Nitrophenol	µg/L	NS	<1.88	<1.8	<8.1	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	0.39	<2.12	<2.02	<1.67	--	--	--	--	--	--	--
3,3'-Dimethylbenzidine	µg/L	NS	<2.35	<2.25	<1.79	--	--	--	--	--	--	--
3/4-Methylphenol	µg/L	70	<0.894	<0.854	<0.833	--	--	--	--	--	--	--
3-Methylcholanthrene	µg/L	NS	<2.94	<2.81	<0.381	--	--	--	--	--	--	--
3-Nitroaniline	µg/L	NS	<1.18	<1.12	<3.21	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.94	<2.81	<8.21	--	--	--	--	--	--	--
4-Aminobiphenyl	µg/L	0.0083	<1.13	<1.08	<2.62	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	µg/L	NS	<2.24	<2.13	<0.833	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	µg/L	700	<1.12	<1.07	<1	--	--	--	--	--	--	--
4-Chloroaniline	µg/L	28	<1.41	<1.35	<0.738	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	NS	<1.53	<1.46	<0.821	--	--	--	--	--	--	--
4-Nitroaniline	µg/L	NS	<2	<1.91	<1.55	--	--	--	--	--	--	--
4-Nitrophenol	µg/L	60	<2.94	<2.81	<9.05	--	--	--	--	--	--	--
5-Nitro-o-toluidine	µg/L	NS	<3.65	<3.48	<3.33	--	--	--	--	--	--	--
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.08	<1.03	<2.26	--	--	--	--	--	--	--
Acenaphthene	µg/L	420	<1.53	<1.46	<0.762	--	--	--	--	--	--	--
Acenaphthylene	µg/L	210	<1.53	<1.46	<0.857	--	--	--	--	--	--	--
Acetophenone	µg/L	NS	<3.53	<3.37	<0.821	--	--	--	--	--	--	--
Anthracene	µg/L	2100	<1.29	<1.24	<1.04	--	--	--	--	--	--	--
Benzo (a) anthracene	µg/L	0.24	<1.29	<1.24	<1.01	--	--	--	--	--	--	--
Benzo (a) pyrene	µg/L	0.2	<1.76	<1.69	<9.64	--	--	--	--	--	--	--
Benzo (b) fluoranthene	µg/L	0.24	<1.41	<1.35	<5.83	--	--	--	--	--	--	--
Benzo (g,h,i) perylene	µg/L	21	<1.88	<1.8	<7.5	--	--	--	--	--	--	--
Benzo (k) fluoranthene	µg/L	2.4	<1.41	<1.35	<2.62	--	--	--	--	--	--	--
Benzyl alcohol	µg/L	700	<1.29	<1.24	<1.55	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	µg/L	NS	<1.29	<1.24	<0.905	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	µg/L	0.16	<1.29	<1.24	<0.976	--	--	--	--	--	--	--
Bis(2-chloroisopropyl) ether	µg/L	300	<1.41	<1.35	<0.643	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	6	<3.06	<2.92	<6.55	--	--	--	--	--	--	--
Butyl benzyl phthalate	µg/L	140	<1.76	<1.69	<6.43	--	--	--	--	--	--	--
Chlorobenzilate	µg/L	NS	<3.41	<3.26	<4.29	--	--	--	--	--	--	--
Chrysene	µg/L	24	<1.29	<1.24	<1.04	--	--	--	--	--	--	--
Diallate (cis or trans)	µg/L	NS	<1.53	<1.46	<4.76	--	--	--	--	--	--	--
Dibenzo (a,h) anthracene	µg/L	0.024	<2.24	<2.13	<4.64	--	--	--	--	--	--	--
Dibenzofuran	µg/L	7	<1.41	<1.35	<0.881	--	--	--	--	--	--	--
Diethyl phthalate	µg/L	5600	<1.29	<1.24	<2.02	--	--	--	--	--	--	--
Dimethoate	µg/L	1.4	<1.18	<1.12	<4.29	--	--	--	--	--	--	--
Dimethyl phthalate	µg/L	NS	<2.94	<2.81	<1.19	--	--	--	--	--	--	--
Di-n-butyl phthalate	µg/L	700	<1.41	<1.35	<6.67	--	--	--	--	--	--	--
Di-n-octyl phthalate	µg/L	140	<3.53	<3.37	<8.33	--	--	--	--	--	--	--
Dinoseb	µg/L	7	<0.588	<0.562	<2.86	--	--	--	--	--	--	--
Diphenylamine	µg/L	180	<1.04	<0.989	<7.14	--	--	--	--	--	--	--
Disulfoton	µg/L	0.7	<0.753	<0.719	<2.86	--	--	--	--	--	--	--
Ethyl Methanesulfonate	µg/L	NS	<0.588	<0.562	<4.29	--	--	--	--	--	--	--
Famphur	µg/L	NS	<0.753	<0.719	<4.52	--	--	--	--	--	--	--
Fluoranthene	µg/L	280	<1.11	<1.06	<2.02	--	--	--	--	--	--	--
Fluorene	µg/L	280	<1.53	<1.46	<0.94	--	--	--	--	--	--	--
Hexachlorobenzene	µg/L	1	<1.65	<1.57	<0.833	--	--	--	--	--	--	--
Hexachlorobutadiene	µg/L	1	<1.41	<1.35	<1.02	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	µg/L	50	<2.47	<2.36	<6.07	--	--	--	--	--	--	--
Hexachloroethane	µg/L	1	<1.53	<1.46	<1.15	--	--	--	--	--	--	--
Hexachloropropene	µg/L	NS	<1.88	<1.8	<3.1	--	--	--	--	--	--	--
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<2.35	<2.25	<5	--	--	--	--	--	--	--
Isodrin	µg/L	NS	<0.682	<0.652	<5.6	--	--	--	--	--	--	--
Isophorone	µg/L	100	<1.16	<1.11	<1.11	--	--	--	--	--	--	--
Isosafrole	µg/L	NS	<0.588	<0.562	<2.74	--	--	--	--	--	--	--
Kepone	µg/L	NS	<2.12	<2.02	<1.19	--	--	--	--	--	--	--
Methapyrilene	µg/L	NS	<2.24	<2.13	<0.905	--	--	--	--	--	--	--
Methyl Methanesulfonate	µg/L	1.8	<0.588	<0.562	<3.93	--	--	--	--	--	--	--
Nitrobenzene	µg/L	14	<1.29	<1.24	<0.952	--	--	--	--	--	--	--
N-Nitrosodiethylamine	µg/L	NS	<0.588	<0.562	<4.05	--	--	--	--	--	--	--
N-Nitrosodimethylamine	µg/L	0.0034	<1.07	<1.02	<0.857	--	--	--	--	--	--	--
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.588	<0.562	<4.64	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	NS	<1.18	<1.12	<1.1	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	µg/L	36	<1.12	<1.07	<0.893	--	--	--	--	--	--	--
N-Nitrosomethylethylamine	µg/L	0.008	<1.53	<1.46	<5.83	--	--	--	--	--	--	--
N-Nitrosopiperidine	µg/L	NS	<0.588	<0.562	<3.21	--	--	--	--	--	--	--
N-Nitrosopyrrolidine	µg/L	0.083	<0.588	<0.562	<4.29	--	--	--	--	--	--	--
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.588	<0.562	<3.81	--	--	--	--	--	--	--
o-Toluidine	µg/L	11	<0.788	<0.753	<3.45	--	--	--	--	--	--	--
p-(Dimethylamino)azobenzene	µg/L	NS	<0.918	<0.876	<2.62	--	--	--	--	--	--	--
Parathion-ethyl	µg/L	NS	<1.88	<1.8	<2.62	--	--	--	--	--	--	--
Parathion-methyl	µg/L	1	<0.882	<0.843	<2.74	--	--	--	--	--	--	--
Pentachlorobenzene	µg/L	NS	<0.682	<0.652	<3.33	--	--	--	--	--	--	--
Pentachloronitrobenzene	µg/L	NS	<0.588	<0.562	<6.9	--	--	--	--	--	--	--
Pentachlorophenol	µg/L	1	<2.71	<2.58	<11.4	--	--	--	--	--	--	--
Phenacetin	µg/L	NS	<2.12	<2.02	<2.26	--	--	--	--	--	--	--
Phenanthrene	µg/L	210	<1.29	<1.24	<0.94	--	--	--	--	--	--	--
Phenol	µg/L	2000	<2.82	<2.7	<1.31	--	--	--	--	--	--	--
Phorate	µg/L	1.4	<0.588	<0.562	<3.81	--	--	--	--	--	--	--
Pronamide	µg/L	5	<0.588	<0.562	<3.21	--	--	--	--	--	--	--
Pyrene	µg/L	210	<1.65	<1.57	<0.94	--	--	--	--	--	--	--
Safrole	µg/L	NS	<0.588	<0.562	<3.33	--	--	--	--	--	--	--
Thionazin	µg/L	NS	<0.894	<0.854	<4.17	--	--	--	--	--	--	--
Volatile Organic Compounds												
1,1-Dichloropropene	µg/L	NS	<0.43	<0.43	<0.43	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	70	<0.75	<0.75	<0.75	--	--	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	600	<0.3	<0.3	<0.3	--	--	--	--	--	--	--
1,3-Dichloropropane	µg/L	NS	<0.4	<0.4	<0.4	--	--	--	--	--	--	--
2,2-Dichloropropane	µg/L	NS	<0.69	<0.69	<0.69	--	--	--	--	--	--	--
Acrolein	µg/L	NS	<3.6	<3.6	<3.6	--	--	--	--	--	--	--
Allyl chloride	µg/L	NS	<0.7	<0.7	<0.7	--	--	--	--	--	--	--
Chloroprene	µg/L	NS	<0.23	<0.23	<0.23	--	--	--	--	--	--	--
Dichlorodifluoromethane	µg/L	1000	<0.25	<0.25	<0.25	--	--	--	--	--	--	--
Ethyl Methacrylate	µg/L	NS	<0.68	<0.68	<0.68	--	--	--	--	--	--	--
Methacrylonitrile	µg/L	NS	<3.3	<3.3	<3.3	--	--	--	--	--	--	--
Methyl Methacrylate	µg/L	NS	<0.76	<0.76	<0.76	--	--	--	--	--	--	--
Naphthalene	µg/L	100	<3	<3	<3	--	--	--	--	--	--	--
Propionitrile	µg/L	NS	<3.4	<3.4	<3.4	--	--	--	--	--	--	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-31A

Parameter Name	Units	GPS	DL	Nov-19	Feb-20	Jun-20	Aug-20	Nov-20	May-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jul-24	Dec-24
Appendix I Inorganics																
Total Suspended Solids	mg/L	NS	0.581	***9***	***2.63***	***19***	***10.4***	***7.25***	***1.88***	***1.63 J***	<0.638	***5***	***6.07***	***1.25 J***	***2.25***	<3.7
Turbidity, Field	NTU	NS	NS	***2.06***	***0.26***	***1.79***	***26.27***	***8.36***	***7***	***5.51***	***0.86***	***74.5***	***4.71***	***4.04***	***2.38***	***5.3***
Turbidity, Lab	NTU	NS	0.4	***13.8***	***3.72***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.53	<0.58	<0.51	<0.51	***0.771 J***	<1.1	<1.1	<0.69	***2.22***	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***2.95***	***1.42 J***	***2.47***	***3.83***	***2.57***	***0.821 J***	<0.75	<0.75	<3	***0.602 J***	***0.571 J***	<0.53	***0.562 J***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***602***	***591***	***279***	***317***	***449***	***160***	***205***	***145***	***441***	***220***	***247***	***243***	***279***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	***0.179***	***0.08 J***	***0.316***	<0.049	***0.424***	***0.26***	***2.04***	***0.302***	***0.984***	***0.34***	<0.1	***0.16 J***	***0.161 J***
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<0.98	<1.1	***1.34 J***	<1.1	***2.5 J***	***1.31 J***	<1.1	<1.1	***7.31***	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***13.4***	***12.4***	***13.6***	***12***	***10***	***10.4***	***3.37***	***3.01***	***32.2***	***3.75***	***4.62***	***3.48***	***2.09***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<2	<3.2	***1.84 J***	<1.5	***5.01***	***3.47 J***	***9.84***	***3.31 J***	***21.3***	***3.61 J***	<1.8	***1.91 J***	***2.6 J***
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***1.15***	<0.27	***1.37***	<0.11	***0.583***	***0.609***	<0.21	<0.24	***1.68***	***0.283 J***	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***20.4***	***21.6***	***27.5***	***47***	***52.8***	***53.4***	***47.7***	***28.1***	***112***	***39.7***	***30.8***	***30.3***	***32.3***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<1	<1	<1	<1	***1.13 J***	<0.96	<0.96	<0.96	***1.86 J***	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.27	<0.26	<0.26	<0.26	***0.286 J***	<0.26	***0.355 J***	<0.26	***0.777 J***	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<0.82	<0.82	***0.997 J***	<0.85	***0.873 J***	<1.1	<1.1	***1.62 J***	***3.26 J***	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	***13.8 J***	<10	<10	<10	***18.1 J***	***23.5***	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	***1.26***	***0.724 J***	***0.774 J***	***1.4***	<0.22	***0.306 J***	<0.22	***0.475 J***	<0.22	***1.23***	***0.859 J***	***0.358 J***	***0.484 J***
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	***5.19 J***	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	***11.8***	<3.1	***3.74 J***	<3.1	***4.88 J***	<3.1	***9.48 J***	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	***0.457 J***	***0.266 J***	***0.225 J***	***0.288 J***	***0.253 J***	<0.22	<0.22	<0.22	***0.264 J***	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	***0.232 J***	<0.21	<0.21	<0.21	<0.21	<0.21	***0.222 J***	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	***0.442 J***	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	***0.541 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-31A

Parameter Name	Units	GPS	Nov-20	Feb-21	May-21	Aug-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jul-24	Dec-24
Alcohols/Gycols by GC													
Acetonitrile	µg/L	NS	<404	--	<404	--	--	<404	--	--	--	--	--
Isobutanol	µg/L	2100	<553	--	<553	--	--	<553	--	--	--	--	--
Herbicides (GC)													
2,4,5-T	µg/L	70	<0.502	--	<0.521	--	--	<0.156	--	--	--	--	--
2,4-D	µg/L	70	<0.539	--	<0.559	--	--	<0.609	--	--	--	--	--
Silvex (2,4,5-TP)	µg/L	50	<0.335	--	<0.348	--	--	<0.143	--	--	--	--	--
Inorganics													
Cyanide	µg/L	200	<5	--	<5.3	--	--	<4.3	--	--	--	--	--
Mercury	µg/L	2	<0.1	--	<0.15	--	--	<0.11	--	--	--	--	--
Sulfide	µg/L	NS	<10000	--	<231	--	--	<231	--	--	--	--	--
Tin	µg/L	4200	<2.4	--	<3	--	--	<3	--	--	--	--	--
PCBs (EPA Method 8082)													
PCB-1016	µg/L	NS	<0.317	--	<0.295	--	--	<0.193	--	--	--	--	--
PCB-1221	µg/L	NS	<0.317	--	<0.295	--	--	<0.193	--	--	--	--	--
PCB-1232	µg/L	NS	<0.317	--	<0.295	--	--	<0.193	--	--	--	--	--
PCB-1242	µg/L	NS	<0.317	--	<0.295	--	--	<0.193	--	--	--	--	--
PCB-1248	µg/L	NS	<0.256	--	<0.239	--	--	<0.125	--	--	--	--	--
PCB-1254	µg/L	NS	<0.256	--	<0.239	--	--	<0.125	--	--	--	--	--
PCB-1260	µg/L	NS	<0.256	--	<0.239	--	--	<0.125	--	--	--	--	--
Pesticides (EPA Method 8081A)													
4,4'-DDD	µg/L	0.73	<0.0022	--	<0.00955	--	--	<0.0307	--	--	--	--	--
4,4'-DDE	µg/L	0.51	***0.0101 J***	--	<0.00966	--	--	<0.0307	--	--	--	--	--
4,4'-DDT	µg/L	0.51	<0.00463	--	<0.0136	--	--	<0.0477	--	--	--	--	--
Aldrin	µg/L	0.01	***0.00639 J***	--	<0.0136	--	--	<0.0364	--	--	--	--	--
alpha-BHC	µg/L	0.028	<0.00207	--	<0.0114	--	--	<0.033	--	--	--	--	--
beta-BHC	µg/L	0.042	<0.00585	--	<0.0148	--	--	<0.042	--	--	--	--	--
Chlordane	µg/L	2	<0.078	--	<0.25	--	--	<0.92	--	--	--	--	--
delta-BHC	µg/L	2.1	***0.00462 J***	--	<0.017	--	--	<0.0307	--	--	--	--	--
Dieldrin	µg/L	0.011	***0.00422 J***	--	<0.0136	--	--	<0.0295	--	--	--	--	--
Endosulfan I	µg/L	42	***0.0531***	***0.00598 J***	***0.026 J***	<0.0126	***0.058***	<0.0375	<0.0384	<0.033	<0.0375	<0.0263	<0.0261
Endosulfan II	µg/L	42	***0.0125 J***	--	<0.0092	--	--	<0.033	--	--	--	--	--
Endosulfan sulfate	µg/L	NS	<0.00305	--	<0.00955	--	--	<0.0341	--	--	--	--	--
Endrin	µg/L	2	***0.00985 J***	--	<0.0114	--	--	<0.0295	--	--	--	--	--
Endrin aldehyde	µg/L	2.1	<0.0089	--	<0.0109	--	--	<0.033	--	--	--	--	--
gamma-BHC (Lindane)	µg/L	0.2	***0.00481 J***	--	<0.0159	--	--	<0.0409	--	--	--	--	--
Heptachlor	µg/L	0.4	<0.00317	--	<0.0136	--	--	<0.0375	--	--	--	--	--
Heptachlor epoxide	µg/L	0.2	<0.00744	--	<0.0103	--	--	<0.033	--	--	--	--	--
Methoxychlor	µg/L	40	<0.00256	--	<0.0159	--	--	<0.0466	--	--	--	--	--
Toxaphene	µg/L	3	<0.0707	--	<0.466	--	--	<0.784	--	--	--	--	--
Semivolatile Organics by GC/MS													
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<1.68	--	<1.9	--	--	<0.563	--	--	--	--	--
1,3,5-Trinitrobenzene	µg/L	NS	<1.37	--	<1.55	--	--	<2.4	--	--	--	--	--
1,3-Dinitrobenzene	µg/L	1	<1.05	--	<1.19	--	--	<3.33	--	--	--	--	--
1,4-Naphthoquinone	µg/L	NS	<1.03	--	<1.17	--	--	<3.75	--	--	--	--	--
1,4-Phenylenediamine	µg/L	NS	<0.526	--	<0.595	--	--	<1.98	--	--	--	--	--
1-Naphthylamine	µg/L	NS	<0.926	--	<1.05	--	--	<2.6	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	µg/L	NS	<1.04	--	<1.18	--	--	<5.52	--	--	--	--	--
2,4,5-Trichlorophenol	µg/L	700	<1.16	--	<1.31	--	--	<5.52	--	--	--	--	--
2,4,6-Trichlorophenol	µg/L	16	<1.26	--	<1.43	--	--	<5.21	--	--	--	--	--
2,4-Dichlorophenol	µg/L	20	<1.16	--	<1.31	--	--	<0.885	--	--	--	--	--
2,4-Dimethylphenol	µg/L	100	<1.05	--	<1.19	--	--	<0.604	--	--	--	--	--
2,4-Dinitrophenol	µg/L	14	<6	--	<6.79	--	--	<13.5	--	--	--	--	--
2,4-Dinitrotoluene	µg/L	0.25	<1.16	--	<1.31	--	--	<6.67	--	--	--	--	--
2,6-Dichlorophenol	µg/L	NS	<1.16	--	<1.31	--	--	<0.719	--	--	--	--	--
2,6-Dinitrotoluene	µg/L	0.26	<1.16	--	<1.31	--	--	<0.542	--	--	--	--	--
2-Acetylaminofluorene	µg/L	NS	<1.26	--	<1.43	--	--	<2.81	--	--	--	--	--
2-Chloronaphthalene	µg/L	560	<1.37	--	<1.55	--	--	<0.667	--	--	--	--	--
2-Chlorophenol	µg/L	40	<1.16	--	<1.31	--	--	<0.563	--	--	--	--	--
2-Methylnaphthalene	µg/L	28	<1.37	--	<1.55	--	--	<0.615	--	--	--	--	--
2-Methylphenol (o-Cresol)	µg/L	35	<1.05	--	<1.19	--	--	<0.677	--	--	--	--	--
2-Naphthylamine	µg/L	0.097	<0.905	--	<1.02	--	--	<2.19	--	--	--	--	--
2-Nitroaniline	µg/L	NS	<1.26	--	<1.43	--	--	<6.15	--	--	--	--	--
2-Nitrophenol	µg/L	NS	<1.68	--	<1.9	--	--	<7.08	--	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	0.39	<1.89	--	<2.14	--	--	<1.46	--	--	--	--	--
3,3'-Dimethylbenzidine	µg/L	NS	<2.11	--	<2.38	--	--	<1.56	--	--	--	--	--
3/4-Methylphenol	µg/L	70	<0.8	--	<0.905	--	--	<0.729	--	--	--	--	--
3-Methylcholanthrene	µg/L	NS	<2.63	--	<2.98	--	--	<0.333	--	--	--	--	--
3-Nitroaniline	µg/L	NS	<1.05	--	<1.19	--	--	<2.81	--	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.63	--	<2.98	--	--	<7.19	--	--	--	--	--
4-Aminobiphenyl	µg/L	0.0083	<1.01	--	<1.14	--	--	<2.29	--	--	--	--	--
4-Bromophenyl phenyl ether	µg/L	NS	<2	--	<2.26	--	--	<0.729	--	--	--	--	--
4-Chloro-3-methylphenol	µg/L	700	<1	--	<1.13	--	--	<0.875	--	--	--	--	--
4-Chloroaniline	µg/L	28	<1.26	--	<1.43	--	--	<0.646	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	NS	<1.37	--	<1.55	--	--	<0.719	--	--	--	--	--
4-Nitroaniline	µg/L	NS	<1.79	--	<2.02	--	--	<1.35	--	--	--	--	--
4-Nitrophenol	µg/L	60	<2.63	--	<2.98	--	--	<7.92	--	--	--	--	--
5-Nitro-o-toluidine	µg/L	NS	<3.26	--	<3.69	--	--	<2.92	--	--	--	--	--
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<0.968	--	<1.1	--	--	<1.98	--	--	--	--	--
Acenaphthene	µg/L	420	<1.37	--	<1.55	--	--	<0.667	--	--	--	--	--
Acenaphthylene	µg/L	210	<1.37	--	<1.55	--	--	<0.75	--	--	--	--	--
Acetophenone	µg/L	NS	<3.16	--	<3.57	--	--	<0.719	--	--	--	--	--
Anthracene	µg/L	2100	<1.16	--	<1.31	--	--	<0.906	--	--	--	--	--
Benzo (a) anthracene	µg/L	0.24	<1.16	--	<1.31	--	--	<0.885	--	--	--	--	--
Benzo (a) pyrene	µg/L	0.2	<1.58	--	<1.79	--	--	<8.44	--	--	--	--	--
Benzo (b) fluoranthene	µg/L	0.24	<1.26	--	<1.43	--	--	<5.1	--	--	--	--	--
Benzo (g,h,i) perylene	µg/L	21	<1.68	--	<1.9	--	--	<6.56	--	--	--	--	--
Benzo (k) fluoranthene	µg/L	2.4	<1.26	--	<1.43	--	--	<2.29	--	--	--	--	--
Benzyl alcohol	µg/L	700	<1.16	--	<1.31	--	--	<1.35	--	--	--	--	--
Bis(2-chloroethoxy)methane	µg/L	NS	<1.16	--	<1.31	--	--	<0.792	--	--	--	--	--
Bis(2-chloroethyl)ether	µg/L	0.16	<1.16	--	<1.31	--	--	<0.854	--	--	--	--	--
Bis(2-chloroisopropyl) ether	µg/L	300	<1.26	--	<1.43	--	--	<0.563	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	6	<2.74	--	<3.1	--	--	<5.73	--	--	--	--	--
Butyl benzyl phthalate	µg/L	140	<1.58	--	<1.79	--	--	<5.63	--	--	--	--	--
Chlorobenzilate	µg/L	NS	<3.05	--	<3.45	--	--	<3.75	--	--	--	--	--
Chrysene	µg/L	24	<1.16	--	<1.31	--	--	<0.906	--	--	--	--	--
Diallate (cis or trans)	µg/L	NS	<1.37	--	<1.55	--	--	<4.17	--	--	--	--	--
Dibenzo (a,h) anthracene	µg/L	0.024	<2	--	<2.26	--	--	<4.06	--	--	--	--	--
Dibenzofuran	µg/L	7	<1.26	--	<1.43	--	--	<0.771	--	--	--	--	--
Diethyl phthalate	µg/L	5600	<1.16	--	<1.31	--	--	<1.77	--	--	--	--	--
Dimethoate	µg/L	1.4	<1.05	--	<1.19	--	--	<3.75	--	--	--	--	--
Dimethyl phthalate	µg/L	NS	<2.63	--	<2.98	--	--	<1.04	--	--	--	--	--
Di-n-butyl phthalate	µg/L	700	<1.26	--	<1.43	--	--	<5.83	--	--	--	--	--
Di-n-octyl phthalate	µg/L	140	<3.16	--	<3.57	--	--	<7.29	--	--	--	--	--
Dinoseb	µg/L	7	<0.526	--	<0.595	--	--	<2.5	--	--	--	--	--
Diphenylamine	µg/L	180	<0.926	--	<1.05	--	--	<6.25	--	--	--	--	--
Disulfoton	µg/L	0.7	<0.674	--	<0.762	--	--	<2.5	--	--	--	--	--
Ethyl Methanesulfonate	µg/L	NS	<0.526	--	<0.595	--	--	<3.75	--	--	--	--	--
Famphur	µg/L	NS	<0.674	--	<0.762	--	--	<3.96	--	--	--	--	--
Fluoranthene	µg/L	280	<0.989	--	<1.12	--	--	<1.77	--	--	--	--	--
Fluorene	µg/L	280	<1.37	--	<1.55	--	--	<0.823	--	--	--	--	--
Hexachlorobenzene	µg/L	1	<1.47	--	<1.67	--	--	<0.729	--	--	--	--	--
Hexachlorobutadiene	µg/L	1	<1.26	--	<1.43	--	--	<0.896	--	--	--	--	--
Hexachlorocyclopentadiene	µg/L	50	<2.21	--	<2.5	--	--	<5.31	--	--	--	--	--
Hexachloroethane	µg/L	1	<1.37	--	<1.55	--	--	<1.01	--	--	--	--	--
Hexachloropropene	µg/L	NS	<1.68	--	<1.9	--	--	<2.71	--	--	--	--	--
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<2.11	--	<2.38	--	--	<4.38	--	--	--	--	--
Isodrin	µg/L	NS	<0.611	--	<0.69	--	--	<4.9	--	--	--	--	--
Isophorone	µg/L	100	<1.04	--	<1.18	--	--	<0.969	--	--	--	--	--
Isosafrole	µg/L	NS	<0.526	--	<0.595	--	--	<2.4	--	--	--	--	--
Kepone	µg/L	NS	<1.89	--	<2.14	--	--	<1.04	--	--	--	--	--
Methapyrilene	µg/L	NS	<2	--	<2.26	--	--	<0.792	--	--	--	--	--
Methyl Methanesulfonate	µg/L	1.8	<0.526	--	<0.595	--	--	<3.44	--	--	--	--	--
Nitrobenzene	µg/L	14	<1.16	--	<1.31	--	--	<0.833	--	--	--	--	--
N-Nitrosodiethylamine	µg/L	NS	<0.526	--	<0.595	--	--	<3.54	--	--	--	--	--
N-Nitrosodimethylamine	µg/L	0.0034	<0.958	--	<1.08	--	--	<0.75	--	--	--	--	--
N-Nitrosodi-n-butylamine	µg/L	0.032	<0.526	--	<0.595	--	--	<4.06	--	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	NS	<1.05	--	<1.19	--	--	<0.958	--	--	--	--	--
N-Nitrosodiphenylamine	µg/L	36	<1	--	<1.13	--	--	<0.781	--	--	--	--	--
N-Nitrosomethylethylamine	µg/L	0.008	<1.37	--	<1.55	--	--	<5.1	--	--	--	--	--
N-Nitrosopiperidine	µg/L	NS	<0.526	--	<0.595	--	--	<2.81	--	--	--	--	--
N-Nitrosopyrrolidine	µg/L	0.083	<0.526	--	<0.595	--	--	<3.75	--	--	--	--	--
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.526	--	<0.595	--	--	<3.33	--	--	--	--	--
o-Toluidine	µg/L	11	<0.705	--	<0.798	--	--	<3.02	--	--	--	--	--
p-(Dimethylamino)azobenzene	µg/L	NS	<0.821	--	<0.929	--	--	<2.29	--	--	--	--	--
Parathion-ethyl	µg/L	NS	<1.68	--	<1.9	--	--	<2.29	--	--	--	--	--
Parathion-methyl	µg/L	1	<0.789	--	<0.893	--	--	<2.4	--	--	--	--	--
Pentachlorobenzene	µg/L	NS	<0.611	--	<0.69	--	--	<2.92	--	--	--	--	--
Pentachloronitrobenzene	µg/L	NS	<0.526	--	<0.595	--	--	<6.04	--	--	--	--	--
Pentachlorophenol	µg/L	1	<2.42	--	<2.74	--	--	<10	--	--	--	--	--
Phenacetin	µg/L	NS	<1.89	--	<2.14	--	--	<1.98	--	--	--	--	--
Phenanthrene	µg/L	210	<1.16	--	<1.31	--	--	<0.823	--	--	--	--	--
Phenol	µg/L	2000	<2.53	--	<2.86	--	--	<1.15	--	--	--	--	--
Phorate	µg/L	1.4	<0.526	--	<0.595	--	--	<3.33	--	--	--	--	--
Pronamide	µg/L	5	<0.526	--	<0.595	--	--	<2.81	--	--	--	--	--
Pyrene	µg/L	210	<1.47	--	<1.67	--	--	<0.823	--	--	--	--	--
Safrole	µg/L	NS	<0.526	--	<0.595	--	--	<2.92	--	--	--	--	--
Thionazin	µg/L	NS	<0.8	--	<0.905	--	--	<3.65	--	--	--	--	--
Volatile Organic Compounds													
1,1-Dichloropropene	µg/L	NS	<0.43	--	<0.43	--	--	<0.43	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	70	<0.75	--	<0.75	--	--	<0.75	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	600	<0.3	--	<0.3	--	--	<0.3	--	--	--	--	--
1,3-Dichloropropane	µg/L	NS	<0.4	--	<0.4	--	--	<0.4	--	--	--	--	--
2,2-Dichloropropane	µg/L	NS	<0.69	--	<0.69	--	--	<0.69	--	--	--	--	--
Acrolein	µg/L	NS	<3.6	--	<3.6	--	--	<3.6	--	--	--	--	--
Allyl chloride	µg/L	NS	<0.7	--	<0.7	--	--	<0.7	--	--	--	--	--
Chloroprene	µg/L	NS	<0.23	--	<0.23	--	--	<0.23	--	--	--	--	--
Dichlorodifluoromethane	µg/L	1000	<0.25	--	<0.25	--	--	<0.25	--	--	--	--	--
Ethyl Methacrylate	µg/L	NS	<0.68	--	<0.68	--	--	<0.68	--	--	--	--	--
Methacrylonitrile	µg/L	NS	<3.3	--	<3.3	--	--	<3.3	--	--	--	--	--
Methyl Methacrylate	µg/L	NS	<0.76	--	<0.76	--	--	<0.76	--	--	--	--	--
Naphthalene	µg/L	100	<3	--	<3	--	--	<3	--	--	--	--	--
Propionitrile	µg/L	NS	<3.4	--	<3.4	--	--	<3.4	--	--	--	--	--

Detections at or above the RL are shown in bold italics on gray background.
Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.
NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-33A

Parameter Name	Units	GPS	DL	Nov-19	Feb-20	Jun-20	Aug-20	Nov-20	Jun-21	Aug-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jun-24	Aug-24	Dec-24
Appendix I Inorganics																		
Total Suspended Solids	mg/L	NS	0.581	***47***	***52***	***5.25***	***74***	***8.75***	***50.3***	***29.9***	***8.33***	***7.62***	***14.8***	***4.5***	Dry	***59***	***52***	***43***
Turbidity, Field	NTU	NS	NS	***97.42***	***17.14***	***22.42***	***506.36***	***82.5***	***8.74***	***33.68***	***10.46***	***28.51***	***11.49***	***5.19***	--	***51.45***	***6.21***	***13.51***
Turbidity, Lab	NTU	NS	0.4	***68.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.53	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<1.1	***0.846 J***	<0.69	<1	--	<1	--	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***42.4***	***80.9***	***5.23***	***65.8***	***17.9***	***35.3***	***52.7***	***18.4***	***11.3***	***13.8***	***1.16 J***	--	***24.3***	***51.8***	***112***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***144***	***176***	***105***	***203***	***177***	***168***	***149***	***152***	***176***	***138***	***108***	--	***255***	--	***199***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	--	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.039	<0.039	<0.049	<0.049	<0.049	<0.051	***0.098 J***	<0.051	***0.062 J***	***0.108***	***0.113 J***	--	<0.1	--	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.2	--	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***3***	***2.59***	***0.478 J***	***2.34***	***1.83***	***3.2***	***3.2***	***2.03***	***0.503***	***0.743***	***0.396 J***	--	***4.51***	--	***2.4***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<2	<3.2	<1.5	<1.5	<1.5	<1.4	<1.4	<1.4	<1.8	<1.8	<1.8	--	***4.25 J***	--	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.27	<0.27	<0.11	***0.316 J***	***0.116 J***	<0.21	***0.303 J***	<0.21	<0.24	<0.24	<0.24	--	***0.692***	--	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***2.65 J***	***2.37 J***	***2.79 J***	***2.89 J***	***3.32 J***	***2.95 J***	***2.95 J***	<1.9	***2.82 J***	***5.16***	<1.9	--	***3.31 J***	--	***2.15 J***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<1	<1	<1	<1	<1	<0.96	<0.96	<0.96	***1.56 J***	<0.96	<1.4	--	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.42	<0.49	<0.49	<0.5	--	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	***0.91 J***	<0.26	<0.26	<0.26	<0.26	--	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<0.82	<0.82	<0.85	***2.91 J***	***1.16 J***	<1.1	<1.1	<1.1	***1.15 J***	***2.48 J***	<1.1	--	***1.11 J***	--	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	--	<20	--	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																		
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	--	***0.231 J***
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	--	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	--	<2.1
Acetone	µg/L	6300	1.79	<3.1	***3.69 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	***37.7***	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	--	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	***0.614***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	--	***2.45***
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	--	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	--	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	***1.27***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	--	***2.37***
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	--	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	--	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	--	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	--	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	--	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--	<7	--	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	***0.819 J***	<0.37	<0.37	<0.37	<0.37	--	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	--	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	--	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	--	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	--	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-33A

Parameter Name	Units	GPL	Sep-21	Sep-22
Alcohols/Glycols by GC				
Acronitrile	ug/L	NS	<404	<404
Isobutanol	ug/L	4100	<263	<263
Herbicides (GC)				
2,4,5-T	ug/L	70	<0.161	--
2,4-D	ug/L	70	<0.629	<2
Silvex (2,4,5-TP)	ug/L	50	<0.148	<0.5
Inorganics				
Cyanide	ug/L	200	<5.3	<8.3
Mercury	ug/L	2	<0.15	<0.11
Sulfide	ug/L	NS	<201	<201
TOC	ug/L	4200	<3	<3
PCBs (EPA Method 8082)				
PCB-1016	ug/L	NS	<0.295	<0.179
PCB-1221	ug/L	NS	<0.295	<0.177
PCB-1232	ug/L	NS	<0.295	<0.179
PCB-1242	ug/L	NS	<0.295	<0.177
PCB-1248	ug/L	NS	<0.239	<0.135
PCB-1254	ug/L	NS	<0.239	<0.135
PCB-1260	ug/L	NS	<0.239	<0.135
Pesticides (EPA Method 8081A)				
4,4'-DDD	ug/L	0.73	<0.00955	<0.0285
4,4'-DDE	ug/L	0.51	<0.00966	<0.0285
4,4'-DDT	ug/L	0.51	<0.0136	<0.0428
Aldrin	ug/L	0.01	<0.0136	<0.0333
alpha-BHC	ug/L	0.028	<0.0114	<0.0302
beta-BHC	ug/L	0.042	<0.0148	<0.0285
Chlordane	ug/L	2	<0.26	<0.0344
delta-BHC	ug/L	2.1	<0.017	<0.0285
Dieldrin	ug/L	0.011	<0.0136	<0.0375
Endosulfan I	ug/L	42	<0.0125	<0.0344
Endosulfan II	ug/L	42	<0.0092	<0.0302
Endosulfan sulfate	ug/L	NS	<0.00955	<0.0313
Endrin	ug/L	2	<0.0114	<0.0271
Endrin aldehyde	ug/L	2.1	<0.0109	<0.0365
gamma-BHC (Lindane)	ug/L	0.2	<0.0139	<0.03575
Heptachlor	ug/L	0.4	<0.0136	<0.0344
Heptachlor epoxide	ug/L	0.2	<0.0103	<0.0302
Methoxychlor	ug/L	40	<0.0139	<0.0464
Toxaphene	ug/L	3	<0.466	<0.716
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<1.08	<0.993
1,2,3-Trichlorobenzene	ug/L	NS	<1.37	<2.4
1,3-Dinitrobenzene	ug/L	1	<1.05	<3.33
1,4-Naphthoquinone	ug/L	NS	<1.03	<3.72
1,4-Phenylenediamine	ug/L	NS	<0.526	<1.98
1-Naphthylamine	ug/L	NS	<0.316	<2.6
2,3,4,6-Tetrachlorophenol	ug/L	NS	<1.04	<5.52
2,4,5-Trichlorophenol	ug/L	700	<1.16	<5.52
2,4,6-Trichlorophenol	ug/L	16	<1.26	<5.71
2,4-Dichlorophenol	ug/L	20	<1.16	<1.895
2,4-Dimethylphenol	ug/L	100	<1.05	<1.694
2,4-Dinitrophenol	ug/L	14	76	<19.5
2,4-Dinitrotoluene	ug/L	0.25	<1.16	<0.87
2,6-Dichlorophenol	ug/L	765	<1.16	<0.719
2,6-Dinitrotoluene	ug/L	0.26	<1.16	<0.545
2-Acetylaminofluorene	ug/L	NS	<1.26	<2.83
2-Chloronaphthalene	ug/L	560	<1.37	<0.909
2-Chlorophenol	ug/L	40	<1.16	<0.595
2-Methylnaphthalene	ug/L	40	<1.37	<0.93
2-Methylphenol (o-Cresol)	ug/L	35	<1.05	<0.677
2-Naphthylamine	ug/L	0.057	<0.905	<2.32
2-Nitroaniline	ug/L	NS	<1.26	<6.15
2-Nitrophenol	ug/L	NS	<1.68	<7.89
3,3'-Dichlorobenzidine	ug/L	0.39	<1.89	<1.46
3,3'-Dimethylbenzidine	ug/L	NS	<2.11	<1.56
3/4-Methylphenol	ug/L	70	<0.8	<0.729
3-Methylcholanthrene	ug/L	NS	<2.63	<2.53
3-Nitroaniline	ug/L	NS	<1.05	<2.81
4,6-Dinitro-2-methylphenol	ug/L	NS	<2.63	<7.19
4-Aminobiphenyl	ug/L	0.0083	<1.01	<2.29
4-Bromophenyl phenyl ether	ug/L	NS	<2	<0.729
4-Chloro-3-methylphenol	ug/L	700	<1	<0.875
4-Chloroaniline	ug/L	20	<1.26	<0.646
4-Chlorophenyl phenyl ether	ug/L	NS	<1.37	<0.719
4-Nitroaniline	ug/L	NS	<1.79	<1.35
4-Nitrophenol	ug/L	60	<2.63	<7.89
4-Nitro-o-toluidine	ug/L	NS	<1.26	<2.92
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<0.968	<1.98
Acenaphthene	ug/L	420	<1.37	<0.667
Acenaphthylene	ug/L	210	<1.37	<0.72
Acetophenone	ug/L	NS	<3.16	<0.719
Anthracene	ug/L	2100	<1.16	<0.909
Benzo (a) anthracene	ug/L	0.24	<1.16	<0.895
Benzo (a) pyrene	ug/L	0.2	<1.58	<0.44
Benzo (b) fluoranthene	ug/L	0.24	<1.26	<5.1
Benzo (g,h,i) perylene	ug/L	21	<1.68	<6.56
Benzo (k) fluoranthene	ug/L	2.4	<1.26	<2.29
Benzyl alcohol	ug/L	760	<3.16	<1.56
Bis(2-chloroethoxy) methane	ug/L	NS	<1.16	<0.792
Bis(2-chloroethyl)ether	ug/L	0.16	<1.16	<0.854
Bis(2-chloroisopropyl) ether	ug/L	900	<1.26	<0.993
Bis(2-ethylhexyl)phthalate	ug/L	6	<2.74	<5.71
Butyl benzyl phthalate	ug/L	140	<1.58	<5.63
Chlorobenzilate	ug/L	NS	<3.05	<3.72
Chrysene	ug/L	24	<1.16	<0.806
Dalkon (cis or trans)	ug/L	NS	<1.37	<4.17
Dibenzo (a,h) anthracene	ug/L	0.024	<2	<4.06
Dibenzofuran	ug/L	7	<1.26	<0.773
Diethyl phthalate	ug/L	5600	<1.16	<1.72
Dimethoate	ug/L	1.4	<1.05	<3.75
Dimethyl phthalate	ug/L	NS	<2.63	<1.68
Di-n-butyl phthalate	ug/L	700	<1.26	<5.83
Di-n-octyl phthalate	ug/L	140	<3.16	<7.29
Dinoseb	ug/L	7	<0.526	<2.5
Diphenylamine	ug/L	180	<0.926	<6.25
Disulfoton	ug/L	0.7	<0.874	<2.5
Ethyl Methanesulfonate	ug/L	NS	<0.526	<3.75
Famphur	ug/L	NS	<0.874	<3.96
Fluoranthene	ug/L	280	<0.989	<1.77
Fluorene	ug/L	280	<1.37	<0.893
Hexachlorobenzene	ug/L	1	<1.47	<0.729
Hexachlorobutadiene	ug/L	1	<1.26	<0.896
Hexachlorocyclopentadiene	ug/L	50	<2.21	<5.31
Hexachloroethane	ug/L	1	<1.37	<1.01
Hexachloropropene	ug/L	NS	<1.68	<2.71
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<2.11	<4.38
Isodrin	ug/L	NS	<0.611	<1.8
Isophorone	ug/L	100	<1.04	<0.999
Isosafrole	ug/L	NS	<0.526	<2.4
Kepone	ug/L	NS	<1.89	<1.62
Methapyrilene	ug/L	NS	<2	<0.792
Methyl Methanesulfonate	ug/L	1.8	<0.526	<1.84
Nitrobenzene	ug/L	14	<1.16	<0.833
N-Nitrosodiethylamine	ug/L	NS	<0.526	<1.54
N-Nitrosodimethylamine	ug/L	0.0034	<0.958	<0.75
N-Nitroso-di-n-butylamine	ug/L	0.032	<0.526	<4.06
N-Nitroso-di-n-propylamine	ug/L	NS	<1.05	<0.958
N-Nitrosodiphenylamine	ug/L	36	<1	<0.781
N-Nitrosomethylethylamine	ug/L	0.008	<1.37	<5.1
N-Nitrosopiperidine	ug/L	NS	<0.526	<2.81
N-Nitrosopyrrolidine	ug/L	0.683	<0.526	<3.75
O,O,O-Triethyl phosphorothioate	ug/L	NS	<0.526	<3.33
o-Toluidine	ug/L	11	<0.705	<3.62
p-Dimethylaminoazobenzene	ug/L	NS	<0.821	<2.29
Parathion-ethyl	ug/L	NS	<1.68	<2.29
Parathion-methyl	ug/L	1	<0.789	<2.4
Pentachlorobenzene	ug/L	NS	<0.611	<2.92
Pentachloronitrobenzene	ug/L	NS	<0.526	<0.94
Pentachlorophenol	ug/L	1	<2.42	<7.6
Phenacetin	ug/L	NS	<1.89	<1.08
Phenanthrene	ug/L	210	<1.16	<0.923
Phenol	ug/L	2000	<2.53	<1.15
Pronamide	ug/L	1.4	<0.526	<2.31
Pyrene	ug/L	210	<1.47	<0.813
Safrole	ug/L	NS	<0.526	<2.92
Thionazin	ug/L	NS	<0.8	<3.85
Volatile Organic Compounds				
1,1-Dichloropropene	ug/L	NS	<0.43	<0.43
1,2,4-Trichlorobenzene	ug/L	70	<0.75	<0.75
1,2-Dichlorobenzene	ug/L	600	<0.3	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4	<0.4
2,2-Dichloropropane	ug/L	NS	<0.69	<0.69
Acrolein	ug/L	NS	<3.6	<3.6
Allyl chloride	ug/L	NS	<0.7	<0.7
Benzonene	ug/L	NS	<0.23	<0.23
Dichlorodifluoromethane	ug/L	1000	<0.25	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68	<0.82
Methacrylonitrile	ug/L	NS	<3.3	<3.3
Methyl Methacrylate	ug/L	NS	<0.76	<0.76
Naphthalene	ug/L	100	<3	<3
Propionitrile	ug/L	NS	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-34A

Parameter Name	Units	GPS	DL	Nov-19	Feb-20	Jul-20	Aug-20	Nov-20	Jun-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jul-24	Dec-24
Appendix I Inorganics																
Total Suspended Solids	mg/L	NS	0.581	***1.88***	***4.5***	***3.13***	***1.63 J***	***1.25 J***	***2.75***	***2***	***2.88***	<2.22	***2.5***	***2.25***	<1.39	***6***
Turbidity, Field	NTU	NS	NS	***1.46***	***6.78***	***5.06***	***5.97***	***5***	***2.73***	***10.46***	***8.91***	***12.61***	***2***	***4.28***	***5.88***	***8.37***
Turbidity, Lab	NTU	NS	0.4	***1.43***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.53	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	<0.88	<0.88	<0.88	<0.88	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***80.4***	***80***	***76.3***	***75.2***	***73.6***	***76.9***	***74.9***	***69.7***	***79.5***	***65.5***	***69.3***	***70.1***	***67.5***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.039	<0.039	<0.049	<0.049	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	***1.37 J***	***1.66 J***	***1.63 J***	***3.06 J***	***1.36 J***	***1.29 J***	<1.1	***1.56 J***	***1.81 J***	***1.48 J***	***1.96 J***	***1.31 J***	***1.88 J***
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	<0.091	***0.122 J***	<0.091	<0.091	<0.091	<0.091	<0.19	<0.19	<0.19	<0.17	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<2	<3.2	<1.5	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.27	<0.27	<0.11	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	<1.7	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	***1.85 J***	***1.95 J***	***1.23 J***	<1	***1.69 J***	***1.59 J***	***1.59 J***	***1.74 J***	***2.27 J***	***1.46 J***	***2.12 J***	<1.4	***2.01 J***
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	***0.747 J***	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<0.82	<0.82	<0.85	***1.72 J***	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	***8.31 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	***4.44***	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	***0.499 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-37A

Parameter Name	Units	GPS	DL	Sep-21	Dec-21	Mar-22	Jun-22	Aug-22	Dec-22	Jun-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics													
Total Suspended Solids	mg/L	NS	0.581	***159***	***45.6***	***17.3***	***31.3***	***1 J***	***4.88***	***26.5***	Dry	***4.62***	***18***
Turbidity, Field	NTU	NS	NS	***97.89***	***47.38***	***16.61***	***9.81***	0	***10.27***	***26.51***	--	***11.39***	***1.87***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<1.1	<1.1	<0.69	<0.69	<0.69	<0.69	<1	--	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***1.38 J***	<0.75	***4.57***	<0.75	<0.75	***0.91 J***	***0.53 J***	--	***1.62 J***	***153***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***202***	***137***	***273***	***144***	***122***	***247***	***111***	--	***134***	***849***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	***0.052 J***	<0.051	<0.055	<0.055	<0.055	<0.055	<0.1	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	***1.5 J***	***1.16 J***	<1.1	***1.57 J***	***1.33 J***	<1.1	***1.33 J***	--	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***0.681***	***0.194 J***	***0.263 J***	<0.19	<0.19	<0.19	***0.179 J***	--	***0.714***	***9.58***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	***2.5 J***	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***1.06***	***0.275 J***	<0.24	<0.24	<0.24	<0.24	***0.244 J***	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	--	<2.1	***4.39 J***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	***0.503 J***	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	***1.67 J***	***1.3 J***	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Appendix I Organics													
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	***0.321 J***
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	***18.1***	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	***6.01***
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	***0.71 J***
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	***0.815 J***	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	--	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	***0.94 J***	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-38A

Parameter Name	Units	GPS	DL	Sep-21	Dec-21	Mar-22	Jun-22	Aug-22	Dec-22	Jun-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics													
Total Suspended Solids	mg/L	NS	0.581	***8.63***	***14.3***	***2.67 J***	***0.875 J***	<0.638	***1.13 J***	***9.12***	***3.5***	***3.13***	***3***
Turbidity, Field	NTU	NS	NS	***11.36***	***29.12***	***2.49***	***0.08***	***3.12***	0	***6.34***	***1.1***	***1.62***	***15.68***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<1.1	<1.1	<0.69	<0.69	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	<0.75	<0.75	***20.8***	<0.75	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***148***	***94.3***	***139***	***200***	***133***	***145***	***133***	***141***	***153***	***153***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.051	<0.051	<0.055	<0.055	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***0.249 J***	<0.19	<0.19	<0.19	<0.19	<0.19	***0.181 J***	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	***2.01 J***	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<0.96	***2.77 J***	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.42	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Appendix I Organics													
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	***0.747 J***	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	***0.772 J***	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-39A

Parameter Name	Units	GPS	DL	Sep-21	Dec-21	Mar-22	Jun-22	Aug-22	Dec-22	Jun-23	Nov-23	Jun-24	Aug-24	Dec-24
Appendix I Inorganics														
Total Suspended Solids	mg/L	NS	0.581	***54.6***	***45.2***	***3.67 J***	***5.63***	***0.75 J***	***13.3***	***43.7***	***52***	***14.3***	***34.6***	***116***
Turbidity, Field	NTU	NS	NS	***102.71***	***70.75***	***10.72***	***10.22***	***0.51***	***20.65***	***71.92***	***71.35***	***25.54***	***66.58***	***271.18***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<1.1	<1.1	<0.69	<0.69	<0.69	<0.69	<1	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.53	<0.53	<0.53	--	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***156***	***146***	***144***	***152***	***136***	***149***	***138***	***145***	***152***	--	***156***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	***0.353 J***	--	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.051	<0.051	<0.055	<0.055	<0.055	<0.055	<0.1	<0.1	<0.1	--	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	--	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***0.857***	***0.382 J***	<0.19	<0.19	<0.19	***0.199 J***	***0.345 J***	<0.17	***0.175 J***	--	***0.812***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	--	***2.08 J***
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***0.259 J***	***0.343 J***	<0.24	<0.24	<0.24	<0.24	***0.339 J***	***0.252 J***	<0.26	--	***0.589***
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***3.68 J***	***2.01 J***	<1.9	<1.9	<1.9	<1.9	<1.9	***2.54 J***	<2.1	--	***2.86 J***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.42	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<6.4	<6.4	***68.3***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics														
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	***0.721 J***	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-40A

Parameter Name	Units	GPS	DL	Sep-21	Dec-21	Mar-22	Jun-22	Aug-22	Dec-22	Jun-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics													
Total Suspended Solids	mg/L	NS	0.581	***81.5***	***33***	***12.3***	***21.4***	***47.7***	***24.5***	***6.75***	***8.25***	***7.13***	***22.3***
Turbidity, Field	NTU	NS	NS	***100.92***	***26.96***	***40.36***	***17.09***	***98.21***	***13.86***	***5.58***	***20.13***	***12.07***	***42.5***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<1.1	<1.1	<0.69	<0.69	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	***0.759 J***	<0.75	<0.75	<0.75	<0.75	<0.53	***0.558 J***	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***279***	***278***	***260***	***257***	***162***	***238***	***216***	***228***	***210***	***215***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.051	<0.051	<0.055	<0.055	***0.064 J***	<0.055	***0.163 J***	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***3.22***	***1.06***	***1.17***	***0.807***	***1.47***	***2.19***	***1.51***	***1.86***	***1.69***	***2.14***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	***2.64 J***	<1.4	<1.8	<1.8	***2.08 J***	<1.8	***7.71***	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***0.379 J***	***0.271 J***	<0.24	<0.24	***0.272 J***	<0.24	<0.24	<0.24	<0.26	***0.282 J***
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***17***	***7.32***	***11***	***7.85***	***10.2***	***12.7***	***19***	***17.4***	***11.1***	***16.8***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	***1.55 J***	<0.96	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.42	<0.42	<0.49	<0.49	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	***1.12 J***	<1.1	***1.69 J***	<1.1	***1.91 J***	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<10	<10	<10	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--
Appendix I Organics													
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	***3.83 J***	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	***0.543***	***0.768***	<0.22	<0.22	<0.22	***0.994***	<0.22	***0.521***	***0.25 J***	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	***0.737 J***	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-40A

Parameter Name	Units	GPS	Nov-23	Jan-24
Alcohols/Glycols by GC				
Acrocrylin	ug/L	NS	<0.57	<.2000
Isobutanol	ug/L	4100	<0.55	<.2400
Herbicides (GC)				
2,4,5-T	ug/L	70	<0.0668	<0.0825
2,4-D	ug/L	70	<0.257	<0.24
Silvex (2,4,5-TP)	ug/L	50	<0.0526	<0.0312
Inorganics				
Cyanide	ug/L	200	<4.3	<3.5
Mercury	ug/L	2	<0.000164	<0.11
Sulfide	ug/L	NS	<.201	<.1400
Tin	ug/L	4200	<2.3	<2.3
PCBs (EPA Method 8082)				
PCB-1016	ug/L	NS	<0.16	<0.746
PCB-1221	ug/L	NS	<0.16	<0.746
PCB-1232	ug/L	NS	<0.16	<0.746
PCB-1242	ug/L	NS	<0.16	<0.746
PCB-1248	ug/L	NS	<0.104	<0.626
PCB-1254	ug/L	NS	<0.104	<0.627
PCB-1260	ug/L	NS	<0.104	<0.627
Pesticides (EPA Method 8081A)				
4,4'-DDD	ug/L	0.73	<0.0155	<0.0127
4,4'-DDE	ug/L	0.51	<0.0255	<0.0173
4,4'-DDT	ug/L	0.51	<0.0596	<0.0182
Aldrin	ug/L	0.01	<0.0302	<0.02
alpha-BHC	ug/L	0.028	<0.0274	<0.00905
beta-BHC	ug/L	0.042	<0.0349	<0.0382
Chlordane	ug/L	2	<0.764	<0.592
delta-BHC	ug/L	2.1	<0.0255	<0.0256
Dieldrin	ug/L	0.011	<0.0245	<0.0316
Endosulfan I	ug/L	42	<0.0111	<0.0253
Endosulfan II	ug/L	42	<0.0274	<0.0236
Endosulfan sulfate	ug/L	NS	<0.0203	<0.0164
Endrin	ug/L	2	<0.0245	<0.0252
Endrin aldehyde	ug/L	2.1	<0.0274	<0.0245
gamma-BHC (Lindane)	ug/L	0.2	<0.014	<0.00909
Heptachlor	ug/L	0.4	<0.0111	<0.0249
Heptachlor epoxide	ug/L	0.2	<0.0274	<0.0295
Methoxychlor	ug/L	40	<0.0387	<0.0259
Toxaphene	ug/L	3	<0.651	<0.989
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.54	<0.993
1,2,3-Trinitrobenzene	ug/L	NS	<2.3	<2.4
1,3-Dinitrobenzene	ug/L	1	<3.2	<3.33
1,4-Naphthoquinone	ug/L	NS	<3.6	<3.72
1,4-Phenylenediamine	ug/L	NS	<1.9	<1.98
1-Naphthylamine	ug/L	NS	<2.5	<2.6
2,3,4,6-Tetrachlorophenol	ug/L	NS	<5.3	<5.52
2,4,5-Trichlorophenol	ug/L	700	<5.3	<5.52
2,4,6-Trichlorophenol	ug/L	16	<5	<5.21
2,4-Dichlorophenol	ug/L	20	<0.05	<0.886
2,4-Dimethylphenol	ug/L	100	<0.58	<0.604
2,4-Dinitrophenol	ug/L	14	<3.7	<19.5
2,4-Dinitrotoluene	ug/L	0.25	<0.4	<0.87
2,6-Dichlorophenol	ug/L	765	<0.69	<0.719
2,6-Dinitrotoluene	ug/L	0.26	<0.52	<0.542
2-Acetylaminofluorene	ug/L	NS	<2.7	<2.81
2-Chloronaphthalene	ug/L	560	<0.64	<0.669
2-Chlorophenol	ug/L	40	<0.54	<0.565
2-Methylnaphthalene	ug/L	40	<0.59	<0.615
2-Methylphenol (o-Cresol)	ug/L	35	<0.05	<0.617
2-Naphthylamine	ug/L	0.057	<2.1	<2.19
2-Nitroaniline	ug/L	NS	<5.9	<6.15
2-Nitrophenol	ug/L	NS	<0.8	<7.89
3,3'-Dichlorobenzidine	ug/L	0.39	<1.4	<1.46
3,3'-Dimethylbenzidine	ug/L	NS	<1.5	<1.56
3/4-Methylphenol	ug/L	70	<0.7	<0.729
3-Methylcholanthrene	ug/L	NS	<0.32	<0.333
3-Nitroaniline	ug/L	NS	<2.7	<2.81
4,6-Dinitro-2-methylphenol	ug/L	NS	<5.9	<7.19
4-Aminobiphenyl	ug/L	0.0083	<2.2	<2.29
4-Bromophenyl phenyl ether	ug/L	NS	<0.7	<0.729
4-Chloro-3-methylphenol	ug/L	700	<0.84	<0.875
4-Chloroaniline	ug/L	20	<0.62	<0.646
4-Chlorophenyl phenyl ether	ug/L	NS	<0.69	<0.719
4-Nitroaniline	ug/L	NS	<2.3	<2.35
4-Nitrophenol	ug/L	60	<7.6	<7.91
4-Nitro-o-toluidine	ug/L	NS	<2.8	<2.92
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<1.9	<1.98
Acenaphthene	ug/L	420	<0.64	<0.667
Acenaphthylene	ug/L	210	<0.72	<0.75
Acetophenone	ug/L	NS	<0.69	<0.719
Anthracene	ug/L	2100	<0.87	<0.906
Benzo (a) anthracene	ug/L	0.24	<0.05	<0.885
Benzo (a) pyrene	ug/L	0.2	<0.1	<0.44
Benzo (b) fluoranthene	ug/L	0.24	<4.9	<5.1
Benzo (g,h,i) perylene	ug/L	21	<6.3	<6.56
Benzo (k) fluoranthene	ug/L	2.4	<2.2	<2.29
Benzyl alcohol	ug/L	760	<1.3	<1.36
Bis(2-chloroethoxy) methane	ug/L	NS	<0.76	<0.792
Bis(2-chloroethyl)ether	ug/L	0.16	<0.82	<0.854
Bis(2-chloroisopropyl) ether	ug/L	900	<0.54	<0.565
Bis(2-ethylhexyl)phthalate	ug/L	6	<5.3	<5.71
Butyl benzyl phthalate	ug/L	140	<5.4	<5.63
Chlorobenzilate	ug/L	NS	<3.6	<3.72
Chrysene	ug/L	24	<0.07	<0.886
Dieldrin (cis or trans)	ug/L	NS	<4	<4.17
Dibenzo (a,h) anthracene	ug/L	0.024	<3.9	<4.06
Dibenzofuran	ug/L	7	<0.74	<0.771
Diethyl phthalate	ug/L	5600	<2.7	<11.7
Dimethoate	ug/L	1.4	<3.6	<3.75
Dimethyl phthalate	ug/L	NS	<1	<1.04
Di-n-butyl phthalate	ug/L	700	<5.6	<5.83
Di-n-octyl phthalate	ug/L	140	<7	<7.29
Dinoseb	ug/L	7	<0.288	<2.5
Diphenylamine	ug/L	180	<6	<6.25
Disulfoton	ug/L	0.7	<2.4	<2.5
Ethyl Methanesulfonate	ug/L	NS	<3.6	<3.75
Famphur	ug/L	NS	<3.8	<3.96
Fluoranthene	ug/L	280	<1.7	<1.77
Fluorene	ug/L	280	<0.79	<0.823
Hexachlorobenzene	ug/L	1	<0.7	<0.729
Hexachlorobutadiene	ug/L	1	<0.86	<0.896
Hexachlorocyclopentadiene	ug/L	50	<5.1	<5.31
Hexachloroethane	ug/L	1	<0.97	<1.01
Hexachloropropene	ug/L	NS	<2.6	<2.71
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<4.2	<4.38
Isodrin	ug/L	NS	<2.7	<2.8
Isophorone	ug/L	100	<0.93	<0.969
Isosafrole	ug/L	NS	<2.3	<2.4
Kepone	ug/L	NS	<1	<1.04
Methapyrilene	ug/L	NS	<0.76	<0.792
Methyl Methanesulfonate	ug/L	1.8	<3.3	<3.44
Nitrobenzene	ug/L	14	<0.8	<0.833
N-Nitrosodiethylamine	ug/L	NS	<1.4	<1.54
N-Nitrosodimethylamine	ug/L	0.0034	<0.72	<0.75
N-Nitroso-di-n-butylamine	ug/L	0.032	<3.9	<4.06
N-Nitroso-di-n-propylamine	ug/L	NS	<0.92	<0.958
N-Nitrosodiphenylamine	ug/L	36	<0.75	<0.781
N-Nitrosomethylethylamine	ug/L	0.008	<4.9	<5.1
N-Nitrosopiperidine	ug/L	NS	<2.7	<2.81
N-Nitrosopyrrolidine	ug/L	0.083	<3.6	<3.75
O,O,O-Triethyl phosphorothioate	ug/L	NS	<5.2	<5.73
o-Toluidine	ug/L	11	<2.9	<3.02
p-Dimethylaminoazobenzene	ug/L	NS	<2.2	<2.29
Parathion-ethyl	ug/L	NS	<2.2	<2.29
Parathion-methyl	ug/L	1	<2.3	<2.4
Pentachlorobenzene	ug/L	NS	<2.8	<2.92
Pentachloronitrobenzene	ug/L	NS	<5.8	<6.04
Pentachlorophenol	ug/L	1	<3.5	<36
Phenacetin	ug/L	NS	<1.9	<1.98
Phenanthrene	ug/L	210	<0.79	<0.823
Phenol	ug/L	2000	<1.1	<1.15
Pronamide	ug/L	1.4	<3.2	<3.33
Pyrene	ug/L	5	<2.7	<2.81
Safrole	ug/L	210	<0.79	<0.823
Thionazin	ug/L	NS	<2.8	<2.92
Volatile Organic Compounds				
1,1-Dichloropropene	ug/L	NS	<0.43	<0.45
1,2,4-Trichlorobenzene	ug/L	70	<0.75	<0.75
1,2-Dichlorobenzene	ug/L	600	<0.3	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4	<0.4
2,2-Dichloropropane	ug/L	NS	<0.69	<0.69
Acrolein	ug/L	NS	<3.6	<3.6
Allyl chloride	ug/L	NS	<0.7	<0.7
Benzonene	ug/L	NS	<0.23	<0.23
Dichlorodifluoromethane	ug/L	1000	<0.25	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68	<0.85
Methacrylonitrile	ug/L	NS	<3.3	<3.3
Methyl Methacrylate	ug/L	NS	<0.76	<0.76
Naphthalene	ug/L	100	<3	<3
Propionitrile	ug/L	NS	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-41A

Parameter Name	Units	GPS	DL	Sep-22	Dec-22	Jun-23	Aug-23	Nov-23	Jan-24	Jul-24	Dec-24
Appendix I Inorganics											
Total Suspended Solids	mg/L	NS	0.581	***4.38***	***3.13***	***4.13***	***3.63***	***1.5 J***	***1.75 J***	***2.63***	***6***
Turbidity, Field	NTU	NS	NS	***12.37***	***2***	***1.78***	***4.4***	***0.57***	***0.98***	***1.73***	***12.99***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	***0.761 J***	<0.69	<1	<1	<1	--	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	<0.75	***0.708 J***	***0.866 J***	<0.53	--	***0.595 J***	***0.967 J***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***154***	***143***	***145***	***141***	***169***	--	***125***	***159***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.33	<0.33	<0.33	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.055	<0.055	<0.1	<0.1	<0.1	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***0.647***	***0.415 J***	***0.71***	***0.541***	***1.01***	<0.17	***0.215 J***	***0.211 J***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.8	<1.8	<1.8	<1.8	<1.8	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	<1.9	<1.9	<1.9	<1.9	<1.9	--	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<1.4	<1.4	<1.4	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.49	<0.49	<0.5	<0.5	<0.5	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<6.4	<6.4	<6.4	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Appendix I Organics											
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	***0.323 J***	<0.22	<0.22	<0.22	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	--	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-42A

Parameter Name	Units	GPS	DL	Aug-22	Dec-22	Jun-23	Aug-23	Nov-23	Jun-24	Dec-24	Feb-25
Appendix I Inorganics											
Total Suspended Solids	mg/L	NS	0.581	***6.25***	***13.3***	***18.6***	***7***	***8***	***4.38***	***14.1***	--
Turbidity, Field	NTU	NS	NS	***18.52***	***6.5***	***17.27***	***3.57***	***8.67***	***9***	***33.63***	***4.29***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	***0.69 J***	<0.69	<1	<1	<1	<1	<1	--
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	***2.96***	<0.53	***0.56 J***	***0.541 J***	<0.53	***0.547 J***	--
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***281***	***119***	***83.4***	***125***	***101***	***128***	***177***	--
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	***0.281***	<0.055	<0.1	<0.1	<0.1	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	***1.95 J***	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2	--
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***3.98***	***3.31***	***0.518***	***2.46***	***2.56***	***2.56***	***2.77***	--
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	***9.67***	<1.8	<1.8	<1.8	<1.8	<1.8	***2 J***	--
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***0.41 J***	<0.24	<0.24	<0.24	<0.24	<0.26	<0.26	--
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***37.2***	***14.7***	***8.62***	***19.3***	***14.8***	***16.6***	***27.6***	***23.5***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4	<1.4	--
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	***0.385 J***	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57	--
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<6.4	<6.4	<6.4	<9.7	<9.7	--
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Appendix I Organics											
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	1.79	***3.14 J***	***3.47 J***	<3.1	<3.1	<3.1	<3.1	<3.1	--
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	0.11	<0.22	***0.539***	<0.22	<0.22	<0.22	<0.22	<0.22	--
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	--
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-42A

Parameter Name	Units	GPS	3-oct-24
Alcohols/Gycols by GC			
Acrocrylin	ug/L	NS	<2680
Isobutanol	ug/L	4100	<4600
Herbicides (GC)			
2,4,5-T	ug/L	70	<0.062
2,4-D	ug/L	70	<0.239
Silvex (2,4,5-TP)	ug/L	50	<0.021
Inorganics			
Cyanide	ug/L	200	<3.5
Mercury	ug/L	2	<0.11
Sulfide	ug/L	NS	7.1410
TC	ug/L	4300	<2.3
PCBs (EPA Method 8082)			
PCB-1016	ug/L	NS	<0.742
PCB-1221	ug/L	NS	<0.742
PCB-1232	ug/L	NS	<0.742
PCB-1242	ug/L	NS	<0.742
PCB-1248	ug/L	NS	<0.624
PCB-1254	ug/L	NS	<0.624
PCB-1260	ug/L	NS	<0.624
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	0.73	<0.0126
4,4'-DDE	ug/L	0.51	<0.0271
4,4'-DDT	ug/L	0.51	<0.0181
Aldrin	ug/L	0.01	<0.0159
alpha-BHC	ug/L	0.028	<0.00504
beta-BHC	ug/L	0.042	<0.038
Chlordane	ug/L	2	<0.353
delta-BHC	ug/L	2.1	<0.0289
Dieldrin	ug/L	0.011	<0.0319
Endosulfan I	ug/L	42	<0.0253
Endosulfan II	ug/L	42	<0.0235
Endosulfan sulfate	ug/L	NS	<0.0163
Endrin	ug/L	2	<0.0253
Endrin aldehyde	ug/L	2.1	<0.0248
gamma-BHC (Lindane)	ug/L	0.2	<0.00504
Heptachlor	ug/L	0.4	<0.0208
Heptachlor epoxide	ug/L	0.2	<0.0289
Methoxychlor	ug/L	40	<0.0289
Toxaphene	ug/L	3	<0.504
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.587
1,3,5-Trinitrobenzene	ug/L	NS	<2.5
1,3-Dinitrobenzene	ug/L	1	<3.48
1,4-Naphthoquinone	ug/L	NS	<3.91
1,4-Phenylenediamine	ug/L	NS	<2.07
1-Naphthylamine	ug/L	NS	<2.72
2,3,4,6-Tetrachlorophenol	ug/L	NS	<3.76
2,4,5-Trichlorophenol	ug/L	700	<3.76
2,4,6-Trichlorophenol	ug/L	16	<3.43
2,4-Dichlorophenol	ug/L	20	<0.924
2,4-Dimethylphenol	ug/L	100	<0.63
2,4-Dinitrophenol	ug/L	14	<14.1
2,4-Dinitrotoluene	ug/L	0.25	<0.96
2,6-Dichlorophenol	ug/L	765	<0.75
2,6-Dinitrotoluene	ug/L	0.26	<0.565
2-Acetylaminofluorene	ug/L	NS	<2.03
2-Chloronaphthalene	ug/L	560	<0.696
2-Chlorophenol	ug/L	40	<0.587
2-Methylnaphthalene	ug/L	20	<0.641
2-Methylphenol (o-Cresol)	ug/L	35	<0.707
2-Naphthylamine	ug/L	0.057	<2.28
2-Nitroaniline	ug/L	NS	<6.41
2-Nitrophenol	ug/L	NS	<7.39
3,3'-Dichlorobenzidine	ug/L	0.39	<1.52
3,3'-Dimethylbenzidine	ug/L	NS	<1.63
3/4-Methylphenol	ug/L	70	<0.761
3-Methylcholanthrene	ug/L	NS	<0.348
3-Nitroaniline	ug/L	NS	<2.93
4,6-Dinitro-2-methylphenol	ug/L	NS	<7.5
4-Aminobiphenyl	ug/L	0.0083	<2.39
4-Bromophenyl phenyl ether	ug/L	NS	<0.761
4-Chloro-3-methylphenol	ug/L	700	<0.913
4-Chloroaniline	ug/L	28	<0.674
4-Chlorophenyl phenyl ether	ug/L	NS	<0.75
4-Nitroaniline	ug/L	NS	<2.41
4-Nitrophenol	ug/L	60	<6.26
4-Nitro-o-toluidine	ug/L	NS	7.104
5,12-Dimethylbenz (a) anthracene	ug/L	NS	<2.07
Acenaphthene	ug/L	420	<0.696
Acenaphthylene	ug/L	210	<0.783
Acetophenone	ug/L	NS	<0.75
Anthracene	ug/L	2100	<0.946
Benzo (a) anthracene	ug/L	0.24	<0.924
Benzo (a) pyrene	ug/L	0.2	<0.8
Benzo (b) fluoranthene	ug/L	0.24	<5.33
Benzo (g,h,i) perylene	ug/L	21	<0.85
Benzo (k) fluoranthene	ug/L	2.4	<2.39
Benzyl alcohol	ug/L	700	<3.41
Bis(2-chloroethoxy) methane	ug/L	NS	<0.826
Bis(2-chloroethyl)ether	ug/L	0.16	<0.891
Bis(2-chloroisopropyl) ether	ug/L	900	<0.587
Bis(2-ethylhexyl)phthalate	ug/L	6	<5.98
Butyl benzyl phthalate	ug/L	140	<5.87
Chlorobenzilate	ug/L	NS	<2.91
Chrysene	ug/L	24	<0.946
Dalkon (cis or trans)	ug/L	NS	<4.35
Dibenzo (a,h) anthracene	ug/L	0.024	<4.24
Dibenzofuran	ug/L	7	<0.804
Diethyl phthalate	ug/L	5600	<3.48
Dimethoate	ug/L	1.4	<3.91
Dimethyl phthalate	ug/L	NS	<1.69
Di-n-butyl phthalate	ug/L	700	<6.09
Di-n-octyl phthalate	ug/L	140	<7.61
Dinoseb	ug/L	7	<2.61
Diphenylamine	ug/L	180	<6.52
Disulfoton	ug/L	0.7	<2.61
Ethyl Methanesulfonate	ug/L	NS	<3.91
Famphur	ug/L	NS	<4.13
Fluoranthene	ug/L	280	<1.85
Fluorene	ug/L	280	<0.893
Hexachlorobenzene	ug/L	1	<0.761
Hexachlorobutadiene	ug/L	1	<0.935
Hexachlorocyclopentadiene	ug/L	50	<5.54
Hexachloroethane	ug/L	1	<1.05
Hexachloropropene	ug/L	NS	<2.83
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<4.57
Isodrin	ug/L	NS	<5.11
Isophorone	ug/L	100	<1.01
Isosafrole	ug/L	NS	<2.5
Kepone	ug/L	NS	<1.69
Methapyrilene	ug/L	NS	<0.826
Methyl Methanesulfonate	ug/L	1.8	<2.59
Nitrobenzene	ug/L	14	<0.87
N-Nitrosodiethylamine	ug/L	NS	<3.7
N-Nitrosodimethylamine	ug/L	0.0034	<0.783
N-Nitrosodi-n-butylamine	ug/L	0.032	<4.24
N-Nitrosodi-n-propylamine	ug/L	NS	<1
N-Nitrosodiphenylamine	ug/L	36	<0.815
N-Nitrosomethylethylamine	ug/L	0.008	<5.33
N-Nitrosopiperidine	ug/L	NS	<2.93
N-Nitrosopyrrolidine	ug/L	0.083	<3.91
O,O,O-Triethyl phosphorothioate	ug/L	NS	<5.48
o-Toluidine	ug/L	11	<3.15
p-Dimethylaminoazobenzene	ug/L	NS	<2.39
Parathion-ethyl	ug/L	NS	<2.39
Parathion-methyl	ug/L	7	<2.5
Pentachlorobenzene	ug/L	NS	<2.04
Pentachloronitrobenzene	ug/L	NS	<6.3
Pentachlorophenol	ug/L	1	<10.4
Phenacetin	ug/L	NS	<2.07
Phenanthrene	ug/L	210	<0.859
Phenol	ug/L	2000	<1.2
Pronamide	ug/L	1.4	<3.48
Pyrene	ug/L	5	<2.93
Safrole	ug/L	210	<0.859
Thionazin	ug/L	NS	<5.04
Triethanolamine	ug/L	NS	<2.8
Volatile Organic Compounds			
1,1-Dichloropropene	ug/L	NS	<0.43
1,2,4-Trichlorobenzene	ug/L	70	<0.75
1,2-Dichlorobenzene	ug/L	600	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4
2,2-Dichloropropane	ug/L	NS	<0.69
Acrolein	ug/L	NS	<3.6
Allyl chloride	ug/L	NS	<0.7
Benzene	ug/L	NS	<0.23
Dichlorodifluoromethane	ug/L	1000	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68
Methacrylonitrile	ug/L	NS	<3.3
Methyl Methacrylate	ug/L	NS	<0.76
Naphthalene	ug/L	100	<3
Propionitrile	ug/L	NS	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-43A

Parameter Name	Units	GPS	DL	Sep-22	Dec-22	Jun-23	Aug-23	Nov-23	Jun-24	Aug-24	Dec-24
Appendix I Inorganics											
Total Suspended Solids	mg/L	NS	0.581	***31.5***	***26***	***30.3***	***39***	***37***	***22***	***28.5***	***29***
Turbidity, Field	NTU	NS	NS	***22.75***	***26.61***	***67.2***	***14.62***	***5***	***3.89***	***11.63***	***12.02***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.69	<0.69	<1	<4	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***8.06***	***7.34***	***8.28***	***8.85***	***9.81***	***6.28***	--	***6.32***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***157***	***167***	***180***	***250***	***274***	***163***	--	***214***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1	--	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	<1.1	<1.1	<1.1	***12***	<1.2	--	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***3.68***	***3.27***	***4.51***	***4.93***	***4.75***	***3.49***	--	***3.83***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.8	<1.8	<1.8	<1.8	***6.4***	<1.8	--	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.24	<0.24	<0.24	<0.24	<0.24	<0.26	--	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***24.4***	***25.6***	***31***	***41.5***	***36.4***	***17.3***	--	***25.9***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.49	<0.49	<0.5	<0.5	<0.5	***9.36***	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	--	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<6.4	***8.74 J***	***7.36 J***	<9.7	--	***12.8 J***
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--
Appendix I Organics											
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-43A

Parameter Name	Units	GPS	3-6-24
Alcohols/Gycols by GC			
Acrocrylin	ug/L	NS	<2680
Isobutanol	ug/L	4100	<4600
Herbicides (GC)			
2,4,5-T	ug/L	70	<0.0734
2,4-D	ug/L	70	<0.282
Silvex (2,4,5-TP)	ug/L	50	<0.0248
Inorganics			
Cyanide	ug/L	200	<3.5
Mercury	ug/L	2	<1
Sulfide	ug/L	NS	<1410
TC	ug/L	4300	<2.3
PCBs (EPA Method 8082)			
PCB-1016	ug/L	NS	<0.716
PCB-1221	ug/L	NS	<0.716
PCB-1232	ug/L	NS	<0.716
PCB-1242	ug/L	NS	<0.716
PCB-1248	ug/L	NS	<0.602
PCB-1254	ug/L	NS	<0.602
PCB-1260	ug/L	NS	<0.602
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	0.73	<0.0218
4,4'-DDE	ug/L	0.51	<0.0202
4,4'-DDT	ug/L	0.51	<0.0175
Aldrin	ug/L	0.01	<0.0102
alpha-BHC	ug/L	0.028	<0.00973
beta-BHC	ug/L	0.042	<0.0367
Chlordane	ug/L	2	<0.34
delta-BHC	ug/L	2.1	<0.0279
Dieldrin	ug/L	0.011	<0.0183
Endosulfan I	ug/L	42	<0.0248
Endosulfan II	ug/L	42	<0.0227
Endosulfan sulfate	ug/L	NS	<0.0157
Endrin	ug/L	2	<0.0248
Endrin aldehyde	ug/L	2.1	<0.0236
gamma-BHC (Lindane)	ug/L	0.2	<0.00819
Heptachlor	ug/L	0.4	<0.0201
Heptachlor epoxide	ug/L	0.2	<0.0279
Methoxychlor	ug/L	40	<0.0279
Toxaphene	ug/L	3	<0.873
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.875
1,3,5-Trinitrobenzene	ug/L	NS	<2.88
1,3-Dinitrobenzene	ug/L	1	<4
1,4-Naphthoquinone	ug/L	NS	<8.5
1,4-Phenylenediamine	ug/L	NS	<2.38
1-Naphthylamine	ug/L	NS	<3.13
2,3,4,6-Tetrachlorophenol	ug/L	NS	<0.63
2,4,5-Trichlorophenol	ug/L	700	<0.63
2,4,6-Trichlorophenol	ug/L	16	<0.25
2,4-Dichlorophenol	ug/L	20	<1.06
2,4-Dimethylphenol	ug/L	100	<0.725
2,4-Dinitrophenol	ug/L	14	<16.7
2,4-Dinitrotoluene	ug/L	0.25	<8
2,6-Dichlorophenol	ug/L	765	<0.863
2,6-Dinitrotoluene	ug/L	0.26	<0.65
2-Acetylaminofluorene	ug/L	NS	<2.38
2-Chloronaphthalene	ug/L	560	<0.8
2-Chlorophenol	ug/L	40	<0.675
2-Methylnaphthalene	ug/L	40	<0.739
2-Methylphenol (o-Cresol)	ug/L	35	<0.813
2-Naphthylamine	ug/L	0.057	<2.63
2-Nitroaniline	ug/L	NS	<7.38
2-Nitrophenol	ug/L	NS	<8.5
3,3'-Dichlorobenzidine	ug/L	0.39	<1.75
3,3'-Dimethylbenzidine	ug/L	NS	<1.88
3/4-Methylphenol	ug/L	70	<0.875
3-Methylcholanthrene	ug/L	NS	<0.4
3-Nitroaniline	ug/L	NS	<3.38
4,6-Dinitro-2-methylphenol	ug/L	NS	<3.63
4-Aminobiphenyl	ug/L	0.0083	<2.75
4-Bromophenyl phenyl ether	ug/L	NS	<0.875
4-Chloro-3-methylphenol	ug/L	700	<1.05
4-Chloroaniline	ug/L	20	<0.775
4-Chlorophenyl phenyl ether	ug/L	NS	<0.863
4-Nitroaniline	ug/L	NS	<1.63
4-Nitrophenol	ug/L	60	<9.5
4-Nitroso-o-toluidine	ug/L	NS	<3.5
5,12-Dimethylbenz (a) anthracene	ug/L	NS	<2.38
Acenaphthene	ug/L	420	<0.8
Acenaphthylene	ug/L	210	<0.3
Acetophenone	ug/L	NS	<0.863
Anthracene	ug/L	2100	<1.69
Benzo (a) anthracene	ug/L	0.24	<1.06
Benzo (a) pyrene	ug/L	0.2	<10.1
Benzo (b) fluoranthene	ug/L	0.24	<6.13
Benzo (g,h,i) perylene	ug/L	21	<7.88
Benzo (k) fluoranthene	ug/L	2.4	<2.75
Benzyl alcohol	ug/L	700	<3.63
Bis(2-chloroethoxy) methane	ug/L	NS	<0.95
Bis(2-chloroethyl)ether	ug/L	0.16	<1.03
Bis(2-chloroisopropyl) ether	ug/L	900	<0.675
Bis(2-ethylhexyl)phthalate	ug/L	6	<0.88
Butyl benzyl phthalate	ug/L	140	<0.75
Chlorobenzilate	ug/L	NS	<4.3
Chrysene	ug/L	24	<1.69
Dalkon (cis or trans)	ug/L	NS	<5
Dibenzo (a,h) anthracene	ug/L	0.024	<4.88
Dibenzofuran	ug/L	7	<0.925
Diethyl phthalate	ug/L	5600	<2.13
Dimethoate	ug/L	1.4	<4.5
Dimethyl phthalate	ug/L	NS	<1.25
Di-n-butyl phthalate	ug/L	700	<7
Di-n-octyl phthalate	ug/L	140	<8.75
Dinoseb	ug/L	7	<3
Diphenylamine	ug/L	180	<7.5
Disulfoton	ug/L	0.7	<3
Ethyl Methanesulfonate	ug/L	NS	<4.5
Famphur	ug/L	NS	<4.75
Fluoranthene	ug/L	280	<2.13
Fluorene	ug/L	280	<0.988
Hexachlorobenzene	ug/L	1	<0.875
Hexachlorobutadiene	ug/L	1	<1.68
Hexachlorocyclopentadiene	ug/L	50	<6.38
Hexachloroethane	ug/L	1	<1.21
Hexachloropropene	ug/L	NS	<3.25
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<5.25
Isodrin	ug/L	NS	<5.88
Isophorone	ug/L	100	<1.16
Isosafrole	ug/L	NS	<2.88
Kepone	ug/L	NS	<4.25
Methapyrilene	ug/L	NS	<0.95
Methyl Methanesulfonate	ug/L	1.8	<4.13
Naphthalene	ug/L	14	<1
N-Nitrosodiethylamine	ug/L	NS	<4.25
N-Nitrosodimethylamine	ug/L	0.0034	<0.9
N-Nitroso-di-n-butylamine	ug/L	0.032	<4.88
N-Nitroso-di-n-propylamine	ug/L	NS	<1.15
N-Nitrosodiphenylamine	ug/L	36	<0.938
N-Nitrosomethylethylamine	ug/L	0.008	<6.13
N-Nitrosopiperidine	ug/L	NS	<2.38
N-Nitrosopyrrolidine	ug/L	0.083	<4.5
O,O,O-Triethyl phosphorothioate	ug/L	NS	<4
o-Toluidine	ug/L	11	<3.63
p-Dimethylaminoazobenzene	ug/L	NS	<2.75
Parathion-ethyl	ug/L	NS	<2.75
Parathion-methyl	ug/L	7	<2.88
Pentachlorobenzene	ug/L	NS	<7.5
Pentachloronitrobenzene	ug/L	NS	<7.25
Pentachlorophenol	ug/L	1	<12
Phenacetin	ug/L	NS	<2.38
Phenanthrene	ug/L	210	<0.988
Phenol	ug/L	2000	<1.38
Pronamide	ug/L	1.4	<4
Pyrene	ug/L	5	<3.38
Pyridine	ug/L	210	<0.988
Safrole	ug/L	NS	<3.5
Thionazin	ug/L	NS	<2.38
Volatile Organic Compounds			
1,1-Dichloropropene	ug/L	NS	<0.43
1,2,4-Trichlorobenzene	ug/L	70	<0.75
1,2-Dichlorobenzene	ug/L	600	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4
2,2-Dichloropropane	ug/L	NS	<0.69
Acrolein	ug/L	NS	<3.6
Allyl chloride	ug/L	NS	<0.7
Benzene	ug/L	5	<0.23
Dichlorodifluoromethane	ug/L	1000	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68
Methacrylonitrile	ug/L	NS	<3.3
Methyl Methacrylate	ug/L	NS	<0.76
Naphthalene	ug/L	100	<3
Propionitrile	ug/L	NS	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-44A

Parameter Name	Units	GPS	DL	Sep-22	Dec-22	Jun-23	Aug-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics										
Total Suspended Solids	mg/L	NS	0.581	***8***	***2.88***	***1.13 J***	***1.5 J***	***0.875 J***	***1.88***	***7.67***
Turbidity, Field	NTU	NS	NS	***1.79***	***2.06***	***10.04***	***1.56***	***0.38***	***2.63***	***9.13***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.69	<0.69	<1	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.75	<0.75	<0.53	<0.53	***0.666 J***	***0.663 J***	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***168***	***212***	***157***	***239***	***253***	***137***	***159***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.055	***0.082 J***	***0.306***	***0.416***	***0.795***	***0.389***	***0.181 J***
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***0.53***	***0.583***	***0.251 J***	***0.603***	***0.327***	***0.423 J***	***0.435 J***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.8	<1.8	<1.8	<1.8	***2.58 J***	***9.56 J***	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	<0.24	<0.24	<0.24	<0.24	<0.24	***0.313 J***	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***21.7***	***51.8***	***28.7***	***70.2***	***66.6***	***21.6***	***34.2***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.96	<0.96	<1.4	<1.4	<1.4	***1.99 J***	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.49	<0.49	<0.5	<0.5	<0.5	***1.01***	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.26	<0.26	<0.26	***0.748 J***	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	***13.4 J***	***21.3***	***18.1 J***	***27.3***	***26***	***13.8 J***	***19.5 J***
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--
Appendix I Organics										
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	***3.17 J***	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-44A

Parameter Name	Units	GPS	3-iv-24
Alcohols/Gycols by GC			
Acrocrylin	ug/L	NS	<2680
Isobutanol	ug/L	4100	*4400*
Herbicides (GC)			
2,4,5-T	ug/L	70	<0.0745
2,4-D	ug/L	70	<0.206
Silvex (2,4,5-TP)	ug/L	50	0.0252
Inorganics			
Cyanide	ug/L	200	<3.5
Mercury	ug/L	2	<0.11
Sulfide	ug/L	NS	7.1410
TC	ug/L	4300	***3.28 J***
PCBs (EPA Method 8082)			
PCB-1016	ug/L	NS	<0.745
PCB-1221	ug/L	NS	<0.745
PCB-1232	ug/L	NS	<0.745
PCB-1242	ug/L	NS	<0.745
PCB-1248	ug/L	NS	<0.627
PCB-1254	ug/L	NS	<0.627
PCB-1260	ug/L	NS	<0.627
Pesticides (EPA Method 8081A)			
4,4'-DDD	ug/L	0.73	<0.0227
4,4'-DDE	ug/L	0.51	<0.0273
4,4'-DDT	ug/L	0.51	<0.0182
Aldrin	ug/L	0.01	<0.02
alpha-BHC	ug/L	0.028	<0.00593
beta-BHC	ug/L	0.042	<0.0382
Chlordane	ug/L	2	<0.355
delta-BHC	ug/L	2.1	<0.0291
Dieldrin	ug/L	0.011	<0.0191
Endosulfan I	ug/L	42	<0.0255
Endosulfan II	ug/L	42	<0.0236
Endosulfan sulfate	ug/L	NS	<0.0164
Endrin	ug/L	2	<0.0255
Endrin aldehyde	ug/L	2.1	<0.0245
gamma-BHC (Lindane)	ug/L	0.2	<0.00989
Heptachlor	ug/L	0.4	<0.0209
Heptachlor epoxide	ug/L	0.2	<0.0293
Methoxychlor	ug/L	40	<0.0268
Toxaphene	ug/L	3	<0.909
Semivolatile Organics by GC/MS			
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.54
1,3,5-Trinitrobenzene	ug/L	NS	<2.1
1,3-Dinitrobenzene	ug/L	1	<3.2
1,4-Naphthoquinone	ug/L	NS	<3.6
1,4-Phenylenediamine	ug/L	NS	<1.9
1-Naphthylamine	ug/L	NS	<2.5
2,3,4,6-Tetrachlorophenol	ug/L	NS	<5.3
2,4,5-Trichlorophenol	ug/L	700	<5.3
2,4,6-Trichlorophenol	ug/L	16	<5
2,4-Dichlorophenol	ug/L	20	<0.05
2,4-Dimethylphenol	ug/L	100	<0.58
2,4-Dinitrophenol	ug/L	14	<3.1
2,4-Dinitrotoluene	ug/L	0.25	<0.4
2,6-Dichlorophenol	ug/L	765	<0.69
2,6-Dinitrotoluene	ug/L	0.26	<0.52
2-Acetylaminofluorene	ug/L	NS	<2.7
2-Chloronaphthalene	ug/L	560	<0.64
2-Chlorophenol	ug/L	40	<0.54
2-Methylnaphthalene	ug/L	20	<0.59
2-Methylphenol (o-Cresol)	ug/L	35	<0.05
2-Naphthylamine	ug/L	0.057	<2.1
2-Nitroaniline	ug/L	NS	<5.9
2-Nitrophenol	ug/L	NS	<0.8
3,3'-Dichlorobenzidine	ug/L	0.39	<1.4
3,3'-Dimethylbenzidine	ug/L	NS	<1.5
3/4-Methylphenol	ug/L	79	<0.7
3-Methylcholanthrene	ug/L	NS	<0.32
3-Nitroaniline	ug/L	NS	<2.7
4,6-Dinitro-2-methylphenol	ug/L	NS	<2.9
4-Aminobiphenyl	ug/L	0.0083	<2.2
4-Bromophenyl phenyl ether	ug/L	NS	<0.7
4-Chloro-3-methylphenol	ug/L	700	<0.84
4-Chloroaniline	ug/L	20	<0.62
4-Chlorophenyl phenyl ether	ug/L	NS	<0.69
4-Nitroaniline	ug/L	NS	<1.3
4-Nitrophenol	ug/L	60	<7.6
4-Nitro-o-toluidine	ug/L	NS	<2.8
5,12-Dimethylbenz (a) anthracene	ug/L	NS	<1.9
Acenaphthene	ug/L	420	<0.64
Acenaphthylene	ug/L	210	<0.72
Acetophenone	ug/L	NS	<0.69
Anthracene	ug/L	2100	<0.87
Benzo (a) anthracene	ug/L	0.24	<0.85
Benzo (a) pyrene	ug/L	0.2	<0.1
Benzo (b) fluoranthene	ug/L	0.24	<4.9
Benzo (g,h,i) perylene	ug/L	21	<6.3
Benzo (k) fluoranthene	ug/L	2.4	<2.2
Benzyl alcohol	ug/L	760	<1.3
Bis(2-chloroethoxy)methane	ug/L	NS	<0.76
Bis(2-chloroethyl)ether	ug/L	0.16	<0.82
Bis(2-chloroisopropyl) ether	ug/L	900	<0.54
Bis(2-ethylhexyl)phthalate	ug/L	6	<5.3
Butyl benzyl phthalate	ug/L	140	<5.4
Chlorobenzilate	ug/L	NS	<2.6
Chrysene	ug/L	24	<0.87
Dalkon (cis or trans)	ug/L	NS	<4
Dibenzo (a,h) anthracene	ug/L	0.024	<3.9
Dibenzofuran	ug/L	7	<0.79
Diethyl phthalate	ug/L	5600	<2.7
Dimethoate	ug/L	1.4	<3.6
Dimethyl phthalate	ug/L	NS	<1
Di-n-butyl phthalate	ug/L	700	<5.6
Di-n-octyl phthalate	ug/L	140	<7
Dinoseb	ug/L	7	<2.4
Diphenylamine	ug/L	180	<6
Disulfoton	ug/L	0.7	<2.4
Ethyl Methanesulfonate	ug/L	NS	<3.6
Famphur	ug/L	NS	<1.8
Fluoranthene	ug/L	280	<1.7
Fluorene	ug/L	280	<0.79
Hexachlorobenzene	ug/L	1	<0.7
Hexachlorobutadiene	ug/L	1	<0.86
Hexachlorocyclopentadiene	ug/L	50	<5.1
Hexachloroethane	ug/L	1	<0.97
Hexachlorophene	ug/L	NS	<2.6
Hydrazine (1,2-Dyl) pyrene	ug/L	0.24	<4.2
Isodrin	ug/L	NS	<2.7
Isophorone	ug/L	100	<0.93
Isosafrole	ug/L	NS	<2.3
Kepone	ug/L	NS	<1
Methapyrilene	ug/L	NS	<0.76
Methyl Methanesulfonate	ug/L	1.8	<3.3
Nitrobenzene	ug/L	14	<0.8
N-Nitrosodiethylamine	ug/L	NS	<1.4
N-Nitrosodimethylamine	ug/L	0.0034	<0.72
N-Nitrosodi-n-butylamine	ug/L	0.032	<3.9
N-Nitrosodi-n-propylamine	ug/L	NS	<0.92
N-Nitrosodiphenylamine	ug/L	36	<0.75
N-Nitrosomethylethylamine	ug/L	0.008	<4.9
N-Nitrosopiperidine	ug/L	NS	<2.7
N-Nitrosopyrrolidine	ug/L	0.083	<3.6
O,O,O-Triethyl phosphorothioate	ug/L	NS	<5.2
o-Toluidine	ug/L	11	<2.9
p-Dimethylaminoazobenzene	ug/L	NS	<2.2
Parathion-ethyl	ug/L	NS	<2.2
Parathion-methyl	ug/L	7	<2.3
Pentachloronitrobenzene	ug/L	NS	<2.8
Pentachlorophenol	ug/L	1	<5.6
Phenacetin	ug/L	NS	<1.9
Phenanthrene	ug/L	210	<0.79
Phenol	ug/L	2000	<1.1
Pronamide	ug/L	1.4	<3.2
Pyrene	ug/L	5	<2.7
Safrole	ug/L	210	<0.79
Thionazin	ug/L	NS	<2.8
Volatile Organic Compounds			
1,1-Dichloropropene	ug/L	NS	<0.43
1,2,4-Trichlorobenzene	ug/L	70	<0.75
1,2-Dichlorobenzene	ug/L	600	<0.3
1,3-Dichloropropane	ug/L	NS	<0.4
2,2-Dichloropropane	ug/L	NS	<0.69
Acrolein	ug/L	NS	<3.6
Allyl chloride	ug/L	NS	<0.7
Chloroprene	ug/L	NS	<0.23
Dichlorodifluoromethane	ug/L	1000	<0.25
Ethyl Methacrylate	ug/L	NS	<0.68
Methacrylonitrile	ug/L	NS	<3.3
Methyl Methacrylate	ug/L	NS	<0.76
Naphthalene	ug/L	100	<3
Propionitrile	ug/L	NS	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-45A

Parameter Name	Units	GPS	DL	Nov-23	Jan-24	Jul-24	Sep-24	Nov-24
Appendix I Inorganics								
Total Suspended Solids	mg/L	NS	0.581	***2.5***	***1.13 J***	<1.39	***2.63***	***3.25***
Turbidity, Field	NTU	NS	NS	***1.87***	0	***0.67***	***2.16***	***6.59***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--
Antimony	µg/L	6	0.185	<1	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--
Arsenic	µg/L	10	0.505	<0.53	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--
Barium	µg/L	2000	1.04	***218***	***137***	***103***	***118***	***128***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.33	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.1	<0.1	<0.1	***0.194 J***	***0.132 J***
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Chromium	µg/L	100	0.729	***2.02 J***	<1.1	<1.2	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	<0.17	***0.263 J***	***0.257 J***	***0.389 J***	***0.296 J***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--
Lead	µg/L	15	0.324	<0.24	<0.24	<0.26	***0.265 J***	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--
Nickel	µg/L	100	0.929	<1.9	<1.9	<2.1	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--
Selenium	µg/L	50	0.928	<1.4	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Silver	µg/L	100	0.14	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.57	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Vanadium	µg/L	35	0.84	***1.13 J***	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Zinc	µg/L	2000	11.5	<6.4	***8.46 J***	<9.7	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--
Appendix I Organics								
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location MW-46A

Parameter Name	Units	GPS	DL	Nov-23	Jan-24	Jun-24	Sep-24	Dec-24
Appendix I Inorganics								
Total Suspended Solids	mg/L	NS	0.581	***11.5***	***36.1***	***10.3***	***26.3***	***19.6***
Turbidity, Field	NTU	NS	NS	***79.73***	***173.01***	***12.22***	***68.05***	***103.12***
Turbidity, Lab	NTU	NS	0.4	--	--	--	--	--
Antimony	µg/L	6	0.185	<1	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--
Arsenic	µg/L	10	0.505	***0.78 J***	***0.984 J***	***0.714 J***	***0.77 J***	***0.805 J***
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--
Barium	µg/L	2000	1.04	***262***	***275***	***213***	***236***	***262***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.33	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.1	***0.123 J***	<0.1	<0.1	***0.115 J***
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.1	***1.12 J***	<1.2	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***0.405 J***	***0.253 J***	<0.17	***0.241 J***	***0.288 J***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.8	***2.39 J***	<1.8	***1.99 J***	***1.99 J***
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--
Lead	µg/L	15	0.324	<0.24	***0.393 J***	<0.26	***0.386 J***	***0.307 J***
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--
Nickel	µg/L	100	0.929	***33.8***	***35***	***26.6***	***26.6***	***28.2***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--
Selenium	µg/L	50	0.928	<1.4	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Silver	µg/L	100	0.14	<0.5	<0.5	***9.06***	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.26	<0.26	<0.57	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Vanadium	µg/L	35	0.84	<1.1	***2.14 J***	<1.1	***1.17 J***	***1.35 J***
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--
Zinc	µg/L	2000	11.5	<6.4	***7.19 J***	<9.7	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--
Appendix I Organics								
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	***3.37 J***	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-100

This well has been dry for every sampling event since the well was drilled in 2016.

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-101

Parameter Name	Units	GPS	DL	Jun-19	Aug-19	Nov-19	Feb-20	Jun-20	Nov-20	Feb-21	May-21	Sep-21	Mar-22	Sep-22	Jun-23	Aug-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics																			
Total Suspended Solids	mg/L	NS	0.581	***1.63 J***	***1.25 J***	***1.63 J***	***3.25***	***1.63 J***	***2.63***	***1.88***	***27.6***	***3.13***	Dry	***2***	<1.7	Dry	Dry	***1.75 J***	<1.53
Turbidity, Field	NTU	NS	NS	***0.75***	***3.94***	***2.85***	***1.38***	***1.98***	***1.27***	***1.63***	***480.28***	***6.14***	--	***5.49***	***1.73***	--	--	***4.32***	***3.35***
Turbidity, Lab	NTU	NS	0.4	***0.62 J***	***1.65***	***1.91***	***1.46***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<1.32	<1.32	<0.53	<0.58	<0.51	<0.51	--	<1.1	<1.1	--	<0.69	<1	--	--	<1	<1
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***0.735 J***	***0.506 J***	<0.75	<0.88	<0.88	<0.88	--	<0.75	<0.75	--	<0.75	<0.53	--	--	***0.541 J***	<0.53
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***196***	***213***	***207***	***194***	***198***	***205***	***191***	***183***	***212***	--	***214***	***175***	--	--	***177***	***221***
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.53	<0.53	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.33	--	--	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.167	<0.167	***0.045 J***	<0.039	<0.049	<0.049	--	<0.051	<0.051	--	<0.055	<0.1	--	--	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<1.14	<1.14	<0.98	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	--	--	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	<0.402	***0.521 J***	***0.48 J***	***0.434 J***	<0.091	***0.113 J***	--	***0.399 J***	***0.241 J***	--	<0.19	***0.232 J***	--	--	***1.36***	***0.189 J***
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<0.497	<0.497	<2	<3.2	<1.5	<1.5	--	<1.4	<1.4	--	<1.8	<1.8	--	--	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***0.261 J***	<0.186	<0.27	<0.27	<0.11	<0.11	--	<0.21	<0.21	--	<0.24	<0.24	--	--	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***7.24***	***8.82***	***9.54***	***8.93***	***4.61 J***	***7.15***	***10.1***	***10.4***	***8.31***	--	***3.73 J***	***9.62***	--	--	***6.92***	***8.19***
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.982	<0.982	<1	<1	<1	<1	--	<0.96	<0.96	--	<0.96	<1.4	--	--	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.115	<0.115	<0.37	<0.37	<0.37	<0.37	--	<0.42	<0.42	--	<0.49	<0.5	--	--	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.57	<0.57	<0.27	<0.26	<0.26	<0.26	--	<0.26	<0.26	--	<0.26	<0.26	--	--	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	***2.61 J***	<2.15	<0.82	<0.82	<0.85	<0.85	--	<1.1	<1.1	--	<1.1	<1.1	--	--	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	***8.28 J***	***7.3 J***	<10	<10	<10	<10	--	<10	<10	--	<10	<6.4	--	--	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																			
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	<0.38	--	--	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	--	<0.19	<0.19	--	--	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	--	<0.47	<0.47	--	--	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	--	--	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	--	--	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	<0.56	--	--	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	--	<0.59	<0.59	--	--	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	--	<1.2	<1.2	--	--	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	<0.34	--	--	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	<0.37	--	--	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	--	--	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	--	--	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	--	<0.23	<0.23	--	--	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	--	--	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	--	<2	<2	--	<2	<2	--	--	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	--	<2.1	<2.1	--	--	<2.1	<2.1
Acetone	µg/L	6300	1.79	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1	<3.1	--	<3.1	<3.1	--	--	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	--	<2.2	<2.2	--	--	<2.2	<2.2
Benzene	µg/L	5	0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	--	<0.22	<0.22	--	--	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	--	<0.54	<0.54	--	--	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	--	<0.39	<0.39	--	--	<0.39	<0.39
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	--	--	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	--	<0.45	<0.45	--	--	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	--	<0.65	<0.65	--	--	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	<0.4	--	--	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	--	<0.79	<0.79	--	--	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	--	<0.61	<0.61	--	--	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	--	<0.21	<0.21	--	--	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	--	<0.25	<0.25	--	--	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	--	<0.75	<0.75	--	--	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	--	<0.33	<0.33	--	--	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	--	<1.7	<1.7	--	--	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	--	<0.31	<0.31	--	--	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	--	<7	<7	--	<7	<7	--	--	<7	<7
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	--	<0.37	<0.37	--	--	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	--	<0.48	<0.48	--	--	<0.48	<0.48
Toluene	µg/L	1000	0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	--	<0.43	<0.43	--	--	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	--	<0.27	<0.27	--	--	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	--	<0.56	<0.56	--	--	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	--	<1.1	<1.1	--	--	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78	<0.78	--	<0.78	<0.78	--	--	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	--	<0.43	<0.43	--	--	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	--	<0.38	<0.38	--	--	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3	<1.3	--	<1.3	<1.3	--	--	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	--	<2.5	<2.5	--	--	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	--	<0.18	<0.18	--	--	<0.18	<0.18
Xylenes	µg/L	10000	0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	--	<0.4	<0.4	--	--	<0.4	<0.4

Winneshiek County Landfill
Appendix I Results
Monitoring Location GU-1

Parameter Name	Units	GPS	DL	RL	Jul-09	Oct-09	Feb-10	Apr-10	Jun-10	Aug-10	Oct-10	Dec-10	Apr-11	Oct-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Jul-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Aug-18	Oct-18	Jun-19	Nov-19	Jul-20	Nov-20	Jun-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jul-24	Dec-24
Appendix I Inorganics																																										
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Dry	Dry	***84.5***	***1.63 J***	Dry	***5.75***	***1.5 J***	***3 J***	***1.38 J***	***3.33 J***	--	***5.5***	***3.63***	***3.25***	***4.25***	***1.38 J***	***1.88***	***2.75***	***13.3***	***3.25***	***2.88***	***2***	***1.5 J***	<3.7
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***73.8***	***1.378***	--	--	***19.21***	***13.29***	***8.973***	***8.72***	***12.82***	***2.63***	***19.87***	***8.12***	***16.24***	***18.27***	***4.79***	***8.49***	***16.37***	***11.29***	***6.93***	***11.21***	***6.49***	***11.73***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***27***	***4.2***	--	***32.5***	***0.5 J***	***0.9 J***	***1.2***	***8.6***	--	***7.2***	***14.6***	***2.92***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<6	<6	<6	<6	<6	<6	<6	<6	<6	<2.73	<1.45	***0.67 J***	***0.741 J***	***0.548 J***	--	--	<0.161	--	--	<0.237	<0.237	<0.185	***0.331 J***	***5.76***	***11.5***	<0.42	<1.32	<0.53	<0.51	<1.1	<1.1	***2.2***	***1.94 J***	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	<6	<6	<6	<6	<6	***8.01***	<6	<6	<6	<2.73	<1.45	***0.65 J***	***0.647 J***	***0.547 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	***1.4***	***4.02***	***1.26***	<1	<1	<1	<1	***1.72***	<1	***0.645 J***	***5.81***	***2.29***	***1.3***	***1.9***	--	--	***7.87***	<0.945	--	***0.942 J***	<0.672	<0.505	***0.696 J***	***0.859 J***	--	***0.88 J***	***1.1***	***0.887 J***	<0.88	<0.88	<0.75	<0.75	***1.87 J***	<0.75	<0.53	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	***1.12***	<1	<1	<1	<1	<1	<1	<1	<1	***0.576 J***	<0.216	***3.46***	***1.36***	***2.33***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***254***	***307***	***252***	***240***	***232***	***232***	***306***	***270***	***214***	***251***	***224***	***149***	***187***	***139***	--	--	***514***	--	--	***262***	***242***	***262***	***249***	***253***	--	***222***	***220***	***250***	***222***	***215***	***248***	***220***	***237***	***228***	***209***	***238***	***228***	***241***
Barium, Dissolved	µg/L	NS	NS	NS	***266***	***249***	***241***	***241***	***235***	***234***	***235***	***244***	***229***	***235***	***217***	***156***	***180***	***140***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	***0.03 J***	<0.0696	<0.0696	--	--	***0.06 J***	--	--	<0.221	<0.221	<0.125	<0.125	<0.19	--	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	***0.863 J***	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.051	<0.079	<0.0178	<0.0696	<0.0696	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	<0.064	<0.106	<0.106	--	--	<0.112	--	--	<0.0351	<0.0351	<0.0441	<0.0441	***0.062 J***	--	<0.06	<0.167	<0.039	<0.049	<0.049	***0.051 J***	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.124	<0.229	<0.064	<0.106	<0.106	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	***2.33 J***	<0.418	<0.418	--	--	<1.24	--	--	<0.355	<0.355	<0.729	<0.729	<0.76	--	***1.06 J***	<1.14	<0.98	<1.1	<1.1	<1.1	<1.1	***2.33 J***	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.81	<1.81	***2.4 J***	<0.418	<0.418	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	0.5	<20	<20	<20	<20	<20	<20	<20	<20	<20	***1.96 J***	<1.55	***0.89***	***0.533***	***0.823***	--	--	***0.214 J***	--	--	***2.1***	***0.247 J***	<0.0453	***0.192 J***	***2.45***	--	***0.829***	***0.476 J***	***0.392 J***	***0.544***	***0.153 J***	***0.208 J***	***0.387 J***	***1.37***	***1.33***	***0.844***	***0.409 J***	***0.325 J***	***0.513***
Cobalt, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<20	<20	<20	<20	***1.74 J***	<1.55	***0.85***	***0.51***	***0.836***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<20	<20	<20	<20	<20	<20	<20	<20	<20	***13.3 J***	***2.75 J***	***10.4***	***4.14***	***7.48***	--	--	<0.485	--	--	<1.22	<1.22	<2.19	<2.19	<1.6	--	<1.6	<0.497	<2	<1.5	<1.5	***1.6 J***	<1.4	***4.38 J***	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<20	<20	<20	***21.1***	***14.6 J***	<1.51	***9.81***	***4.22***	***7.67***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<4	<4	<4	<4	<4	<4	<4	<4	<1	<0.804	***0.46 J***	<0.207	***0.224 J***	--	--	--	***0.308 J***	--	--	<0.211	<0.211	<0.324	<0.324	<0.25	--	<0.25	<0.186	<0.27	<0.11	<0.11	<0.21	<0.21	***1.85***	<0.24	<0.24	<0.24	<0.26	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	<4	<4	<4	<4	<4	<4	***30.2***	<4	<4	<1	<0.804	***0.48 J***	<0.207	<0.207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	***13.6 J***	***11 J***	***21.6***	***10.9***	***19.6***	--	--	***12.1***	--	--	***14.2***	***13.1***	***14.7***	***15.1***	***18.7***	***11.5***	***16.3***	***14.2***	***16.2***	***14.4***	***15***	***16.7***	***14.8***	***17.7***	***18.3***	***18***	***18.3***	***16.6***	***16.1***
Nickel, Dissolved	µg/L	NS	NS	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	***15.7 J***	***13.2 J***	***20.8***	***10.1***	***20.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	***1.78 J***	***3.7 J***	--	--	<3.34	--	--	<0.63	<0.63	<0.928	<0.928	<0.9	--	<0.9	<0.982	<1	<1	<1	***1.42 J***	<0.96	***3.37 J***	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1.69	<0.7	<0.297	<1.46	<1.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	--	--	<0.042	--	--	<0.153	<0.153	<0.14	<0.14	<0.3	--	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	<0.42	***0.776 J***	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<1.7	<0.027	<0.0789	<0.0789	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	<0.0087	<0.0267	<0.0267	--	--	<0.0325	--	--	<0.0255	***0.032 J***	<0.0644	<0.0644	<0.17	--	<0.17	<0.57	<0.27	<0.26	***0.994 J***	***1.54***	<0.26	***2.56***	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.84	<0.288	***0.01 J***	<0.0267	<0.0267	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	***2.24 J***	***2.2***	<0.833	***1.54***	--	--	<0.449	--	--	<0.255	<0.255	<0.84	<0.84	<0.52	--	<0.52	***2.19 J***	<0.82	<0.85	<0.85	<1.1	<1.1	***1.33 J***	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	<2.1	<2.1	***2.15***	<0.833	***1.38***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***53.5***	***46.5***	<20	***27.5***	***36.2***	***49.5***	<20	***61.4***	<20	***9.32 J***	***107***	***30.3***	***18.4***	***25.4***	--	--	<6.95	--	--	<5.21	***6.02 J***	<11.5	<11.5	***126***	***1380***	<10	<6.92	<10	<10	<10	***13.4 J***	<10	***31.1***	<10	***9.89 J***	***9.11 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	***47.6***	***46.4***	<20	***27.8***	***36.9***	***58.6***	***36.7***	***46.4***	<20	<9.11	***39.2***	***23.4***	***15.7***	***26.7***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																									
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<1	<1	<2	<10	<1	<1	<5	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.38	--	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.47	--	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	***0.26 J***	***0.42 J***	<0.21	<0.21	<0.21	--	--	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.56	--	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	--	--	<0.19	<0.19	<0.19	<0.19	<0.59	--	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<1.2	--	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.13	--	--	<0.13	<0.13	<0.13	<0.13	<0.34	--	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	***0.154 J***	<0.14	--	--	<0.14	--	--	<0.14	<0.14	<0.14	<0.14	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.18	--	--	<0.18	<0.18	<0.18	<0.18	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	<0.87	<0.87	<0.87	--	--	<0.87	--	--	<0.87	<0.87	<0.87	<0.87	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<1	<1	<1	<1	<1	<1	<1	<4	<1	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.2	--	--	<0.2	<0.2	<0.2	<0.2	<0.23	--	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.47	***1.77 J***	***1.32 J***	***1.14 J***	<0.47	--	--	<0.47	--	--	<0.47	<1.04	<1.04	<1.04	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.2	--	--	<0.2	<0.2	<0.2	<0.2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	--	--	<0.22	<0.22	<0.22	<0.22	<2.1	--	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	***3.65 J***	<1.79	***2.76 J***	***3.46 J***	<1.79	--	--	<1.79	--	--	<1.79	<1.79	<1.79	***1.96 J***	<3.1	--	<3.1	***4.25 J***	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	<0.53	<0.53	<0.53	--	--	<0.53	--	--	<0.53	<0.53	<0.53	<0.53	<2.2	--	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.5	***0.52***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	***0.17 J***	<0.11	<0.11	<0.11	--	--	<0.11	--	--	<0.11	<0.11	<0.11	<0.11	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.54	--	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<1	<1	<1	<10	<5	<1	<1	<1	<1	<0.12	<0.12	<0.12	<0.12	<0.12	--	--	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.39	--	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	<0.22	<0.22	<0.22	--	--	<0.22	--	--	<0.22	<0.22	<0.22	<0.22	<1.1	--	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<1	<1	<1	<10	<5	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.45	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<2	<2	<2	<5	<4	<4	<5	<2	<2	<0.24	<0.24	<0.24	<0.24	<0.24	--	--	<0.24	--	--	<0.24	<0.24	<0.24	<0.24	<0.65	--	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	<0.19	<0.19	<0.19	--	--	<0.19	--	--	<0.19	<0.19	<0.19	<0.19	<0.4	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	***0.24 J***	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.79	--	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	***0.41 J***	<0.31	<0.31	<0.31	--	--	<0.31	--	--	<0.31	<0.31	<0.31	<0.31	<0.61	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	<0.13	--	--	<0.13	<0.13	<0.13	<0.13	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	<0.2	--	--	<0.2	<0.2	<0.2	<0.2	<0.75	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.18	--	--	<0.18	<0.18	<0.18	<0.18	<0.33	--	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	***0.18 J***	<0.17	<0.17	--	--	<0.17	--	--	<0.17	***0.213 J***	<0.17	***0.573 J***	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<50	<10	<10	<10	<50	<10	<20	<10	<10	<0.8	<0.8	<0.8	<0.8	<0.8	--	--	<0.8	--	--	<0.8	<0.8	<0.8	<0.8	<7	--	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	0.1	1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.37	--	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	***0.435 J***	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.18	--	--	<0.18	<0.18	<0.18	<0.18	<0.48	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	--	--	<0.15	<0.15	<0.15	<0.15	<0.43	--	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	<0.21	<0.21	<0.21	--	--	<0.21	--	--	<0.21	<0.21	<0.21	<0.21	<0.27	--	<0.27	<0.27	<0.27	<0.27	<0.27

Winneshiek County Landfill
Appendix I Results
Monitoring Location GU-2

Parameter Name	Units	GPS	DL	Jun-18	Aug-18	Oct-18	Jun-19	Aug-19	Nov-19	Jul-20	Nov-20	Jun-21	Sep-21	Mar-22	Sep-22	Nov-23
Appendix I Inorganics																
Total Suspended Solids	mg/L	NS	0.581	***20***	***72***	***23.1***	***1.13 J***	***1.5 J***	***4.62***	***22.8***	***4700***	Dry	***117***	***74***	***2.63***	Dry
Turbidity, Field	NTU	NS	NS	***14.11***	***97.82***	***60.25***	***15.12***	***11.74***	***9.87***	***10.21***	***200***	--	***287.3***	***48.9***	***8.29***	--
Turbidity, Lab	NTU	NS	0.4	***57.5***	***180***	***67***	***3.08***	***3.54***	***12.9***	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	<0.42	<0.42	<0.42	<1.32	<1.32	<0.53	<0.51	***3.75 J***	--	***3.29***	***3.05***	<0.69	--
Antimony, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	***8.67***	***7.76***	***2.77***	***1.07***	***0.931 J***	<0.75	<0.88	***345***	--	***10.1***	***3.94***	***1.25 J***	--
Arsenic, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	***294***	***530***	***276***	***173***	***199***	***172***	***93.6***	***2300***	--	***108***	***117***	***251***	--
Barium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	<0.19	<0.19	<0.19	<0.53	<0.53	<0.27	<0.27	<1.08	--	<0.27	***1.08***	<0.27	--
Beryllium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	<0.06	<0.06	<0.06	<0.167	<0.167	<0.039	<0.049	***0.644***	--	<0.051	***0.075 J***	<0.055	--
Cadmium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	<0.76	<0.76	<0.76	<1.14	<1.14	<0.98	<1.1	***8.83 J***	--	***10.2***	***3.18 J***	<1.1	--
Chromium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	***6.19***	***7.06***	***8.54***	***0.649 J***	***0.538 J***	***0.699***	***0.339 J***	***25.3***	--	***7.22***	***3.05***	***0.786***	--
Cobalt, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	<1.6	<1.6	<1.6	<0.497	<0.497	<2	<1.5	***17.2 J***	--	***3.01 J***	***8.77***	<1.8	--
Copper, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	***0.308 J***	***0.305 J***	<0.25	<0.186	<0.186	<0.27	***0.565***	***8.09***	--	***0.494 J***	***3.57***	<0.24	--
Lead, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	***11.3***	***12***	***31.4***	***5.16***	***4.7***	***4.9 J***	<1.9	***43.9***	--	***81.5***	***11.6***	***6.52***	--
Nickel, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	<0.9	<0.9	<0.9	<0.982	<0.982	<1	<1	<4	--	***1.07 J***	***4.12 J***	<0.96	--
Selenium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	<0.3	<0.3	<0.3	<0.115	<0.115	<0.37	<0.37	<1.48	--	<0.42	***0.909 J***	<0.49	--
Silver, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	<0.17	<0.17	<0.17	<0.57	<0.57	<0.27	<0.26	<1.04	--	<0.26	***3.16***	<0.26	--
Thallium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	***0.527 J***	<0.52	<0.52	***2.53 J***	<2.15	<0.82	***1.63 J***	***21.7***	--	***2.6 J***	***4.24 J***	<1.1	--
Vanadium, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	<10	<10	<10	<6.92	<6.92	<10	<10	***97.5***	--	***41.3***	***20.3***	<10	--
Zinc, Dissolved	µg/L	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<3.8	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<1.9	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<4.7	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<4.5	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	0.21	***0.517 J***	<0.22	<0.22	<0.22	***0.314 J***	***0.28 J***	<0.22	<0.22	--	<2.2	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<5.6	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.0058	0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<5.9	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<12	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<3.4	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<3.7	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<3.9	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<2.7	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	0.2	***2.22***	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	***0.263 J***	--	<2.3	<0.23	<0.23	--
2-Butanone	µg/L	4000	1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	***27.9 J***	<2.1	<2.1	--
2-Hexanone	µg/L	NS	0.2	<2	<2	<2	<2	<2	<2	<2	<2	--	<20	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<21	<2.1	<2.1	--
Acetone	µg/L	6300	1.79	***8.43 J***	***7.35 J***	***3.17 J***	***3.8 J***	<3.1	<3.1	<3.1	***13.2***	--	***90 J***	***47***	<3.1	--
Acrylonitrile	µg/L	0.32	0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<22	<2.2	<2.2	--
Benzene	µg/L	5	0.11	***4.3***	***0.222 J***	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<2.2	<0.22	<0.22	--
Bromochloromethane	µg/L	90	0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<5.4	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<3.9	<0.39	<0.39	--
Bromomethane	µg/L	10	0.22	<1.1	<1.1	<1.1	***1.97 J***	<1.1	<1.1	<1.1	<1.1	--	<11	<1.1	<1.1	--
Carbon disulfide	µg/L	700	0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<4.5	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<6.5	<0.65	<0.65	--
Chlorobenzene	µg/L	100	0.19	***2.33***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<4	<0.4	<0.4	--
Chloroethane	µg/L	2800	0.15	***0.912 J***	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<7.9	<0.79	<0.79	--
Chloromethane	µg/L	NS	0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<6.1	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	0.13	***0.628 J***	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<2.1	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<2.5	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<7.5	<0.75	<0.75	--
Dibromomethane	µg/L	70	0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<3.3	<0.33	<0.33	--
Dichloromethane	µg/L	5	0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<17	<1.7	<1.7	--
Ethylbenzene	µg/L	700	0.21	***5.2***	***0.427 J***	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<3.1	<0.31	<0.31	--
Iodomethane	µg/L	NS	0.8	<7	<7	<7	<7	<7	<7	<7	<7	--	<70	<7	<7	--
Styrene	µg/L	100	0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<3.7	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<4.8	<0.48	<0.48	--
Toluene	µg/L	1000	0.15	***30***	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	***7.58 J***	<0.43	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	0.21	***0.971 J***	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<2.7	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<5.6	<0.56	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<11	<1.1	<1.1	--
Tribromomethane	µg/L	80	0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<7.8	<0.78	<0.78	--
Trichloroethylene	µg/L	5	0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<4.3	<0.43	<0.43	--
Trichlorofluoromethane	µg/L	2000	0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<3.8	<0.38	<0.38	--
Trichloromethane	µg/L	80	0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<13	<1.3	<1.3	--
Vinyl Acetate	µg/L	NS	0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<25	<2.5	<2.5	--
Vinyl Chloride	µg/L	2	0.1	***1.47***	<0.6	<0.6	<0.18	<0.18	<0.18	<0.18	<0.18	--	<1.8	<0.18	<0.18	--
Xylenes	µg/L	10000	0.13	***14.2***	***1.02 J***	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	***8.65 J***	<0.4	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

BEDROCK

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-11

Parameter Name	Units	GPS	Oct-07	Jan-08	Apr-08	Jul-08	Dec-09	Feb-10	Feb-11	Apr-11	Aug-11	Apr-12	Oct-12	Apr-13	Nov-13	May-14	Nov-14	May-15	Sep-15	Nov-16	Nov-17	Jun-18	Oct-18	Dec-18	Jun-19	Jul-20	Nov-20	Jun-21	Aug-21	Sep-21	Mar-22	Jun-22	Sep-22	Jun-23	Jul-24	Nov-24
Appendix I Inorganics																																					
Total Suspended Solids	mg/L	NS	--	--	--	--	--	--	--	--	--	--	--	Dry	Dry	Dry	Dry	Dry	--	Dry	Dry	Dry	***2.13***	<0.638	Dry	Dry	Dry	***1.5 J***	<0.638	Dry	Dry	Dry	<0.638	<0.638	<1.39	Dry
Turbidity, Field	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***2.729***	***0.26***	--	--	--	***1.3***	***2.57***	--	--	--	***6.43***	***1.75***	***1.01***	--
Turbidity, Lab	NTU	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	***1.2***	<0.4	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<6	<6	<6	<6	<6	<6	<6	<6	<6	***2.55 J***	***0.41 J***	--	--	--	--	--	--	--	--	--	<0.42	--	--	--	--	<1.1	--	--	--	--	<0.69	<1	<1	--
Antimony, Dissolved	µg/L	NS	--	--	--	--	<6	<6	<6	<6	<6	<1.45	***0.15 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.66***	***4.52***	<1	***5.88***	***1.61***	<1	<2	<4	<1	***0.251 J***	***1.62***	--	--	--	--	--	--	--	--	--	<0.57	--	--	--	--	<0.75	--	--	--	--	<0.75	<0.53	<0.53	--
Arsenic, Dissolved	µg/L	NS	--	--	--	--	***2.57***	<1	<2	<2	<2	<0.216	***1.16***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***47.4***	***61.9***	***51.7***	***40.8***	***74.1***	***42***	***23.2***	***31.9***	***23.2***	***33.3***	***35.2***	--	--	--	--	--	--	--	--	--	***16.9***	--	--	--	--	***18.7***	--	--	--	--	***17.7***	***15.4***	***14.3***	--
Barium, Dissolved	µg/L	NS	--	--	--	--	***53.7***	***34.2***	***23.1***	***27***	***25.4***	***29.5***	***33.8***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<1	<1	<1	***1.22***	<1	<1	<1	<1	<1	<0.079	***0.06 J***	--	--	--	--	--	--	--	--	--	<0.19	--	--	--	--	<0.27	--	--	--	--	<0.27	<0.33	<0.33	--
Beryllium, Dissolved	µg/L	NS	--	--	--	--	<1	<1	<1	<1	<1	<0.079	<0.0178	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.229	***0.15 J***	--	--	--	--	--	--	--	--	--	<0.06	--	--	--	--	<0.051	--	--	--	--	***0.056 J***	<0.1	<0.1	--
Cadmium, Dissolved	µg/L	NS	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.229	<0.064	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<20	<20	***29.4***	<20	<20	<20	<20	<20	<20	<1.81	***1.61 J***	--	--	--	--	--	--	--	--	--	***0.795 J***	--	--	--	--	<1.1	--	--	--	--	<1.1	<1.1	<1.2	--
Chromium, Dissolved	µg/L	NS	--	--	--	--	<20	<20	<20	<20	<20	<1.81	***0.46 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	2.1	<20	<20	<20	<20	<20	<20	<20	<20	<20	***2.97 J***	***2.17***	--	--	--	--	--	--	--	--	--	***7.89***	***2.57***	--	--	--	***0.285 J***	--	--	--	--	***0.244 J***	<0.17	<0.17	--
Cobalt, Dissolved	µg/L	NS	--	--	--	--	<20	<20	<20	<20	<20	<1.55	***0.35 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<20	<20	<20	<20	<20	<20	<20	***27.7***	***25***	***5.62 J***	***7.42***	--	--	--	--	--	--	--	--	--	<1.6	--	--	--	--	<1.4	--	--	--	--	<1.8	<1.8	<1.8	--
Copper, Dissolved	µg/L	NS	--	--	--	--	<20	<20	<20	***29.6***	***26.6***	<1.51	***2.31***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<4	***4.4***	<4	***5.38***	<4	***4.39***	<4	<4	<4	***1.7 J***	***2.64***	--	--	--	--	--	--	--	--	--	<0.25	--	--	--	--	<0.21	--	--	--	--	<0.24	<0.24	<0.26	--
Lead, Dissolved	µg/L	NS	--	--	--	--	***4.18***	<4	<4	<4	<4	<0.804	***0.04 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	<50	<50	***50.3***	<50	<50	<50	<50	<50	<50	***31.9 J***	***29.3***	--	--	--	--	--	--	--	--	--	***43.3***	***35.1***	--	--	--	***34.1***	***22.6***	--	--	--	***30.2***	***21.6***	***16.3***	--
Nickel, Dissolved	µg/L	NS	--	--	--	--	<50	<50	<50	<50	<50	***30.2 J***	***24.1***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<5	<5	<5	<5	<5	<10	<5	<5	<5	<0.7	<0.297	--	--	--	--	--	--	--	--	--	<0.9	--	--	--	--	***2.51 J***	--	--	--	--	***2.87 J***	***2.16 J***	***1.91 J***	--
Selenium, Dissolved	µg/L	NS	--	--	--	--	<5	<5	<5	<5	<5	<0.7	<0.297	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1.7	<0.027	--	--	--	--	--	--	--	--	--	<0.3	--	--	--	--	<0.42	--	--	--	--	<0.49	<0.5	<0.5	--
Silver, Dissolved	µg/L	NS	--	--	--	--	<20	<20	<20	<20	<20	<1.7	<0.027	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.288	***0.04 J***	--	--	--	--	--	--	--	--	--	<0.17	--	--	--	--	<0.26	--	--	--	--	<0.26	<0.26	<0.57	--
Thallium, Dissolved	µg/L	NS	--	--	--	--	<2	<2	<2	<2	<2	<0.288	<0.0087	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<50	<50	<50	<50	<50	<50	<50	<50	<50	***5.57 J***	***1.6***	--	--	--	--	--	--	--	--	--	<0.52	--	--	--	--	<1.1	--	--	--	--	<1.1	<1.1	<1.1	--
Vanadium, Dissolved	µg/L	NS	--	--	--	--	<50	<50	<50	<50	<50	***2.86 J***	<0.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***134***	<20	***61.6***	***31.8***	***177***	***28.8***	***92.9***	***23.5***	***28.3***	***32.1***	***40.7***	--	--	--	--	--	--	--	--	--	***119***	***82.8***	--	--	--	***140***	***70.1***	--	--	--	***146***	***98.5***	***60***	--
Zinc, Dissolved	µg/L	NS	--	--	--	--	***131***	***20.6***	***89.3***	<20	<20	***37.6***	***25.1***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																					
1,1,1,2-Tetrachloroethane	µg/L	70	<1	<1	<1	<1	<5	<2	<2	<1	<1	<0.21	<0.21	--	--	--	--	--	--	--	--	--	<0.38	--	--	--	--	<0.38	--	--	--	--	<0.38	<0.38	<0.38	--
1,1,1-Trichloroethane	µg/L	200	<1	<1	<1	<1	<10	<1	<1	<1	<1	<0.12	<0.12	--	--	--	--	--	--	--	--	--	<0.19	--	--	--	--	<0.19	--	--	--	--	<0.19	<0.19	<0.19	--
1,1,2,2-Tetrachloroethane	µg/L	0.3	<1	<1	<1	<1	<1	<2	<1	<1	<1	<0.1	<0.1	--	--	--	--	--	--	--	--	--	<0.47	--	--	--	--	<0.47	--	--	--	--	<0.47	<0.47	<0.47	--
1,1,2-Trichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.12	<0.12	--	--	--	--	--	--	--	--	--	<0.45	--	--	--	--	<0.45	--	--	--	--	<0.45	<0.45	<0.45	--
1,1-Dichloroethane	µg/L	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	--	--	--	--	--	--	--	--	--	<0.22	--	--	--	--	<0.22	--	--	--	--	<0.22	<0.22	<0.22	--
1,1-Dichloroethylene	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.15	<0.15	--	--	--	--	--	--	--	--	--	<0.56	--	--	--	--	<0.56	--	--	--	--	<0.56	<0.56	<0.56	--
1,2,3-Trichloropropane	µg/L	0.006	<1	<1	<1	<1	<1	<2	<1	<1	<1	<0.19	<0.19	--	--	--	--	--	--	--	--	--	<0.59	--	--	--	--	<0.59	--	--	--	--	<0.59	<0.59	<0.59	--
1,2-Dibromo-3-chloropropane	µg/L	0.2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.12	<0.12	--	--	--	--	--	--	--	--	--	<1.2	--	--	--	--	<1.2	--	--	--	--	<1.2	<1.2	<1.2	--
1,2-Dibromoethane	µg/L	0.05	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	--	--	--	--	--	--	--	--	--	<0.34	--	--	--	--	<0.34	--	--	--	--	<0.34	<0.34	<0.34	--
1,2-Dichlorobenzene	µg/L	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.14	<0.14	--	--	--	--	--	--	--	--	--	<0.37	--	--	--	--	<0.37	--	--	--	--	<0.37	<0.37	<0.37	--
1,2-Dichloroethane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	--	--	--	--	--	--	--	--	--	<0.39	--	--	--	--	<0.39	--	--	--	--	<0.39	<0.39	<0.39	--
1,2-Dichloropropane	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.87	<0.87	--	--	--	--	--	--	--	--	--	<0.27	--	--	--	--	<0.27	--	--	--	--	<0.27	<0.27	<0.27	--
1,4-Dichlorobenzene	µg/L	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	--	--	--	--	--	--	--	--	--	<0.23	--	--	--	--	<0.23	--	--	--	--	<0.23	<0.23	<0.23	--
2-Butanone	µg/L	4000	<10	<10	<10	<10	<10	<10	<10	<10	<10	***2.29 J***	<0.47	--	--	--	--	--	--	--	--	--	<2.1	--	--	--	--	<2.1	--	--	--	--	<2.1	<2.1	***2.49 J***	--
2-Hexanone	µg/L	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.2	<0.2	--	--	--	--	--	--	--	--	--	<2	--	--	--	--	<2	--	--	--	--	<2	<2	<2	--
4-Methyl-2-pentanone	µg/L	560	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.22	<0.22	--	--	--	--	--	--	--	--	--	<2.1	--	--	--	--	<2.1	--	--	--	--	<2.1	<2.1	<2.1	--
Acetone	µg/L	6300	<10	<10	<10	<10	<10	<10	<10	<10	<10	***3.82 J***	<1.79	--	--	--	--	--	--	--	--	--	<3.1	--	--	--	--	<3.1	--	--	--	--	<3.1	<3.1	<3.1	--
Acrylonitrile	µg/L	0.32	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.53	<0.53	--	--	--	--	--	--	--	--	--	<2.2	--	--	--	--	<2.2	--	--	--	--	<2.2	<2.2	<2.2	--
Benzene	µg/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.11	<0.11	--	--	--	--	--	--	--	--	--	<0.22	--	--	--	--	<0.22	--	--	--	--	<0.22	<0.22	<0.22	--
Bromochloromethane	µg/L	90	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.12	<0.12	--	--	--	--	--	--	--	--	--	<0.54	--	--	--	--	<0.54	--	--	--	--	<0.54	<0.54	<0.54	--
Bromodichloromethane	µg/L	80	<1	<1	<1	<1	<5	<1	<1	<1	<1	<0.12	<0.12	--	--	--	--	--	--	--	--	--	<0.39	--	--	--	--	<0.39	--	--	--	--	<0.39	<0.39	<0.39	--
Bromomethane	µg/L	10	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.22	<0.22	--	--	--	--	--	--	--	--	--	<1.1	--	--	--	--	<1.1	--	--	--	--	<1.1	<1.1	<1.1	--
Carbon disulfide	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	***0.78 J***	--	--	--	--	--	--	--	--	--	<0.45	--	--	--	--	<0.45	--	--	--	--	<0.45	<0.45	<0.45	--
Carbon Tetrachloride	µg/L	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.24	<0.24	--	--	--	--	--	--	--	--	--	<0.65	--	--	--	--	<0.65	--	--	--	--	<0.65	<0.65	<0.65	--
Chlorobenzene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	--	<0.4	--	--	--	--	<0.4	<0.4	<0.4	--
Chloroethane	µg/L	2800	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.15	<0.15	--	--	--	--	--	--	--	--	--	<0.79	--	--	--	--	<0.79	--	--	--	--	<0.79	<0.79	<0.79	--
Chloromethane	µg/L	NS	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.31	***0.31 J***	--	--	--	--	--	--	--	--	--	<0.61	--	--	--	--	<0.61	--	--	--	--	<0.61	<0.61	<0.61	--
cis-1,2-Dichloroethylene	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.13	<0.13	--	--	--	--	--	--	--	--	--	<0.21	--	--	--	--	<0.21	--	--	--	--	<0.21	<0.21	<0.21	--
cis-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.15	<0.15	--	--	--	--	--	--	--	--	--	<0.25	--	--	--	--	<0.25	--	--	--	--	<0.25	<0.25	<0.25	--
Dibromochloromethane	µg/L	80	<5	<5	<5	<5	<10	<5	<5	<5	<5	<0.2	<0.2	--	--	--	--	--	--	--	--	--	<0.75	--	--	--	--	<0.75	--	--	--	--	<0.75	<0.75	<0.75	--
Dibromomethane	µg/L	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.18	<0.18	--	--	--	--	--	--	--	--	--	<0.33	--	--	--	--	<0.33	--	--	--	--	<0.33	<0.33	<0.33	--
Dichloromethane	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.17	<0.17	--	--	--	--	--	--	--	--	--	<1.7	--	--	--	--	<1.7	--	--	--	--	<1.7	<1.7	<1.7	--
Ethylbenzene	µg/L	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	--	--	--	--	--	--	--	--	--	<0.31	--	--	--	--	<0.31	--	--	--	--	<0.31	<0.31	<0.31	--
Iodomethane	µg/L	NS	<10	<10	<10	<10	<20	<10	<20	<10	<10	<0.8	<0.8	--	--	--	--	--	--	--	--	--	<7	--	--	--	--	<7	--	--	--	--	<7	<7	<7	--
Styrene	µg/L	100	<1	<1	<1	<1	<2	<2	<1	<1	<1	<0.1	<0.1	--	--	--	--	--	--	--	--	--	<0.37	--	--	--	--	<0.37	--	--	--	--	<0.37	<0.37	<0.37	--
Tetrachloroethylene	µg/L	5	<1	<1	<1	<1	<1	<2	<1	<1	<1	<0.18	<0.18	--	--	--	--	--	--	--	--	--	<0.48	--	--	--	--	<0.48	--	--	--	--	<0.48	<0.48	<0.48	--
Toluene	µg/L	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.15	<0.15	--	--	--	--	--	--	--	--	--	<0.43	--	--	--	--	<0.43	--	--	--	--	<0.43	<0.43	<0.43	--
Trans-1,2-dichloroethylene	µg/L	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.21	<0.21	--	--	--	--	--	--	--	--	--	<0.27	--	--	--	--	<0.27	--	--	--	--	<0.27	<0.27	<0.27	--
trans-1,3-Dichloropropene	µg/L	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.22	<0.22	--	--	--	--	--	--	--	--	--	<0.56	--	--	--	--	<0.56	--	--	--	--	<0.56	<0.56	<0.56	--
trans-1,4-Dichloro-2-butene	µg/L	1.8	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.13	<0.13	--	--	--	--	--	--	--	--	--	<1.1	--	--	--	--	<1.1	--	--	--	--	<1.1	<1.1	<1.1	--
Tribromomethane	µg/L	80	<5	<5	<5	<5	<10	<5	<5	<5	<5	<0.14	<0.14	--	--	--	--	--	--	--	--	--	<0.78	--	--	--	--	<0.78	--	--	--	--	<0.78	<0.78	<0.78	--
Trichloroethylene	µg/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.19	<0.19	--	--	--	--	--	--	--	--	--	<0.43	--	--	--	--	<0.43	--	--	--	--	<0.43	<0.43	<0.43	--
Trichlorofluoromethane	µg/L	2000	<4	<4	<4	<4	<4	<4	<4	<4	<4	<0.17	<0.17	--	--	--	--	--	--	--	--	--	<0.38	--	--	--	--	<0.38	--	--	--	--	<0.38	<0.38	<0.38	--
Trichloromethane	µg/L	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.28	<0.28	--	--	--	--	--	--	--	--	--	<1.3	--	--	--	--	<1.3	--	--	--	--	<1.3	<1.3	<1.3	--
Vinyl Acetate	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.74	<0.74	--	--	--	--	--	--	--	--	--	<2.5	--	--	--	--	<2.5	--	--	--	--	<2.5	<2.5	<2.5	--
Vinyl Chloride	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	--	--	--	--	--	--	--	--	--	<0.6	--	--	--	--	<0.18	--	--	--	--	<0.18	<0.18	<0.18	--
Xylenes	µg/L	10000	<3	<3	<3	<3	<6	<3	<3	<3	<3	<0.13	<0.13	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	--	<0.4	--	--	--	--	<0.4	<0.4	<0.4	--

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-11

Parameter Name	Units	GPS	Jun-23	Jul-24
Alcohols/Glycols by GC				
Acetonitrile	µg/L	NS	<0.57	<2600
Isobutanol	µg/L	2100	<0.55	<2400
Herbicides (GC)				
2,4,5-T	µg/L	70	<0.16	<0.0923
2,4-D	µg/L	70	<0.341	<0.355
Silvex (2,4,5-TP)	µg/L	50	<0.0928	<0.0312
Inorganics				
Cyanide	µg/L	200	<4.3	<3.5
Mercury	µg/L	2	<0.00014	<0.11
Sulfide	µg/L	NS	<231	<1410
Zinc	µg/L	4200	<2.3	<2.3
PCBs (EPA Method 8082)				
PCB-1016	µg/L	NS	<0.202	<0.767
PCB-1221	µg/L	NS	<0.202	<0.767
PCB-1232	µg/L	NS	<0.202	<0.767
PCB-1242	µg/L	NS	<0.202	<0.767
PCB-1248	µg/L	NS	<0.131	<0.646
PCB-1254	µg/L	NS	<0.131	<0.646
PCB-1260	µg/L	NS	<0.131	<0.646
Pesticides (EPA Method 8081A)				
4,4'-DDD	µg/L	0.73	<0.0321	<0.0234
4,4'-DDE	µg/L	0.51	<0.0321	<0.0281
4,4'-DDT	µg/L	0.51	<0.05	<0.0187
Aldrin	µg/L	0.01	<0.0381	<0.0206
alpha-BHC	µg/L	0.028	<0.0345	<0.00936
beta-BHC	µg/L	0.042	<0.044	<0.0393
Chlordane	µg/L	2	<0.964	<0.365
delta-BHC	µg/L	2.1	<0.0321	<0.0299
Dieldrin	µg/L	0.011	<0.031	<0.0197
Endosulfan I	µg/L	42	<0.0393	<0.0262
Endosulfan II	µg/L	42	<0.0345	<0.0243
Endosulfan sulfate	µg/L	NS	<0.0357	<0.0168
Endrin	µg/L	2	<0.031	<0.0262
Endrin aldehyde	µg/L	2.1	<0.0345	<0.0253
gamma-BHC (Lindane)	µg/L	0.2	<0.0429	<0.00936
Heptachlor	µg/L	0.4	<0.0393	<0.0215
Heptachlor epoxide	µg/L	0.2	<0.0345	<0.0299
Methoxychlor	µg/L	40	<0.0498	<0.0299
Toxaphene	µg/L	3	<0.821	<0.936
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<0.614	<0.675
1,3,5-Trimethylbenzene	µg/L	NS	<2.61	<2.88
1,3-Dinitrobenzene	µg/L	1	<3.64	<4
1,4-Naphthoquinone	µg/L	NS	<4.09	<4.5
1,4-Phenylenediamine	µg/L	NS	<2.16	<2.38
1-Naphthylamine	µg/L	NS	<2.84	<3.13
2,3,4,6-Tetrachlorophenol	µg/L	NS	<6.02	<6.63
2,4,5-Trichlorophenol	µg/L	700	<6.02	<6.63
2,4,6-Trichlorophenol	µg/L	16	<5.68	<6.25
2,4-Dichlorophenol	µg/L	20	<0.966	<1.06
2,4-Dimethylphenol	µg/L	100	<0.659	<0.725
2,4-Dinitrophenol	µg/L	14	<14.8	<16.3
2,4-Dinitrotoluene	µg/L	0.25	<7.27	<8
2,6-Dichlorophenol	µg/L	NS	<0.784	<0.863
2,6-Dinitrotoluene	µg/L	0.25	<0.391	<0.65
2-Acetylaminofluorene	µg/L	NS	<3.07	<3.38
2-Chloronaphthalene	µg/L	560	<0.727	<0.8
2-Chlorophenol	µg/L	40	<0.614	<0.675
2-Methylnaphthalene	µg/L	28	<0.67	<0.738
2-Methylphenol (o-Cresol)	µg/L	35	<0.739	<0.813
2-Naphthylamine	µg/L	0.097	<2.39	<2.63
2-Nitroaniline	µg/L	NS	<6.7	<7.38
2-Nitrophenol	µg/L	NS	<7.73	<8.5
3,3'-Dichlorobenzidine	µg/L	0.59	<1.59	<1.75
3,3'-Dimethylbenzidine	µg/L	NS	<1.7	<1.88
3+4-Methylphenol	µg/L	70	<0.795	<0.875
3-Methylcholanthrene	µg/L	NS	<0.364	<0.4
3-Nitroaniline	µg/L	NS	<3.07	<3.38
4,6-Dinitro-2-methylphenol	µg/L	NS	<7.84	<8.63
4-Aminobiphenyl	µg/L	0.0085	<2.5	<2.75
4-Bromophenyl phenyl ether	µg/L	NS	<0.795	<0.875
4-Chloro-3-methylphenol	µg/L	700	<0.955	<1.05
4-Chloroaniline	µg/L	28	<0.705	<0.775
4-Chlorophenyl phenyl ether	µg/L	NS	<0.784	<0.863
4-Nitroaniline	µg/L	NS	<1.48	<1.63
4-Nitrophenol	µg/L	60	<8.64	<9.5
4-Nitro-o-toluidine	µg/L	NS	<3.18	<3.5
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<2.16	<2.38
Acenaphthene	µg/L	420	<0.727	<0.8
Acenaphthylene	µg/L	210	<0.818	<0.9
Acetophenone	µg/L	NS	<0.784	<0.863
Anthracene	µg/L	2100	<0.989	<1.09
Benzo (a) anthracene	µg/L	0.24	<0.966	<1.06
Benzo (a) pyrene	µg/L	0.2	<9.2	<10.1
Benzo (b) fluoranthene	µg/L	0.24	<5.57	<6.13
Benzo (g,h,i) perylene	µg/L	21	<7.16	<7.88
Benzo (k) fluoranthene	µg/L	2.4	<2.5	<2.75
Benzyl alcohol	µg/L	700	<1.48	<1.63
Bis(2-chloroethoxy)methane	µg/L	NS	<0.864	<0.95
Bis(2-chloroethyl)ether	µg/L	0.16	<0.932	<1.03
Bis(2-chloroisopropyl) ether	µg/L	309	<0.614	<0.675
Bis(2-ethylhexyl)phthalate	µg/L	6	<8.25	<6.88
Butyl benzyl phthalate	µg/L	140	<6.14	<6.75
Chlorobenzilate	µg/L	NS	<4.09	<4.5
Chrysene	µg/L	24	<0.989	<1.09
Diallate (cis or trans)	µg/L	NS	<4.51	<5
Dibenzo (a,h) anthracene	µg/L	0.024	<4.43	<4.88
Dibenzofuran	µg/L	7	<0.841	<0.925
Diethyl phthalate	µg/L	5600	<1.93	<2.13
Dimethoate	µg/L	1.4	<4.09	<4.5
Dimethyl phthalate	µg/L	NS	<1.14	<1.25
Di-n-butyl phthalate	µg/L	700	<6.36	<7
Di-n-octyl phthalate	µg/L	140	<7.95	<8.75
Diuron	µg/L	7	<2.73	<3
Diphenylamine	µg/L	280	<6.82	<7.5
Disulfoton	µg/L	0.7	***4.14 J***	<3
Ethyl Methanesulfonate	µg/L	NS	<4.09	<4.5
Famphur	µg/L	NS	<4.32	<4.75
Fluoranthene	µg/L	280	<1.93	<2.13
Fluorene	µg/L	280	<0.898	<0.988
Hexachlorobenzene	µg/L	1	<0.795	<0.875
Hexachlorobutadiene	µg/L	1	<0.977	<1.08
Hexachlorocyclopentadiene	µg/L	50	<5.8	<6.38
Hexachloroethane	µg/L	1	<3.1	<3.41
Hexachloropropene	µg/L	NS	<2.95	<3.25
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<4.77	<5.25
Isodrin	µg/L	NS	<5.34	<5.88
Isophorone	µg/L	100	<1.06	<1.16
Isosafrole	µg/L	NS	<2.61	<2.88
Kepone	µg/L	NS	<1.14	<1.25
Methapyrilene	µg/L	NS	<0.864	<0.95
Methyl Methanesulfonate	µg/L	1.8	<3.75	<4.13
Nitrobenzene	µg/L	14	<0.909	<1
N-Nitrosodiethylamine	µg/L	NS	<3.86	<4.25
N-Nitrosodimethylamine	µg/L	0.0034	<0.818	<0.9
N-Nitrosodi-n-butylamine	µg/L	0.033	<4.43	<4.88
N-Nitrosodi-n-propylamine	µg/L	NS	<1.05	<1.15
N-Nitrosodiphenylamine	µg/L	56	<0.852	<0.938
N-Nitrosomethylethylamine	µg/L	0.008	<5.57	<6.13
N-Nitrosopiperidine	µg/L	NS	<3.07	<3.38
N-Nitrosopyrrolidine	µg/L	0.083	<4.09	<4.5
O,O,O-Triethyl phosphorothioate	µg/L	NS	<3.64	<4
o-Toluidine	µg/L	11	<3.3	<3.63
p-(Dimethylamino)azobenzene	µg/L	NS	<2.5	<2.75
Pyridine	µg/L	NS	<2.5	<2.75
Safrole	µg/L	NS	<2.61	<2.88
Tetrachloroethene	µg/L	1	<3.18	<3.5
Tetrachloromethane	µg/L	1	<6.59	<7.25
Pentachloroethane	µg/L	1	<10.9	<12
Phenacetin	µg/L	NS	<2.16	<2.38
Phenanthrene	µg/L	210	<0.898	<0.988
Phenol	µg/L	2000	<1.25	<1.38
Pronamide	µg/L	1.4	<3.64	<4
Propanil	µg/L	7	<3.07	<3.38
Pyrene	µg/L	210	<0.898	<0.988
Sulfotep	µg/L	NS	<3.18	<3.5
Thionazin	µg/L	NS	<3.98	<4.38
Volatile Organic Compounds				
1,1-Dichloropropene	µg/L	NS	<0.43	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<0.75	<0.75
1,3-Dichlorobenzene	µg/L	600	<0.3	<0.3
1,3-Dichloropropane	µg/L	NS	<0.4	<0.4
2,2-Dichloropropane	µg/L	NS	<0.69	<0.69
Aramite	µg/L	NS	<3.6	<3.6
Allyl chloride	µg/L	NS	<0.7	<0.7
Chloroprene	µg/L	NS	<0.23	<0.23
Dichlorodifluoromethane	µg/L	1000	<0.25	<0.25
Ethyl Methacrylate	µg/L	NS	<0.68	<0.68
Methacrylonitrile	µg/L	NS	<3.3	<3.3
Methyl Methacrylate	µg/L	NS	<0.76	<0.76
Naphthalene	µg/L	100	<3	<3
Propionitrile	µg/L	NS	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-18

Parameter Name	Units	GPS	Jul-24	Aug-24	Dec-24
Appendix I Inorganics					
Total Suspended Solids	mg/L	NS	<1.39	***5.88***	***5.33***
Turbidity, Field	NTU	NS	***6.4***	***2.65***	***1.54***
Turbidity, Lab	NTU	NS	--	--	--
Antimony	µg/L	6	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--
Arsenic	µg/L	10	<0.53	<0.53	<0.53
Arsenic, Dissolved	µg/L	NS	--	--	--
Barium	µg/L	2000	***60.5***	***69.2***	***76.2***
Barium, Dissolved	µg/L	NS	--	--	--
Beryllium	µg/L	4	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--
Cadmium	µg/L	5	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--
Chromium	µg/L	100	<1.2	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--
Cobalt	µg/L	2.1	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--
Copper	µg/L	1300	***2.72 J***	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--
Lead	µg/L	15	<0.26	<0.26	<0.26
Lead, Dissolved	µg/L	NS	--	--	--
Nickel	µg/L	100	<2.1	<2.1	<2.1
Nickel, Dissolved	µg/L	NS	--	--	--
Selenium	µg/L	50	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--
Silver	µg/L	100	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--
Thallium	µg/L	2	<0.57	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--
Vanadium	µg/L	35	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--
Zinc	µg/L	2000	<9.7	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--
Appendix I Organics					
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-19/19R

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Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-19-19R

Parameter Name	Units	GPS	Nov-19	Jun-20	Aug-20	Nov-20	Mar-21	Start MW-19R Dec-21
Alcohols/Glycols by GC								
Acetonitrile	ug/L	NS	<126	<404	--	--	<404	--
Isobutanol	ug/L	2100	<177	<502	--	--	<502	--
Herbicides (GC)								
2,4,5-T	ug/L	70	<0.523	<0.482	--	--	<0.495	--
2,4-D	ug/L	70	<0.562	<0.496	--	--	<0.532	--
Silvex (2,4,5-TP)	ug/L	50	<0.349	<0.308	--	--	<0.331	--
Inorganics								
Cyanide	ug/L	200	<5	<5	--	--	<5.3	--
Mercury	ug/L	2	<0.1	<0.1	--	--	<0.13	--
Sulfide	ug/L	NS	<211	**2570**	< 10000	< 1000	< 10000	<231
Tin	ug/L	4200	<1.8	<2.4	--	--	<3	--
PCBs (EPA Method 8082)								
PCB-1016	ug/L	NS	<0.0467	<0.277	--	--	<0.31	--
PCB-1221	ug/L	NS	<0.172	<0.277	--	--	<0.31	--
PCB-1232	ug/L	NS	<0.118	<0.277	--	--	<0.31	--
PCB-1242	ug/L	NS	<0.14	<0.277	--	--	<0.31	--
PCB-1248	ug/L	NS	<0.118	<0.221	--	--	<0.25	--
PCB-1254	ug/L	NS	<0.0989	<0.221	--	--	<0.25	--
PCB-1260	ug/L	NS	<0.0473	<0.221	--	--	<0.25	--
Pesticides (EPA Method 8081A)								
4,4'-DDD	ug/L	0.73	<0.00393	<0.00189	--	--	<0.01	--
4,4'-DDE	ug/L	0.51	<0.00223	***0.00438 J***	--	--	<0.010	--
4,4'-DDT	ug/L	0.53	***0.00459 J***	<0.00469	--	--	<0.0143	--
Aldrin	ug/L	0.01	<0.00475	***0.0054 J***	--	--	<0.0143	--
alpha-BHC	ug/L	0.028	<0.00393	<0.00181	--	--	<0.0119	--
beta-BHC	ug/L	0.0422	<0.00511	***0.0072 J J***	--	--	<0.0155	--
Chlordane	ug/L	2	<0.0681	<0.0681	--	--	<0.262	--
delta-BHC	ug/L	2.1	<0.00245	<0.00245	--	--	<0.0179	--
Dieldrin	ug/L	0.011	***0.00275 J***	<0.00213	--	--	<0.0143	--
Endosulfan I	ug/L	42	***0.00496 J***	<0.00213	--	--	<0.0131	--
Endosulfan II	ug/L	42	***0.00531 J***	<0.00302	--	--	<0.00564	--
Endosulfan sulfate	ug/L	NS	<0.00269	<0.00366	--	--	<0.01	--
Endrin	ug/L	2	***0.00207 J***	<0.00269	--	--	<0.0119	--
Endrin aldehyde	ug/L	2.1	<0.00777	<0.00777	--	--	<0.0114	--
gamma-BHC (Lindane)	ug/L	0.2	<0.00262	<0.00269	--	--	<0.0167	--
Heptachlor	ug/L	0.4	<0.00277	<0.00277	--	--	<0.0143	--
Heptachlor epoxide	ug/L	0.2	***0.00813 J***	<0.00668	--	--	<0.0108	--
Methoxychlor	ug/L	40	<0.00223	<0.00223	--	--	<0.0167	--
Toxaphene	ug/L	3	<0.0617	<0.0617	--	--	<0.488	--
Semivolatile Organics by GC/MS								
1,2,4,5-Tetrachlorobenzene	ug/L	2.1	<0.148	<1.72	--	--	<1.88	--
1,3,5-Trinitrobenzene	ug/L	NS	<1.35	<1.4	--	--	<1.53	--
1,3-Dinitrobenzene	ug/L	1	<1.07	<1.08	--	--	<1.18	--
1,4-Naphthoquinone	ug/L	NS	<0.388	<1.05	--	--	<1.15	--
1,4-Phenylenediamine	ug/L	NS	<0.88	<0.538	--	--	<0.588	--
1-Naphthylamine	ug/L	NS	<0.254	<0.946	--	--	<1.04	--
2,3,4,6-Tetrachlorophenol	ug/L	NS	<0.528	<1.08	--	--	<1.16	--
2,4,5-Trichlorophenol	ug/L	700	<0.748	<1.18	--	--	<1.29	--
2,4,6-Trichlorophenol	ug/L	16	<0.741	<1.29	--	--	<1.41	--
2,4-Dichlorophenol	ug/L	20	<0.328	<1.18	--	--	<1.29	--
2,4-Dimethylphenol	ug/L	100	<0.222	<1.08	--	--	<1.18	--
2,4-Dinitrophenol	ug/L	14	<2.79	<0.13	--	--	<0.71	--
2,4-Dinitrotoluene	ug/L	0.25	<0.487	<1.18	--	--	<1.29	--
2,6-Dichlorophenol	ug/L	NS	<0.233	<1.18	--	--	<1.29	--
2,6-Dinitrotoluene	ug/L	0.26	<0.254	<1.18	--	--	<1.29	--
2-Acetylaminofluorene	ug/L	NS	<1.31	<1.29	--	--	<1.41	--
2-Chloronaphthalene	ug/L	560	<0.243	<1.4	--	--	<1.53	--
2-Chlorophenol	ug/L	40	<0.159	<1.18	--	--	<1.29	--
2-Methylnaphthalene	ug/L	28	<0.202	<1.4	--	--	<1.53	--
2-Methylphenol (o-Cresol)	ug/L	35	<0.19	<1.08	--	--	<1.18	--
2-Naphthylamine	ug/L	0.007	<0.233	<0.925	--	--	<1.01	--
2-Nitroaniline	ug/L	NS	<1.31	<1.29	--	--	<1.41	--
2-Nitrophenol	ug/L	NS	<1.02	<1.72	--	--	<1.88	--
3,3'-Dichlorobenzidine	ug/L	0.19	<0.857	<1.94	--	--	<2.12	--
3,4'-Dimethylbenzidine	ug/L	NS	<0.222	<2.35	--	--	<2.35	--
3,4-Methylphenol	ug/L	70	<0.19	<0.857	--	--	<0.894	--
3-Methylcholanthrene	ug/L	NS	<0.942	<2.49	--	--	<2.94	--
3-Nitroaniline	ug/L	NS	<0.614	<1.08	--	--	<1.18	--
4,6-Dinitro-2-methylphenol	ug/L	NS	<2.35	<2.69	--	--	<2.94	--
4-Aminobiphenyl	ug/L	0.0003	<0.317	<1.03	--	--	<1.13	--
4-Bromophenyl phenyl ether	ug/L	NS	<0.387	<2.04	--	--	<2.24	--
4-Chloro-3-methylphenol	ug/L	700	<0.275	<1.02	--	--	<1.12	--
4-Chloroaniline	ug/L	28	<0.159	<1.29	--	--	<1.41	--
4-Chlorophenyl phenyl ether	ug/L	NS	<0.202	<1.4	--	--	<1.53	--
4-Nitroaniline	ug/L	NS	<0.339	<1.83	--	--	<2	--
4-Nitrophenol	ug/L	60	<1.46	<2.69	--	--	<2.94	--
5-Nitro-o-toluidine	ug/L	NS	<0.18	<3.33	--	--	<3.65	--
7,12-Dimethylbenz (a) anthracene	ug/L	NS	<0.205	<0.989	--	--	<1.08	--
Acenaphthene	ug/L	420	<0.317	<1.4	--	--	<1.53	--
Acenaphthylene	ug/L	210	<0.614	<1.4	--	--	<1.53	--
Acetophenone	ug/L	765	<0.37	<3.23	--	--	<3.53	--
Anthracene	ug/L	2100	<0.18	<1.39	--	--	<1.29	--
Benzo (a) anthracene	ug/L	0.24	<0.36	<1.39	--	--	<1.29	--
Benzo (a) pyrene	ug/L	0.2	<1.34	<1.63	--	--	<1.76	--
Benzo (b) fluoranthene	ug/L	0.24	<1.06	<1.29	--	--	<1.41	--
Benzo (g,h,i) perylene	ug/L	210	<1.6	<1.75	--	--	<1.88	--
Benzo (k) fluoranthene	ug/L	2.1	<0.603	<1.29	--	--	<1.41	--
Benzyl alcohol	ug/L	700	<0.95	<1.18	--	--	<1.29	--
Bis(2-chloroethoxy) methane	ug/L	NS	<0.275	<1.18	--	--	<1.29	--
Bis(2-chloroethyl)ether	ug/L	0.16	<0.201	<1.18	--	--	<1.29	--
Bis(2-chloroisopropyl) ether	ug/L	300	<0.19	<1.29	--	--	<1.41	--
Bis(2-ethylhexyl)phthalate	ug/L	6	<2.46	<2.8	--	--	<3.06	--
Butyl benzyl phthalate	ug/L	140	<1.02	<1.61	--	--	<1.76	--
Chlorobenzilate	ug/L	NS	<0.222	<3.12	--	--	<3.41	--
Chrysene	ug/L	24	<0.328	<1.18	--	--	<1.29	--
Dalkon (cis or trans)	ug/L	NS	<0.243	<1.4	--	--	<1.53	--
Dibenzo (a,h) anthracene	ug/L	0.024	<1.94	<2.04	--	--	<2.24	--
Dibenzofuran	ug/L	7	<0.254	<1.29	--	--	<1.41	--
Diethyl phthalate	ug/L	5600	***1.45 J***	<1.18	--	--	***1.1 J***	--
Dimethoate	ug/L	1.4	<0.286	<1.08	--	--	<1.18	--
dimethyl phthalate	ug/L	NS	<2.32	<2.69	--	--	<2.94	--
Di-n-butyl phthalate	ug/L	700	<1.22	<1.29	--	--	<1.41	--
Di-n-octyl phthalate	ug/L	140	<2.8	<3.23	--	--	<3.53	--
Diphenyl	ug/L	7	<0.492	<0.538	--	--	<0.588	--
Diphenylamine	ug/L	180	<0.699	<0.946	--	--	<1.04	--
Disulfoton	ug/L	0.7	<0.307	<0.688	--	--	<0.753	--
Ethyl Methanesulfonate	ug/L	NS	<0.159	<0.538	--	--	<0.588	--
Famphur	ug/L	NS	<0.497	<0.688	--	--	<0.753	--
Fluoranthene	ug/L	280	<0.72	<1.08	--	--	<1.11	--
Fluorene	ug/L	280	<0.307	<1.4	--	--	<1.53	--
Hexachlorobenzene	ug/L	1	<0.286	<1.51	--	--	<1.65	--
Hexachlorobutadiene	ug/L	1	<0.18	<1.29	--	--	<1.41	--
Hexachlorocyclopentadiene	ug/L	50	<2	<2.26	--	--	<2.47	--
Hexachloroethane	ug/L	1	<0.148	<1.4	--	--	<1.53	--
Hexachloropropene	ug/L	NS	<1.74	<1.72	--	--	<1.88	--
Indeno (1,2,3-cd) pyrene	ug/L	0.24	<1.56	<2.37	--	--	<2.35	--
Isodrin	ug/L	NS	<0.402	<0.634	--	--	<0.692	--
Isophorone	ug/L	100	<0.233	<1.08	--	--	<1.16	--
Isosafrole	ug/L	NS	<0.19	<0.538	--	--	<0.588	--
Kepone	ug/L	NS	<0.254	<1.94	--	--	<2.12	--
Methapyrilene	ug/L	NS	<1.44	<2.04	--	--	<2.24	--
Methyl Methanesulfonate	ug/L	1.8	<0.148	<0.538	--	--	<0.588	--
Naphthalene	ug/L	34	<0.317	<1.18	--	--	<1.29	--
N-Nitrosodiethylamine	ug/L	NS	<0.317	<0.538	--	--	<0.588	--
N-Nitrosodimethylamine	ug/L	0.0034	<0.201	<0.978	--	--	<1.07	--
N-Nitrosodi-n-butylamine	ug/L	0.032	<0.307	<0.538	--	--	<0.588	--
N-Nitroso-di-n-propylamine	ug/L	NS	<0.275	<1.08	--	--	<1.18	--
N-Nitrosodiphenylamine	ug/L	30	<0.698	<1.02	--	--	<1.12	--
N-Nitrosomethylethylamine	ug/L	0.008	<0.212	<1.4	--	--	<1.53	--
N-Nitrosopiperidine	ug/L	NS	<0.159	<0.538	--	--	<0.588	--
N-Nitrosopyrrolidine	ug/L	0.063	<0.243	<0.538	--	--	<0.588	--
O,O,O-Triethyl phosphorothioate	ug/L	NS	<0.254	<0.538	--	--	<0.588	--
o-Toluidine	ug/L	11	<0.19	<0.72	--	--	<0.788	--
p-(Dimethylamino)azobenzene	ug/L	NS	<0.254	<0.839	--	--	<0.918	--
Parathion-ethyl	ug/L	NS	<0.19	<1.72	--	--	<1.88	--
Parathion-methyl	ug/L	1	<0.159	<0.806	--	--	<0.882	--
Pentachlorobenzene	ug/L	NS	<0.233	<0.624	--	--	<0.682	--
Pentachloronitrobenzene	ug/L	NS	<0.348	<0.538	--	--	<0.588	--
Pentachlorophenol	ug/L	1	<2.46	<2.49	--	--	<2.71	--
Phenacetin	ug/L	765	<0.593	<1.94	--	--	<2.12	--
Phenanthrene	ug/L	210	<0.635	<1.39	--	--	<1.29	--
Phenol	ug/L	2800	<2.54	<2.58	--	--	<2.82	--
Pronamide	ug/L	1.4	<0.18	<0.538	--	--	<0.588	--
Pyrene	ug/L	210	<0.275	<0.538	--	--	<0.588	--
Safrole	ug/L	NS	<0.212	<0.538	--	--	<0.588	--
Thionazin	ug/L	NS	<0.328	<0.817	--	--	<0.894	--
Volatile Organic Compounds								
1,1-Dichloropropene	ug/L	NS	<0.43	<0.43	--	--	<0.43	--
1,2,4-Trichlorobenzene	ug/L	70	<0.75	<0.75	--	--	<0.75	--
1,2-Dibromoethane	ug/L	600	<0.3	<0.3	--	--	<0.3	--
1,3-Dichloropropane	ug/L	NS	<0.4	<0.4	--	--	<0.4	--
2,2-Dichloropropane	ug/L	NS	<0.69	<0.69	--	--	<0.69	--
Acrolein	ug/L	NS	<3.6	<3.6	--	--	<3.6	--
Allyl chloride	ug/L	NS	<0.7	<0.7	--	--	<0.7	--
Chloroprene	ug/L	NS	<0.23	<0.23	--	--	<0.23	--
Dichlorodifluoromethane	ug/L	1000	<0.25	<0.25	--	--	<0.25	--
Ethyl Methacrylate	ug/L	NS	<0.68	<0.68	--	--	<0.68	--
Methacrylonitrile	ug/L	NS	<3.3	<3.3	--	--	<3.3	--
Methyl Methacrylate	ug/L	NS	<0.76	<0.76	--	--	<0.76	--
Naphthalene	ug/L	280	<1	<1	--	--	<1	--
Propionitrile	ug/L	NS	<3.4	<3.4	--	--	<3.4	--

Detections at or above the RL are shown in bold italics on grey background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-22

Parameter Name	Units	GPS	Jun-19	Aug-19	Nov-19	Jun-20	Aug-20	Nov-20	Jun-21	Sep-21	Mar-22	Aug-22	Jun-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics																
Total Suspended Solids	mg/L	NS	***1.13 J***	***2.5***	***3.5***	***2.75***	***4.13***	***2.88***	***2.75***	***2.25***	***2.5***	***5.88***	<0.638	***2.25***	***1.88***	***7.25***
Turbidity, Field	NTU	NS	***3.48***	***4.86***	***2.44***	***2.14***	***8.57***	***0.98***	***1.5***	***3.38***	***1.23***	***9.48***	***1.06***	***0.9***	***1.83***	***9.18***
Turbidity, Lab	NTU	NS	***1.08***	***3.13***	***5***	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<1.32	<1.32	<0.53	<0.51	<0.51	***1.23***	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	***1.16***	***0.899 J***	<0.75	<0.88	<0.88	<0.88	***0.872 J***	<0.75	<0.75	<0.75	***0.618 J***	***0.834 J***	***0.801 J***	***0.864 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***146***	***176***	***161***	***144***	***174***	***154***	***147***	***151***	***133***	***156***	***148***	***159***	***137***	***146***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.53	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.167	<0.167	<0.039	<0.049	<0.049	<0.049	***0.056 J***	<0.051	<0.055	***0.057 J***	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<1.14	<1.14	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	2.1	<0.402	<0.402	***0.099 J***	<0.091	***0.115 J***	<0.091	***0.122 J***	<0.19	<0.19	<0.19	<0.17	<0.17	<0.17	<0.17
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<0.497	<0.497	<2	<1.5	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.186	<0.186	<0.27	<0.11	***0.207 J***	***0.121 J***	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	***0.293 J***
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	***6.61***	***8.64***	***9.21***	***7.25***	***9.85***	***9.21***	***6.72***	***7.71***	***5.54***	***7.64***	***4.45 J***	***9.26***	***6.65***	***7.63***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<0.982	<0.982	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.115	<0.115	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	<0.57	<0.57	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	***2.67 J***	<2.15	<0.82	<0.85	<0.85	***0.923 J***	<1.1	<1.1	***1.49 J***	<1.1	<1.1	<1.1	<1.1	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	***11 J***	***11.7 J***	<10	<10	<10	<10	<10	<10	<10	<10	***9.53 J***	***9.94 J***	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	***2.52 J***	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	***1.91 J***	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Well MW-35

Parameter Name	Units	GPS	Nov-19	Feb-20	Jul-20	Aug-20	Nov-20	Jun-21	Sep-21	Mar-22	Sep-22	Jun-23	Nov-23	Jul-24	Sep-24	Dec-24
Appendix I Inorganics																
Total Suspended Solids	mg/L	NS	***2.13***	***7***	***7.13***	***14.5***	***3.25***	***3.5***	***4.62***	***6.67***	***10.3***	***6.63***	***7***	***5.25***	***2.25***	***3.31***
Turbidity, Field	NTU	NS	***0.76***	***23.84***	***20.64***	***43.11***	***5.4***	***1.29***	***4.86***	***4.68***	***8.58***	***13.82***	***1.38***	***2.25***	***3.58***	***14.84***
Turbidity, Lab	NTU	NS	***3.55***	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	<0.53	<0.58	<0.51	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<1	<1	<1	--	<1
Antimony, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	<0.75	<0.88	<0.88	<0.88	<0.88	<0.75	<0.75	***1.01 J***	***1.13 J***	***0.761 J***	***1.73 J***	***0.767 J***	--	***1.09 J***
Arsenic, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	***326***	***294***	***337***	***288***	***278***	***276***	***301***	***316***	***345***	***264***	***467***	***280***	--	***186***
Barium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.33	<0.33	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	<0.039	<0.039	<0.049	<0.049	<0.049	<0.051	<0.051	<0.055	<0.055	<0.1	<0.1	<0.1	--	<0.1
Cadmium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.2	--	<1.2
Chromium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	2.1	***8.27***	***6.6***	***7.03***	***5.98***	***5.97***	***5.51***	***6.33***	***6.39***	***6.74***	***5.33***	***10.8***	***4.96***	--	***1.98***
Cobalt, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	<2	<3.2	<1.5	<1.5	<1.5	<1.4	<1.4	<1.8	<1.8	<1.8	<1.8	<1.8	--	<1.8
Copper, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	<0.27	<0.27	<0.11	<0.11	<0.11	<0.21	<0.21	<0.24	<0.24	<0.24	<0.24	<0.26	--	<0.26
Lead, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	***27.4***	***23.2***	***27.9***	***22***	***19.5***	***18.8***	***22.5***	***24.9***	***26.5***	***18.7***	***32.7***	***17.6***	--	***11.8***
Nickel, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	<1	<1	<1	<1	<1	<0.96	<0.96	<0.96	<0.96	<1.4	<1.4	<1.4	--	<1.4
Selenium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	***0.759 J***	<0.5	<0.5	<0.5	--	<0.5
Silver, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	***0.386 J***	***0.304 J***	***0.357 J***	***0.339 J***	***0.273 J***	***0.307 J***	***0.34 J***	***0.361 J***	***0.408 J***	***0.337 J***	***0.371 J***	***1.14***	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	<0.82	<0.82	<0.85	<0.85	<0.85	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<6.4	<6.4	<9.7	--	<9.7
Zinc, Dissolved	µg/L	NS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																
1,1,1,2-Tetrachloroethane	µg/L	70	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	<0.22	<0.22	***0.684 J***	***0.522 J***	***0.592 J***	***0.582 J***	***0.448 J***	***0.545 J***	***0.52 J***	<0.22	***0.557 J***	***0.365 J***	--	***0.338 J***
1,1-Dichloroethylene	µg/L	7	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23
2-Butanone	µg/L	4000	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	--	<3.1
Acrylonitrile	µg/L	0.32	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
Bromochloromethane	µg/L	90	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4
Chloroethane	µg/L	2800	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix II Results
Monitoring Well MW-35

Parameter Name	Units	GPS	Nov-20	Jun-21
Alcohols/Glycols by GC				
Acetonitrile	µg/L	NS	<404	<404
Isobutanol	µg/L	2100	<553	<553
Herbicides (GC)				
2,4,5-T	µg/L	70	<0.544	<0.571
2,4-D	µg/L	70	<0.588	<0.613
Silvex (2,4,5-TP)	µg/L	50	<0.363	<0.381
Inorganics				
Cyanide	µg/L	200	<5	<5.3
Mercury	µg/L	2	<0.1	<0.15
Sulfide	µg/L	NS	<10000	<231
Tin	µg/L	4200	<2.4	<3
PCBs (EPA Method 8082)				
PCB-1016	µg/L	NS	<0.317	<0.325
PCB-1221	µg/L	NS	<0.317	<0.325
PCB-1232	µg/L	NS	<0.317	<0.325
PCB-1242	µg/L	NS	<0.317	<0.325
PCB-1248	µg/L	NS	<0.256	<0.263
PCB-1254	µg/L	NS	<0.256	<0.263
PCB-1260	µg/L	NS	<0.256	<0.263
Pesticides (EPA Method 8081A)				
4,4'-DDD	µg/L	0.73	***0.00285 J***	<0.0105
4,4'-DDE	µg/L	0.51	<0.00256	<0.0106
4,4'-DDT	µg/L	0.51	<0.00463	<0.0155
Aldrin	µg/L	0.01	<0.00549	<0.0155
alpha-BHC	µg/L	0.028	<0.00207	<0.0129
beta-BHC	µg/L	0.042	<0.00585	<0.0165
Chlordane	µg/L	2	<0.078	<0.275
delta-BHC	µg/L	2.1	***0.00447 J***	<0.0188
Dieldrin	µg/L	0.011	<0.00244	<0.0155
Endosulfan I	µg/L	42	<0.00244	<0.0138
Endosulfan II	µg/L	42	<0.00232	<0.0101
Endosulfan sulfate	µg/L	NS	<0.00305	<0.0105
Endrin	µg/L	2	<0.00232	<0.0129
Endrin aldehyde	µg/L	2.1	<0.0085	<0.0122
gamma-BHC (Lindane)	µg/L	0.2	<0.00232	<0.0175
Heptachlor	µg/L	0.4	<0.00317	<0.0155
Heptachlor epoxide	µg/L	0.2	<0.00744	<0.0144
Methoxychlor	µg/L	40	<0.00256	<0.0175
Toxaphene	µg/L	3	<0.0707	<0.513
Semivolatile Organics by GC/MS				
1,2,4,5-Tetrachlorobenzene	µg/L	2.1	<1.88	<1.93
1,3,5-Trimethylbenzene	µg/L	NS	<1.53	<1.57
1,3-Dinitrobenzene	µg/L	1	<1.18	<1.2
1,4-Naphthoquinone	µg/L	NS	<1.15	<1.18
1,4-Phenylenediamine	µg/L	NS	<0.588	<0.602
1-Naphthylamine	µg/L	NS	<1.04	<1.06
2,3,4,6-Tetrachlorophenol	µg/L	NS	<1.16	<1.19
2,4,5-Trichlorophenol	µg/L	700	<1.29	<1.33
2,4,6-Trichlorophenol	µg/L	16	<1.41	<1.45
2,4-Dichlorophenol	µg/L	20	<1.29	<1.33
2,4-Dimethylphenol	µg/L	100	<1.18	<1.2
2,4-Dinitrophenol	µg/L	14	<6.71	<6.87
2,4-Dinitrotoluene	µg/L	8.25	<1.29	<1.33
2,6-Dichlorophenol	µg/L	NS	<1.29	<1.33
2,6-Dinitrotoluene	µg/L	0.25	<1.29	<1.33
2-Acetylaminofluorene	µg/L	NS	<1.41	<1.45
2-Chloronaphthalene	µg/L	560	<1.53	<1.57
2-Chlorophenol	µg/L	40	<1.29	<1.33
2-Methylnaphthalene	µg/L	28	<1.53	<1.57
2-Methylphenol (o-Cresol)	µg/L	35	<1.18	<1.2
2-Naphthylamine	µg/L	0.097	<1.01	<1.04
2-Nitroaniline	µg/L	NS	<1.41	<1.45
2-Nitrophenol	µg/L	NS	<1.88	<1.93
3,3'-Dichlorobenzidine	µg/L	0.59	<2.12	<2.17
3,3'-Dimethylbenzidine	µg/L	NS	<2.35	<2.41
3/4-Methylphenol	µg/L	70	<0.894	<0.916
3-Methylcholanthrene	µg/L	NS	<2.94	<3.01
3-Nitroaniline	µg/L	NS	<1.18	<1.2
4,6-Dinitro-2-methylphenol	µg/L	NS	<2.94	<3.01
4-Aminobiphenyl	µg/L	0.0685	<1.13	<1.16
4-Bromophenyl phenyl ether	µg/L	NS	<2.24	<2.29
4-Chloro-3-methylphenol	µg/L	700	<1.12	<1.14
4-Chloroaniline	µg/L	28	<1.41	<1.45
4-Chlorophenyl phenyl ether	µg/L	NS	<1.53	<1.57
4-Nitroaniline	µg/L	NS	<2	<2.05
4-Nitrophenol	µg/L	60	<2.94	<3.01
5-Nitro-o-toluidine	µg/L	NS	<3.65	<3.73
7,12-Dimethylbenz (a) anthracene	µg/L	NS	<1.08	<1.11
Acenaphthene	µg/L	420	<1.53	<1.57
Acenaphthylene	µg/L	210	<1.53	<1.57
Acetophenone	µg/L	NS	<3.53	<3.61
Anthracene	µg/L	2100	<1.29	<1.33
Benzo (a) anthracene	µg/L	0.24	<1.29	<1.33
Benzo (a) pyrene	µg/L	0.2	<1.76	<1.81
Benzo (b) fluoranthene	µg/L	0.24	<1.41	<1.45
Benzo (g,h,i) perylene	µg/L	21	<1.88	<1.93
Benzo (k) fluoranthene	µg/L	2.4	<1.41	<1.45
Benzyl alcohol	µg/L	700	<1.29	<1.33
Bis(2-chloroethoxy)methane	µg/L	NS	<1.29	<1.33
Bis(2-chloroethyl)ether	µg/L	0.16	<1.29	<1.33
Bis(2-chloroisopropyl) ether	µg/L	300	<1.41	<1.45
Bis(2-ethylhexyl)phthalate	µg/L	6	<3.06	<3.13
Butyl benzyl phthalate	µg/L	140	<1.76	<1.81
Chlorobenzilate	µg/L	NS	<1.41	<1.45
Chrysene	µg/L	24	<1.29	<1.33
Diallate (cis or trans)	µg/L	NS	<1.53	<1.57
Dibenzo (a,h) anthracene	µg/L	0.024	<2.24	<2.29
Dibenzofuran	µg/L	7	<1.41	<1.45
Diethyl phthalate	µg/L	5600	<1.29	<1.33
Dimethoate	µg/L	1.4	<1.18	<1.2
Dimethyl phthalate	µg/L	NS	<2.94	<3.01
Di-n-butyl phthalate	µg/L	700	<1.41	<1.45
Di-n-octyl phthalate	µg/L	140	<3.53	<3.61
Diuron	µg/L	7	<0.588	<0.602
Diphenylamine	µg/L	280	<1.04	<1.06
Disulfoton	µg/L	0.7	<0.753	<0.771
Ethyl Methanesulfonate	µg/L	NS	<0.588	<0.602
Famphur	µg/L	NS	<0.753	<0.771
Fluoranthene	µg/L	280	<1.11	<1.13
Fluorene	µg/L	280	<1.53	<1.57
Hexachlorobenzene	µg/L	1	<1.65	<1.69
Hexachlorobutadiene	µg/L	1	<1.41	<1.45
Hexachlorocyclopentadiene	µg/L	50	<2.47	<2.53
Hexachloroethane	µg/L	1	<1.53	<1.57
Hexachloropropene	µg/L	NS	<1.88	<1.93
Indeno (1,2,3-cd) pyrene	µg/L	0.24	<2.35	<2.41
Isodrin	µg/L	NS	<0.682	<0.699
Isophorone	µg/L	100	<1.16	<1.19
Isosafrole	µg/L	NS	<0.588	<0.602
Kepone	µg/L	NS	<2.12	<2.17
Methapyrilene	µg/L	NS	<2.24	<2.29
Methyl Methanesulfonate	µg/L	1.8	<0.588	<0.602
Nitrobenzene	µg/L	14	<1.29	<1.33
N-Nitrosodiethylamine	µg/L	NS	<0.588	<0.602
N-Nitrosodimethylamine	µg/L	0.0034	<1.07	<1.1
N-Nitrosodi-n-butylamine	µg/L	0.033	<0.588	<0.602
N-Nitrosodi-n-propylamine	µg/L	NS	<1.18	<1.2
N-Nitrosodiphenylamine	µg/L	56	<1.12	<1.14
N-Nitrosomethylethylamine	µg/L	0.008	<1.53	<1.57
N-Nitrosopiperidine	µg/L	NS	<0.588	<0.602
N-Nitrosopyrrolidine	µg/L	0.083	<0.588	<0.602
O,O,O-Triethyl phosphorothioate	µg/L	NS	<0.588	<0.602
o-Toluidine	µg/L	11	<0.788	<0.807
p-(Dimethylamino)azobenzene	µg/L	NS	<0.918	<0.94
Pentothion-ethyl	µg/L	NS	<1.88	<1.93
Pentothion-methyl	µg/L	1	<0.882	<0.904
Pentachlorobenzene	µg/L	NS	<0.682	<0.699
Pentachloronitrobenzene	µg/L	NS	<0.588	<0.602
Pentachlorophenol	µg/L	1	<2.71	<2.77
Phenacetin	µg/L	NS	<2.12	<2.17
Phenanthrene	µg/L	210	<1.29	<1.33
Phenol	µg/L	2000	<2.82	<2.89
Pronamide	µg/L	1.4	<0.588	<0.602
Pyrazontide	µg/L	5	<0.588	<0.602
Pyrene	µg/L	210	<1.65	<1.69
Safrole	µg/L	NS	<0.588	<0.602
Thionazin	µg/L	NS	<0.894	<0.916
Volatile Organic Compounds				
1,1-Dichloropropene	µg/L	NS	<0.43	<0.43
1,2,4-Trichlorobenzene	µg/L	70	<0.75	<0.75
1,3-Dichlorobenzene	µg/L	600	<0.3	<0.3
1,3-Dichloropropane	µg/L	NS	<0.4	<0.4
2,2-Dichloropropane	µg/L	NS	<0.69	<0.69
Acrolein	µg/L	NS	<3.6	<3.6
Allyl chloride	µg/L	NS	<0.7	<0.7
Chloroprene	µg/L	NS	<0.23	<0.23
Dichlorodifluoromethane	µg/L	1020	<0.25	<0.25
Ethyl Methacrylate	µg/L	NS	<0.68	<0.68
Methacrylonitrile	µg/L	NS	<3.3	<3.3
Methyl Methacrylate	µg/L	NS	<0.76	<0.76
Naphthalene	µg/L	100	<3	<3
Propionitrile	µg/L	NS	<3.4	<3.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

SURFACE WATER

Winneshiek County Landfill
Appendix I Results
Monitoring Location SW-1

Parameter Name	Units	GPS	DL	RL	Apr-12	Oct-12	Apr-13	Jun-13	Aug-13	Jun-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Jul-20	Nov-20	Jun-21	Sep-21	Mar-22	Jun-22	Aug-22	Jun-23	Aug-23	Jun-24
Appendix I Inorganics																														
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	***3.17***	***23***	Dry	***17.6***	***28.7***	***15***	***8.25***	***7.5***	***5.63***	***22.6***	***11.1***	***20***	***6.25***	***35***	***12.7***	***824***	***11.5***	***2.25***	***19.3***	***276***	***4.75***
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	***6.13***	***1.26***	--	--	***8.67***	***16.32***	***11.79***	***12.57***	***2.859***	***28.11***	***8.21***	***11.29***	***17.05***	***26.39***	***14.23***	***984.3***	***12.11***	***18.73***	***28***	***143.7***	***19.74***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	***1***	***1.7***	--	***7.1***	***11.5***	***1.2***	***4***	***2.6***	***1.2***	***8.46***	***6.01***	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<1.45	Dry	***0.0822 J***	***1.03 J***	***0.0839 J***	<0.119	<0.161	<0.161	--	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<1.32	<0.53	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<0.69	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	<1.45	--	***0.0666 J***	<0.271	***0.0738 J***	<0.119			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<0.216	--	***1.5***	<2.72	***0.655 J***	<0.397	<0.945	<0.945	--	<0.672	<0.672	<0.505	<0.505	<0.57	<0.57	***0.769 J***	<0.75	<0.88	<0.88	***0.951 J***	<0.75	***2.54***	<0.75	<0.75	***0.685 J***	--	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	<0.216	--	***1.15***	<2.72	***0.682 J***	***0.406 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***117***	--	***104***	***122***	***128***	***122***	***136***	***116***	--	***124***	***134***	***115***	***143***	***139***	***120***	***121***	***136***	***113***	***127***	***121***	***129***	***201***	***123***	***112***	***110***	--	***103***
Barium, Dissolved	µg/L	NS	NS	NS	***119***	--	***90.6***	***122***	***110***	***124***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<0.079	--	<0.0696	<0.348	<0.0696	<0.0142	<0.039	<0.039	--	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	***0.497 J***	<0.27	<0.27	<0.33	--	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	<0.079	--	<0.0696	<0.348	<0.0696	<0.0142	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.229	--	<0.106	<0.53	<0.106	<0.108	<0.112	<0.112	--	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	<0.039	<0.049	<0.049	***0.103***	<0.051	***0.22***	<0.055	<0.055	***0.228***	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	<0.229	--	<0.106	<0.53	<0.106	<0.108	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<1.81	--	<0.418	***3.84 J***	***0.697 J***	<1.37	<1.24	<1.24	--	<0.355	<0.355	<0.729	<0.729	<0.76	<0.76	***1.28 J***	<0.98	<1.1	<1.1	***1.87 J***	<1.1	***1.63 J***	<1.1	<1.1	<1.1	--	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	<1.81	--	<0.418	***3.34 J***	***0.565 J***	<1.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<1.55	--	***0.728***	***1.08 J***	***1.11***	***0.437 J***	***0.085 J***	***0.177 J***	--	***0.156 J***	***0.328 J***	***0.121 J***	***0.204 J***	***0.218 J***	***0.107 J***	<0.402	***0.264 J***	***0.327 J***	***0.153 J***	***0.787***	<0.19	***4.36***	***0.244 J***	<0.19	***0.411 J***	--	<0.17
Cobalt, Dissolved	µg/L	NS	NS	NS	<1.55	--	***0.636***	***0.873 J***	***0.468 J***	***0.35 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	***1.94 J***	--	***3.54***	***2.02 J***	***4.71***	***1.08***	***0.508 J***	***0.677 J***	--	<1.22	***1.43 J***	<2.19	<2.19	<1.6	<1.6	<0.497	<2	<1.5	<1.5	***1.84 J***	<1.4	***11.5***	<1.8	<1.8	<1.8	--	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	<1.51	--	***2.5***	<0.85	***3.56***	***1.42***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<0.804	--	<0.207	<1.04	***1.63***	***0.123 J***	<0.0967	***0.232 J***	--	<0.211	***0.32 J***	<0.324	<0.324	<0.25	<0.25	***0.644***	<0.27	***0.531***	***0.142 J***	***0.886***	<0.21	***7.08***	***0.24 J***	<0.24	***0.617***	--	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	<0.804	--	<0.207	<1.04	<0.207	<0.084	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<2.58	--	***3.7***	***4.5***	***3.35***	***2.12 J***	<0.581	<0.581	--	<1.53	<1.53	<0.929	<0.929	***1.07 J***	<1	***1.06 J***	<1.7	<1.9	<1.9	<1.9	<1.9	***7.85***	<1.9	<1.9	<1.9	--	<2.1
Nickel, Dissolved	µg/L	NS	NS	NS	<2.58	--	***2.87***	***11.5***	***6.08***	***4.85 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<0.7	--	<1.46	<7.3	<1.46	<1.79	<3.34	<3.34	--	***0.916 J***	<0.63	<0.928	<0.928	<0.9	<0.9	<0.982	<1	<1	<1	***1.9 J***	<0.96	***0.966 J***	<0.96	<0.96	***1.77 J***	--	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	<0.7	--	<1.46	<7.3	<1.46	<1.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<1.7	--	<0.0789	<0.395	<0.0789	<0.0396	<0.042	***0.063 J***	--	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	<0.49	***1.36***	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	<1.7	--	<0.0789	<0.395	<0.0789	<0.0396	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<0.288	--	***0.0338 J***	***0.141 J***	***0.0478 J***	<0.0353	<0.0325	<0.0325	--	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	<0.26	<0.26	***2.13***	<0.26	***0.281 J***	<0.26	<0.26	***4.67***	<0.26	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	<0.288	--	<0.0267	***0.502***	***0.0869 J***	<0.0353	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<2.1	--	<0.833	<4.17	***1.59***	***2.37 J***	***0.512 J***	***0.716 J***	--	***0.495 J***	***0.645 J***	<0.84	***1.39 J***	***0.778 J***	***0.646 J***	***3.82 J***	***1.24 J***	***1.41 J***	<0.85	***4.3 J***	<1.1	***7.59***	<1.1	<1.1	<1.1	--	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	***2.15 J***	--	<0.833	<4.17	<0.833	***0.671 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	***14.2 J***	--	<0.625	<3.13	***12.2***	<6.95	<6.95	<6.95	--	<5.21	<5.21	<11.5	<11.5	<10	<10	***12.9 J***	<10	<10	<10	<10	<10	***20.7***	<10	<10	<6.4	--	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	***10.4 J***	--	***0.953 J***	<3.13	***7.74***	<6.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																														
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<0.21	Dry	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	--	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<0.14	--	***0.4 J***	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<0.87	--	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<0.2	--	***0.38 J***	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23
2-Butanone	µg/L	4000	1.04	10	***1.15 J***	--	***1.32 J***	***1.17 J***	<0.47	***2.34 J***	<0.47	<0.47	--	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
2-Hexanone	µg/L	NS	0.2	10	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1
Acetone	µg/L	6300	1.79	10	<1.79	--	***2.19 J***	<1.79	<1.79	***3.85 J***	<1.79	<1.79	--	<1.79	<1.79	<1.79	***2.88 J***	***3.12 J***	<3.1	***4.55 J***	<3.1	<3.1	<3.1	***3.45 J***	<3.1	<3.1	<3.1	<3.1	***3.3 J***	--	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<0.53	--	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2
Benzene	µg/L	5	0.11	0.5	<0.11	--	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	--	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22
Bromochloromethane	µg/L	90	0.12	5	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39
Bromomethane	µg/L	10	0.22	4	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Carbon disulfide	µg/L	700	0.15	1	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<0.24	--	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65
Chlorobenzene	µg/L	100	0.19	1	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4
Chloroethane	µg/L	2800	0.15	4	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79
Chloromethane	µg/L	NS	0.31	3	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75
Dibromomethane	µg/L	70	0.18	1	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33
Dichloromethane	µg/L	5	0.17	5	<0.17	--	<0.17	***0.391 J***	<0.17	<0.17	<0.17	<0.17	--	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7
Ethylbenzene	µg/L	700	0.21	1	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31
Iodomethane	µg/L	NS	0.8	10	<0.8	--	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--	<7
Styrene	µg/L	100	0.1	1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37
Tetrachloroethylene	µg/L	5	0.18	1	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48
Toluene	µg/L	1000	0.15	1	<0.15	--	<0.15	***0.654 J***	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	***0.475 J***	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	1	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	5	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	10	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1
Tribromomethane	µg/L	80	0.14	5	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	--	<0.78
Trichloroethylene	µg/L	5	0.19	1	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	4	<0.17	--	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	--	<0.17	<0.17	<0.17	<0.17	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38
Trichloromethane	µg/L	80	0.28	1	<0.28	--	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	--	<0.28	<0.28	<0.28	<0.28	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	--	<1.3
Vinyl Acetate	µg/L	NS	0.74	10	<0.74	--	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	--	<0.74	<0.74	<0.74	<0.74	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	<2.5
Vinyl Chloride	µg/L	2	0.1	1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.6	<0.6	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18
Xylenes	µg/L	10000	0.13	3	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Winneshiek County Landfill
Appendix I Results
Monitoring Location SW-2

Parameter Name	Units	GPS	DL	RL	Dec-11	Feb-12	Apr-12	Jun-12	Aug-12	Oct-12	Apr-13	Nov-13	Jun-14	Nov-14	May-15	Sep-15	Apr-16	Nov-16	May-17	Nov-17	Jun-18	Oct-18	Jun-19	Nov-19	Jul-20	Nov-20	Jun-21	Sep-21	Mar-22	Jun-22	Aug-22	Jun-23	Aug-23	Nov-23	Jun-24	Dec-24
Appendix I Inorganics																																				
Total Suspended Solids	mg/L	NS	0.581	1.88	--	--	--	--	--	--	--	--	--	***15.7***	***79.7***	Dry	***17.1***	***16.3***	***20.5***	***10.2***	***13.4***	***11***	***31.5***	***6.25***	***1.75 J***	***6.75***	***10.3***	***17.4***	***564***	***63.8***	***6.38***	***37.9***	***17***	***4.88***	***24.1***	***4.67 J***
Turbidity, Field	NTU	NS	NS	NS	--	--	--	--	--	--	--	--	--	***18.36***	***59.63***	--	--	***16.24***	***33.21***	***28.49***	***14.11***	***8.81***	***28.63***	***10.11***	***21.23***	***18.91***	***21.23***	***19.32***	***1009.4***	***13.24***	***26.43***	***22.39***	***28.3***	***23.11***	***12.79***	***4.76***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--	--	--	--	***4.8***	***9.1***	--	***10.2***	***11.3***	***4.8***	***2.8***	***7.2***	***5.2***	***11.7***	***5.34***	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<2.73	<0.12	<1.45	<0.12	<0.12	<0.12	***0.227 J***	<0.0541	<0.119	<0.161	<0.161	--	<0.237	<0.237	<0.185	<0.185	<0.42	<0.42	<1.32	<0.53	<0.51	<0.51	<1.1	<1.1	<0.69	<0.69	<0.69	<1	--	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	<2.73	<0.12	<1.45	<0.12	<0.12	<0.12	***0.251 J***	<0.0541	<0.119	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	<0.6	<0.73	<0.216	***1.05 J***	***0.98 J***	***1.13***	***1.73***	***0.587 J***	***2.99 J***	<0.945	<0.945	--	<0.672	<0.672	<0.505	***0.743 J***	<0.57	<0.57	***0.877 J***	<0.75	***1.02 J***	<0.88	<0.75	<0.75	***1.52 J***	***0.806 J***	<0.75	***0.84 J***	--	***0.591 J***	***0.627 J***	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	<0.47	***1.16***	<0.216	***0.97***	<0.73	***0.74 J***	***1.8***	***1.14***	***0.798 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***125***	***141***	***111***	***151***	***144***	***150***	***114***	***131***	***105***	***117***	***105***	--	***128***	***100***	***60.5***	***104***	***98.5***	***99.8***	***91.8***	***104***	***195***	***96.2***	***90***	***107***	***156***	***110***	***89.7***	***101***	--	***94.1***	***104***	***110***
Barium, Dissolved	µg/L	NS	NS	NS	***118***	***130***	***118***	***137***	***147***	***155***	***115***	***139***	***84.6***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<0.051	***0.03 J***	<0.079	***0.04 J***	***0.02 J***	***0.03 J***	<0.0696	<0.0696	<0.0142	<0.039	***0.15 J***	--	<0.221	<0.221	<0.125	<0.125	<0.19	<0.19	<0.53	<0.27	<0.27	<0.27	<0.27	<0.27	***0.321 J***	<0.27	<0.27	<0.33	--	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	<0.051	<0.0178	<0.079	<0.0178	<0.0178	<0.0178	<0.0696	<0.0696	<0.0142	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	0.044	0.5	<0.124	<0.064	<0.229	<0.064	<0.064	***0.07 J***	<0.106	<0.106	<0.108	<0.112	<0.112	--	<0.0351	<0.0351	<0.0441	<0.0441	<0.06	<0.06	<0.167	<0.039	***0.05 J***	<0.049	<0.051	<0.051	***0.181***	<0.055	<0.055	***0.157 J***	--	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	<0.124	<0.064	<0.229	<0.064	<0.064	***0.08 J***	<0.106	<0.106	<0.108	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<1.81	<0.39	<1.81	<0.39	***0.5 J***	***0.59 J***	***0.697 J***	<0.418	<1.37	<1.24	***1.74 J***	--	<0.355	<0.355	<0.729	***2.56 J***	<0.76	***0.781 J***	***1.61 J***	<0.98	<1.1	<1.1	<1.1	<1.1	***1.26 J***	***1.73 J***	<1.1	<1.1	--	<1.1	<1.2	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	<1.81	<0.39	<1.81	***0.71 J***	<0.39	<0.39	<0.418	<0.418	<1.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.045	0.5	<1.55	***0.77***	<1.55	***0.94***	***0.44 J***	***0.44 J***	***0.805***	***0.653***	***0.953 J***	***0.414 J***	***0.753***	--	***0.24 J***	***0.193 J***	<0.0453	***0.247 J***	***0.22 J***	***0.235 J***	<0.402	***0.171 J***	***0.495 J***	***0.174 J***	***0.302 J***	***0.361 J***	***3.17***	***0.693***	***0.212 J***	***0.622***	--	<0.17	***0.388 J***	***0.237 J***
Cobalt, Dissolved	µg/L	NS	NS	NS	<1.55	***0.99***	<1.55	***0.35 J***	***0.37 J***	***0.31 J***	***0.742***	***0.699***	***0.367 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	***8.34 J***	***2.62***	<1.51	***2***	***1.36***	***1.29***	***4.78***	***1.36***	***2.47***	***0.591 J***	***1.67 J***	--	<1.22	<1.22	<2.19	<2.19	<1.6	<1.6	<0.497	<2	<1.5	<1.5	<1.4	<1.4	***6.76***	<1.8	<1.8	<1.8	--	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	***7.81 J***	***4***	<1.51	***1.9***	***3.13***	***1.11***	***3.41***	***1.63***	***1.55***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	<1	***0.66***	<0.804	***1.25***	***0.83***	***0.4 J***	<0.207	<0.207	<0.42	***0.32 J***	***1.08***	--	***0.251 J***	***0.237 J***	<0.324	<0.324	<0.25	***0.354 J***	***0.721***	***0.765***	<0.11	***0.158 J***	***0.238 J***	***0.308 J***	***5.3***	***0.939***	<0.24	***0.867***	--	<0.24	***0.583***	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	<1	***0.2 J***	<0.804	***0.03 J***	<0.029	<0.029	<0.207	<0.207	<0.084	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<2.58	***5.56***	<2.58	***3.86***	***3.2***	***3.65***	***4.75***	***4.27***	***1.14 J***	***0.969 J***	***2.54 J***	--	<1.53	<1.53	<0.929	***0.982 J***	<1	<1	***1.35 J***	<1.7	***3.03 J***	<1.9	<1.9	<1.9	***6.59***	<1.9	<1.9	<1.9	--	<1.9	<2.1	***3.27 J***
Nickel, Dissolved	µg/L	NS	NS	NS	***3.02 J***	***9.6***	***3.45 J***	***4.14***	***5.38***	***2.57***	***4.55***	***4.87***	***1.47 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	<1.69	<0.297	<0.7	<0.297	<0.297	<0.297	<1.46	***1.66 J***	<1.79	<3.34	<3.34	--	***0.771 J***	<0.63	<0.928	<0.928	<0.9	<0.9	<0.982	<1	<1	***1.28 J***	<0.96	<0.96	<0.96	<0.96	***1.58 J***	--	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	<1.69	<0.297	<0.7	<0.297	***0.73 J***	<0.297	<1.46	<1.46	<1.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	<1.7	<0.027	<1.7	<0.027	<0.027	<0.027	<0.0789	<0.0789	<0.0396	<0.042	***0.062 J***	--	<0.153	<0.153	<0.14	<0.14	<0.3	<0.3	<0.115	<0.37	<0.37	<0.37	<0.42	<0.42	<0.49	<0.49	***1.43***	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	<1.7	<0.027	<1.7	<0.027	<0.027	<0.027	<0.0789	<0.0789	<0.0396	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	0.064	1	<0.84	<0.0087	<0.288	<0.0087	***0.02 J***	<0.0087	***0.0329 J***	<0.0267	<0.0353	<0.0325	***0.037 J***	--	<0.0255	<0.0255	<0.0644	<0.0644	<0.17	<0.17	<0.57	<0.27	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	***3.93***	***0.279 J***	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	<0.84	<0.0087	<0.288	<0.0087	***0.02 J***	***0.01 J***	***0.0278 J***	<0.0267	<0.0353	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<2.1	***0.94 J***	***2.16 J***	***1.12***	<0.94	<0.94	***0.942 J***	<0.833	***2.44 J***	***1.28 J***	***3.53 J***	--	***0.571 J***	***0.769 J***	<0.84	***1.49 J***	***1.27 J***	***1.34 J***	***4.5 J***	***0.951 J***	<0.85	***1.3 J***	***2.31 J***	***1.44 J***	***5.45***	***3.84 J***	***1.19 J***	***1.52 J***	--	***1.11 J***	***2.14 J***	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	<2.1	***1.51***	<2.1	***1.17***	<0.94	<0.94	<0.833	<0.833	***1.23***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	<9.11	***11.6***	***18.7 J***	***6.37***	***8.31***	***4.68 J***	***5.62***	<0.625	***33.9***	<6.95	***6.97 J***	--	<5.21	<5.21	<11.5	<11.5	<10	<10	***12 J***	<10	<10	<10	<10	<10	***16.7 J***	<10	<10	<6.4	--	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	<9.11	***6.92***	***12.2 J***	<0.92	<0.92	***2.56 J***	***4.23 J***	<0.625	***6.99 J***	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Appendix I Organics																																				
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	--	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	--	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.006	0.19	1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	--	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	--	<0.5	<0.5	<0.5	<0.5	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	--	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	--	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	***0.147 J***	<0.14	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	--	<0.87	<0.87	<0.87	<0.87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	--	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	***1.24 J***	<0.47	***1.21 J***	<0.47	<0.47	<0.47	***8.7 J***	<0.47	***1.99 J***	<0.47	<0.47	--	<0.47	<1.04	<1.04	<1.04	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	--	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<1.79	***2.37 J***	***3.08 J***	<1.79	***3.15 J***	<1.79	***15.8***	<1.79	***4 J***	<1.79	<1.79	--	***2.59 J***	<1.79	<1.79	***2.82 J***	***4.04 J***	<3.1	***4.43 J***	<3.1	<3.1	<3.1	***7.5 J***	***4.22 J***	***3.73 J***	<3.1	<3.1	***5 J***	--	<3.1	***3.68 J***	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	--	<0.53	<0.53	<0.53	<0.53	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	--	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	--	<0.11	<0.11	<0.11	<0.11	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	--	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	<0.12	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	--	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	***0.25 J***	<0.22	***0.249 J***	--	--	<0.22	<0.22	<0.22	<0.22	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	--	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.24	<0.24	<0.24	<0.24	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	<0.65	--	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	--	<0.19	<0.19	<0.19	<0.19	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	--	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	***0.18 J***	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	--	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	***0.507 J***	<0.31	<0.31	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	--	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	--	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	--	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<0.17	***0.78 J***	<0.17	<0.17	***0.21 J***	***0.62 J***	<0.17	<0.17	<0.17	<0.17	<0.17	--	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	--	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	--	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	--	<0.8	<0.8	<0.8	<0.8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	--	<7	<7	<7
Styrene	µg/L	100	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	--	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	--	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	1	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	***0.597 J***	<0.43	<0.43	<0.43	<0.43	<0.43	--	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	--	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	10	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1

Winneshiek County Landfill
Appendix I Results
Monitoring Location SW-5

Parameter Name	Units	GPS	DL	RL	Jun-23	Aug-23	Nov-23	Jan-24	Jun-24	Dec-24
Appendix I Inorganics										
Total Suspended Solids	mg/L	NS	0.581	1.88	***10.4***	***19***	***5.63***	***1.75 J***	***37***	<3.7
Turbidity, Field	NTU	NS	NS	NS	***20.19***	***18.23***	***18.21***	***5.29***	***17.89***	***4.78***
Turbidity, Lab	NTU	NS	0.4	1	--	--	--	--	--	--
Antimony	µg/L	6	0.185	1	<1	--	<1	<1	<1	<1
Antimony, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Arsenic	µg/L	10	0.505	2	***0.745 J***	--	***0.582 J***	***0.569 J***	***0.764 J***	<0.53
Arsenic, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Barium	µg/L	2000	1.04	2	***91.4***	--	***90***	***87.1***	***70.1***	***87.2***
Barium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Beryllium	µg/L	4	0.125	1	<0.33	--	<0.33	<0.33	<0.33	<0.33
Beryllium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Cadmium	µg/L	5	0.0441	0.5	<0.1	--	<0.1	<0.1	<0.1	<0.1
Cadmium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Chromium	µg/L	100	0.729	5	<1.1	--	<1.1	<1.1	***1.27 J***	<1.2
Chromium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Cobalt	µg/L	3.4	0.0453	0.5	***0.287 J***	--	***0.181 J***	<0.17	***0.679***	<0.17
Cobalt, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Copper	µg/L	1300	2.19	5	<1.8	--	<1.8	<1.8	<1.8	<1.8
Copper, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Lead	µg/L	15	0.324	0.5	***0.388 J***	--	<0.24	<0.24	***0.689***	<0.26
Lead, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Nickel	µg/L	100	0.929	5	<1.9	--	<1.9	<1.9	***2.33 J***	<2.1
Nickel, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Selenium	µg/L	50	0.928	5	***1.51 J***	--	<1.4	<1.4	<1.4	<1.4
Selenium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Silver	µg/L	100	0.14	1	***1.54***	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Thallium	µg/L	2	0.0644	1	<0.26	--	<0.26	<0.26	<0.57	<0.57
Thallium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Vanadium	µg/L	35	0.84	5	<1.1	--	***1.61 J***	<1.1	***2.4 J***	<1.1
Vanadium, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Zinc	µg/L	2000	11.5	20	<6.4	--	<6.4	<6.4	<9.7	<9.7
Zinc, Dissolved	µg/L	NS	NS	NS	--	--	--	--	--	--
Appendix I Organics										
1,1,1,2-Tetrachloroethane	µg/L	70	0.21	1	<0.38	--	<0.38	<0.38	<0.38	<0.38
1,1,1-Trichloroethane	µg/L	200	0.12	1	<0.19	--	<0.19	<0.19	<0.19	<0.19
1,1,2,2-Tetrachloroethane	µg/L	0.3	0.1	1	<0.47	--	<0.47	<0.47	<0.47	<0.47
1,1,2-Trichloroethane	µg/L	5	0.12	1	<0.45	--	<0.45	<0.45	<0.45	<0.45
1,1-Dichloroethane	µg/L	140	0.21	1	<0.22	--	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethylene	µg/L	7	0.15	2	<0.56	--	<0.56	<0.56	<0.56	<0.56
1,2,3-Trichloropropane	µg/L	0.0058	0.19	1	<0.59	--	<0.59	<0.59	<0.59	<0.59
1,2-Dibromo-3-chloropropane	µg/L	0.2	0.5	5	<1.2	--	<1.2	<1.2	<1.2	<1.2
1,2-Dibromoethane	µg/L	0.05	0.13	1	<0.34	--	<0.34	<0.34	<0.34	<0.34
1,2-Dichlorobenzene	µg/L	600	0.14	1	<0.37	--	<0.37	<0.37	<0.37	<0.37
1,2-Dichloroethane	µg/L	5	0.18	1	<0.39	--	<0.39	<0.39	<0.39	<0.39
1,2-Dichloropropane	µg/L	5	0.87	1	<0.27	--	<0.27	<0.27	<0.27	<0.27
1,4-Dichlorobenzene	µg/L	75	0.2	1	<0.23	--	<0.23	<0.23	<0.23	<0.23
2-Butanone	µg/L	4000	1.04	10	<2.1	--	<2.1	<2.1	<2.1	<2.1
2-Hexanone	µg/L	NS	0.2	10	<2	--	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	560	0.22	10	<2.1	--	<2.1	<2.1	<2.1	<2.1
Acetone	µg/L	6300	1.79	10	<3.1	--	<3.1	<3.1	***5.15 J***	<3.1
Acrylonitrile	µg/L	0.32	0.53	5	<2.2	--	<2.2	<2.2	<2.2	<2.2
Benzene	µg/L	5	0.11	0.5	<0.22	--	<0.22	<0.22	<0.22	<0.22
Bromochloromethane	µg/L	90	0.12	5	<0.54	--	<0.54	<0.54	<0.54	<0.54
Bromodichloromethane	µg/L	80	0.12	1	<0.39	--	<0.39	<0.39	<0.39	<0.39
Bromomethane	µg/L	10	0.22	4	<1.1	--	<1.1	<1.1	<1.1	<1.1
Carbon disulfide	µg/L	700	0.15	1	<0.45	--	<0.45	<0.45	<0.45	<0.45
Carbon Tetrachloride	µg/L	5	0.24	2	<0.65	--	<0.65	<0.65	<0.65	<0.65
Chlorobenzene	µg/L	100	0.19	1	<0.4	--	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	2800	0.15	4	<0.79	--	<0.79	<0.79	<0.79	<0.79
Chloromethane	µg/L	NS	0.31	3	<0.61	--	<0.61	<0.61	<0.61	<0.61
cis-1,2-Dichloroethylene	µg/L	70	0.13	1	<0.21	--	<0.21	<0.21	<0.21	<0.21
cis-1,3-Dichloropropene	µg/L	NS	0.15	5	<0.25	--	<0.25	<0.25	<0.25	<0.25
Dibromochloromethane	µg/L	80	0.2	5	<0.75	--	<0.75	<0.75	<0.75	<0.75
Dibromomethane	µg/L	70	0.18	1	<0.33	--	<0.33	<0.33	<0.33	<0.33
Dichloromethane	µg/L	5	0.17	5	<1.7	--	<1.7	<1.7	<1.7	<1.7
Ethylbenzene	µg/L	700	0.21	1	<0.31	--	<0.31	<0.31	<0.31	<0.31
Iodomethane	µg/L	NS	0.8	10	<7	--	<7	<7	<7	<7
Styrene	µg/L	100	0.1	1	<0.37	--	<0.37	<0.37	<0.37	<0.37
Tetrachloroethylene	µg/L	5	0.18	1	<0.48	--	<0.48	<0.48	<0.48	<0.48
Toluene	µg/L	1000	0.15	1	<0.43	--	<0.43	<0.43	<0.43	<0.43
Trans-1,2-dichloroethylene	µg/L	100	0.21	1	<0.27	--	<0.27	<0.27	<0.27	<0.27
trans-1,3-Dichloropropene	µg/L	NS	0.22	5	<0.56	--	<0.56	<0.56	<0.56	<0.56
trans-1,4-Dichloro-2-butene	µg/L	1.8	0.13	10	<1.1	--	<1.1	<1.1	<1.1	<1.1
Tribromomethane	µg/L	80	0.14	5	<0.78	--	<0.78	<0.78	<0.78	<0.78
Trichloroethylene	µg/L	5	0.19	1	<0.43	--	<0.43	<0.43	<0.43	<0.43
Trichlorofluoromethane	µg/L	2000	0.17	4	<0.38	--	<0.38	<0.38	<0.38	<0.38
Trichloromethane	µg/L	80	0.28	1	<1.3	--	<1.3	<1.3	<1.3	<1.3
Vinyl Acetate	µg/L	NS	0.74	10	<2.5	--	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	µg/L	2	0.1	1	<0.18	--	<0.18	<0.18	<0.18	<0.18
Xylenes	µg/L	10000	0.13	3	<0.4	--	<0.4	<0.4	<0.4	<0.4

Detections at or above the RL are shown in bold italics on gray background.

Detections greater than the MDL but less than the RL are shown in bold italics on white background with a J.

NS = No standard

Appendix B2 – 2024 Spring Laboratory Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Spring Groundwater

JOB NUMBER

310-283291-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
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Job ID: 310-283291-1 — Eurofins Cedar Falls

Job Narrative
310-283291-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/12/2024 8:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-425101 recovered above the upper control limit for Bromoform (23.1%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-425101/3).

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283291-1	MW-4	Ground Water	06/11/24 13:30	06/12/24 08:30
310-283291-2	MW-4B	Ground Water	06/11/24 15:30	06/12/24 08:30
310-283291-3	Trip Blank	Water	06/11/24 05:00	06/12/24 08:30
310-283291-4	MW-43A	Ground Water	06/11/24 10:45	06/12/24 08:30
310-283291-5	MW-46A	Ground Water	06/11/24 12:15	06/12/24 08:30

Detection Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4 — Lab Sample ID: 310-283291-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.425	J	1.00	0.230	ug/L	1		8260D	Total/NA
Benzene	0.223	J	0.500	0.220	ug/L	1		8260D	Total/NA
Arsenic	0.000792	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.485		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00185		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000270	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.00627		0.00500	0.00210	mg/L	1		6020B	Total/NA
Silver	0.00121		0.00100	0.000500	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	0.88				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-4B — Lab Sample ID: 310-283291-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.184		0.00200	0.000660	mg/L	1		6020B	Total/NA
Silver	0.00537		0.00100	0.000500	mg/L	1		6020B	Total/NA
Field Turbidity	1.75				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-283291-3

No Detections.

Client Sample ID: MW-43A — Lab Sample ID: 310-283291-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00628		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.163		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00349		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0173		0.00500	0.00210	mg/L	1		6020B	Total/NA
Silver	0.00936		0.00100	0.000500	mg/L	1		6020B	Total/NA
Total Suspended Solids	22.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.89				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-46A — Lab Sample ID: 310-283291-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.37	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.000714	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.213		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.0266		0.00500	0.00210	mg/L	1		6020B	Total/NA
Silver	0.00906		0.00100	0.000500	mg/L	1		6020B	Total/NA
Total Suspended Solids	10.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.22				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4
Lab Sample ID: 310-283291-1
Date Collected: 06/11/24 13:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 11:40	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 11:40	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 11:40	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 11:40	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 11:40	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 11:40	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 11:40	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 11:40	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 11:40	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 11:40	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 11:40	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 11:40	1
1,4-Dichlorobenzene	**0.425**	**J**	1.00	0.230	ug/L			06/20/24 11:40	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 11:40	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 11:40	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 11:40	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 11:40	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 11:40	1
Benzene	**0.223**	**J**	0.500	0.220	ug/L			06/20/24 11:40	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 11:40	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 11:40	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 11:40	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 11:40	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 11:40	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 11:40	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 11:40	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 11:40	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 11:40	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 11:40	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 11:40	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 11:40	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 11:40	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 11:40	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 11:40	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 11:40	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 11:40	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 11:40	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 11:40	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 11:40	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 11:40	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 11:40	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 11:40	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 11:40	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 11:40	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 11:40	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 11:40	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 11:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*06/20/24 11:40*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Lab Sample ID: 310-283291-1
Date Collected: 06/11/24 13:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*06/20/24 11:40*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*06/20/24 11:40*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:08	1
Arsenic	**0.000792**	**J**	0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:01	1
Barium	**0.485**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:52	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:52	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:40	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:01	1
Cobalt	**0.00185**		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:52	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:52	1
Lead	**0.000270**	**J**	0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:40	1
Nickel	**0.00627**		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:52	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:01	1
Silver	**0.00121**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:01	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:08	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:52	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.25**		1.88	1.39	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.88**				NTU			06/11/24 13:30	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4B
Lab Sample ID: 310-283291-2
Date Collected: 06/11/24 15:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 12:02	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 12:02	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 12:02	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 12:02	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 12:02	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 12:02	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 12:02	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 12:02	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 12:02	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 12:02	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 12:02	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 12:02	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 12:02	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 12:02	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 12:02	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 12:02	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 12:02	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 12:02	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 12:02	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 12:02	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 12:02	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 12:02	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 12:02	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 12:02	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 12:02	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 12:02	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 12:02	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 12:02	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 12:02	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 12:02	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 12:02	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 12:02	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 12:02	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 12:02	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 12:02	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 12:02	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 12:02	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 12:02	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 12:02	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 12:02	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 12:02	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 12:02	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 12:02	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 12:02	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 12:02	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 12:02	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 12:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/20/24 12:02*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4B
Lab Sample ID: 310-283291-2

Date Collected: 06/11/24 15:30
Matrix: Ground Water

Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*06/20/24 12:02*	*1*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*06/20/24 12:02*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:25	1
Arsenic	<0.000530		0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:03	1
Barium	**0.184**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:55	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:55	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:44	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:03	1
Cobalt	<0.000170		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:55	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:55	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:44	1
Nickel	<0.00210		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:55	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:03	1
Silver	**0.00537**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:03	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:25	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:55	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.75**				NTU			06/11/24 15:30	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283291-3
Date Collected: 06/11/24 05:00
Matrix: Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 10:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 10:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 10:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 10:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 10:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 10:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 10:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 10:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 10:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 10:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 10:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 10:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 10:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 10:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 10:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 10:57	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 10:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 10:57	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 10:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 10:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 10:57	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 10:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 10:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 10:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 10:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 10:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 10:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 10:57	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 10:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 10:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 10:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 10:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 10:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 10:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 10:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 10:57	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 10:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 10:57	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 10:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 10:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 10:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 10:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 10:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 10:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 10:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 10:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 10:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*06/20/24 10:57*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283291-3
Date Collected: 06/11/24 05:00
Matrix: Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*94*		*80 - 120*		*06/20/24 10:57*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*06/20/24 10:57*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4
Date Collected: 06/11/24 10:45
Matrix: Ground Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 12:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 12:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 12:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 12:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 12:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 12:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 12:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 12:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 12:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 12:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 12:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 12:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 12:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 12:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 12:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 12:23	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 12:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 12:23	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 12:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 12:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 12:23	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 12:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 12:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 12:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 12:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 12:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 12:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 12:23	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 12:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 12:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 12:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 12:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 12:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 12:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 12:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 12:23	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 12:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 12:23	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 12:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 12:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 12:23	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 12:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 12:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 12:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 12:23	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 12:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*06/20/24 12:23*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4

Date Collected: 06/11/24 10:45
Matrix: Ground Water

Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*06/20/24 12:23*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*06/20/24 12:23*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:29	1
Arsenic	**0.00628**		0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:05	1
Barium	**0.163**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:59	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:59	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:47	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:05	1
Cobalt	**0.00349**		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:59	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:59	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:47	1
Nickel	**0.0173**		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:59	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:05	1
Silver	**0.00936**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:05	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:29	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:59	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**22.0**		15.0	11.1	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.89**				NTU			06/11/24 10:45	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-46A
Lab Sample ID: 310-283291-5
Date Collected: 06/11/24 12:15
Matrix: Ground Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 12:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 12:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 12:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 12:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 12:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 12:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 12:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 12:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 12:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 12:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 12:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 12:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 12:45	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 12:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 12:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 12:45	1
Acetone	**3.37**	**J**	10.0	3.10	ug/L			06/20/24 12:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 12:45	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 12:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 12:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 12:45	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 12:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 12:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 12:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 12:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 12:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 12:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 12:45	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 12:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 12:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 12:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 12:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 12:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 12:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 12:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 12:45	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 12:45	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 12:45	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 12:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 12:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 12:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 12:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 12:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 12:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 12:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 12:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/20/24 12:45*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-46A
Lab Sample ID: 310-283291-5

Date Collected: 06/11/24 12:15
Matrix: Ground Water

Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*06/20/24 12:45*	*1*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*06/20/24 12:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:33	1
Arsenic	**0.000714**	**J**	0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:07	1
Barium	**0.213**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 22:03	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 22:03	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:51	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:07	1
Cobalt	<0.000170		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 22:03	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 22:03	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:51	1
Nickel	**0.0266**		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 22:03	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:07	1
Silver	**0.00906**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:07	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:33	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 22:03	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 22:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**10.3**		1.88	1.39	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.22**				NTU			06/11/24 12:15	1

Definitions/Glossary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283291-1	MW-4	117	93	109
310-283291-2	MW-4B	115	91	112
310-283291-4	MW-43A	110	90	107
310-283291-5	MW-46A	115	91	108

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283291-3	Trip Blank	112	94	107
LCS 310-425101/6	Lab Control Sample	91	104	104
LCS 310-425101/7	Lab Control Sample	117	96	113
MB 310-425101/5	Method Blank	114	94	108

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-425101/5
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 09:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 09:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 09:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 09:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 09:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 09:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 09:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 09:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 09:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 09:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 09:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 09:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 09:08	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 09:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 09:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 09:08	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 09:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 09:08	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 09:08	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 09:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 09:08	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 09:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 09:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 09:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 09:08	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 09:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 09:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 09:08	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 09:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 09:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 09:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 09:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 09:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 09:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 09:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 09:08	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 09:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 09:08	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 09:08	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 09:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 09:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 09:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 09:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 09:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 09:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 09:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 09:08	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-425101/5
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*06/20/24 09:08*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*06/20/24 09:08*	*1*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*06/20/24 09:08*	*1*

Lab Sample ID: LCS 310-425101/6
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.69		ug/L		103	71 - 120
1,1,1-Trichloroethane	20.0	20.29		ug/L		101	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.53		ug/L		93	68 - 124
1,1,2-Trichloroethane	20.0	18.50		ug/L		93	73 - 123
1,1-Dichloroethane	20.0	18.74		ug/L		94	70 - 127
1,1-Dichloroethene	20.0	21.96		ug/L		110	63 - 132
1,2,3-Trichloropropane	20.0	19.70		ug/L		99	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.97		ug/L		100	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.50		ug/L		92	75 - 125
1,2-Dichlorobenzene	20.0	18.89		ug/L		94	74 - 120
1,2-Dichloroethane	20.0	19.12		ug/L		96	71 - 125
1,2-Dichloropropane	20.0	18.79		ug/L		94	73 - 124
1,4-Dichlorobenzene	20.0	18.71		ug/L		94	72 - 120
2-Butanone (MEK)	40.0	37.50		ug/L		94	50 - 150
2-Hexanone	40.0	37.40		ug/L		93	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	36.63		ug/L		92	60 - 139
Acetone	40.0	37.25		ug/L		93	50 - 150
Acrylonitrile	200	192.3		ug/L		96	50 - 150
Benzene	20.0	19.63		ug/L		98	72 - 124
Bromochloromethane	20.0	18.39		ug/L		92	73 - 130
Bromodichloromethane	20.0	18.25		ug/L		91	74 - 122
Bromoform	20.0	20.69		ug/L		103	61 - 122
Carbon disulfide	20.0	23.70		ug/L		119	59 - 135
Carbon tetrachloride	20.0	20.11		ug/L		101	67 - 132
Chlorobenzene	20.0	18.57		ug/L		93	76 - 120
Chlorodibromomethane	20.0	17.16		ug/L		86	71 - 121
Chloroform	20.0	18.94		ug/L		95	72 - 125
cis-1,2-Dichloroethene	20.0	18.84		ug/L		94	74 - 123
cis-1,3-Dichloropropene	20.0	19.47		ug/L		97	71 - 125
Dibromomethane	20.0	18.67		ug/L		93	74 - 125
Ethylbenzene	20.0	20.05		ug/L		100	74 - 122
Iodomethane	20.0	17.97		ug/L		90	10 - 150
Methylene Chloride	20.0	20.58		ug/L		103	50 - 150
Styrene	20.0	20.40		ug/L		102	74 - 121
Tetrachloroethene	20.0	20.16		ug/L		101	71 - 130
Toluene	20.0	18.44		ug/L		92	74 - 123
trans-1,2-Dichloroethene	20.0	21.24		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	19.27		ug/L		96	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.96		ug/L		90	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-425101/6
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.17		ug/L		101	72 - 126
Vinyl acetate	40.0	39.29		ug/L		98	50 - 150
Xylenes, Total	40.0	39.13		ug/L		98	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*91*		*73 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 310-425101/7
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	14.40		ug/L		72	23 - 150
Chloroethane	20.0	15.32		ug/L		77	54 - 136
Chloromethane	20.0	15.78		ug/L		79	38 - 150
Trichlorofluoromethane	20.0	16.54		ug/L		83	54 - 149
Vinyl chloride	20.0	15.70		ug/L		79	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*113*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-424362/1-A
Matrix: Water
Analysis Batch: 424788

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/17/24 13:43	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/17/24 13:43	1

Lab Sample ID: MB 310-424362/1-A
Matrix: Water
Analysis Batch: 425116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000530		0.00200	0.000530	mg/L		06/13/24 09:00	06/19/24 21:17	1
Barium	<0.000660		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:17	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:17	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/19/24 21:17	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/19/24 21:17	1
Cobalt	<0.000170		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:17	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:17	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/19/24 21:17	1
Nickel	<0.00210		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:17	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-424362/1-A
Matrix: Water
Analysis Batch: 425116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/19/24 21:17	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:17	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:17	1

Lab Sample ID: LCS 310-424362/2-A
Matrix: Water
Analysis Batch: 424788

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.1917		mg/L		96	80 - 120
Thallium	0.100	0.09546		mg/L		95	80 - 120

Lab Sample ID: LCS 310-424362/2-A
Matrix: Water
Analysis Batch: 425116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1886		mg/L		94	80 - 120
Barium	0.100	0.09915		mg/L		99	80 - 120
Beryllium	0.100	0.09504		mg/L		95	80 - 120
Cadmium	0.100	0.08949		mg/L		89	80 - 120
Chromium	0.100	0.09515		mg/L		95	80 - 120
Cobalt	0.100	0.09739		mg/L		97	80 - 120
Copper	0.200	0.1961		mg/L		98	80 - 120
Lead	0.200	0.1916		mg/L		96	80 - 120
Nickel	0.200	0.1982		mg/L		99	80 - 120
Selenium	0.400	0.3599		mg/L		90	80 - 120
Vanadium	0.100	0.09063		mg/L		91	80 - 120
Zinc	0.200	0.1919		mg/L		96	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-424443/1
Matrix: Water
Analysis Batch: 424443

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/13/24 10:03	1

Lab Sample ID: LCS 310-424443/2
Matrix: Water
Analysis Batch: 424443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101.0		mg/L		101	81 - 116

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: 310-283291-4 DU
Client Sample ID: MW-43A
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 424443

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	22.0			25.00		mg/L				13	35

QC Association Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

GC/MS VOA

Analysis Batch: 425101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	8260D	
310-283291-2	MW-4B	Total/NA	Ground Water	8260D	
310-283291-3	Trip Blank	Total/NA	Water	8260D	
310-283291-4	MW-43A	Total/NA	Ground Water	8260D	
310-283291-5	MW-46A	Total/NA	Ground Water	8260D	
MB 310-425101/5	Method Blank	Total/NA	Water	8260D	
LCS 310-425101/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-425101/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 424362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	3005A	
310-283291-2	MW-4B	Total/NA	Ground Water	3005A	
310-283291-4	MW-43A	Total/NA	Ground Water	3005A	
310-283291-5	MW-46A	Total/NA	Ground Water	3005A	
MB 310-424362/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-424362/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 424788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-424362/1-A	Method Blank	Total/NA	Water	6020B	424362
LCS 310-424362/2-A	Lab Control Sample	Total/NA	Water	6020B	424362

Analysis Batch: 424820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362

Analysis Batch: 424983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362

Analysis Batch: 425116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362
MB 310-424362/1-A	Method Blank	Total/NA	Water	6020B	424362
LCS 310-424362/2-A	Lab Control Sample	Total/NA	Water	6020B	424362

Analysis Batch: 425254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362

Metals (Continued)

Analysis Batch: 425254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362

General Chemistry

Analysis Batch: 424443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	I-3765-85	
310-283291-2	MW-4B	Total/NA	Ground Water	I-3765-85	
310-283291-4	MW-43A	Total/NA	Ground Water	I-3765-85	
310-283291-5	MW-46A	Total/NA	Ground Water	I-3765-85	
MB 310-424443/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-424443/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-283291-4 DU	MW-43A	Total/NA	Ground Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 424339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	Field Sampling	
310-283291-2	MW-4B	Total/NA	Ground Water	Field Sampling	
310-283291-4	MW-43A	Total/NA	Ground Water	Field Sampling	
310-283291-5	MW-46A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Lab Sample ID: 310-283291-1
Date Collected: 06/11/24 13:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 11:40
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:40
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 21:52
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:08
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:01
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 13:30

Client Sample ID: MW-4B
Lab Sample ID: 310-283291-2
Date Collected: 06/11/24 15:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 12:02
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:44
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 21:55
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:25
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:03
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 15:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-283291-3
Date Collected: 06/11/24 05:00
Matrix: Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 10:57

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4
Date Collected: 06/11/24 10:45
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 12:23
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:47

Lab Chronicle

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4
Date Collected: 06/11/24 10:45
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 21:59
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:29
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:05
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 10:45

Client Sample ID: MW-46A
Lab Sample ID: 310-283291-5
Date Collected: 06/11/24 12:15
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 12:45
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:51
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 22:03
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:33
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:07
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 12:15

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-283291 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Arcon

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 6/12/24 | TIME: 0830 | Received By:

Delivery Type: ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☐ No	*If yes.* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.1 | Corrected Temp (°C): 3.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-12-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Sample Specific Notes.
MW-1			G	GW		N		X	X		
MW-2R			G	GW		N		X	X		
MW-3			G	GW		N		X	X		
MW-4	6-11-24	1330	G	GW	5	N		X	X		Turbidity - 0.88 NTU
MW-4B	6-11-24	1530	G	GW	5	N		X	X		Turbidity - 1.75 NTU
MW-7A			G	GW		N		X	X		
MW-24A			G	GW		N		X	X		
MW-25A			G	GW		N		X	X		
MW-29A			G	GW		N		X	X	X	
Trip Blank	6-11-24	0500	G	W	2	N			X		

***Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____*

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd ____ | Therm ID No .____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-12-24	MU		6-12-24 880
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, *dated* 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277 2401 fax 319 277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-12-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
MW-42A			G	GW		N		X	X			
MW-43A	6-11-24	1045	G	GW	5	N		X	X			Turbidity - 3.89 NTU
MW-44A			G	GW		N		X	X			
MW-45A			G	GW		N		X	X			
MW-46A	6-11-24	1215	G	GW	5	N		X	X			Turbidity - 12.22 NTU
MW-101			G	GW		N		X	X			
MW-11			G	GW		N		X			X	
MW-19R			G	GW		N		X	X			
MW-22			G	GW		N		X	X			
MW-22-PD			G	GW		N		X	X			
MW-35			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd _____	Therm ID No._____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 6-12-24	Received by	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time: 6/12/24 0830
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283291-1

Login Number: 283291

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Spring Groundwater

JOB NUMBER

310-283291-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Revision 1

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-283291-1 Eurofins Cedar Falls

Job Narrative
310-283291-1

REVISION

The report being provided is a revision of the original report sent on 6/24/2024. The report (revision 1) is being revised due to This report was revised 7/24/2024. Added App II VOC and Metals to the list per client request..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/12/2024 8:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-425101 recovered above the upper control limit for Bromoform (23.1%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-425101/3).

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283291-1	MW-4	Ground Water	06/11/24 13:30	06/12/24 08:30
310-283291-2	MW-4B	Ground Water	06/11/24 15:30	06/12/24 08:30
310-283291-3	Trip Blank	Water	06/11/24 05:00	06/12/24 08:30
310-283291-4	MW-43A	Ground Water	06/11/24 10:45	06/12/24 08:30
310-283291-5	MW-46A	Ground Water	06/11/24 12:15	06/12/24 08:30

Detection Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4 — Lab Sample ID: 310-283291-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.223	J	0.500	0.220	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	0.425	J	1.00	0.230	ug/L	1		8260D	Total/NA
Arsenic	0.000792	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.485		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00185		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000270	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.00627		0.00500	0.00210	mg/L	1		6020B	Total/NA
Silver	0.00121		0.00100	0.000500	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	0.88				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-4B — Lab Sample ID: 310-283291-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.184		0.00200	0.000660	mg/L	1		6020B	Total/NA
Silver	0.00537		0.00100	0.000500	mg/L	1		6020B	Total/NA
Field Turbidity	1.75				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-283291-3

No Detections.

Client Sample ID: MW-43A — Lab Sample ID: 310-283291-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00628		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.163		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00349		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0173		0.00500	0.00210	mg/L	1		6020B	Total/NA
Silver	0.00936		0.00100	0.000500	mg/L	1		6020B	Total/NA
Total Suspended Solids	22.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.89				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-46A — Lab Sample ID: 310-283291-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.37	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.000714	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.213		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.0266		0.00500	0.00210	mg/L	1		6020B	Total/NA
Silver	0.00906		0.00100	0.000500	mg/L	1		6020B	Total/NA
Total Suspended Solids	10.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.22				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Date Collected: 06/11/24 13:30
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 11:40	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 11:40	1
Benzene	**0.223**	**J**	0.500	0.220	ug/L			06/20/24 11:40	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 11:40	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 11:40	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 11:40	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 11:40	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 11:40	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 11:40	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 11:40	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 11:40	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 11:40	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 11:40	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 11:40	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 11:40	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 11:40	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 11:40	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 11:40	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 11:40	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 11:40	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 11:40	1
1,4-Dichlorobenzene	**0.425**	**J**	1.00	0.230	ug/L			06/20/24 11:40	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 11:40	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 11:40	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 11:40	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 11:40	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 11:40	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 11:40	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 11:40	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 11:40	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 11:40	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/20/24 11:40	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 11:40	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 11:40	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 11:40	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 11:40	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 11:40	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 11:40	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 11:40	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 11:40	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 11:40	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 11:40	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 11:40	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 11:40	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 11:40	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 11:40	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 11:40	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 11:40	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Date Collected: 06/11/24 13:30
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-1
Matrix: Ground Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*06/20/24 11:40*	*1*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*06/20/24 11:40*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*06/20/24 11:40*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:08	1
Arsenic	**0.000792**	**J**	0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:01	1
Barium	**0.485**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:52	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:52	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:40	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:01	1
Cobalt	**0.00185**		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:52	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:52	1
Lead	**0.000270**	**J**	0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:40	1
Nickel	**0.00627**		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:52	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:01	1
Silver	**0.00121**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:01	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:08	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:52	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.25**		1.88	1.39	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.88**				NTU			06/11/24 13:30	1

Client Sample ID: MW-4B
Date Collected: 06/11/24 15:30
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 12:02	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 12:02	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 12:02	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 12:02	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 12:02	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 12:02	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 12:02	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 12:02	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 12:02	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 12:02	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 12:02	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 12:02	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 12:02	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 12:02	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 12:02	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 12:02	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 12:02	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 12:02	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 12:02	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 12:02	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 12:02	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 12:02	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 12:02	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 12:02	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 12:02	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 12:02	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 12:02	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 12:02	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 12:02	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 12:02	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 12:02	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/20/24 12:02	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 12:02	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 12:02	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 12:02	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 12:02	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 12:02	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 12:02	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 12:02	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 12:02	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 12:02	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 12:02	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 12:02	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 12:02	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 12:02	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 12:02	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 12:02	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 12:02	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4B
Date Collected: 06/11/24 15:30
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-2
Matrix: Ground Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*06/20/24 12:02*	*1*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/20/24 12:02*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*		*06/20/24 12:02*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:25	1
Arsenic	<0.000530		0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:03	1
Barium	**0.184**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:55	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:55	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:44	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:03	1
Cobalt	<0.000170		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:55	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:55	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:44	1
Nickel	<0.00210		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:55	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:03	1
Silver	**0.00537**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:03	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:25	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:55	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.75**				NTU			06/11/24 15:30	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283291-3
Date Collected: 06/11/24 05:00
Matrix: Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 10:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 10:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 10:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 10:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 10:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 10:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 10:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 10:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 10:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 10:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 10:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 10:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 10:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 10:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 10:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 10:57	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 10:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 10:57	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 10:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 10:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 10:57	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 10:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 10:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 10:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 10:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 10:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 10:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 10:57	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 10:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 10:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 10:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 10:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 10:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 10:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 10:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 10:57	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 10:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 10:57	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 10:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 10:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 10:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 10:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 10:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 10:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 10:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 10:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 10:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*06/20/24 10:57*	*1*

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283291-3
Date Collected: 06/11/24 05:00
Matrix: Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		06/20/24 10:57	1
4-Bromofluorobenzene (Surr)	107		80 - 120		06/20/24 10:57	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4
Date Collected: 06/11/24 10:45
Matrix: Ground Water
Date Received: 06/12/24 08:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 12:23	1
Acrolein	<3.60		10.0	3.60	ug/L			06/20/24 12:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 12:23	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/20/24 12:23	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 12:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 12:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 12:23	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 12:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 12:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 12:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 12:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 12:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 12:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 12:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 12:23	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 12:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 12:23	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/20/24 12:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 12:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 12:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 12:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 12:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 12:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 12:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 12:23	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/20/24 12:23	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			06/20/24 12:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 12:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 12:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 12:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 12:23	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/20/24 12:23	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/20/24 12:23	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/20/24 12:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 12:23	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/20/24 12:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 12:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 12:23	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/20/24 12:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 12:23	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/20/24 12:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 12:23	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/20/24 12:23	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/20/24 12:23	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 12:23	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 12:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 12:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 12:23	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 12:23	1

Client Sample ID: MW-43A
Date Collected: 06/11/24 10:45
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-4
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 12:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 12:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 12:23	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/20/24 12:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 12:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 12:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 12:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 12:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 12:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 12:23	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 12:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*06/20/24 12:23*	*1*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*06/20/24 12:23*	*1*
Toluene-d8 (Surr)	*90*		*80 - 120*		*06/20/24 12:23*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:29	1
Arsenic	**0.00628**		0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:05	1
Barium	**0.163**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:59	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:59	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:47	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:05	1
Cobalt	**0.00349**		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:59	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:59	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:47	1
Nickel	**0.0173**		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:59	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:05	1
Silver	**0.00936**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:05	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:29	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:59	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**22.0**		15.0	11.1	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.89**				NTU			06/11/24 10:45	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-46A
Date Collected: 06/11/24 12:15
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-5
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**3.37**	**J**	10.0	3.10	ug/L			06/20/24 12:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 12:45	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 12:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 12:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 12:45	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 12:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 12:45	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 12:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 12:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 12:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 12:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 12:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 12:45	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 12:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 12:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 12:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 12:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 12:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 12:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 12:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 12:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 12:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 12:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 12:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 12:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 12:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 12:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 12:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 12:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 12:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 12:45	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/20/24 12:45	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 12:45	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 12:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 12:45	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 12:45	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 12:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 12:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 12:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 12:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 12:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 12:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 12:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 12:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 12:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 12:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 12:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 12:45	1

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-46A
Date Collected: 06/11/24 12:15
Date Received: 06/12/24 08:30

Lab Sample ID: 310-283291-5
Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*06/20/24 12:45*	*1*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*06/20/24 12:45*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*		*06/20/24 12:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/20/24 23:33	1
Arsenic	**0.000714**	**J**	0.00200	0.000530	mg/L		06/13/24 09:00	06/17/24 14:07	1
Barium	**0.213**		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 22:03	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 22:03	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/18/24 20:51	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/17/24 14:07	1
Cobalt	<0.000170		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 22:03	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 22:03	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/18/24 20:51	1
Nickel	**0.0266**		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 22:03	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/17/24 14:07	1
Silver	**0.00906**		0.00100	0.000500	mg/L		06/13/24 09:00	06/17/24 14:07	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/20/24 23:33	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 22:03	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 22:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**10.3**		1.88	1.39	mg/L			06/13/24 10:03	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.22**				NTU			06/11/24 12:15	1

Definitions/Glossary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(73-130)	(80-120)
310-283291-1	MW-4	109	117	93
310-283291-2	MW-4B	112	115	91
310-283291-4	MW-43A	107	110	90
310-283291-5	MW-46A	108	115	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283291-3	Trip Blank	112	94	107
LCS 310-425101/6	Lab Control Sample	91	104	104
LCS 310-425101/7	Lab Control Sample	117	96	113
MB 310-425101/5	Method Blank	114	94	108

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-425101/5
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	<3.60		10.0	3.60	ug/L			06/20/24 09:08	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/20/24 09:08	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 09:08	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 09:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 09:08	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 09:08	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/20/24 09:08	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 09:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 09:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 09:08	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 09:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 09:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 09:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 09:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 09:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 09:08	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 09:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 09:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 09:08	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/20/24 09:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 09:08	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 09:08	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			06/20/24 09:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 09:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 09:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 09:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 09:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 09:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 09:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 09:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 09:08	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/20/24 09:08	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/20/24 09:08	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/20/24 09:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 09:08	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/20/24 09:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 09:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 09:08	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/20/24 09:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 09:08	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/20/24 09:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 09:08	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/20/24 09:08	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/20/24 09:08	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 09:08	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 09:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 09:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 09:08	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-425101/5
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 09:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 09:08	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 09:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 09:08	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/20/24 09:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 09:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 09:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 09:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 09:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 09:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 09:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 09:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 09:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*06/20/24 09:08*	*1*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*06/20/24 09:08*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*06/20/24 09:08*	*1*

Lab Sample ID: LCS 310-425101/6
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	40.0	37.50		ug/L		94	50 - 150
Acetone	40.0	37.25		ug/L		93	50 - 150
Acrylonitrile	200	192.3		ug/L		96	50 - 150
Benzene	20.0	19.63		ug/L		98	72 - 124
Bromochloromethane	20.0	18.39		ug/L		92	73 - 130
Bromodichloromethane	20.0	18.25		ug/L		91	74 - 122
1,2-Dibromo-3-Chloropropane	20.0	19.97		ug/L		100	50 - 150
Bromoform	20.0	20.69		ug/L		103	61 - 122
1,2-Dibromoethane (EDB)	20.0	18.50		ug/L		92	75 - 125
Carbon disulfide	20.0	23.70		ug/L		119	59 - 135
Carbon tetrachloride	20.0	20.11		ug/L		101	67 - 132
1,2-Dichlorobenzene	20.0	18.89		ug/L		94	74 - 120
Chlorobenzene	20.0	18.57		ug/L		93	76 - 120
1,4-Dichlorobenzene	20.0	18.71		ug/L		94	72 - 120
Chlorodibromomethane	20.0	17.16		ug/L		86	71 - 121
Chloroform	20.0	18.94		ug/L		95	72 - 125
1,1-Dichloroethane	20.0	18.74		ug/L		94	70 - 127
1,2-Dichloroethane	20.0	19.12		ug/L		96	71 - 125
cis-1,2-Dichloroethene	20.0	18.84		ug/L		94	74 - 123
1,1-Dichloroethene	20.0	21.96		ug/L		110	63 - 132
cis-1,3-Dichloropropene	20.0	19.47		ug/L		97	71 - 125
1,2-Dichloropropane	20.0	18.79		ug/L		94	73 - 124
Dibromomethane	20.0	18.67		ug/L		93	74 - 125
Ethylbenzene	20.0	20.05		ug/L		100	74 - 122

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-425101/6
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Hexanone	40.0	37.40		ug/L		93	60 - 140
Iodomethane	20.0	17.97		ug/L		90	10 - 150
Methylene Chloride	20.0	20.58		ug/L		103	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	36.63		ug/L		92	60 - 139
Styrene	20.0	20.40		ug/L		102	74 - 121
1,1,1,2-Tetrachloroethane	20.0	20.69		ug/L		103	71 - 120
1,1,2,2-Tetrachloroethane	20.0	18.53		ug/L		93	68 - 124
Tetrachloroethene	20.0	20.16		ug/L		101	71 - 130
Toluene	20.0	18.44		ug/L		92	74 - 123
trans-1,4-Dichloro-2-butene	20.0	17.96		ug/L		90	50 - 150
trans-1,2-Dichloroethene	20.0	21.24		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	19.27		ug/L		96	69 - 123
1,1,1-Trichloroethane	20.0	20.29		ug/L		101	73 - 129
1,1,2-Trichloroethane	20.0	18.50		ug/L		93	73 - 123
Trichloroethene	20.0	20.17		ug/L		101	72 - 126
1,2,3-Trichloropropane	20.0	19.70		ug/L		99	65 - 127
Vinyl acetate	40.0	39.29		ug/L		98	50 - 150
Xylenes, Total	40.0	39.13		ug/L		98	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*91*		*73 - 130*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 310-425101/7
Matrix: Water
Analysis Batch: 425101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	14.40		ug/L		72	23 - 150
Chloroethane	20.0	15.32		ug/L		77	54 - 136
Dichlorodifluoromethane	20.0	15.60		ug/L		78	39 - 150
Chloromethane	20.0	15.78		ug/L		79	38 - 150
Trichlorofluoromethane	20.0	16.54		ug/L		83	54 - 149
Vinyl chloride	20.0	15.70		ug/L		79	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
4-Bromofluorobenzene (Surr)	*113*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-424362/1-A
Matrix: Water
Analysis Batch: 424788

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00100		0.00200	0.00100	mg/L		06/13/24 09:00	06/17/24 13:43	1
Thallium	<0.000570		0.00100	0.000570	mg/L		06/13/24 09:00	06/17/24 13:43	1

Lab Sample ID: MB 310-424362/1-A
Matrix: Water
Analysis Batch: 425116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000530		0.00200	0.000530	mg/L		06/13/24 09:00	06/19/24 21:17	1
Barium	<0.000660		0.00200	0.000660	mg/L		06/13/24 09:00	06/19/24 21:17	1
Beryllium	<0.000330		0.00100	0.000330	mg/L		06/13/24 09:00	06/19/24 21:17	1
Cadmium	<0.000100		0.000200	0.000100	mg/L		06/13/24 09:00	06/19/24 21:17	1
Chromium	<0.00120		0.00500	0.00120	mg/L		06/13/24 09:00	06/19/24 21:17	1
Cobalt	<0.000170		0.000500	0.000170	mg/L		06/13/24 09:00	06/19/24 21:17	1
Copper	<0.00180		0.00500	0.00180	mg/L		06/13/24 09:00	06/19/24 21:17	1
Lead	<0.000260		0.000500	0.000260	mg/L		06/13/24 09:00	06/19/24 21:17	1
Nickel	<0.00210		0.00500	0.00210	mg/L		06/13/24 09:00	06/19/24 21:17	1
Selenium	<0.00140		0.00500	0.00140	mg/L		06/13/24 09:00	06/19/24 21:17	1
Vanadium	<0.00110		0.00500	0.00110	mg/L		06/13/24 09:00	06/19/24 21:17	1
Zinc	<0.00970		0.0200	0.00970	mg/L		06/13/24 09:00	06/19/24 21:17	1

Lab Sample ID: LCS 310-424362/2-A
Matrix: Water
Analysis Batch: 424788

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.1917		mg/L		96	80 - 120
Thallium	0.100	0.09546		mg/L		95	80 - 120

Lab Sample ID: LCS 310-424362/2-A
Matrix: Water
Analysis Batch: 425116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1886		mg/L		94	80 - 120
Barium	0.100	0.09915		mg/L		99	80 - 120
Beryllium	0.100	0.09504		mg/L		95	80 - 120
Cadmium	0.100	0.08949		mg/L		89	80 - 120
Chromium	0.100	0.09515		mg/L		95	80 - 120
Cobalt	0.100	0.09739		mg/L		97	80 - 120
Copper	0.200	0.1961		mg/L		98	80 - 120
Lead	0.200	0.1916		mg/L		96	80 - 120
Nickel	0.200	0.1982		mg/L		99	80 - 120
Selenium	0.400	0.3599		mg/L		90	80 - 120
Vanadium	0.100	0.09063		mg/L		91	80 - 120
Zinc	0.200	0.1919		mg/L		96	80 - 120

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-424443/1
Matrix: Water
Analysis Batch: 424443

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/13/24 10:03	1

Lab Sample ID: LCS 310-424443/2
Matrix: Water
Analysis Batch: 424443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	101.0		mg/L		101	81 - 116		

Lab Sample ID: 310-283291-4 DU
Matrix: Ground Water
Analysis Batch: 424443

Client Sample ID: MW-43A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	22.0			25.00		mg/L				13	35

QC Association Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

GC/MS VOA

Analysis Batch: 425101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	8260D	
310-283291-2	MW-4B	Total/NA	Ground Water	8260D	
310-283291-3	Trip Blank	Total/NA	Water	8260D	
310-283291-4	MW-43A	Total/NA	Ground Water	8260D	
310-283291-5	MW-46A	Total/NA	Ground Water	8260D	
MB 310-425101/5	Method Blank	Total/NA	Water	8260D	
LCS 310-425101/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-425101/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 424362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	3005A	
310-283291-2	MW-4B	Total/NA	Ground Water	3005A	
310-283291-4	MW-43A	Total/NA	Ground Water	3005A	
310-283291-5	MW-46A	Total/NA	Ground Water	3005A	
MB 310-424362/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-424362/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 424788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-424362/1-A	Method Blank	Total/NA	Water	6020B	424362
LCS 310-424362/2-A	Lab Control Sample	Total/NA	Water	6020B	424362

Analysis Batch: 424820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362

Analysis Batch: 424983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362

Analysis Batch: 425116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362
MB 310-424362/1-A	Method Blank	Total/NA	Water	6020B	424362
LCS 310-424362/2-A	Lab Control Sample	Total/NA	Water	6020B	424362

Analysis Batch: 425254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	6020B	424362

QC Association Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Metals (Continued)

Analysis Batch: 425254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-2	MW-4B	Total/NA	Ground Water	6020B	424362
310-283291-4	MW-43A	Total/NA	Ground Water	6020B	424362
310-283291-5	MW-46A	Total/NA	Ground Water	6020B	424362

General Chemistry

Analysis Batch: 424443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	I-3765-85	
310-283291-2	MW-4B	Total/NA	Ground Water	I-3765-85	
310-283291-4	MW-43A	Total/NA	Ground Water	I-3765-85	
310-283291-5	MW-46A	Total/NA	Ground Water	I-3765-85	
MB 310-424443/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-424443/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-283291-4 DU	MW-43A	Total/NA	Ground Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 424339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283291-1	MW-4	Total/NA	Ground Water	Field Sampling	
310-283291-2	MW-4B	Total/NA	Ground Water	Field Sampling	
310-283291-4	MW-43A	Total/NA	Ground Water	Field Sampling	
310-283291-5	MW-46A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Lab Sample ID: 310-283291-1
Date Collected: 06/11/24 13:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 11:40
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:40
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 21:52
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:08
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:01
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 13:30

Client Sample ID: MW-4B
Lab Sample ID: 310-283291-2
Date Collected: 06/11/24 15:30
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 12:02
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:44
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 21:55
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:25
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:03
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 15:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-283291-3
Date Collected: 06/11/24 05:00
Matrix: Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 10:57

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4
Date Collected: 06/11/24 10:45
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 12:23
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:47

Lab Chronicle

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-283291-4
Date Collected: 06/11/24 10:45
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 21:59
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:29
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:05
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 10:45

Client Sample ID: MW-46A
Lab Sample ID: 310-283291-5
Date Collected: 06/11/24 12:15
Matrix: Ground Water
Date Received: 06/12/24 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425101	WSE8	EET CF	06/20/24 12:45
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 20:51
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425116	NFT2	EET CF	06/19/24 22:03
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 23:33
Total/NA	Prep	3005A			424362	KM3E	EET CF	06/13/24 09:00
Total/NA	Analysis	6020B		1	424820	NFT2	EET CF	06/17/24 14:07
Total/NA	Analysis	I-3765-85		1	424443	DGU1	EET CF	06/13/24 10:03
Total/NA	Analysis	Field Sampling		1	424339	BJ0R	EET CF	06/11/24 12:15

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,2,4-Trichlorobenzene
8260D		Ground Water	Allyl chloride
8260D		Ground Water	Ethyl methacrylate
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-283291-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-283291 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Arcon

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 6/12/24 | TIME: 0830 | Received By:

Delivery Type: ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☐ No	*If yes.* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.1 | Corrected Temp (°C): 3.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-12-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Sample Specific Notes.
MW-1			G	GW		N		X	X		
MW-2R			G	GW		N		X	X		
MW-3			G	GW		N		X	X		
MW-4	6-11-24	1330	G	GW	5	N		X	X		Turbidity - 0.88 NTU
MW-4B	6-11-24	1530	G	GW	5	N		X	X		Turbidity - 1.75 NTU
MW-7A			G	GW		N		X	X		
MW-24A			G	GW		N		X	X		
MW-25A			G	GW		N		X	X		
MW-29A			G	GW		N		X	X	X	
Trip Blank	6-11-24	0500	G	W	2	N			X		

***Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____*

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ | Therm ID No._____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-12-24	MU		6-12-24 880
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, *dated* 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277 2401 fax 319 277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-12-24	COC No
AECOM	Email Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
MW-42A			G	GW		N		X	X			
MW-43A	6-11-24	1045	G	GW	5	N		X	X			Turbidity - 3.89 NTU
MW-44A			G	GW		N		X	X			
MW-45A			G	GW		N		X	X			
MW-46A	6-11-24	1215	G	GW	5	N		X	X			Turbidity - 12.22 NTU
MW-101			G	GW		N		X	X			
MW-11			G	GW		N		X			X	
MW-19R			G	GW		N		X	X			
MW-22			G	GW		N		X	X			
MW-22-PD			G	GW		N		X	X			
MW-35			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd _____	Therm ID No._____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 6-12-24	Received by	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time: 6/12/24 0830
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

7/24/2024 (Rev. 1)

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283291-1

Login Number: 283291
List Number: 1
Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Spring Groundwater

JOB NUMBER

310-283406-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

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Job ID: 310-283406-1 — Eurofins Cedar Falls

Job Narrative
310-283406-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/13/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-424640 recovered above the upper control limit for 2-Hexanone (20.2%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-424640/3).

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283406-1	MW-33A	Ground Water	06/12/24 14:00	06/13/24 08:00
310-283406-2	MW-37A	Ground Water	06/12/24 12:45	06/13/24 08:00
310-283406-3	Trip Blank	Water	06/12/24 05:00	06/13/24 08:00
310-283406-4	MW-1	Ground Water	06/12/24 12:00	06/13/24 08:00
310-283406-5	MW-19R	Ground Water	06/12/24 11:00	06/13/24 08:00

Detection Summary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A — Lab Sample ID: 310-283406-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	37.7		10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	24.3		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	255		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	4.51		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	4.25	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.692		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	3.31	J	5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.11	J	5.00	1.10	ug/L	1		6020B	Total/NA
Zinc	12.9	J B	20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	59.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA
Field Turbidity	51.45				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-37A — Lab Sample ID: 310-283406-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	18.1		10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	1.62	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	134		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.714		0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	4.62		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	11.39				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-283406-3

No Detections.

Client Sample ID: MW-1 — Lab Sample ID: 310-283406-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	94.7		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	1.73				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-19R — Lab Sample ID: 310-283406-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	58.4		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	1.47				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A
Lab Sample ID: 310-283406-1
Date Collected: 06/12/24 14:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/15/24 02:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/15/24 02:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/15/24 02:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/15/24 02:42	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/15/24 02:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/15/24 02:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/15/24 02:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/15/24 02:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/15/24 02:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/15/24 02:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/15/24 02:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/15/24 02:42	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/15/24 02:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/15/24 02:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/15/24 02:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/15/24 02:42	1
Acetone	**37.7**		10.0	3.10	ug/L			06/15/24 02:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/15/24 02:42	1
Benzene	<0.220		0.500	0.220	ug/L			06/15/24 02:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/15/24 02:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/15/24 02:42	1
Bromoform	<0.780		5.00	0.780	ug/L			06/15/24 02:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/15/24 02:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/15/24 02:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/15/24 02:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/15/24 02:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/15/24 02:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/15/24 02:42	1
Chloroform	<1.30		3.00	1.30	ug/L			06/15/24 02:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/15/24 02:42	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/15/24 02:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/15/24 02:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/15/24 02:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/15/24 02:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/15/24 02:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/15/24 02:42	1
Styrene	<0.370		1.00	0.370	ug/L			06/15/24 02:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/15/24 02:42	1
Toluene	<0.430		1.00	0.430	ug/L			06/15/24 02:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/15/24 02:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/15/24 02:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/15/24 02:42	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/15/24 02:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/15/24 02:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/15/24 02:42	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/15/24 02:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/15/24 02:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*06/15/24 02:42*	*1*

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A
Lab Sample ID: 310-283406-1
Date Collected: 06/12/24 14:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*06/15/24 02:42*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/15/24 02:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/14/24 09:00	06/25/24 13:02	1
Arsenic	**24.3**		2.00	0.530	ug/L		06/14/24 09:00	06/17/24 18:15	1
Barium	**255**		2.00	0.660	ug/L		06/14/24 09:00	06/18/24 22:16	1
Beryllium	<0.330		1.00	0.330	ug/L		06/14/24 09:00	06/18/24 22:16	1
Cadmium	<0.100		0.200	0.100	ug/L		06/14/24 09:00	06/18/24 22:16	1
Chromium	<1.20		5.00	1.20	ug/L		06/14/24 09:00	06/17/24 18:15	1
Cobalt	**4.51**		0.500	0.170	ug/L		06/14/24 09:00	06/18/24 22:16	1
Copper	**4.25**	**J**	5.00	1.80	ug/L		06/14/24 09:00	06/18/24 22:16	1
Lead	**0.692**		0.500	0.260	ug/L		06/14/24 09:00	06/18/24 22:16	1
Nickel	**3.31**	**J**	5.00	2.10	ug/L		06/14/24 09:00	06/18/24 22:16	1
Selenium	<1.40		5.00	1.40	ug/L		06/14/24 09:00	06/17/24 18:15	1
Silver	<0.500		1.00	0.500	ug/L		06/14/24 09:00	06/17/24 18:15	1
Thallium	<0.570		1.00	0.570	ug/L		06/14/24 09:00	06/18/24 22:16	1
Vanadium	**1.11**	**J**	5.00	1.10	ug/L		06/14/24 09:00	06/18/24 22:16	1
Zinc	**12.9**	**J B**	20.0	9.70	ug/L		06/14/24 09:00	06/18/24 22:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**59.0**		15.0	11.1	mg/L			06/13/24 12:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**51.45**				NTU			06/12/24 14:00	1

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A
Lab Sample ID: 310-283406-2
Date Collected: 06/12/24 12:45
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/15/24 03:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/15/24 03:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/15/24 03:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/15/24 03:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/15/24 03:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/15/24 03:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/15/24 03:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/15/24 03:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/15/24 03:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/15/24 03:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/15/24 03:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/15/24 03:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/15/24 03:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/15/24 03:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/15/24 03:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/15/24 03:05	1
Acetone	**18.1**		10.0	3.10	ug/L			06/15/24 03:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/15/24 03:05	1
Benzene	<0.220		0.500	0.220	ug/L			06/15/24 03:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/15/24 03:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/15/24 03:05	1
Bromoform	<0.780		5.00	0.780	ug/L			06/15/24 03:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/15/24 03:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/15/24 03:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/15/24 03:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/15/24 03:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/15/24 03:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/15/24 03:05	1
Chloroform	<1.30		3.00	1.30	ug/L			06/15/24 03:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/15/24 03:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/15/24 03:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/15/24 03:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/15/24 03:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/15/24 03:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/15/24 03:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/15/24 03:05	1
Styrene	<0.370		1.00	0.370	ug/L			06/15/24 03:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/15/24 03:05	1
Toluene	<0.430		1.00	0.430	ug/L			06/15/24 03:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/15/24 03:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/15/24 03:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/15/24 03:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/15/24 03:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/15/24 03:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/15/24 03:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/15/24 03:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/15/24 03:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*06/15/24 03:05*	*1*

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A
Lab Sample ID: 310-283406-2
Date Collected: 06/12/24 12:45
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*06/15/24 03:05*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/15/24 03:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/14/24 09:00	06/25/24 13:05	1
Arsenic	**1.62**	**J**	2.00	0.530	ug/L		06/14/24 09:00	06/17/24 18:18	1
Barium	**134**		2.00	0.660	ug/L		06/14/24 09:00	06/18/24 22:19	1
Beryllium	<0.330		1.00	0.330	ug/L		06/14/24 09:00	06/18/24 22:19	1
Cadmium	<0.100		0.200	0.100	ug/L		06/14/24 09:00	06/18/24 22:19	1
Chromium	<1.20		5.00	1.20	ug/L		06/14/24 09:00	06/17/24 18:18	1
Cobalt	**0.714**		0.500	0.170	ug/L		06/14/24 09:00	06/18/24 22:19	1
Copper	<1.80		5.00	1.80	ug/L		06/14/24 09:00	06/18/24 22:19	1
Lead	<0.260		0.500	0.260	ug/L		06/14/24 09:00	06/18/24 22:19	1
Nickel	<2.10		5.00	2.10	ug/L		06/14/24 09:00	06/18/24 22:19	1
Selenium	<1.40		5.00	1.40	ug/L		06/14/24 09:00	06/17/24 18:18	1
Silver	<0.500		1.00	0.500	ug/L		06/14/24 09:00	06/17/24 18:18	1
Thallium	<0.570		1.00	0.570	ug/L		06/14/24 09:00	06/18/24 22:19	1
Vanadium	<1.10		5.00	1.10	ug/L		06/14/24 09:00	06/18/24 22:19	1
Zinc	<9.70		20.0	9.70	ug/L		06/14/24 09:00	06/18/24 22:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**4.62**		1.88	1.39	mg/L			06/13/24 12:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**11.39**				NTU			06/12/24 12:45	1

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283406-3
Date Collected: 06/12/24 05:00
Matrix: Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/14/24 22:33	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/14/24 22:33	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/14/24 22:33	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/14/24 22:33	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/14/24 22:33	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/14/24 22:33	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/14/24 22:33	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/14/24 22:33	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/14/24 22:33	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/14/24 22:33	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/14/24 22:33	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/14/24 22:33	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/14/24 22:33	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/14/24 22:33	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/14/24 22:33	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/14/24 22:33	1
Acetone	<3.10		10.0	3.10	ug/L			06/14/24 22:33	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/14/24 22:33	1
Benzene	<0.220		0.500	0.220	ug/L			06/14/24 22:33	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/14/24 22:33	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/14/24 22:33	1
Bromoform	<0.780		5.00	0.780	ug/L			06/14/24 22:33	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/14/24 22:33	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/14/24 22:33	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/14/24 22:33	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/14/24 22:33	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/14/24 22:33	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/14/24 22:33	1
Chloroform	<1.30		3.00	1.30	ug/L			06/14/24 22:33	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/14/24 22:33	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/14/24 22:33	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/14/24 22:33	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/14/24 22:33	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/14/24 22:33	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/14/24 22:33	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/14/24 22:33	1
Styrene	<0.370		1.00	0.370	ug/L			06/14/24 22:33	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/14/24 22:33	1
Toluene	<0.430		1.00	0.430	ug/L			06/14/24 22:33	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/14/24 22:33	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/14/24 22:33	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/14/24 22:33	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/14/24 22:33	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/14/24 22:33	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/14/24 22:33	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/14/24 22:33	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/14/24 22:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/14/24 22:33*	*1*

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283406-3
Date Collected: 06/12/24 05:00
Matrix: Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		06/14/24 22:33	1
4-Bromofluorobenzene (Surr)	103		80 - 120		06/14/24 22:33	1

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-1
Lab Sample ID: 310-283406-4
Date Collected: 06/12/24 12:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/15/24 03:28	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/15/24 03:28	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/15/24 03:28	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/15/24 03:28	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/15/24 03:28	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/15/24 03:28	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/15/24 03:28	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/15/24 03:28	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/15/24 03:28	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/15/24 03:28	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/15/24 03:28	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/15/24 03:28	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/15/24 03:28	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/15/24 03:28	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/15/24 03:28	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/15/24 03:28	1
Acetone	<3.10		10.0	3.10	ug/L			06/15/24 03:28	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/15/24 03:28	1
Benzene	<0.220		0.500	0.220	ug/L			06/15/24 03:28	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/15/24 03:28	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/15/24 03:28	1
Bromoform	<0.780		5.00	0.780	ug/L			06/15/24 03:28	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/15/24 03:28	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/15/24 03:28	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/15/24 03:28	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/15/24 03:28	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/15/24 03:28	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/15/24 03:28	1
Chloroform	<1.30		3.00	1.30	ug/L			06/15/24 03:28	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/15/24 03:28	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/15/24 03:28	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/15/24 03:28	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/15/24 03:28	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/15/24 03:28	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/15/24 03:28	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/15/24 03:28	1
Styrene	<0.370		1.00	0.370	ug/L			06/15/24 03:28	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/15/24 03:28	1
Toluene	<0.430		1.00	0.430	ug/L			06/15/24 03:28	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/15/24 03:28	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/15/24 03:28	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/15/24 03:28	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/15/24 03:28	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/15/24 03:28	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/15/24 03:28	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/15/24 03:28	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/15/24 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/15/24 03:28*	*1*

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-1
Lab Sample ID: 310-283406-4
Date Collected: 06/12/24 12:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*06/15/24 03:28*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/15/24 03:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/14/24 09:00	06/25/24 13:07	1
Arsenic	<0.530		2.00	0.530	ug/L		06/14/24 09:00	06/17/24 18:20	1
Barium	**94.7**		2.00	0.660	ug/L		06/14/24 09:00	06/18/24 22:23	1
Beryllium	<0.330		1.00	0.330	ug/L		06/14/24 09:00	06/18/24 22:23	1
Cadmium	<0.100		0.200	0.100	ug/L		06/14/24 09:00	06/18/24 22:23	1
Chromium	<1.20		5.00	1.20	ug/L		06/14/24 09:00	06/17/24 18:20	1
Cobalt	<0.170		0.500	0.170	ug/L		06/14/24 09:00	06/18/24 22:23	1
Copper	<1.80		5.00	1.80	ug/L		06/14/24 09:00	06/18/24 22:23	1
Lead	<0.260		0.500	0.260	ug/L		06/14/24 09:00	06/18/24 22:23	1
Nickel	<2.10		5.00	2.10	ug/L		06/14/24 09:00	06/18/24 22:23	1
Selenium	<1.40		5.00	1.40	ug/L		06/14/24 09:00	06/17/24 18:20	1
Silver	<0.500		1.00	0.500	ug/L		06/14/24 09:00	06/17/24 18:20	1
Thallium	<0.570		1.00	0.570	ug/L		06/14/24 09:00	06/18/24 22:23	1
Vanadium	<1.10		5.00	1.10	ug/L		06/14/24 09:00	06/18/24 22:23	1
Zinc	<9.70		20.0	9.70	ug/L		06/14/24 09:00	06/18/24 22:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/13/24 12:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.73**				NTU			06/12/24 12:00	1

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-19R
Lab Sample ID: 310-283406-5
Date Collected: 06/12/24 11:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/15/24 03:50	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/15/24 03:50	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/15/24 03:50	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/15/24 03:50	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/15/24 03:50	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/15/24 03:50	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/15/24 03:50	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/15/24 03:50	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/15/24 03:50	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/15/24 03:50	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/15/24 03:50	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/15/24 03:50	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/15/24 03:50	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/15/24 03:50	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/15/24 03:50	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/15/24 03:50	1
Acetone	<3.10		10.0	3.10	ug/L			06/15/24 03:50	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/15/24 03:50	1
Benzene	<0.220		0.500	0.220	ug/L			06/15/24 03:50	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/15/24 03:50	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/15/24 03:50	1
Bromoform	<0.780		5.00	0.780	ug/L			06/15/24 03:50	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/15/24 03:50	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/15/24 03:50	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/15/24 03:50	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/15/24 03:50	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/15/24 03:50	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/15/24 03:50	1
Chloroform	<1.30		3.00	1.30	ug/L			06/15/24 03:50	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/15/24 03:50	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/15/24 03:50	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/15/24 03:50	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/15/24 03:50	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/15/24 03:50	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/15/24 03:50	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/15/24 03:50	1
Styrene	<0.370		1.00	0.370	ug/L			06/15/24 03:50	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/15/24 03:50	1
Toluene	<0.430		1.00	0.430	ug/L			06/15/24 03:50	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/15/24 03:50	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/15/24 03:50	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/15/24 03:50	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/15/24 03:50	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/15/24 03:50	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/15/24 03:50	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/15/24 03:50	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/15/24 03:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*06/15/24 03:50*	*1*

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-19R
Lab Sample ID: 310-283406-5
Date Collected: 06/12/24 11:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*06/15/24 03:50*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/15/24 03:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/14/24 09:00	06/25/24 13:09	1
Arsenic	<0.530		2.00	0.530	ug/L		06/14/24 09:00	06/17/24 18:22	1
Barium	**58.4**		2.00	0.660	ug/L		06/14/24 09:00	06/18/24 22:26	1
Beryllium	<0.330		1.00	0.330	ug/L		06/14/24 09:00	06/18/24 22:26	1
Cadmium	<0.100		0.200	0.100	ug/L		06/14/24 09:00	06/18/24 22:26	1
Chromium	<1.20		5.00	1.20	ug/L		06/14/24 09:00	06/17/24 18:22	1
Cobalt	<0.170		0.500	0.170	ug/L		06/14/24 09:00	06/18/24 22:26	1
Copper	<1.80		5.00	1.80	ug/L		06/14/24 09:00	06/18/24 22:26	1
Lead	<0.260		0.500	0.260	ug/L		06/14/24 09:00	06/18/24 22:26	1
Nickel	<2.10		5.00	2.10	ug/L		06/14/24 09:00	06/18/24 22:26	1
Selenium	<1.40		5.00	1.40	ug/L		06/14/24 09:00	06/17/24 18:22	1
Silver	<0.500		1.00	0.500	ug/L		06/14/24 09:00	06/17/24 18:22	1
Thallium	<0.570		1.00	0.570	ug/L		06/14/24 09:00	06/18/24 22:26	1
Vanadium	<1.10		5.00	1.10	ug/L		06/14/24 09:00	06/18/24 22:26	1
Zinc	<9.70		20.0	9.70	ug/L		06/14/24 09:00	06/18/24 22:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/13/24 12:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.47**				NTU			06/12/24 11:00	1

Definitions/Glossary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283406-1	MW-33A	101	97	103
310-283406-2	MW-37A	100	95	101
310-283406-4	MW-1	99	95	103
310-283406-5	MW-19R	100	95	103

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283406-3	Trip Blank	99	94	103
LCS 310-424640/6	Lab Control Sample	94	95	99
LCS 310-424640/7	Lab Control Sample	99	96	102
MB 310-424640/5	Method Blank	97	98	105

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-424640/5
Matrix: Water
Analysis Batch: 424640

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/14/24 21:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/14/24 21:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/14/24 21:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/14/24 21:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/14/24 21:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/14/24 21:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/14/24 21:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/14/24 21:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/14/24 21:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/14/24 21:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/14/24 21:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/14/24 21:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/14/24 21:26	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/14/24 21:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/14/24 21:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/14/24 21:26	1
Acetone	<3.10		10.0	3.10	ug/L			06/14/24 21:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/14/24 21:26	1
Benzene	<0.220		0.500	0.220	ug/L			06/14/24 21:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/14/24 21:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/14/24 21:26	1
Bromoform	<0.780		5.00	0.780	ug/L			06/14/24 21:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/14/24 21:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/14/24 21:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/14/24 21:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/14/24 21:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/14/24 21:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/14/24 21:26	1
Chloroform	<1.30		3.00	1.30	ug/L			06/14/24 21:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/14/24 21:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/14/24 21:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/14/24 21:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/14/24 21:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/14/24 21:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/14/24 21:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/14/24 21:26	1
Styrene	<0.370		1.00	0.370	ug/L			06/14/24 21:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/14/24 21:26	1
Toluene	<0.430		1.00	0.430	ug/L			06/14/24 21:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/14/24 21:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/14/24 21:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/14/24 21:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/14/24 21:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/14/24 21:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/14/24 21:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/14/24 21:26	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/14/24 21:26	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-424640/5
Matrix: Water
Analysis Batch: 424640

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*97*		*73 - 130*		*06/14/24 21:26*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*06/14/24 21:26*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*06/14/24 21:26*	*1*

Lab Sample ID: LCS 310-424640/6
Matrix: Water
Analysis Batch: 424640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.96		ug/L		95	71 - 120
1,1,1-Trichloroethane	20.0	19.20		ug/L		96	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.81		ug/L		99	68 - 124
1,1,2-Trichloroethane	20.0	20.78		ug/L		104	73 - 123
1,1-Dichloroethane	20.0	18.53		ug/L		93	70 - 127
1,1-Dichloroethene	20.0	19.73		ug/L		99	63 - 132
1,2,3-Trichloropropane	20.0	20.29		ug/L		101	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.43		ug/L		102	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.58		ug/L		103	75 - 125
1,2-Dichlorobenzene	20.0	20.69		ug/L		103	74 - 120
1,2-Dichloroethane	20.0	17.56		ug/L		88	71 - 125
1,2-Dichloropropane	20.0	20.63		ug/L		103	73 - 124
1,4-Dichlorobenzene	20.0	18.16		ug/L		91	72 - 120
2-Butanone (MEK)	40.0	37.56		ug/L		94	50 - 150
2-Hexanone	40.0	46.95		ug/L		117	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	45.15		ug/L		113	60 - 139
Acetone	40.0	39.32		ug/L		98	50 - 150
Acrylonitrile	200	199.8		ug/L		100	50 - 150
Benzene	20.0	19.30		ug/L		97	72 - 124
Bromochloromethane	20.0	18.93		ug/L		95	73 - 130
Bromodichloromethane	20.0	19.05		ug/L		95	74 - 122
Bromoform	20.0	18.71		ug/L		94	61 - 122
Carbon disulfide	20.0	19.18		ug/L		96	59 - 135
Carbon tetrachloride	20.0	18.36		ug/L		92	67 - 132
Chlorobenzene	20.0	19.99		ug/L		100	76 - 120
Chlorodibromomethane	20.0	19.69		ug/L		98	71 - 121
Chloroform	20.0	18.68		ug/L		93	72 - 125
cis-1,2-Dichloroethene	20.0	18.66		ug/L		93	74 - 123
cis-1,3-Dichloropropene	20.0	18.56		ug/L		93	71 - 125
Dibromomethane	20.0	19.65		ug/L		98	74 - 125
Ethylbenzene	20.0	19.20		ug/L		96	74 - 122
Iodomethane	20.0	12.43		ug/L		62	10 - 150
Methylene Chloride	20.0	20.23		ug/L		101	50 - 150
Styrene	20.0	19.46		ug/L		97	74 - 121
Tetrachloroethene	20.0	18.88		ug/L		94	71 - 130
Toluene	20.0	20.98		ug/L		105	74 - 123
trans-1,2-Dichloroethene	20.0	18.10		ug/L		91	70 - 126
trans-1,3-Dichloropropene	20.0	18.11		ug/L		91	69 - 123
trans-1,4-Dichloro-2-butene	20.0	15.25		ug/L		76	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-424640/6
Matrix: Water
Analysis Batch: 424640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.08		ug/L		100	72 - 126
Vinyl acetate	40.0	38.70		ug/L		97	50 - 150
Xylenes, Total	40.0	39.35		ug/L		98	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-424640/7
Matrix: Water
Analysis Batch: 424640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	13.30		ug/L		66	23 - 150
Chloroethane	20.0	19.10		ug/L		96	54 - 136
Chloromethane	20.0	19.84		ug/L		99	38 - 150
Trichlorofluoromethane	20.0	19.47		ug/L		97	54 - 149
Vinyl chloride	20.0	17.68		ug/L		88	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-424524/1-A
Matrix: Water
Analysis Batch: 424839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530	^+	2.00	0.530	ug/L		06/14/24 09:00	06/17/24 17:37	1
Barium	<0.660		2.00	0.660	ug/L		06/14/24 09:00	06/17/24 17:37	1
Chromium	<1.20		5.00	1.20	ug/L		06/14/24 09:00	06/17/24 17:37	1
Selenium	<1.40		5.00	1.40	ug/L		06/14/24 09:00	06/17/24 17:37	1
Silver	<0.500		1.00	0.500	ug/L		06/14/24 09:00	06/17/24 17:37	1

Lab Sample ID: MB 310-424524/1-A
Matrix: Water
Analysis Batch: 424983

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.330		1.00	0.330	ug/L		06/14/24 09:00	06/18/24 21:23	1
Cadmium	<0.100		0.200	0.100	ug/L		06/14/24 09:00	06/18/24 21:23	1
Cobalt	<0.170		0.500	0.170	ug/L		06/14/24 09:00	06/18/24 21:23	1
Copper	<1.80		5.00	1.80	ug/L		06/14/24 09:00	06/18/24 21:23	1
Lead	<0.260		0.500	0.260	ug/L		06/14/24 09:00	06/18/24 21:23	1
Nickel	<2.10		5.00	2.10	ug/L		06/14/24 09:00	06/18/24 21:23	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-424524/1-A
Matrix: Water
Analysis Batch: 424983

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		06/14/24 09:00	06/18/24 21:23	1
Vanadium	<1.10		5.00	1.10	ug/L		06/14/24 09:00	06/18/24 21:23	1
Zinc	14.79	J	20.0	9.70	ug/L		06/14/24 09:00	06/18/24 21:23	1

Lab Sample ID: MB 310-424524/1-A
Matrix: Water
Analysis Batch: 425640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/14/24 09:00	06/25/24 12:56	1

Lab Sample ID: LCS 310-424524/2-A
Matrix: Water
Analysis Batch: 424839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	100	100.5		ug/L		101	80 - 120
Selenium	400	420.4		ug/L		105	80 - 120
Silver	100	100.8		ug/L		101	80 - 120

Lab Sample ID: LCS 310-424524/2-A
Matrix: Water
Analysis Batch: 424983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	180.8		ug/L		90	80 - 120
Barium	100	100.2		ug/L		100	80 - 120
Beryllium	100	98.90		ug/L		99	80 - 120
Cadmium	100	91.18		ug/L		91	80 - 120
Cobalt	100	95.20		ug/L		95	80 - 120
Copper	200	199.8		ug/L		100	80 - 120
Lead	200	204.0		ug/L		102	80 - 120
Nickel	200	188.0		ug/L		94	80 - 120
Thallium	100	93.10		ug/L		93	80 - 120
Vanadium	100	93.25		ug/L		93	80 - 120
Zinc	200	192.6		ug/L		96	80 - 120

Lab Sample ID: LCS 310-424524/2-A
Matrix: Water
Analysis Batch: 425640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	210.9		ug/L		105	80 - 120

Lab Sample ID: 310-283406-5 DU
Matrix: Ground Water
Analysis Batch: 424839

Client Sample ID: MW-19R
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.530		<0.530		ug/L		NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-283406-5 DU
Matrix: Ground Water
Analysis Batch: 424839

Client Sample ID: MW-19R
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium	<1.20		<1.20		ug/L		NC	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20

Lab Sample ID: 310-283406-5 DU
Matrix: Ground Water
Analysis Batch: 424983

Client Sample ID: MW-19R
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.530		<0.530		ug/L		NC	20
Barium	58.4		61.54		ug/L		5	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	<0.170		<0.170		ug/L		NC	20
Copper	<1.80		<1.80		ug/L		NC	20
Lead	<0.260		<0.260		ug/L		NC	20
Nickel	<2.10		<2.10		ug/L		NC	20
Selenium	<1.40		<1.40		ug/L		NC	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	<1.10		<1.10		ug/L		NC	20
Zinc	<9.70		10.66	J	ug/L		NC	20

Lab Sample ID: 310-283406-5 DU
Matrix: Ground Water
Analysis Batch: 425640

Client Sample ID: MW-19R
Prep Type: Total/NA
Prep Batch: 424524

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-424485/1
Matrix: Water
Analysis Batch: 424485

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/13/24 12:27	1

Lab Sample ID: LCS 310-424485/2
Matrix: Water
Analysis Batch: 424485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	81 - 116

GC/MS VOA

Analysis Batch: 424640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	8260D	
310-283406-2	MW-37A	Total/NA	Ground Water	8260D	
310-283406-3	Trip Blank	Total/NA	Water	8260D	
310-283406-4	MW-1	Total/NA	Ground Water	8260D	
310-283406-5	MW-19R	Total/NA	Ground Water	8260D	
MB 310-424640/5	Method Blank	Total/NA	Water	8260D	
LCS 310-424640/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-424640/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 424524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	3005A	
310-283406-2	MW-37A	Total/NA	Ground Water	3005A	
310-283406-4	MW-1	Total/NA	Ground Water	3005A	
310-283406-5	MW-19R	Total/NA	Ground Water	3005A	
MB 310-424524/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-424524/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-283406-5 DU	MW-19R	Total/NA	Ground Water	3005A	

Analysis Batch: 424839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	6020B	424524
310-283406-2	MW-37A	Total/NA	Ground Water	6020B	424524
310-283406-4	MW-1	Total/NA	Ground Water	6020B	424524
310-283406-5	MW-19R	Total/NA	Ground Water	6020B	424524
MB 310-424524/1-A	Method Blank	Total/NA	Water	6020B	424524
LCS 310-424524/2-A	Lab Control Sample	Total/NA	Water	6020B	424524
310-283406-5 DU	MW-19R	Total/NA	Ground Water	6020B	424524

Analysis Batch: 424983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	6020B	424524
310-283406-2	MW-37A	Total/NA	Ground Water	6020B	424524
310-283406-4	MW-1	Total/NA	Ground Water	6020B	424524
310-283406-5	MW-19R	Total/NA	Ground Water	6020B	424524
MB 310-424524/1-A	Method Blank	Total/NA	Water	6020B	424524
LCS 310-424524/2-A	Lab Control Sample	Total/NA	Water	6020B	424524
310-283406-5 DU	MW-19R	Total/NA	Ground Water	6020B	424524

Analysis Batch: 425640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	6020B	424524
310-283406-2	MW-37A	Total/NA	Ground Water	6020B	424524
310-283406-4	MW-1	Total/NA	Ground Water	6020B	424524
310-283406-5	MW-19R	Total/NA	Ground Water	6020B	424524
MB 310-424524/1-A	Method Blank	Total/NA	Water	6020B	424524
LCS 310-424524/2-A	Lab Control Sample	Total/NA	Water	6020B	424524
310-283406-5 DU	MW-19R	Total/NA	Ground Water	6020B	424524

QC Association Summary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

General Chemistry

Analysis Batch: 424485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	I-3765-85	
310-283406-2	MW-37A	Total/NA	Ground Water	I-3765-85	
310-283406-4	MW-1	Total/NA	Ground Water	I-3765-85	
310-283406-5	MW-19R	Total/NA	Ground Water	I-3765-85	
MB 310-424485/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-424485/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 425298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283406-1	MW-33A	Total/NA	Ground Water	Field Sampling	
310-283406-2	MW-37A	Total/NA	Ground Water	Field Sampling	
310-283406-4	MW-1	Total/NA	Ground Water	Field Sampling	
310-283406-5	MW-19R	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A
Lab Sample ID: 310-283406-1
Date Collected: 06/12/24 14:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424640	WSE8	EET CF	06/15/24 02:42
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 22:16
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424839	NFT2	EET CF	06/17/24 18:15
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	425640	NFT2	EET CF	06/25/24 13:02
Total/NA	Analysis	I-3765-85		1	424485	DGU1	EET CF	06/13/24 12:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/12/24 14:00

Client Sample ID: MW-37A
Lab Sample ID: 310-283406-2
Date Collected: 06/12/24 12:45
Matrix: Ground Water
Date Received: 06/13/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424640	WSE8	EET CF	06/15/24 03:05
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 22:19
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424839	NFT2	EET CF	06/17/24 18:18
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	425640	NFT2	EET CF	06/25/24 13:05
Total/NA	Analysis	I-3765-85		1	424485	DGU1	EET CF	06/13/24 12:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/12/24 12:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-283406-3
Date Collected: 06/12/24 05:00
Matrix: Water
Date Received: 06/13/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424640	WSE8	EET CF	06/14/24 22:33

Client Sample ID: MW-1
Lab Sample ID: 310-283406-4
Date Collected: 06/12/24 12:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424640	WSE8	EET CF	06/15/24 03:28
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 22:23
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424839	NFT2	EET CF	06/17/24 18:20
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	425640	NFT2	EET CF	06/25/24 13:07

Lab Chronicle

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-1
Lab Sample ID: 310-283406-4

Date Collected: 06/12/24 12:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	424485	DGU1	EET CF	06/13/24 12:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/12/24 12:00

Client Sample ID: MW-19R
Lab Sample ID: 310-283406-5

Date Collected: 06/12/24 11:00
Matrix: Ground Water
Date Received: 06/13/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424640	WSE8	EET CF	06/15/24 03:50
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424983	NFT2	EET CF	06/18/24 22:26
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	424839	NFT2	EET CF	06/17/24 18:22
Total/NA	Prep	3005A			424524	KM3E	EET CF	06/14/24 09:00
Total/NA	Analysis	6020B		1	425640	NFT2	EET CF	06/25/24 13:09
Total/NA	Analysis	I-3765-85		1	424485	DGU1	EET CF	06/13/24 12:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/12/24 11:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-283406-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

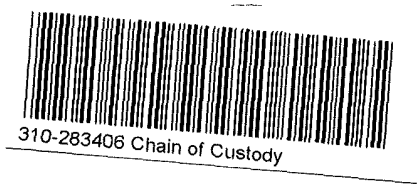
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America



Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 6-13-24 | TIME: 800 | Received By: MC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.9 | Corrected Temp (°C): 0.9

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-13-24	COC No
AECOM	Email Christopher Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 3 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling:
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	All Appendix II Analytes	Sample Specific Notes
MW-31A			G	GW		N		X	X	X		
MW-33A	6-12-24	1400	G	GW	5	N		X	X			Turbidity - 51.45 NTU
MW-34A			G	GW		N		X	X			
MW-34A-FD			G	GW		N		X	X			
MW-37A	6-12-24	1245	G	GW	5	N		X	X			Turbidity - 11.39 NTU
MW-38A			G	GW		N		X	X			
MW-38A-FD			G	GW		N		X	X			
MW-39A			G	GW		N		X	X			
MW-40A			G	GW		N		X	X			
MW-41A			G	GW		N		X	X			
Trip Blank	6-12-24	0500	G	W	2	N			X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-13-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by: GC 6/13/24 ~1500	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

6/25/2024

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-13-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 3 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			Job / SDG No:
Site: Winneshiek County Landfill	☐ 1 week			
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Sample Specific Notes
MW-1	6-12-24	1200	G	GW	5	N		X	X		Turbidity - 1.73 NTU
MW-2R			G	GW		N		X	X		
MW-3			G	GW		N		X	X		
MW-4			G	GW		N		X	X		
MW-4B			G	GW		N		X	X		
MW-7A			G	GW		N		X	X		
MW-24A			G	GW		N		X	X		
MW-25A			G	GW		N		X	X		
MW-29A			G	GW		N		X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd. ____ Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-13-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by: LC 6/13/24	Company: ESDC	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Project Manager: Christopher Oelkers
Email Christopher Oelkers@aecom com
Tel/Fax: (319)232-6531/(319)232-0271

Site Contact:
Lab Contact:
Date: 6-13-24
Carrier:

COC No
3 of 3 COCs
Sampler:
For Lab Use Only:
Walk-in Client
Lab Sampling
Job / SDG No

Client Contact
AECOM
501 Sycamore St., Suite 222
Waterloo, IA 50703
(319)232-6531 Phone
(319)232-0271 FAX
Project Name Winneshiek Groundwater Monitoring
Site Winneshiek County Landfill
P O #

Analysis Turnaround Time
☑ CALENDAR DAYS ☐ WORKING DAYS
TAT if different from Below _____
☑ 2 weeks
☐ 1 week
☑ 2 days
☐ 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
MW-42A			G	GW		N		X	X			
MW-43A			G	GW		N		X	X			
MW-44A			G	GW		N		X	X			
MW-45A			G	GW		N		X	X			
MW-46A			G	GW		N		X	X			
MW-101			G	GW		N		X	X			
MW-11			G	GW		N		X			X	
MW-19R	6-12-24	1100	G	GW	5	N		X	X			Turbidity - 1.47 NTU
MW-22			G	GW		N		X	X			
MW-22-FD			G	GW		N		X	X			
MW-35			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No ._____

Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Ben Porter	Aecom	6-13-24			
			Received in Laboratory by: CC 6-13-24	Company: CSOC	

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283406-1

Login Number: 283406

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 7/12/2024 12:44:50 PM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater

JOB NUMBER

310-283618-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-283618-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/14/2024 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-424743 recovered above the upper control limit for Dichlorodifluoromethane (58.4%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-424743/4).

Method 8260D: The laboratory control sample (LCS) for analytical batch 310-424743 recovered outside control limits for the following analyte: Dichlorodifluoromethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

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

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-425054. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-425054 and analytical batch 310-425420 recovered outside control limits for the following analyte(s): 4-Nitrophenol. 4-Nitrophenol has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-425054 and analytical batch 310-425420 recovered outside control limits for the following analytes: 2,4-Dinitrophenol, 2,3,4,6-Tetrachlorophenol, 4,6-Dinitro-2-methylphenol, Pentachlorophenol and 4-Nitrophenol

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-425415 recovered above the upper control limit for 1,4-Naphthoquinone (30.8%D), N-Nitrosodi-n-butylamine (24.7%D), 3,3'-Dimethylbenzidine (25.1%D), 1-Naphthylamine (21.8%D), 4-Aminobipheny (21.2%D)l, Safrole (24.7%D), o-Toluidine (26.8%D), o,o',o''-Triethylphosphorothioate (25.0%D) and Dinoseb (39.2%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-425054 and analytical batch 310-425415 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Batch precision also exceeded control limits for these analyte(s). These results have been reported and qualified.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-425054 and analytical batch 310-425415 recovered outside control limits for the following analytes: Famphur. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Job ID: 310-283618-1 (Continued) Eurofins Cedar Falls

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

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

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

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

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

Metals
Method 6020B: The laboratory control sample (LCS) for 310-424661 recovered outside control limits for the following analytes: Nickel. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. MW-25A (310-283618-1), MW-38A (310-283618-2), MW-38A-FD (310-283618-3) and MW-39A (310-283618-4)

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283618-1	MW-25A	Ground Water	06/13/24 15:00	06/14/24 10:35
310-283618-2	MW-38A	Ground Water	06/13/24 10:30	06/14/24 10:35
310-283618-3	MW-38A-FD	Ground Water	06/13/24 10:30	06/14/24 10:35
310-283618-4	MW-39A	Ground Water	06/13/24 11:45	06/14/24 10:35
310-283618-5	MW-40A	Ground Water	06/13/24 13:00	06/14/24 10:35

Detection Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A — Lab Sample ID: 310-283618-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	178		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.64	J	5.00	1.20	ug/L	1		6020B	Total/NA
Selenium	2.02	J	5.00	1.40	ug/L	1		6020B	Total/NA
Field Turbidity	2.82				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-38A — Lab Sample ID: 310-283618-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	153		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.62				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-38A-FD — Lab Sample ID: 310-283618-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	148		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.50		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-39A — Lab Sample ID: 310-283618-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	152		2.00	0.660	ug/L	1		6020B	Total/NA
Beryllium	0.353	J	1.00	0.330	ug/L	1		6020B	Total/NA
Cobalt	0.175	J	0.500	0.170	ug/L	1		6020B	Total/NA
Zinc	68.3		20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	14.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	25.54				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-40A — Lab Sample ID: 310-283618-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.250	J	0.500	0.220	ug/L	1		8260D	Total/NA
Barium	210		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.69		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	11.1		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	7.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.07				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Lab Sample ID: 310-283618-1
Date Collected: 06/13/24 15:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 14:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 14:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 14:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 14:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 14:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 14:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 14:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 14:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 14:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 14:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 14:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 14:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 14:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 14:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 14:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 14:13	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 14:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 14:13	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 14:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 14:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 14:13	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 14:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 14:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 14:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 14:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 14:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 14:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 14:13	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 14:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 14:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 14:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 14:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 14:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 14:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 14:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 14:13	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 14:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 14:13	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 14:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 14:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 14:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 14:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 14:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 14:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 14:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 14:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/18/24 14:13*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Lab Sample ID: 310-283618-1
Date Collected: 06/13/24 15:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/18/24 14:13*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 14:13*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:22	1
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/28/24 23:34	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 18:53	1
Barium	**178**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 18:53	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:22	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 18:53	1
Chromium	**2.64**	**J**	5.00	1.20	ug/L		06/17/24 09:00	06/18/24 18:53	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 18:53	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 18:53	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 18:53	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 18:53	1
Selenium	**2.02**	**J**	5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:22	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 18:53	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:22	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	07/07/24 22:35	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:22	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/19/24 10:41	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.82**				NTU			06/13/24 15:00	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A
Lab Sample ID: 310-283618-2
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 14:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 14:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 14:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 14:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 14:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 14:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 14:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 14:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 14:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 14:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 14:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 14:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 14:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 14:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 14:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 14:35	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 14:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 14:35	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 14:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 14:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 14:35	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 14:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 14:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 14:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 14:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 14:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 14:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 14:35	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 14:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 14:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 14:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 14:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 14:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 14:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 14:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 14:35	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 14:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 14:35	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 14:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 14:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 14:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 14:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 14:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 14:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 14:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 14:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*06/18/24 14:35*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A
Lab Sample ID: 310-283618-2
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/18/24 14:35*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 14:35*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:25	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 18:56	1
Barium	**153**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 18:56	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:25	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 18:56	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 18:56	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 18:56	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 18:56	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 18:56	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 18:56	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:25	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 18:56	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:25	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:25	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.13**		1.88	1.39	mg/L			06/19/24 09:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.62**				NTU			06/13/24 10:30	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-283618-3
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 14:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 14:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 14:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 14:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 14:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 14:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 14:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 14:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 14:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 14:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 14:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 14:58	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 14:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 14:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 14:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 14:58	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 14:58	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 14:58	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 14:58	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 14:58	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 14:58	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 14:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 14:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 14:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 14:58	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 14:58	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 14:58	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 14:58	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 14:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 14:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 14:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 14:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 14:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 14:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 14:58	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 14:58	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 14:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 14:58	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 14:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 14:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 14:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 14:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 14:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 14:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 14:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 14:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/18/24 14:58*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-283618-3

Date Collected: 06/13/24 10:30
Matrix: Ground Water

Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/18/24 14:58*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/18/24 14:58*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:29	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 18:58	1
Barium	**148**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 18:58	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:29	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 18:58	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 18:58	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 18:58	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 18:58	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 18:58	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 18:58	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:29	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 18:58	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:29	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:29	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.50**		1.88	1.39	mg/L			06/19/24 09:51	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Lab Sample ID: 310-283618-4
Date Collected: 06/13/24 11:45
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 15:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 15:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 15:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 15:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 15:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 15:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 15:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 15:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 15:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 15:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 15:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 15:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 15:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 15:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 15:21	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 15:21	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 15:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 15:21	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 15:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 15:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 15:21	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 15:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 15:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 15:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 15:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 15:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 15:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 15:21	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 15:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 15:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 15:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 15:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 15:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 15:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 15:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 15:21	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 15:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 15:21	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 15:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 15:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 15:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 15:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 15:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 15:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 15:21	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 15:21	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*06/18/24 15:21*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Lab Sample ID: 310-283618-4

Date Collected: 06/13/24 11:45
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*06/18/24 15:21*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 15:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:33	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 19:00	1
Barium	**152**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 19:00	1
Beryllium	**0.353**	**J**	1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:33	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 19:00	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 19:00	1
Cobalt	**0.175**	**J**	0.500	0.170	ug/L		06/17/24 09:00	06/18/24 19:00	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 19:00	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 19:00	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 19:00	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:33	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 19:00	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:33	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:33	1
Zinc	**68.3**		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**14.3**		1.88	1.39	mg/L			06/19/24 10:41	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**25.54**				NTU			06/13/24 11:45	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 15:43	1
Acrolein	<3.60		10.0	3.60	ug/L			06/18/24 15:43	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 15:43	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/18/24 15:43	1
Benzene	**0.250**	**J**	0.500	0.220	ug/L			06/18/24 15:43	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 15:43	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 15:43	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 15:43	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 15:43	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 15:43	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 15:43	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 15:43	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 15:43	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 15:43	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 15:43	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 15:43	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 15:43	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/18/24 15:43	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 15:43	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 15:43	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 15:43	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 15:43	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 15:43	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 15:43	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/18/24 15:43	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 15:43	1
Dichlorodifluoromethane	<0.250	*+	3.00	0.250	ug/L			06/18/24 15:43	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 15:43	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 15:43	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 15:43	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 15:43	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/18/24 15:43	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/18/24 15:43	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/18/24 15:43	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 15:43	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/18/24 15:43	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 15:43	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 15:43	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/18/24 15:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 15:43	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/18/24 15:43	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 15:43	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/18/24 15:43	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/18/24 15:43	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/18/24 15:43	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/18/24 15:43	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 15:43	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 15:43	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 15:43	1

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 15:43	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 15:43	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 15:43	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 15:43	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 15:43	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/18/24 15:43	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 15:43	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 15:43	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 15:43	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 15:43	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 15:43	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 15:43	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 15:43	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*06/18/24 15:43*	*1*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/18/24 15:43*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*06/18/24 15:43*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.667		10.4	0.667	ug/L		06/20/24 08:00	06/24/24 15:26	1
Acenaphthylene	<0.750		10.4	0.750	ug/L		06/20/24 08:00	06/24/24 15:26	1
Acetophenone	<0.719		10.4	0.719	ug/L		06/20/24 08:00	06/24/24 15:26	1
2-Acetylaminofluorene	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 12:27	1
4-Aminobiphenyl	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 12:27	1
Anthracene	<0.906		10.4	0.906	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[a]anthracene	<0.885		10.4	0.885	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[a]pyrene	<8.44		10.4	8.44	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[b]fluoranthene	<5.10		10.4	5.10	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[g,h,i]perylene	<6.56		10.4	6.56	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[k]fluoranthene	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzyl alcohol	<1.35		10.4	1.35	ug/L		06/20/24 08:00	06/24/24 15:26	1
Bis(2-chloroethoxy)methane	<0.792		10.4	0.792	ug/L		06/20/24 08:00	06/24/24 15:26	1
Bis(2-chloroethyl)ether	<0.854		10.4	0.854	ug/L		06/20/24 08:00	06/24/24 15:26	1
bis (2-chloroisopropyl) ether	<0.563		10.4	0.563	ug/L		06/20/24 08:00	06/24/24 15:26	1
Bis(2-ethylhexyl) phthalate	<5.73		10.4	5.73	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Bromophenyl phenyl ether	<0.729		10.4	0.729	ug/L		06/20/24 08:00	06/24/24 15:26	1
Butyl benzyl phthalate	<5.63		10.4	5.63	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Chloroaniline	<0.646		10.4	0.646	ug/L		06/20/24 08:00	06/24/24 15:26	1
Chlorobenzilate	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
4-Chloro-3-methylphenol	<0.875		10.4	0.875	ug/L		06/20/24 08:00	06/24/24 15:26	1
2-Chloronaphthalene	<0.667		10.4	0.667	ug/L		06/20/24 08:00	06/24/24 15:26	1
2-Chlorophenol	<0.563		10.4	0.563	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Chlorophenyl phenyl ether	<0.719		10.4	0.719	ug/L		06/20/24 08:00	06/24/24 15:26	1
Chrysene	<0.906		10.4	0.906	ug/L		06/20/24 08:00	06/24/24 15:26	1
Diallate	<4.17		10.4	4.17	ug/L		06/20/24 08:00	06/24/24 12:27	1
Dibenzo(a,h)anthracene	<4.06		10.4	4.06	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dibenzofuran	<0.771		10.4	0.771	ug/L		06/20/24 08:00	06/24/24 15:26	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	<1.46		10.4	1.46	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4-Dichlorophenol	<0.885		10.4	0.885	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,6-Dichlorophenol	<0.719		10.4	0.719	ug/L		06/20/24 08:00	06/24/24 15:26	1
Diethyl phthalate	<1.77		10.4	1.77	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dimethoate	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
7,12-Dimethylbenz(a)anthracene	<1.98		10.4	1.98	ug/L		06/20/24 08:00	06/24/24 12:27	1
3,3'-Dimethylbenzidine	<1.56		10.4	1.56	ug/L		06/20/24 08:00	06/24/24 12:27	1
2,4-Dimethylphenol	<0.604		10.4	0.604	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dimethyl phthalate	<1.04		10.4	1.04	ug/L		06/20/24 08:00	06/24/24 15:26	1
Di-n-butyl phthalate	<5.83		10.4	5.83	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,3-Dinitrobenzene	<3.33		10.4	3.33	ug/L		06/20/24 08:00	06/24/24 15:26	1
4,6-Dinitro-2-methylphenol	<7.19	*1	10.4	7.19	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4-Dinitrophenol	<13.5	*1	20.8	13.5	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4-Dinitrotoluene	<6.67		10.4	6.67	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,6-Dinitrotoluene	<0.542		10.4	0.542	ug/L		06/20/24 08:00	06/24/24 15:26	1
Di-n-octyl phthalate	<7.29		20.8	7.29	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dinoseb	<2.50		10.4	2.50	ug/L		06/20/24 08:00	06/24/24 12:27	1
Diphenylamine	<6.25		10.4	6.25	ug/L		06/20/24 08:00	06/24/24 15:26	1
Disulfoton	<2.50		10.4	2.50	ug/L		06/20/24 08:00	06/24/24 12:27	1
Ethyl methanesulfonate	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
Ethyl Parathion	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 12:27	1
Famphur	<3.96	*+	10.4	3.96	ug/L		06/20/24 08:00	06/24/24 12:27	1
Fluoranthene	<1.77		10.4	1.77	ug/L		06/20/24 08:00	06/24/24 15:26	1
Fluorene	<0.823		10.4	0.823	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachlorobenzene	<0.729		10.4	0.729	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachlorobutadiene	<0.896		10.4	0.896	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachlorocyclopentadiene	<5.31		10.4	5.31	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachloroethane	<1.01		10.4	1.01	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachloropropene	<2.71		10.4	2.71	ug/L		06/20/24 08:00	06/24/24 12:27	1
Indeno[1,2,3-cd]pyrene	<4.38		10.4	4.38	ug/L		06/20/24 08:00	06/24/24 15:26	1
Isodrin	<4.90		10.4	4.90	ug/L		06/20/24 08:00	06/24/24 12:27	1
Isophorone	<0.969		10.4	0.969	ug/L		06/20/24 08:00	06/24/24 15:26	1
Isosafrole	<2.40		10.4	2.40	ug/L		06/20/24 08:00	06/24/24 12:27	1
Kepone	<1.04		10.4	1.04	ug/L		06/20/24 08:00	06/24/24 12:27	1
Methapyrilene	<0.792		10.4	0.792	ug/L		06/20/24 08:00	06/24/24 12:27	1
3-Methylcholanthrene	<0.333		10.4	0.333	ug/L		06/20/24 08:00	06/24/24 12:27	1
Methyl methanesulfonate	<3.44		10.4	3.44	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Methylnaphthalene	<0.615		10.4	0.615	ug/L		06/20/24 08:00	06/24/24 15:26	1
Methyl parathion	<2.40		10.4	2.40	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Methylphenol	<0.677		10.4	0.677	ug/L		06/20/24 08:00	06/24/24 15:26	1
Methylphenol, 3 & 4	<0.729		10.4	0.729	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,4-Naphthoquinone	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
1-Naphthylamine	<2.60		10.4	2.60	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Naphthylamine	<2.19		10.4	2.19	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Nitroaniline	<6.15		10.4	6.15	ug/L		06/20/24 08:00	06/24/24 15:26	1
3-Nitroaniline	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Nitroaniline	<1.35		10.4	1.35	ug/L		06/20/24 08:00	06/24/24 15:26	1
Nitrobenzene	<0.833		10.4	0.833	ug/L		06/20/24 08:00	06/24/24 15:26	1
5-Nitro-o-toluidine	<2.92		10.4	2.92	ug/L		06/20/24 08:00	06/24/24 12:27	1

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	<7.08		10.4	7.08	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Nitrophenol	<7.92	*- *1	10.4	7.92	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosodiethylamine	<3.54		10.4	3.54	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosodimethylamine	<0.750		10.4	0.750	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosodi-n-butylamine	<4.06		10.4	4.06	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosodi-n-propylamine	<0.958		10.4	0.958	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosodiphenylamine	<0.781		10.4	0.781	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosomethylethylamine	<5.10		10.4	5.10	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosopiperidine	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosopyrrolidine	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
o,o',o''-Triethylphosphorothioate	<3.33		10.4	3.33	ug/L		06/20/24 08:00	06/24/24 12:27	1
o-Toluidine	<3.02		10.4	3.02	ug/L		06/20/24 08:00	06/24/24 12:27	1
p-Dimethylamino azobenzene	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pentachlorobenzene	<2.92		10.4	2.92	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pentachloronitrobenzene	<6.04		10.4	6.04	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pentachlorophenol	<10.0	*1	10.4	10.0	ug/L		06/20/24 08:00	06/24/24 15:26	1
Phenacetin	<1.98		10.4	1.98	ug/L		06/20/24 08:00	06/24/24 12:27	1
Phenanthrene	<0.823		10.4	0.823	ug/L		06/20/24 08:00	06/24/24 15:26	1
Phenol	<1.15		10.4	1.15	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,4-phenylenediamine	<1.98	*- *1	10.4	1.98	ug/L		06/20/24 08:00	06/24/24 12:27	1
Phorate	<3.33		10.4	3.33	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pronamide	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pyrene	<0.823		10.4	0.823	ug/L		06/20/24 08:00	06/24/24 15:26	1
Safrole	<2.92		10.4	2.92	ug/L		06/20/24 08:00	06/24/24 12:27	1
1,2,4,5-Tetrachlorobenzene	<0.563		10.4	0.563	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,3,4,6-Tetrachlorophenol	<5.52	*1	10.4	5.52	ug/L		06/20/24 08:00	06/24/24 15:26	1
Thionazin	<3.65		10.4	3.65	ug/L		06/20/24 08:00	06/24/24 12:27	1
2,4,5-Trichlorophenol	<5.52		10.4	5.52	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4,6-Trichlorophenol	<5.21		10.4	5.21	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,3,5-Trinitrobenzene	<2.40		10.4	2.40	ug/L		06/20/24 08:00	06/24/24 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 118*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
2-Fluorophenol (Surr)	*70*		*25 - 110*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
Nitrobenzene-d5 (Surr)	*90*		*45 - 129*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
Phenol-d5 (Surr)	*57*		*21 - 110*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
Terphenyl-d14 (Surr)	*82*		*12 - 144*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*27 - 136*	*06/20/24 08:00*	*06/24/24 15:26*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			06/15/24 10:55	1
Isobutanol	<2400		10000	2400	ug/L			06/15/24 10:55	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0200		0.0909	0.0200	ug/L		06/19/24 07:06	06/19/24 20:06	1
alpha-BHC	<0.00909		0.0909	0.00909	ug/L		06/19/24 07:06	06/19/24 20:06	1
beta-BHC	<0.0382		0.0909	0.0382	ug/L		06/19/24 07:06	06/19/24 20:06	1
Chlordane (technical)	<0.355		1.82	0.355	ug/L		06/19/24 07:06	06/19/24 20:06	1

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0227		0.0909	0.0227	ug/L		06/19/24 07:06	06/19/24 20:06	1
4,4'-DDE	<0.0273		0.0909	0.0273	ug/L		06/19/24 07:06	06/19/24 20:06	1
4,4'-DDT	<0.0182		0.0909	0.0182	ug/L		06/19/24 07:06	06/19/24 20:06	1
delta-BHC	<0.0291		0.0909	0.0291	ug/L		06/19/24 07:06	06/19/24 20:06	1
Dieldrin	<0.0191		0.0909	0.0191	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endosulfan I	<0.0255		0.0909	0.0255	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endosulfan II	<0.0236		0.0909	0.0236	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endosulfan sulfate	<0.0164		0.0909	0.0164	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endrin	<0.0255		0.0909	0.0255	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endrin aldehyde	<0.0245		0.0909	0.0245	ug/L		06/19/24 07:06	06/19/24 20:06	1
gamma-BHC (Lindane)	<0.00909		0.0909	0.00909	ug/L		06/19/24 07:06	06/19/24 20:06	1
Heptachlor	<0.0209		0.0909	0.0209	ug/L		06/19/24 07:06	06/19/24 20:06	1
Heptachlor epoxide	<0.0291		0.0909	0.0291	ug/L		06/19/24 07:06	06/19/24 20:06	1
Methoxychlor	<0.0291		0.0909	0.0291	ug/L		06/19/24 07:06	06/19/24 20:06	1
Toxaphene	<0.909		1.82	0.909	ug/L		06/19/24 07:06	06/19/24 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*105*		*10 - 136*	*06/19/24 07:06*	*06/19/24 20:06*	*1*
Tetrachloro-m-xylene	*99*		*10 - 130*	*06/19/24 07:06*	*06/19/24 20:06*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1221	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1232	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1242	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1248	<0.627		1.82	0.627	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1254	<0.627		1.82	0.627	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1260	<0.627		1.82	0.627	ug/L		06/19/24 07:06	06/19/24 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*104*		*10 - 136*	*06/19/24 07:06*	*06/19/24 20:06*	*1*
Tetrachloro-m-xylene	*104*		*10 - 130*	*06/19/24 07:06*	*06/19/24 20:06*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.240		0.577	0.240	ug/L		06/20/24 14:54	06/22/24 03:12	1
Silvex (2,4,5-TP)	<0.0212		0.0481	0.0212	ug/L		06/20/24 14:54	06/22/24 03:12	1
2,4,5-T	<0.0625		0.144	0.0625	ug/L		06/20/24 14:54	06/22/24 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*59*		*34 - 142*	*06/20/24 14:54*	*06/22/24 03:12*	*1*
DCAA	*63*		*34 - 142*	*06/20/24 14:54*	*06/22/24 03:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:36	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 19:02	1
Barium	**210**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 19:02	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:36	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 19:02	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5

Date Collected: 06/13/24 13:00
Matrix: Ground Water

Date Received: 06/14/24 10:35

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 19:02	1
Cobalt	**1.69**		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 19:02	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 19:02	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 19:02	1
Nickel	**11.1**		5.00	2.10	ug/L		07/10/24 09:00	07/11/24 21:08	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:36	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 19:02	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:36	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:36	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:36	1
Tin	<2.30		5.00	2.30	ug/L		06/17/24 09:00	06/20/24 18:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		06/26/24 15:25	06/27/24 13:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		06/19/24 09:31	06/21/24 18:12	1
Sulfide (SW846 9034)	<1410		3000	1410	ug/L		06/18/24 07:50	06/18/24 09:24	1
Total Suspended Solids (USGS I-3765-85)	**7.13**		1.88	1.39	mg/L			06/19/24 10:41	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.07**				NTU			06/13/24 13:00	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283618-1	MW-25A	99	96	103
310-283618-2	MW-38A	98	96	103
310-283618-3	MW-38A-FD	99	96	104
310-283618-4	MW-39A	98	94	103
310-283618-5	MW-40A	99	97	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
LCS 310-424743/6	Lab Control Sample	96	100	97
LCS 310-424743/7	Lab Control Sample	101	102	95
MB 310-424743/5	Method Blank	102	104	93

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
310-283618-5	MW-40A	71	70	90	57	82	82

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCS 310-425054/2-A	Lab Control Sample	65	67	86	53	85	97
LCSD 310-425054/3-A	Lab Control Sample Dup	69	60	89	55	89	82
MB 310-425054/1-A	Method Blank	64	63	83	51	79	84

Surrogate Legend

Surrogate Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCB2 (10-136)	TCX2 (10-130)								
310-283618-5	MW-40A	105	99								

Surrogate Legend
DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCB1 (10-136)	TCX1 (10-130)								
310-283618-5	MW-40A	104	104								

Surrogate Legend
DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)								
310-283618-5	MW-40A	59	63								

Surrogate Legend
DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)								
LCS 410-519678/2-A	Lab Control Sample	63	63								
LCSD 410-519678/3-A	Lab Control Sample Dup	70	69								
MB 410-519678/1-A	Method Blank	64	60								

Surrogate Legend
DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-424743/5
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	<3.60		10.0	3.60	ug/L			06/18/24 08:34	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/18/24 08:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 08:34	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 08:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 08:34	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 08:34	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/18/24 08:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 08:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 08:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 08:34	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 08:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 08:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 08:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 08:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 08:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 08:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 08:34	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/18/24 08:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 08:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 08:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 08:34	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 08:34	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			06/18/24 08:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 08:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 08:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 08:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 08:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 08:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 08:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 08:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 08:34	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/18/24 08:34	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/18/24 08:34	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/18/24 08:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 08:34	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/18/24 08:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 08:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 08:34	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/18/24 08:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 08:34	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/18/24 08:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 08:34	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/18/24 08:34	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/18/24 08:34	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/18/24 08:34	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/18/24 08:34	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 08:34	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 08:34	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-424743/5
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 08:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 08:34	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 08:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 08:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 08:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 08:34	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/18/24 08:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 08:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 08:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 08:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 08:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 08:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 08:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 08:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 08:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*06/18/24 08:34*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/18/24 08:34*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*06/18/24 08:34*	*1*

Lab Sample ID: LCS 310-424743/6
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	94.8	75.90		ug/L		80	49 - 150
Allyl chloride	20.0	17.04		ug/L		85	49 - 150
2-Butanone (MEK)	40.0	36.12		ug/L		90	50 - 150
Acetone	40.0	34.96		ug/L		87	50 - 150
Acrylonitrile	200	181.1		ug/L		91	50 - 150
Benzene	20.0	18.37		ug/L		92	72 - 124
Chloroprene	20.0	17.02		ug/L		85	69 - 133
Bromochloromethane	20.0	19.05		ug/L		95	73 - 130
Bromodichloromethane	20.0	18.45		ug/L		92	74 - 122
1,2-Dibromo-3-Chloropropane	20.0	18.17		ug/L		91	50 - 150
Bromoform	20.0	18.30		ug/L		91	61 - 122
1,2-Dibromoethane (EDB)	20.0	19.16		ug/L		96	75 - 125
Carbon disulfide	20.0	17.84		ug/L		89	59 - 135
Carbon tetrachloride	20.0	17.54		ug/L		88	67 - 132
1,2-Dichlorobenzene	20.0	19.36		ug/L		97	74 - 120
Chlorobenzene	20.0	19.65		ug/L		98	76 - 120
1,3-Dichlorobenzene	20.0	20.26		ug/L		101	72 - 120
Chlorodibromomethane	20.0	19.05		ug/L		95	71 - 121
1,4-Dichlorobenzene	20.0	17.40		ug/L		87	72 - 120
Chloroform	20.0	17.88		ug/L		89	72 - 125
1,1-Dichloroethane	20.0	17.37		ug/L		87	70 - 127
1,2-Dichloroethane	20.0	16.93		ug/L		85	71 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-424743/6
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	18.02		ug/L		90	74 - 123
1,1-Dichloroethene	20.0	19.30		ug/L		96	63 - 132
cis-1,3-Dichloropropene	20.0	18.01		ug/L		90	71 - 125
1,2-Dichloropropane	20.0	18.96		ug/L		95	73 - 124
Dibromomethane	20.0	18.89		ug/L		94	74 - 125
1,3-Dichloropropane	20.0	19.05		ug/L		95	72 - 125
2,2-Dichloropropane	20.0	14.74		ug/L		74	50 - 150
1,1-Dichloropropene	20.0	17.73		ug/L		89	69 - 132
Ethylbenzene	20.0	18.35		ug/L		92	74 - 122
Ethyl methacrylate	20.0	21.64		ug/L		108	70 - 129
2-Hexanone	40.0	43.59		ug/L		109	60 - 140
Iodomethane	20.0	11.94		ug/L		60	10 - 150
Methacrylonitrile	200	187.5		ug/L		94	69 - 129
Methylene Chloride	20.0	19.53		ug/L		98	50 - 150
Methyl methacrylate	40.0	41.04		ug/L		103	68 - 131
4-Methyl-2-pentanone (MIBK)	40.0	40.42		ug/L		101	60 - 139
Naphthalene	20.0	17.30		ug/L		86	50 - 150
Propionitrile	200	195.4		ug/L		98	63 - 135
Styrene	20.0	19.09		ug/L		95	74 - 121
1,1,1,2-Tetrachloroethane	20.0	18.44		ug/L		92	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.29		ug/L		96	68 - 124
Tetrachloroethene	20.0	18.88		ug/L		94	71 - 130
Toluene	20.0	20.16		ug/L		101	74 - 123
trans-1,4-Dichloro-2-butene	20.0	14.26		ug/L		71	50 - 150
trans-1,2-Dichloroethene	20.0	16.98		ug/L		85	70 - 126
trans-1,3-Dichloropropene	20.0	17.12		ug/L		86	69 - 123
1,2,4-Trichlorobenzene	20.0	16.11		ug/L		81	68 - 124
1,1,1-Trichloroethane	20.0	18.22		ug/L		91	73 - 129
1,1,2-Trichloroethane	20.0	19.50		ug/L		98	73 - 123
Trichloroethene	20.0	20.16		ug/L		101	72 - 126
1,2,3-Trichloropropane	20.0	19.21		ug/L		96	65 - 127
Vinyl acetate	40.0	38.58		ug/L		96	50 - 150
Xylenes, Total	40.0	37.87		ug/L		95	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-424743/7
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	11.45		ug/L		57	23 - 150
Chloroethane	20.0	22.62		ug/L		113	54 - 136
Dichlorodifluoromethane	20.0	30.29	*+	ug/L		151	39 - 150
Chloromethane	20.0	21.15		ug/L		106	38 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-424743/7
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	22.92		ug/L		115	54 - 149
Vinyl chloride	20.0	20.58		ug/L		103	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.640		10.0	0.640	ug/L		06/20/24 08:00	06/24/24 11:30	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		06/20/24 08:00	06/24/24 11:30	1
Acetophenone	<0.690		10.0	0.690	ug/L		06/20/24 08:00	06/24/24 11:30	1
Anthracene	<0.870		10.0	0.870	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		06/20/24 08:00	06/24/24 11:30	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		06/20/24 08:00	06/24/24 11:30	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		06/20/24 08:00	06/24/24 11:30	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		06/20/24 08:00	06/24/24 11:30	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		06/20/24 08:00	06/24/24 11:30	1
Chrysene	<0.870		10.0	0.870	ug/L		06/20/24 08:00	06/24/24 11:30	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		06/20/24 08:00	06/24/24 11:30	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		06/20/24 08:00	06/24/24 11:30	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		06/20/24 08:00	06/24/24 11:30	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		06/20/24 08:00	06/24/24 11:30	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		06/20/24 08:00	06/24/24 11:30	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		06/20/24 08:00	06/24/24 11:30	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		06/20/24 08:00	06/24/24 11:30	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		06/20/24 08:00	06/24/24 11:30	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		06/20/24 08:00	06/24/24 11:30	1
Diphenylamine	<6.00		10.0	6.00	ug/L		06/20/24 08:00	06/24/24 11:30	1
Fluoranthene	<1.70		10.0	1.70	ug/L		06/20/24 08:00	06/24/24 11:30	1
Fluorene	<0.790		10.0	0.790	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		06/20/24 08:00	06/24/24 11:30	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		06/20/24 08:00	06/24/24 11:30	1
Isophorone	<0.930		10.0	0.930	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		06/20/24 08:00	06/24/24 11:30	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		06/20/24 08:00	06/24/24 11:30	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		06/20/24 08:00	06/24/24 11:30	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		06/20/24 08:00	06/24/24 11:30	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		06/20/24 08:00	06/24/24 11:30	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		06/20/24 08:00	06/24/24 11:30	1
Phenanthrene	<0.790		10.0	0.790	ug/L		06/20/24 08:00	06/24/24 11:30	1
Phenol	<1.10		10.0	1.10	ug/L		06/20/24 08:00	06/24/24 11:30	1
Pyrene	<0.790		10.0	0.790	ug/L		06/20/24 08:00	06/24/24 11:30	1
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		06/20/24 08:00	06/24/24 11:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*39 - 118*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
2-Fluorophenol (Surr)	*63*		*25 - 110*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
Nitrobenzene-d5 (Surr)	*83*		*45 - 129*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
Phenol-d5 (Surr)	*51*		*21 - 110*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
Terphenyl-d14 (Surr)	*79*		*12 - 144*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*27 - 136*	*06/20/24 08:00*	*06/24/24 11:30*	*1*

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 12:01	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzilate	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
Diallate	<4.00		10.0	4.00	ug/L		06/20/24 08:00	06/24/24 12:01	1
Dimethoate	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		06/20/24 08:00	06/24/24 12:01	1
Dinoseb	<2.40		10.0	2.40	ug/L		06/20/24 08:00	06/24/24 12:01	1
Disulfoton	<2.40		10.0	2.40	ug/L		06/20/24 08:00	06/24/24 12:01	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
Famphur	<3.80		10.0	3.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
Isodrin	<4.70		10.0	4.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
Isosafrole	<2.30		10.0	2.30	ug/L		06/20/24 08:00	06/24/24 12:01	1
Kepone	<1.00		10.0	1.00	ug/L		06/20/24 08:00	06/24/24 12:01	1
Methapyrilene	<0.760		10.0	0.760	ug/L		06/20/24 08:00	06/24/24 12:01	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		06/20/24 08:00	06/24/24 12:01	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		06/20/24 08:00	06/24/24 12:01	1
Methyl parathion	<2.30		10.0	2.30	ug/L		06/20/24 08:00	06/24/24 12:01	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		06/20/24 08:00	06/24/24 12:01	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		06/20/24 08:00	06/24/24 12:01	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
o-Toluidine	<2.90		10.0	2.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Phenacetin	<1.90		10.0	1.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
Phorate	<3.20		10.0	3.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
Pronamide	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
Safrole	<2.80		10.0	2.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Thionazin	<3.50		10.0	3.50	ug/L		06/20/24 08:00	06/24/24 12:01	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		06/20/24 08:00	06/24/24 12:01	1

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	82.91		ug/L		83	43 - 110
Acenaphthylene	100	78.33		ug/L		78	40 - 110
Acetophenone	100	79.19		ug/L		79	48 - 119
Anthracene	100	91.43		ug/L		91	51 - 120

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425054/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425420
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]anthracene	100	89.15		ug/L		89	51 - 123
Benzo[a]pyrene	100	94.99		ug/L		95	48 - 125
Benzo[b]fluoranthene	100	111.6		ug/L		112	49 - 129
Benzo[g,h,i]perylene	100	98.15		ug/L		98	43 - 139
Benzo[k]fluoranthene	100	84.32		ug/L		84	47 - 130
Benzyl alcohol	100	90.36		ug/L		90	39 - 128
Bis(2-chloroethoxy)methane	100	95.36		ug/L		95	48 - 121
Bis(2-chloroethyl)ether	100	85.53		ug/L		86	43 - 123
bis (2-chloroisopropyl) ether	100	81.65		ug/L		82	34 - 123
Bis(2-ethylhexyl) phthalate	100	102.4		ug/L		102	43 - 143
4-Bromophenyl phenyl ether	100	89.84		ug/L		90	45 - 119
Butyl benzyl phthalate	100	99.54		ug/L		100	46 - 135
4-Chloroaniline	100	102.1		ug/L		102	21 - 139
4-Chloro-3-methylphenol	100	97.51		ug/L		98	49 - 130
2-Chloronaphthalene	100	77.40		ug/L		77	37 - 110
2-Chlorophenol	100	82.99		ug/L		83	44 - 117
4-Chlorophenyl phenyl ether	100	82.95		ug/L		83	44 - 116
Chrysene	100	85.72		ug/L		86	51 - 125
Dibenzo(a,h)anthracene	100	119.9		ug/L		120	38 - 149
Dibenzofuran	100	81.56		ug/L		82	45 - 112
2,4-Dichlorophenol	100	93.64		ug/L		94	41 - 124
2,6-Dichlorophenol	100	94.43		ug/L		94	30 - 130
Diethyl phthalate	100	91.84		ug/L		92	43 - 135
2,4-Dimethylphenol	100	88.63		ug/L		89	31 - 142
Dimethyl phthalate	100	93.82		ug/L		94	43 - 129
Di-n-butyl phthalate	100	108.4		ug/L		108	50 - 133
1,3-Dinitrobenzene	100	106.5		ug/L		106	45 - 138
4,6-Dinitro-2-methylphenol	200	196.1		ug/L		98	22 - 143
2,4-Dinitrophenol	200	96.59		ug/L		48	10 - 138
2,4-Dinitrotoluene	100	97.39		ug/L		97	47 - 137
2,6-Dinitrotoluene	100	106.0		ug/L		106	51 - 130
Di-n-octyl phthalate	100	116.5		ug/L		116	34 - 150
Diphenylamine	85.0	77.85		ug/L		92	48 - 122
Fluoranthene	100	100.2		ug/L		100	47 - 128
Fluorene	100	90.18		ug/L		90	45 - 119
Hexachlorobenzene	100	88.00		ug/L		88	48 - 119
Hexachlorobutadiene	100	62.43		ug/L		62	32 - 110
Hexachlorocyclopentadiene	100	21.16		ug/L		21	10 - 110
Hexachloroethane	100	52.38		ug/L		52	31 - 110
Indeno[1,2,3-cd]pyrene	100	113.0		ug/L		113	37 - 150
Isophorone	100	96.38		ug/L		96	50 - 125
2-Methylnaphthalene	100	71.13		ug/L		71	33 - 110
2-Methylphenol	100	82.31		ug/L		82	47 - 118
Methylphenol, 3 & 4	100	89.13		ug/L		89	46 - 117
2-Nitroaniline	100	102.7		ug/L		103	50 - 135
3-Nitroaniline	100	105.5		ug/L		105	42 - 139
4-Nitroaniline	100	105.7		ug/L		106	31 - 145
Nitrobenzene	100	91.97		ug/L		92	47 - 116
2-Nitrophenol	100	102.1		ug/L		102	41 - 129

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4-Nitrophenol	200	118.0		ug/L		59	18 - 110
N-Nitrosodimethylamine	100	73.70		ug/L		74	37 - 110
N-Nitrosodi-n-propylamine	100	94.07		ug/L		94	45 - 130
N-Nitrosodiphenylamine	100	91.59		ug/L		92	49 - 121
Pentachlorophenol	200	188.9		ug/L		94	26 - 133
Phenanthrene	100	89.12		ug/L		89	51 - 117
Phenol	100	60.17		ug/L		60	29 - 110
Pyrene	100	82.13		ug/L		82	48 - 127
1,2,4,5-Tetrachlorobenzene	100	71.71		ug/L		72	36 - 110
2,3,4,6-Tetrachlorophenol	100	102.0		ug/L		102	33 - 134
2,4,5-Trichlorophenol	100	86.08		ug/L		86	35 - 133
2,4,6-Trichlorophenol	100	90.76		ug/L		91	28 - 139

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*65*		*39 - 118*
2-Fluorophenol (Surr)	*67*		*25 - 110*
Nitrobenzene-d5 (Surr)	*86*		*45 - 129*
Phenol-d5 (Surr)	*53*		*21 - 110*
Terphenyl-d14 (Surr)	*85*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*97*		*27 - 136*

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Acetylaminofluorene	64.0	61.60		ug/L		96	35 - 150
4-Aminobiphenyl	64.0	51.33		ug/L		80	24 - 138
Chlorobenzilate	64.0	47.49		ug/L		74	52 - 138
Diallate	64.0	53.27		ug/L		83	42 - 141
Dimethoate	64.0	74.95		ug/L		117	51 - 150
7,12-Dimethylbenz(a)anthracene	64.0	53.57		ug/L		84	51 - 129
3,3'-Dimethylbenzidine	64.0	55.56		ug/L		87	10 - 150
Dinoseb	64.0	71.56		ug/L		112	25 - 146
Disulfoton	64.0	50.56		ug/L		79	54 - 131
Ethyl methanesulfonate	64.0	50.63		ug/L		79	48 - 120
Ethyl Parathion	64.0	57.03		ug/L		89	52 - 149
Famphur	64.0	107.3	E *+	ug/L		168	44 - 150
Hexachloropropene	64.0	17.81		ug/L		28	10 - 110
Isodrin	64.0	57.18		ug/L		89	52 - 125
Isosafrole	64.0	55.37		ug/L		87	31 - 123
Kepone	64.0	90.28		ug/L		141	10 - 150
Methapyrilene	64.0	38.21		ug/L		60	10 - 110
3-Methylcholanthrene	64.0	59.17		ug/L		92	43 - 150
Methyl methanesulfonate	64.0	26.68		ug/L		42	36 - 110
Methyl parathion	64.0	69.24		ug/L		108	50 - 150
1,4-Naphthoquinone	64.0	58.45		ug/L		91	37 - 149
1-Naphthylamine	64.0	39.11		ug/L		61	19 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Naphthylamine	64.0	41.99		ug/L		66	18 - 127
5-Nitro-o-toluidine	64.0	63.08		ug/L		99	47 - 145
N-Nitrosodiethylamine	64.0	60.65		ug/L		95	47 - 138
N-Nitrosodi-n-butylamine	64.0	65.05		ug/L		102	52 - 142
N-Nitrosomethylethylamine	64.0	50.24		ug/L		78	54 - 123
N-Nitrosopiperidine	64.0	50.81		ug/L		79	60 - 127
N-Nitrosopyrrolidine	64.0	57.69		ug/L		90	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	62.59		ug/L		98	45 - 113
o-Toluidine	64.0	56.77		ug/L		89	24 - 142
p-Dimethylamino azobenzene	64.0	56.61		ug/L		88	42 - 138
Pentachlorobenzene	64.0	43.01		ug/L		67	33 - 110
Pentachloronitrobenzene	64.0	53.79		ug/L		84	65 - 127
Phenacetin	64.0	54.72		ug/L		85	56 - 146
1,4-phenylenediamine	64.0	<1.90	*-	ug/L		-0.6	20 - 120
Phorate	64.0	47.89		ug/L		75	57 - 135
Pronamide	64.0	58.41		ug/L		91	61 - 144
Safrole	64.0	58.39		ug/L		91	34 - 110
Thionazin	64.0	61.20		ug/L		96	52 - 147
1,3,5-Trinitrobenzene	64.0	43.39		ug/L		68	39 - 144

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene	100	82.42		ug/L		82	43 - 110	1	35
Acenaphthylene	100	77.58		ug/L		78	40 - 110	1	35
Acetophenone	100	77.69		ug/L		78	48 - 119	2	35
Anthracene	100	90.78		ug/L		91	51 - 120	1	35
Benzo[a]anthracene	100	87.29		ug/L		87	51 - 123	2	35
Benzo[a]pyrene	100	94.06		ug/L		94	48 - 125	1	35
Benzo[b]fluoranthene	100	108.5		ug/L		108	49 - 129	3	35
Benzo[g,h,i]perylene	100	94.48		ug/L		94	43 - 139	4	35
Benzo[k]fluoranthene	100	85.37		ug/L		85	47 - 130	1	35
Benzyl alcohol	100	91.13		ug/L		91	39 - 128	1	35
Bis(2-chloroethoxy)methane	100	95.44		ug/L		95	48 - 121	0	35
Bis(2-chloroethyl)ether	100	85.08		ug/L		85	43 - 123	1	35
bis (2-chloroisopropyl) ether	100	80.75		ug/L		81	34 - 123	1	35
Bis(2-ethylhexyl) phthalate	100	101.7		ug/L		102	43 - 143	1	35
4-Bromophenyl phenyl ether	100	93.37		ug/L		93	45 - 119	4	35
Butyl benzyl phthalate	100	99.92		ug/L		100	46 - 135	0	35
4-Chloroaniline	100	103.6		ug/L		104	21 - 139	1	35
4-Chloro-3-methylphenol	100	93.46		ug/L		93	49 - 130	4	35
2-Chloronaphthalene	100	76.89		ug/L		77	37 - 110	1	35
2-Chlorophenol	100	77.17		ug/L		77	44 - 117	7	35
4-Chlorophenyl phenyl ether	100	80.68		ug/L		81	44 - 116	3	35
Chrysene	100	84.72		ug/L		85	51 - 125	1	35
Dibenzo(a,h)anthracene	100	116.0		ug/L		116	38 - 149	3	35
Dibenzofuran	100	79.23		ug/L		79	45 - 112	3	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-425054/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425420
Prep Batch: 425054

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-Dichlorophenol			100	87.69		ug/L		88	41 - 124	7	35
2,6-Dichlorophenol			100	74.61		ug/L		75	30 - 130	23	35
Diethyl phthalate			100	86.07		ug/L		86	43 - 135	6	35
2,4-Dimethylphenol			100	88.82		ug/L		89	31 - 142	0	35
Dimethyl phthalate			100	89.24		ug/L		89	43 - 129	5	35
Di-n-butyl phthalate			100	101.7		ug/L		102	50 - 133	6	35
1,3-Dinitrobenzene			100	102.9		ug/L		103	45 - 138	3	35
4,6-Dinitro-2-methylphenol			200	46.95	*1	ug/L		23	22 - 143	123	35
2,4-Dinitrophenol			200	20.75	*1	ug/L		10	10 - 138	129	35
2,4-Dinitrotoluene			100	87.99		ug/L		88	47 - 137	10	35
2,6-Dinitrotoluene			100	102.2		ug/L		102	51 - 130	4	35
Di-n-octyl phthalate			100	117.2		ug/L		117	34 - 150	1	35
Diphenylamine			85.0	80.31		ug/L		94	48 - 122	3	35
Fluoranthene			100	92.81		ug/L		93	47 - 128	8	35
Fluorene			100	85.12		ug/L		85	45 - 119	6	35
Hexachlorobenzene			100	91.28		ug/L		91	48 - 119	4	35
Hexachlorobutadiene			100	66.53		ug/L		67	32 - 110	6	35
Hexachlorocyclopentadiene			100	25.20		ug/L		25	10 - 110	17	35
Hexachloroethane			100	55.84		ug/L		56	31 - 110	6	35
Indeno[1,2,3-cd]pyrene			100	108.3		ug/L		108	37 - 150	4	35
Isophorone			100	95.97		ug/L		96	50 - 125	0	35
2-Methylnaphthalene			100	68.96		ug/L		69	33 - 110	3	35
2-Methylphenol			100	80.97		ug/L		81	47 - 118	2	35
Methylphenol, 3 & 4			100	87.72		ug/L		88	46 - 117	2	35
2-Nitroaniline			100	103.1		ug/L		103	50 - 135	0	35
3-Nitroaniline			100	99.13		ug/L		99	42 - 139	6	35
4-Nitroaniline			100	94.70		ug/L		95	31 - 145	11	35
Nitrobenzene			100	91.46		ug/L		91	47 - 116	1	35
2-Nitrophenol			100	96.00		ug/L		96	41 - 129	6	35
4-Nitrophenol			200	26.30	*- *1	ug/L		13	18 - 110	127	35
N-Nitrosodimethylamine			100	75.99		ug/L		76	37 - 110	3	35
N-Nitrosodi-n-propylamine			100	91.61		ug/L		92	45 - 130	3	35
N-Nitrosodiphenylamine			100	94.49		ug/L		94	49 - 121	3	35
Pentachlorophenol			200	71.05	*1	ug/L		36	26 - 133	91	35
Phenanthrene			100	88.40		ug/L		88	51 - 117	1	35
Phenol			100	61.69		ug/L		62	29 - 110	2	35
Pyrene			100	85.06		ug/L		85	48 - 127	4	35
1,2,4,5-Tetrachlorobenzene			100	72.31		ug/L		72	36 - 110	1	35
2,3,4,6-Tetrachlorophenol			100	59.39	*1	ug/L		59	33 - 134	53	35
2,4,5-Trichlorophenol			100	76.96		ug/L		77	35 - 133	11	35
2,4,6-Trichlorophenol			100	70.86		ug/L		71	28 - 139	25	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*39 - 118*
2-Fluorophenol (Surr)	*60*		*25 - 110*
Nitrobenzene-d5 (Surr)	*89*		*45 - 129*
Phenol-d5 (Surr)	*55*		*21 - 110*
Terphenyl-d14 (Surr)	*89*		*12 - 144*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*82*		*27 - 136*

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Acetylaminofluorene			64.0	62.03		ug/L		97	35 - 150	1	28
4-Aminobiphenyl			64.0	53.99		ug/L		84	24 - 138	5	35
Chlorobenzilate			64.0	47.58		ug/L		74	52 - 138	0	28
Diallate			64.0	51.70		ug/L		81	42 - 141	3	35
Dimethoate			64.0	76.20		ug/L		119	51 - 150	2	26
7,12-Dimethylbenz(a)anthracene			64.0	55.00		ug/L		86	51 - 129	3	28
3,3'-Dimethylbenzidine			64.0	58.75		ug/L		92	10 - 150	6	35
Dinoseb			64.0	58.09		ug/L		91	25 - 146	21	35
Disulfoton			64.0	50.15		ug/L		78	54 - 131	1	24
Ethyl methanesulfonate			64.0	49.05		ug/L		77	48 - 120	3	27
Ethyl Parathion			64.0	56.64		ug/L		89	52 - 149	1	26
Famphur			64.0	113.4	E *+	ug/L		177	44 - 150	5	35
Hexachloropropene			64.0	16.68		ug/L		26	10 - 110	7	35
Isodrin			64.0	54.37		ug/L		85	52 - 125	5	26
Isosafrole			64.0	51.36		ug/L		80	31 - 123	8	35
Kepone			64.0	86.62		ug/L		135	10 - 150	4	35
Methapyrilene			64.0	30.53		ug/L		48	10 - 110	22	35
3-Methylcholanthrene			64.0	59.44		ug/L		93	43 - 150	0	32
Methyl methanesulfonate			64.0	25.57		ug/L		40	36 - 110	4	26
Methyl parathion			64.0	68.76		ug/L		107	50 - 150	1	25
1,4-Naphthoquinone			64.0	55.84		ug/L		87	37 - 149	5	29
1-Naphthylamine			64.0	41.66		ug/L		65	19 - 110	6	35
2-Naphthylamine			64.0	43.97		ug/L		69	18 - 127	5	35
5-Nitro-o-toluidine			64.0	62.96		ug/L		98	47 - 145	0	31
N-Nitrosodiethylamine			64.0	59.58		ug/L		93	47 - 138	2	26
N-Nitrosodi-n-butylamine			64.0	62.48		ug/L		98	52 - 142	4	27
N-Nitrosomethylethylamine			64.0	48.34		ug/L		76	54 - 123	4	26
N-Nitrosopiperidine			64.0	51.63		ug/L		81	60 - 127	2	26
N-Nitrosopyrrolidine			64.0	58.99		ug/L		92	56 - 143	2	25
o,o',o''-Triethylphosphorothioate			64.0	60.47		ug/L		94	45 - 113	3	33
o-Toluidine			64.0	55.61		ug/L		87	24 - 142	2	35
p-Dimethylamino azobenzene			64.0	55.97		ug/L		87	42 - 138	1	29
Pentachlorobenzene			64.0	37.13		ug/L		58	33 - 110	15	35
Pentachloronitrobenzene			64.0	53.40		ug/L		83	65 - 127	1	29
Phenacetin			64.0	59.51		ug/L		93	56 - 146	8	25
1,4-phenylenediamine			64.0	<1.90	*- *1	ug/L		-1	20 - 120	66	35
Phorate			64.0	47.42		ug/L		74	57 - 135	1	26
Pronamide			64.0	64.82		ug/L		101	61 - 144	10	27
Safrole			64.0	52.94		ug/L		83	34 - 110	10	35
Thionazin			64.0	59.33		ug/L		93	52 - 147	3	28
1,3,5-Trinitrobenzene			64.0	41.61		ug/L		65	39 - 144	4	35

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-424678/4
Matrix: Water
Analysis Batch: 424678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			06/15/24 09:40	1
Isobutanol	<2400		10000	2400	ug/L			06/15/24 09:40	1

Lab Sample ID: LCS 310-424678/5
Matrix: Water
Analysis Batch: 424678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	121100		ug/L		107	67 - 132
Isobutanol	104000	105800		ug/L		101	80 - 121

Lab Sample ID: 310-283618-5 MS
Matrix: Ground Water
Analysis Batch: 424678

Client Sample ID: MW-40A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	<2600		113000	113800		ug/L		100	60 - 138
Isobutanol	<2400		104000	105700		ug/L		101	72 - 131

Lab Sample ID: 310-283618-5 MSD
Matrix: Ground Water
Analysis Batch: 424678

Client Sample ID: MW-40A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetonitrile	<2600		113000	113100		ug/L		100	60 - 138	1	30
Isobutanol	<2400		104000	104600		ug/L		100	72 - 131	1	30

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-519678/1-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 519678

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		06/20/24 14:54	06/21/24 23:03	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		06/20/24 14:54	06/21/24 23:03	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		06/20/24 14:54	06/21/24 23:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*64*		*34 - 142*	*06/20/24 14:54*	*06/21/24 23:03*	*1*
DCAA	*60*		*34 - 142*	*06/20/24 14:54*	*06/21/24 23:03*	*1*

Lab Sample ID: LCS 410-519678/2-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 519678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-D	2.51	2.150		ug/L		86	53 - 159
Silvex (2,4,5-TP)	0.250	0.2088		ug/L		84	62 - 170

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-519678/2-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 519678

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4,5-T			0.250	0.1768		ug/L		71	57 - 171		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*63*		*34 - 142*
DCAA	*63*		*34 - 142*

Lab Sample ID: LCSD 410-519678/3-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 519678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.51	2.247		ug/L		90	53 - 159	4	30
Silvex (2,4,5-TP)			0.250	0.2046		ug/L		82	62 - 170	2	30
2,4,5-T			0.250	0.1850		ug/L		74	57 - 171	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*70*		*34 - 142*
DCAA	*69*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-424661/1-A
Matrix: Water
Analysis Batch: 426465

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	07/03/24 20:42	1
Barium	<0.660		2.00	0.660	ug/L		06/17/24 09:00	07/03/24 20:42	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	07/03/24 20:42	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	07/03/24 20:42	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	07/03/24 20:42	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	07/03/24 20:42	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	07/03/24 20:42	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	07/03/24 20:42	1
Nickel	<2.10		5.00	2.10	ug/L		06/17/24 09:00	07/03/24 20:42	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	07/03/24 20:42	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	07/03/24 20:42	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	07/03/24 20:42	1

Lab Sample ID: MB 310-424661/1-A
Matrix: Water
Analysis Batch: 426555

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	07/07/24 22:07	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	07/07/24 22:07	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	07/07/24 22:07	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 424981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	217.1		ug/L		109	80 - 120
Lead	200	237.4		ug/L		119	80 - 120
Silver	100	88.34		ug/L		88	80 - 120

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 426079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	228.3		ug/L		114	80 - 120

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 426465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	120.0		ug/L		120	80 - 120
Cadmium	100	111.0		ug/L		111	80 - 120
Chromium	100	119.1		ug/L		119	80 - 120
Cobalt	100	119.2		ug/L		119	80 - 120
Copper	200	234.8		ug/L		117	80 - 120
Nickel	200	253.2	*+	ug/L		127	80 - 120
Selenium	400	429.4		ug/L		107	80 - 120
Vanadium	100	114.4		ug/L		114	80 - 120
Zinc	200	229.0		ug/L		114	80 - 120

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 426645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	81.59		ug/L		82	80 - 120

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 424981

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.530		<0.530		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	1.69		1.658		ug/L		2	20
Lead	<0.260		<0.260		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 426079

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 426555

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Thallium	<0.570		<0.570		ug/L		NC	20

Lab Sample ID: MB 310-426775/1-A
Matrix: Water
Analysis Batch: 427084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426775

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		07/10/24 09:00	07/11/24 19:56	1

Lab Sample ID: LCS 310-426775/2-A
Matrix: Water
Analysis Batch: 427084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	194.5		ug/L		97	80 - 120

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 427084

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 426775

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nickel	11.1		11.18		ug/L		1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-425722/1-A
Matrix: Water
Analysis Batch: 425884

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		06/26/24 15:25	06/27/24 13:13	1

Lab Sample ID: LCS 310-425722/2-A
Matrix: Water
Analysis Batch: 425884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.553		ug/L		93	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-425000/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425359
Prep Batch: 425000

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		06/19/24 09:31	06/21/24 17:54	1

Lab Sample ID: LCS 310-425000/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425359
Prep Batch: 425000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	193.2		ug/L		97	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-616870/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 616909
Prep Batch: 616870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1410		3000	1410	ug/L		06/18/24 07:50	06/18/24 09:24	1

Lab Sample ID: LCS 240-616870/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 616909
Prep Batch: 616870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8800	8533		ug/L		97	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-425005/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/19/24 09:51	1

Lab Sample ID: LCS 310-425005/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425005

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	105.0		mg/L		105	81 - 116

Lab Sample ID: MB 310-425026/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425026

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/19/24 10:41	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-425026/2
Matrix: Water
Analysis Batch: 425026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	110.0		mg/L		110	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

GC/MS VOA

Analysis Batch: 424743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	8260D	
310-283618-2	MW-38A	Total/NA	Ground Water	8260D	
310-283618-3	MW-38A-FD	Total/NA	Ground Water	8260D	
310-283618-4	MW-39A	Total/NA	Ground Water	8260D	
310-283618-5	MW-40A	Total/NA	Ground Water	8260D	
MB 310-424743/5	Method Blank	Total/NA	Water	8260D	
LCS 310-424743/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-424743/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 425054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	3510C	
MB 310-425054/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-425054/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-425054/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 425415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8270E	425054
MB 310-425054/1-A	Method Blank	Total/NA	Water	8270E	425054
LCS 310-425054/2-A	Lab Control Sample	Total/NA	Water	8270E	425054
LCSD 310-425054/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	425054

Analysis Batch: 425420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8270E	425054
MB 310-425054/1-A	Method Blank	Total/NA	Water	8270E	425054
LCS 310-425054/2-A	Lab Control Sample	Total/NA	Water	8270E	425054
LCSD 310-425054/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	425054

GC Semi VOA

Analysis Batch: 424678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8015C	
MB 310-424678/4	Method Blank	Total/NA	Water	8015C	
LCS 310-424678/5	Lab Control Sample	Total/NA	Water	8015C	
310-283618-5 MS	MW-40A	Total/NA	Ground Water	8015C	
310-283618-5 MSD	MW-40A	Total/NA	Ground Water	8015C	

Prep Batch: 424953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	3511	

Analysis Batch: 425056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8081B	424953

GC Semi VOA

Analysis Batch: 425057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8082A	424953

Prep Batch: 519678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8151A	
MB 410-519678/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-519678/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-519678/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 519886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8151A	519678
MB 410-519678/1-A	Method Blank	Total/NA	Water	8151A	519678
LCS 410-519678/2-A	Lab Control Sample	Total/NA	Water	8151A	519678
LCSD 410-519678/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	519678

Metals

Prep Batch: 424661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	3005A	
310-283618-2	MW-38A	Total/NA	Ground Water	3005A	
310-283618-3	MW-38A-FD	Total/NA	Ground Water	3005A	
310-283618-4	MW-39A	Total/NA	Ground Water	3005A	
310-283618-5	MW-40A	Total/NA	Ground Water	3005A	
MB 310-424661/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-283618-5 DU	MW-40A	Total/NA	Ground Water	3005A	

Analysis Batch: 424981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	6020B	424661
310-283618-2	MW-38A	Total/NA	Ground Water	6020B	424661
310-283618-3	MW-38A-FD	Total/NA	Ground Water	6020B	424661
310-283618-4	MW-39A	Total/NA	Ground Water	6020B	424661
310-283618-5	MW-40A	Total/NA	Ground Water	6020B	424661
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	424661

Analysis Batch: 425254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	6020B	424661
310-283618-2	MW-38A	Total/NA	Ground Water	6020B	424661
310-283618-3	MW-38A-FD	Total/NA	Ground Water	6020B	424661
310-283618-4	MW-39A	Total/NA	Ground Water	6020B	424661
310-283618-5	MW-40A	Total/NA	Ground Water	6020B	424661

Prep Batch: 425722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	7470A	
MB 310-425722/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 425722 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-425722/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 425884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	7470A	425722
MB 310-425722/1-A	Method Blank	Total/NA	Water	7470A	425722
LCS 310-425722/2-A	Lab Control Sample	Total/NA	Water	7470A	425722

Analysis Batch: 426079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	6020B	424661
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	424661

Analysis Batch: 426465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-424661/1-A	Method Blank	Total/NA	Water	6020B	424661
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661

Analysis Batch: 426555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	6020B	424661
MB 310-424661/1-A	Method Blank	Total/NA	Water	6020B	424661
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	424661

Analysis Batch: 426645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661

Prep Batch: 426775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	3005A	
MB 310-426775/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-426775/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-283618-5 DU	MW-40A	Total/NA	Ground Water	3005A	

Analysis Batch: 427084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	6020B	426775
MB 310-426775/1-A	Method Blank	Total/NA	Water	6020B	426775
LCS 310-426775/2-A	Lab Control Sample	Total/NA	Water	6020B	426775
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	426775

General Chemistry

Prep Batch: 425000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9012B	
MB 310-425000/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-425000/2-A	Lab Control Sample	Total/NA	Water	9012B	

General Chemistry

Analysis Batch: 425005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-2	MW-38A	Total/NA	Ground Water	I-3765-85	
310-283618-3	MW-38A-FD	Total/NA	Ground Water	I-3765-85	
MB 310-425005/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425005/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	I-3765-85	
310-283618-4	MW-39A	Total/NA	Ground Water	I-3765-85	
310-283618-5	MW-40A	Total/NA	Ground Water	I-3765-85	
MB 310-425026/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425026/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9012B	425000
MB 310-425000/1-A	Method Blank	Total/NA	Water	9012B	425000
LCS 310-425000/2-A	Lab Control Sample	Total/NA	Water	9012B	425000

Prep Batch: 616870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9030B	
MB 240-616870/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-616870/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 616909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9034	616870
MB 240-616870/1-A	Method Blank	Total/NA	Water	9034	616870
LCS 240-616870/2-A	Lab Control Sample	Total/NA	Water	9034	616870

Field Service / Mobile Lab

Analysis Batch: 425298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	Field Sampling	
310-283618-2	MW-38A	Total/NA	Ground Water	Field Sampling	
310-283618-4	MW-39A	Total/NA	Ground Water	Field Sampling	
310-283618-5	MW-40A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Lab Sample ID: 310-283618-1
Date Collected: 06/13/24 15:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 14:13
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:22
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	426079	DHM5	EET CF	06/28/24 23:34
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 18:53
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	426555	ZRI4	EET CF	07/07/24 22:35
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 15:00

Client Sample ID: MW-38A
Lab Sample ID: 310-283618-2
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 14:35
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:25
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 18:56
Total/NA	Analysis	I-3765-85		1	425005	HE7K	EET CF	06/19/24 09:51
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 10:30

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-283618-3
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 14:58
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:29
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 18:58
Total/NA	Analysis	I-3765-85		1	425005	HE7K	EET CF	06/19/24 09:51

Client Sample ID: MW-39A
Lab Sample ID: 310-283618-4
Date Collected: 06/13/24 11:45
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 15:21

Lab Chronicle

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Lab Sample ID: 310-283618-4

Date Collected: 06/13/24 11:45
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:33
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 19:00
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 11:45

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5

Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 15:43
Total/NA	Prep	3510C			425054	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	8270E		1	425415	L0FS	EET CF	06/24/24 12:27
Total/NA	Prep	3510C			425054	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	8270E		1	425420	L0FS	EET CF	06/24/24 15:26
Total/NA	Analysis	8015C		1	424678	V7YZ	EET CF	06/15/24 10:55
Total/NA	Prep	3511			424953	D0DG	EET CF	06/19/24 07:06
Total/NA	Analysis	8081B		1	425056	BW2O	EET CF	06/19/24 20:06
Total/NA	Prep	3511			424953	D0DG	EET CF	06/19/24 07:06
Total/NA	Analysis	8082A		1	425057	BW2O	EET CF	06/19/24 20:06
Total/NA	Prep	8151A			519678	QJZ6	ELLE	06/20/24 14:54
Total/NA	Analysis	8151A		1	519886	UAMZ	ELLE	06/22/24 03:12
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:36
Total/NA	Prep	3005A			426775	QTZ5	EET CF	07/10/24 09:00
Total/NA	Analysis	6020B		1	427084	NFT2	EET CF	07/11/24 21:08
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 19:02
Total/NA	Prep	7470A			425722	DHM5	EET CF	06/26/24 15:25
Total/NA	Analysis	7470A		1	425884	DHM5	EET CF	06/27/24 13:41
Total/NA	Prep	9012B			425000	WZC8	EET CF	06/19/24 09:31
Total/NA	Analysis	9012B		1	425359	ZJX4	EET CF	06/21/24 18:12
Total/NA	Prep	9030B			616870	BLW	EET CLE	06/18/24 07:50
Total/NA	Analysis	9034		1	616909	BLW	EET CLE	06/18/24 09:24
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 13:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,2,4-Trichlorobenzene
8260D		Ground Water	Allyl chloride
8260D		Ground Water	Ethyl methacrylate
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	06-25-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-28-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-25
Alaska	State	PA00009	06-30-24
Alaska (UST)	State	17-027	02-28-25
Arizona	State	AZ0780	03-12-25
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-24
Colorado	State	PA00009	06-30-25
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-25
Delaware (DW)	State	N/A	01-31-25
Florida	NELAP	E87997	06-30-24
Georgia (DW)	State	C048	01-31-25

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	N/A	01-31-25
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-26
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-24
Louisiana (All)	NELAP	02055	06-30-24
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-25
Massachusetts	State	M-PA009	06-30-25
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-25
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-24
New York	NELAP	10670	04-01-25
North Carolina (DW)	State	42705	06-30-24
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24 *
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-25
Tennessee	State	02838	01-31-25
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24 *
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-25
Wyoming (UST)	A2LA	0001.01	11-30-24

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

Method Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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310-283618 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Johnston	STATE IA	Project: Wanstrick GW	
Receipt Information			
Date/Time Received. DATE 6/7/24	TIME 1035	Received By: JD	
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☑ Yes ☐ No	*If yes:* Cooler ID:		
Multiple Coolers? ☐ Yes ☑ No	*If yes:* Cooler # _____ of _____		
Cooler Custody Seals Present? ☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No		
Sample Custody Seals Present? ☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No		
Trip Blank Present? ☑ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓ No trips		
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: P	Correction Factor (°C): 0.3		
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 2.5	Corrected Temp (°C): 2.8		
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-14-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes.
MW-1			G	GW		N		X	X			
MW-2R			G	GW		N		X	X			
MW-3			G	GW		N		X	X			
MW-4			G	GW		N		X	X			
MW-4B			G	GW		N		X	X			
MW-7A			G	GW		N		X			X	
MW-24A			G	GW		N		X			X	
MW-25A	6-13-24	1500	G	GW	5	N		X	X			Turbidity – 2.82 NTU
MW-29A			G	GW		N		X	X	X		
Trip Blank	6-13-24	0500	G	W	2	N			X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-14-24			6/14/24 1035
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-14-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Endosulfan I	All Appendix II Analytes	Sample Specific Notes
MW-31A			G	GW		N		X	X	X		
MW-33A			G	GW		N		X	X			
MW-34A			G	GW		N		X	X			
MW-34A-FD			G	GW		N		X	X			
MW-37A			G	GW		N		X	X			
MW-38A	6-13-24	1030	G	GW	5	N		X	X			Turbidity - 1.62 NTU
MW-38A-FD	6-13-24	1030	G	GW	5	N		X	X			
MW-39A	6-13-24	1145	G	GW	5	N		X	X			Turbidity - 25.54 NTU
MW-40A	6-13-24	1300	G	GW	18	N		X			X	Turbidity - 12.07 NTU
MW-41A			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp. (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-14-24			0745 6/14/24
Relinquished by	Company	Date/Time.	Received by	Company	Date/Time.
Relinquished by	Company	Date/Time.	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

2.3 | 3.8

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-73474.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-283618-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 7/5/2024	Analysis Requested		Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			Other:
Site: 310 - AECOM - Winneshiek County	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						652
MW-40A (310-283618-5)	6/13/24	13:00 Central		Water			X	1	

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/14/24 1425		JESSICA RIGBON	6-15-24 0930	EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins - Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Eurofins - CP Site Name

Cooler unpacked by: DWR

Cooler Received on 6-15-24 Opened on 6-15-24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # BC (Foam Box) Client Cooler Box Other

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 19 (CF +1.5 °C) Observed Cooler Temp. 2.3 °C Corrected Cooler Temp. 3.8 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes) No	**Tests that are not checked for pH by Receiving** **VOAs** **Oil and Grease** **TOC**
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes) No NA	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	
-Were tamper/custody seals intact and uncompromised?	(Yes) No NA	
3 Shippers' packing slip attached to the cooler(s)?	(Yes) No	
4. Did custody papers accompany the sample(s)?	(Yes) No	
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)	
7 Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No	
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
11 Sufficient quantity received to perform indicated analyses?	(Yes) No	
12. Are these work share samples and all listed on the COC?	(Yes) No	
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# HC339814
14. Were VOAs on the COC?	Yes No	
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes No NA	
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes No	
17 Was a LL Hg or Me Hg trip blank present?	Yes No	

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container

Sample(s) were received with bubble >6 mm in diameter (Notify PM)

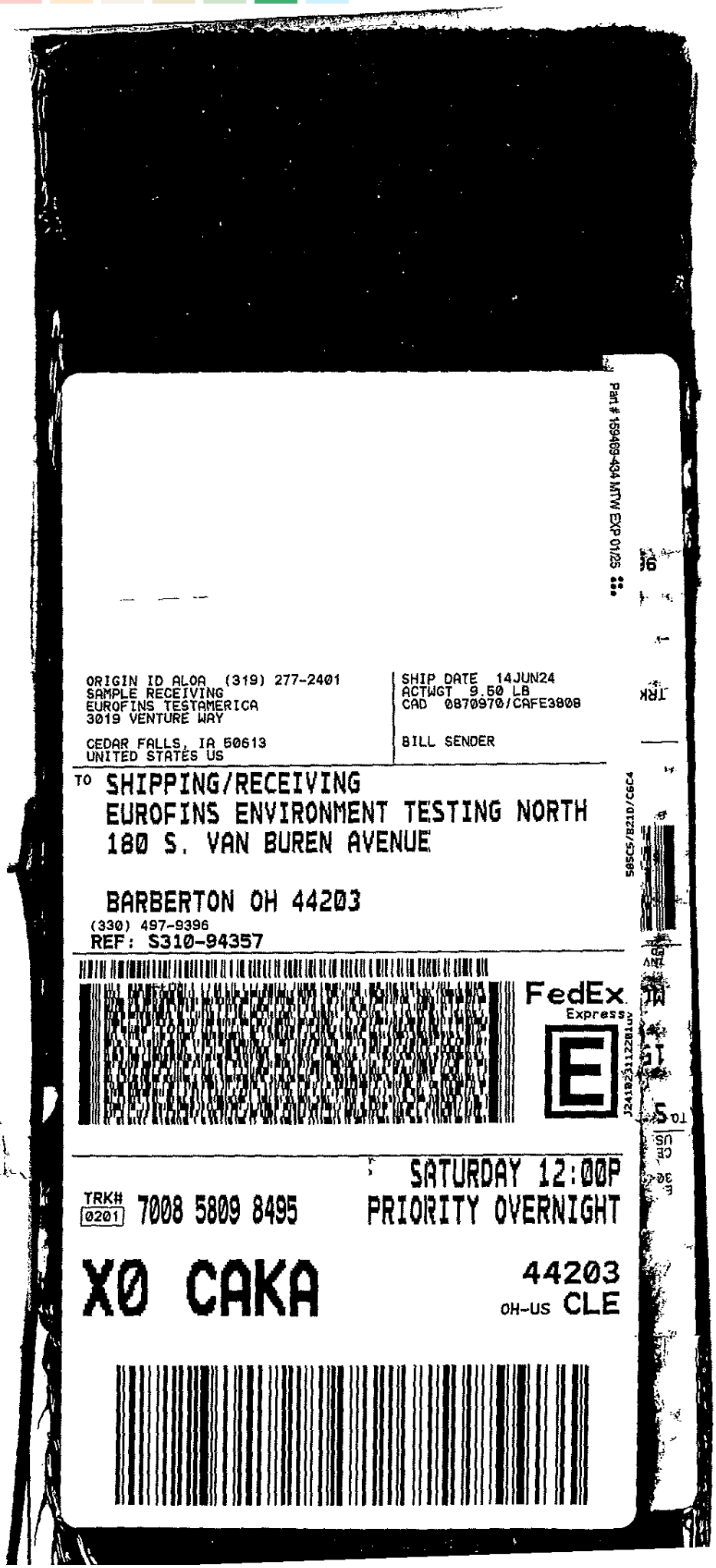
20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s).

VOA Sample Preservation - Date/Time VOAs Frozen.

Part # 159469-434 MTW EXP 01/25



ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 14JUN24
ACTWGT 9.50 LB
CAD 0870970/CAFE3808

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-94357

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7008 5809 8495

X0 CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-73475.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State Program - Iowa		Job #: 310-283618-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 7/5/2024	Analysis Requested		Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			Other:
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-40A (310-283618-5)	6/13/24	13:00 Central		Water			X	2	

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/14/24 1430				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 6/15/24 0930	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:	R: 5.2 C: 5.1

Ver: 04/02/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283618-1

Login Number: 283618

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

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

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283618-1

Login Number: 283618
List Number: 2
Creator: Santiago, Nathaniel

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 06/15/24 11:54 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 7/15/2024 1:07:40 PM Revision 1

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater

JOB NUMBER

310-283618-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
7/15/2024 1:07:40 PM
Revision 1

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-283618-1

REVISION

The report being provided is a revision of the original report sent on 7/12/2024. The report (revision 1) is being revised due to This report was revised 7/15/2024. 2 sample results for Antimony and Thallium..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/14/2024 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-424743 recovered above the upper control limit for Dichlorodifluoromethane (58.4%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-424743/4).

Method 8260D: The laboratory control sample (LCS) for analytical batch 310-424743 recovered outside control limits for the following analyte: Dichlorodifluoromethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

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

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-425054. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-425054 and analytical batch 310-425420 recovered outside control limits for the following analyte(s): 4-Nitrophenol. 4-Nitrophenol has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-425054 and analytical batch 310-425420 recovered outside control limits for the following analytes: 2,4-Dinitrophenol, 2,3,4,6-Tetrachlorophenol, 4,6-Dinitro-2-methylphenol, Pentachlorophenol and 4-Nitrophenol

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-425415 recovered above the upper control limit for 1,4-Naphthoquinone (30.8%D), N-Nitrosodi-n-butylamine (24.7%D), 3,3'-Dimethylbenzidine (25.1%D), 1-Naphthylamine (21.8%D), 4-Aminobipheny (21.2%D)l, Safrole (24.7%D), o-Toluidine (26.8%D), o,o',o''-Triethylphosphorothioate (25.0%D) and Dinoseb (39.2%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-425054 and analytical batch 310-425415 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Batch precision also exceeded control limits for these analyte(s). These results have been reported

and qualified.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-425054 and analytical batch 310-425415 recovered outside control limits for the following analytes: Famphur. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

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

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

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

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

Metals
Method 6020B: The laboratory control sample (LCS) for 310-424661 recovered outside control limits for the following analytes: Nickel. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. MW-25A (310-283618-1), MW-38A (310-283618-2), MW-38A-FD (310-283618-3) and MW-39A (310-283618-4)

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283618-1	MW-25A	Ground Water	06/13/24 15:00	06/14/24 10:35
310-283618-2	MW-38A	Ground Water	06/13/24 10:30	06/14/24 10:35
310-283618-3	MW-38A-FD	Ground Water	06/13/24 10:30	06/14/24 10:35
310-283618-4	MW-39A	Ground Water	06/13/24 11:45	06/14/24 10:35
310-283618-5	MW-40A	Ground Water	06/13/24 13:00	06/14/24 10:35

Detection Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A — Lab Sample ID: 310-283618-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	178		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	2.64	J	5.00	1.20	ug/L	1		6020B	Total/NA
Selenium	2.02	J	5.00	1.40	ug/L	1		6020B	Total/NA
Field Turbidity	2.82				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-38A — Lab Sample ID: 310-283618-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	153		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	3.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.62				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-38A-FD — Lab Sample ID: 310-283618-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	148		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.50		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-39A — Lab Sample ID: 310-283618-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	152		2.00	0.660	ug/L	1		6020B	Total/NA
Beryllium	0.353	J	1.00	0.330	ug/L	1		6020B	Total/NA
Cobalt	0.175	J	0.500	0.170	ug/L	1		6020B	Total/NA
Zinc	68.3		20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	14.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	25.54				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-40A — Lab Sample ID: 310-283618-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.250	J	0.500	0.220	ug/L	1		8260D	Total/NA
Barium	210		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.69		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	11.1		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	7.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.07				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-25A
Date Collected: 06/13/24 15:00
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 14:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 14:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 14:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 14:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 14:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 14:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 14:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 14:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 14:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 14:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 14:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 14:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 14:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 14:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 14:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 14:13	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 14:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 14:13	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 14:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 14:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 14:13	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 14:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 14:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 14:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 14:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 14:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 14:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 14:13	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 14:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 14:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 14:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 14:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 14:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 14:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 14:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 14:13	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 14:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 14:13	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 14:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 14:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 14:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 14:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 14:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 14:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 14:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 14:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/18/24 14:13*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Date Collected: 06/13/24 15:00
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/18/24 14:13*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 14:13*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:22	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 18:53	1
Barium	**178**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 18:53	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:22	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 18:53	1
Chromium	**2.64**	**J**	5.00	1.20	ug/L		06/17/24 09:00	06/18/24 18:53	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 18:53	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 18:53	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 18:53	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 18:53	1
Selenium	**2.02**	**J**	5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:22	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 18:53	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:22	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:22	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/19/24 10:41	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.82**				NTU			06/13/24 15:00	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A
Date Collected: 06/13/24 10:30
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 14:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 14:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 14:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 14:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 14:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 14:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 14:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 14:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 14:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 14:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 14:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 14:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 14:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 14:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 14:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 14:35	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 14:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 14:35	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 14:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 14:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 14:35	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 14:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 14:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 14:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 14:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 14:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 14:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 14:35	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 14:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 14:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 14:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 14:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 14:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 14:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 14:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 14:35	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 14:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 14:35	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 14:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 14:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 14:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 14:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 14:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 14:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 14:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 14:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*06/18/24 14:35*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A
Date Collected: 06/13/24 10:30
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/18/24 14:35*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 14:35*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:25	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 18:56	1
Barium	**153**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 18:56	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:25	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 18:56	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 18:56	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 18:56	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 18:56	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 18:56	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 18:56	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:25	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 18:56	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:25	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:25	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.13**		1.88	1.39	mg/L			06/19/24 09:51	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.62**				NTU			06/13/24 10:30	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A-FD
Date Collected: 06/13/24 10:30
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-3
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 14:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 14:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 14:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 14:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 14:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 14:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 14:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 14:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 14:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 14:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 14:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 14:58	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 14:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 14:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 14:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 14:58	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 14:58	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 14:58	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 14:58	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 14:58	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 14:58	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 14:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 14:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 14:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 14:58	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 14:58	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 14:58	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 14:58	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 14:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 14:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 14:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 14:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 14:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 14:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 14:58	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 14:58	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 14:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 14:58	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 14:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 14:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 14:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 14:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 14:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 14:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 14:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 14:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/18/24 14:58*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-283618-3
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/18/24 14:58*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/18/24 14:58*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:29	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 18:58	1
Barium	**148**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 18:58	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:29	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 18:58	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 18:58	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 18:58	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 18:58	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 18:58	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 18:58	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:29	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 18:58	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:29	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:29	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.50**		1.88	1.39	mg/L			06/19/24 09:51	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Date Collected: 06/13/24 11:45
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-4
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 15:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 15:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 15:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 15:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 15:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 15:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 15:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 15:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 15:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 15:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 15:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 15:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 15:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 15:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 15:21	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 15:21	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 15:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 15:21	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 15:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 15:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 15:21	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 15:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 15:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 15:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 15:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 15:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 15:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 15:21	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 15:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 15:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 15:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 15:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 15:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 15:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 15:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 15:21	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 15:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 15:21	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 15:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 15:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 15:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 15:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 15:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 15:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 15:21	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 15:21	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*73 - 130*		*06/18/24 15:21*	*1*

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Date Collected: 06/13/24 11:45
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-4
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*06/18/24 15:21*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 15:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:33	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 19:00	1
Barium	**152**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 19:00	1
Beryllium	**0.353**	**J**	1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:33	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 19:00	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 19:00	1
Cobalt	**0.175**	**J**	0.500	0.170	ug/L		06/17/24 09:00	06/18/24 19:00	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 19:00	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 19:00	1
Nickel	<2.10	*+	5.00	2.10	ug/L		06/17/24 09:00	06/18/24 19:00	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:33	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 19:00	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:33	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:33	1
Zinc	**68.3**		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**14.3**		1.88	1.39	mg/L			06/19/24 10:41	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**25.54**				NTU			06/13/24 11:45	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Date Collected: 06/13/24 13:00
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-5
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 15:43	1
Acrolein	<3.60		10.0	3.60	ug/L			06/18/24 15:43	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 15:43	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/18/24 15:43	1
Benzene	**0.250**	**J**	0.500	0.220	ug/L			06/18/24 15:43	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 15:43	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 15:43	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 15:43	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 15:43	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 15:43	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 15:43	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 15:43	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 15:43	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 15:43	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 15:43	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 15:43	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 15:43	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/18/24 15:43	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 15:43	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 15:43	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 15:43	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 15:43	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 15:43	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 15:43	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/18/24 15:43	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 15:43	1
Dichlorodifluoromethane	<0.250	*+	3.00	0.250	ug/L			06/18/24 15:43	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 15:43	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 15:43	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 15:43	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 15:43	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/18/24 15:43	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/18/24 15:43	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/18/24 15:43	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 15:43	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/18/24 15:43	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 15:43	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 15:43	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/18/24 15:43	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 15:43	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/18/24 15:43	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 15:43	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/18/24 15:43	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/18/24 15:43	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/18/24 15:43	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/18/24 15:43	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 15:43	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 15:43	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 15:43	1

Client Sample ID: MW-40A
Date Collected: 06/13/24 13:00
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-5
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 15:43	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 15:43	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 15:43	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 15:43	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 15:43	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/18/24 15:43	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 15:43	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 15:43	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 15:43	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 15:43	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 15:43	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 15:43	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 15:43	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*06/18/24 15:43*	*1*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*06/18/24 15:43*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*06/18/24 15:43*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.667		10.4	0.667	ug/L		06/20/24 08:00	06/24/24 15:26	1
Acenaphthylene	<0.750		10.4	0.750	ug/L		06/20/24 08:00	06/24/24 15:26	1
Acetophenone	<0.719		10.4	0.719	ug/L		06/20/24 08:00	06/24/24 15:26	1
2-Acetylaminofluorene	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 12:27	1
4-Aminobiphenyl	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 12:27	1
Anthracene	<0.906		10.4	0.906	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[a]anthracene	<0.885		10.4	0.885	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[a]pyrene	<8.44		10.4	8.44	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[b]fluoranthene	<5.10		10.4	5.10	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[g,h,i]perylene	<6.56		10.4	6.56	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzo[k]fluoranthene	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 15:26	1
Benzyl alcohol	<1.35		10.4	1.35	ug/L		06/20/24 08:00	06/24/24 15:26	1
Bis(2-chloroethoxy)methane	<0.792		10.4	0.792	ug/L		06/20/24 08:00	06/24/24 15:26	1
Bis(2-chloroethyl)ether	<0.854		10.4	0.854	ug/L		06/20/24 08:00	06/24/24 15:26	1
bis (2-chloroisopropyl) ether	<0.563		10.4	0.563	ug/L		06/20/24 08:00	06/24/24 15:26	1
Bis(2-ethylhexyl) phthalate	<5.73		10.4	5.73	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Bromophenyl phenyl ether	<0.729		10.4	0.729	ug/L		06/20/24 08:00	06/24/24 15:26	1
Butyl benzyl phthalate	<5.63		10.4	5.63	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Chloroaniline	<0.646		10.4	0.646	ug/L		06/20/24 08:00	06/24/24 15:26	1
Chlorobenzilate	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
4-Chloro-3-methylphenol	<0.875		10.4	0.875	ug/L		06/20/24 08:00	06/24/24 15:26	1
2-Chloronaphthalene	<0.667		10.4	0.667	ug/L		06/20/24 08:00	06/24/24 15:26	1
2-Chlorophenol	<0.563		10.4	0.563	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Chlorophenyl phenyl ether	<0.719		10.4	0.719	ug/L		06/20/24 08:00	06/24/24 15:26	1
Chrysene	<0.906		10.4	0.906	ug/L		06/20/24 08:00	06/24/24 15:26	1
Diallate	<4.17		10.4	4.17	ug/L		06/20/24 08:00	06/24/24 12:27	1
Dibenzo(a,h)anthracene	<4.06		10.4	4.06	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dibenzofuran	<0.771		10.4	0.771	ug/L		06/20/24 08:00	06/24/24 15:26	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	<1.46		10.4	1.46	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4-Dichlorophenol	<0.885		10.4	0.885	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,6-Dichlorophenol	<0.719		10.4	0.719	ug/L		06/20/24 08:00	06/24/24 15:26	1
Diethyl phthalate	<1.77		10.4	1.77	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dimethoate	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
7,12-Dimethylbenz(a)anthracene	<1.98		10.4	1.98	ug/L		06/20/24 08:00	06/24/24 12:27	1
3,3'-Dimethylbenzidine	<1.56		10.4	1.56	ug/L		06/20/24 08:00	06/24/24 12:27	1
2,4-Dimethylphenol	<0.604		10.4	0.604	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dimethyl phthalate	<1.04		10.4	1.04	ug/L		06/20/24 08:00	06/24/24 15:26	1
Di-n-butyl phthalate	<5.83		10.4	5.83	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,3-Dinitrobenzene	<3.33		10.4	3.33	ug/L		06/20/24 08:00	06/24/24 15:26	1
4,6-Dinitro-2-methylphenol	<7.19	*1	10.4	7.19	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4-Dinitrophenol	<13.5	*1	20.8	13.5	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4-Dinitrotoluene	<6.67		10.4	6.67	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,6-Dinitrotoluene	<0.542		10.4	0.542	ug/L		06/20/24 08:00	06/24/24 15:26	1
Di-n-octyl phthalate	<7.29		20.8	7.29	ug/L		06/20/24 08:00	06/24/24 15:26	1
Dinoseb	<2.50		10.4	2.50	ug/L		06/20/24 08:00	06/24/24 12:27	1
Diphenylamine	<6.25		10.4	6.25	ug/L		06/20/24 08:00	06/24/24 15:26	1
Disulfoton	<2.50		10.4	2.50	ug/L		06/20/24 08:00	06/24/24 12:27	1
Ethyl methanesulfonate	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
Ethyl Parathion	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 12:27	1
Famphur	<3.96	*+	10.4	3.96	ug/L		06/20/24 08:00	06/24/24 12:27	1
Fluoranthene	<1.77		10.4	1.77	ug/L		06/20/24 08:00	06/24/24 15:26	1
Fluorene	<0.823		10.4	0.823	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachlorobenzene	<0.729		10.4	0.729	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachlorobutadiene	<0.896		10.4	0.896	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachlorocyclopentadiene	<5.31		10.4	5.31	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachloroethane	<1.01		10.4	1.01	ug/L		06/20/24 08:00	06/24/24 15:26	1
Hexachloropropene	<2.71		10.4	2.71	ug/L		06/20/24 08:00	06/24/24 12:27	1
Indeno[1,2,3-cd]pyrene	<4.38		10.4	4.38	ug/L		06/20/24 08:00	06/24/24 15:26	1
Isodrin	<4.90		10.4	4.90	ug/L		06/20/24 08:00	06/24/24 12:27	1
Isophorone	<0.969		10.4	0.969	ug/L		06/20/24 08:00	06/24/24 15:26	1
Isosafrole	<2.40		10.4	2.40	ug/L		06/20/24 08:00	06/24/24 12:27	1
Kepone	<1.04		10.4	1.04	ug/L		06/20/24 08:00	06/24/24 12:27	1
Methapyrilene	<0.792		10.4	0.792	ug/L		06/20/24 08:00	06/24/24 12:27	1
3-Methylcholanthrene	<0.333		10.4	0.333	ug/L		06/20/24 08:00	06/24/24 12:27	1
Methyl methanesulfonate	<3.44		10.4	3.44	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Methylnaphthalene	<0.615		10.4	0.615	ug/L		06/20/24 08:00	06/24/24 15:26	1
Methyl parathion	<2.40		10.4	2.40	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Methylphenol	<0.677		10.4	0.677	ug/L		06/20/24 08:00	06/24/24 15:26	1
Methylphenol, 3 & 4	<0.729		10.4	0.729	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,4-Naphthoquinone	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
1-Naphthylamine	<2.60		10.4	2.60	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Naphthylamine	<2.19		10.4	2.19	ug/L		06/20/24 08:00	06/24/24 12:27	1
2-Nitroaniline	<6.15		10.4	6.15	ug/L		06/20/24 08:00	06/24/24 15:26	1
3-Nitroaniline	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Nitroaniline	<1.35		10.4	1.35	ug/L		06/20/24 08:00	06/24/24 15:26	1
Nitrobenzene	<0.833		10.4	0.833	ug/L		06/20/24 08:00	06/24/24 15:26	1
5-Nitro-o-toluidine	<2.92		10.4	2.92	ug/L		06/20/24 08:00	06/24/24 12:27	1

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5

Date Collected: 06/13/24 13:00
Matrix: Ground Water

Date Received: 06/14/24 10:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	<7.08		10.4	7.08	ug/L		06/20/24 08:00	06/24/24 15:26	1
4-Nitrophenol	<7.92	*- *1	10.4	7.92	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosodiethylamine	<3.54		10.4	3.54	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosodimethylamine	<0.750		10.4	0.750	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosodi-n-butylamine	<4.06		10.4	4.06	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosodi-n-propylamine	<0.958		10.4	0.958	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosodiphenylamine	<0.781		10.4	0.781	ug/L		06/20/24 08:00	06/24/24 15:26	1
N-Nitrosomethylethylamine	<5.10		10.4	5.10	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosopiperidine	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 12:27	1
N-Nitrosopyrrolidine	<3.75		10.4	3.75	ug/L		06/20/24 08:00	06/24/24 12:27	1
o,o',o''-Triethylphosphorothioate	<3.33		10.4	3.33	ug/L		06/20/24 08:00	06/24/24 12:27	1
o-Toluidine	<3.02		10.4	3.02	ug/L		06/20/24 08:00	06/24/24 12:27	1
p-Dimethylamino azobenzene	<2.29		10.4	2.29	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pentachlorobenzene	<2.92		10.4	2.92	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pentachloronitrobenzene	<6.04		10.4	6.04	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pentachlorophenol	<10.0	*1	10.4	10.0	ug/L		06/20/24 08:00	06/24/24 15:26	1
Phenacetin	<1.98		10.4	1.98	ug/L		06/20/24 08:00	06/24/24 12:27	1
Phenanthrene	<0.823		10.4	0.823	ug/L		06/20/24 08:00	06/24/24 15:26	1
Phenol	<1.15		10.4	1.15	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,4-phenylenediamine	<1.98	*- *1	10.4	1.98	ug/L		06/20/24 08:00	06/24/24 12:27	1
Phorate	<3.33		10.4	3.33	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pronamide	<2.81		10.4	2.81	ug/L		06/20/24 08:00	06/24/24 12:27	1
Pyrene	<0.823		10.4	0.823	ug/L		06/20/24 08:00	06/24/24 15:26	1
Safrole	<2.92		10.4	2.92	ug/L		06/20/24 08:00	06/24/24 12:27	1
1,2,4,5-Tetrachlorobenzene	<0.563		10.4	0.563	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,3,4,6-Tetrachlorophenol	<5.52	*1	10.4	5.52	ug/L		06/20/24 08:00	06/24/24 15:26	1
Thionazin	<3.65		10.4	3.65	ug/L		06/20/24 08:00	06/24/24 12:27	1
2,4,5-Trichlorophenol	<5.52		10.4	5.52	ug/L		06/20/24 08:00	06/24/24 15:26	1
2,4,6-Trichlorophenol	<5.21		10.4	5.21	ug/L		06/20/24 08:00	06/24/24 15:26	1
1,3,5-Trinitrobenzene	<2.40		10.4	2.40	ug/L		06/20/24 08:00	06/24/24 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 118*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
2-Fluorophenol (Surr)	*70*		*25 - 110*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
Nitrobenzene-d5 (Surr)	*90*		*45 - 129*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
Phenol-d5 (Surr)	*57*		*21 - 110*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
Terphenyl-d14 (Surr)	*82*		*12 - 144*	*06/20/24 08:00*	*06/24/24 15:26*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*27 - 136*	*06/20/24 08:00*	*06/24/24 15:26*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			06/15/24 10:55	1
Isobutanol	<2400		10000	2400	ug/L			06/15/24 10:55	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0200		0.0909	0.0200	ug/L		06/19/24 07:06	06/19/24 20:06	1
alpha-BHC	<0.00909		0.0909	0.00909	ug/L		06/19/24 07:06	06/19/24 20:06	1
beta-BHC	<0.0382		0.0909	0.0382	ug/L		06/19/24 07:06	06/19/24 20:06	1
Chlordane (technical)	<0.355		1.82	0.355	ug/L		06/19/24 07:06	06/19/24 20:06	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Date Collected: 06/13/24 13:00
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-5
Matrix: Ground Water

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0227		0.0909	0.0227	ug/L		06/19/24 07:06	06/19/24 20:06	1
4,4'-DDE	<0.0273		0.0909	0.0273	ug/L		06/19/24 07:06	06/19/24 20:06	1
4,4'-DDT	<0.0182		0.0909	0.0182	ug/L		06/19/24 07:06	06/19/24 20:06	1
delta-BHC	<0.0291		0.0909	0.0291	ug/L		06/19/24 07:06	06/19/24 20:06	1
Dieldrin	<0.0191		0.0909	0.0191	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endosulfan I	<0.0255		0.0909	0.0255	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endosulfan II	<0.0236		0.0909	0.0236	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endosulfan sulfate	<0.0164		0.0909	0.0164	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endrin	<0.0255		0.0909	0.0255	ug/L		06/19/24 07:06	06/19/24 20:06	1
Endrin aldehyde	<0.0245		0.0909	0.0245	ug/L		06/19/24 07:06	06/19/24 20:06	1
gamma-BHC (Lindane)	<0.00909		0.0909	0.00909	ug/L		06/19/24 07:06	06/19/24 20:06	1
Heptachlor	<0.0209		0.0909	0.0209	ug/L		06/19/24 07:06	06/19/24 20:06	1
Heptachlor epoxide	<0.0291		0.0909	0.0291	ug/L		06/19/24 07:06	06/19/24 20:06	1
Methoxychlor	<0.0291		0.0909	0.0291	ug/L		06/19/24 07:06	06/19/24 20:06	1
Toxaphene	<0.909		1.82	0.909	ug/L		06/19/24 07:06	06/19/24 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*105*		*10 - 136*	*06/19/24 07:06*	*06/19/24 20:06*	*1*
Tetrachloro-m-xylene	*99*		*10 - 130*	*06/19/24 07:06*	*06/19/24 20:06*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1221	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1232	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1242	<0.745		1.82	0.745	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1248	<0.627		1.82	0.627	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1254	<0.627		1.82	0.627	ug/L		06/19/24 07:06	06/19/24 20:06	1
PCB-1260	<0.627		1.82	0.627	ug/L		06/19/24 07:06	06/19/24 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*104*		*10 - 136*	*06/19/24 07:06*	*06/19/24 20:06*	*1*
Tetrachloro-m-xylene	*104*		*10 - 130*	*06/19/24 07:06*	*06/19/24 20:06*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.240		0.577	0.240	ug/L		06/20/24 14:54	06/22/24 03:12	1
Silvex (2,4,5-TP)	<0.0212		0.0481	0.0212	ug/L		06/20/24 14:54	06/22/24 03:12	1
2,4,5-T	<0.0625		0.144	0.0625	ug/L		06/20/24 14:54	06/22/24 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*59*		*34 - 142*	*06/20/24 14:54*	*06/22/24 03:12*	*1*
DCAA	*63*		*34 - 142*	*06/20/24 14:54*	*06/22/24 03:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	06/20/24 18:36	1
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	06/18/24 19:02	1
Barium	**210**		2.00	0.660	ug/L		06/17/24 09:00	06/18/24 19:02	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	06/20/24 18:36	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	06/18/24 19:02	1

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Date Collected: 06/13/24 13:00
Date Received: 06/14/24 10:35

Lab Sample ID: 310-283618-5
Matrix: Ground Water

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	06/18/24 19:02	1
Cobalt	**1.69**		0.500	0.170	ug/L		06/17/24 09:00	06/18/24 19:02	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	06/18/24 19:02	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	06/18/24 19:02	1
Nickel	**11.1**		5.00	2.10	ug/L		07/10/24 09:00	07/11/24 21:08	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	06/20/24 18:36	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	06/18/24 19:02	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	06/20/24 18:36	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	06/20/24 18:36	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	06/20/24 18:36	1
Tin	<2.30		5.00	2.30	ug/L		06/17/24 09:00	06/20/24 18:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		06/26/24 15:25	06/27/24 13:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		06/19/24 09:31	06/21/24 18:12	1
Sulfide (SW846 9034)	<1410		3000	1410	ug/L		06/18/24 07:50	06/18/24 09:24	1
Total Suspended Solids (USGS I-3765-85)	**7.13**		1.88	1.39	mg/L			06/19/24 10:41	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.07**				NTU			06/13/24 13:00	1

Definitions/Glossary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283618-1	MW-25A	99	96	103
310-283618-2	MW-38A	98	96	103
310-283618-3	MW-38A-FD	99	96	104
310-283618-4	MW-39A	98	94	103
310-283618-5	MW-40A	99	97	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
LCS 310-424743/6	Lab Control Sample	96	100	97
LCS 310-424743/7	Lab Control Sample	101	102	95
MB 310-424743/5	Method Blank	102	104	93

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
310-283618-5	MW-40A	71	70	90	57	82	82

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCS 310-425054/2-A	Lab Control Sample	65	67	86	53	85	97
LCSD 310-425054/3-A	Lab Control Sample Dup	69	60	89	55	89	82
MB 310-425054/1-A	Method Blank	64	63	83	51	79	84

Surrogate Legend

Surrogate Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-283618-5	MW-40A	105	99

Surrogate Legend
DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-283618-5	MW-40A	104	104

Surrogate Legend
DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
310-283618-5	MW-40A	59	63

Surrogate Legend
DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
LCS 410-519678/2-A	Lab Control Sample	63	63
LCSD 410-519678/3-A	Lab Control Sample Dup	70	69
MB 410-519678/1-A	Method Blank	64	60

Surrogate Legend
DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-424743/5
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	<3.60		10.0	3.60	ug/L			06/18/24 08:34	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/18/24 08:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/18/24 08:34	1
Acetone	<3.10		10.0	3.10	ug/L			06/18/24 08:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/18/24 08:34	1
Benzene	<0.220		0.500	0.220	ug/L			06/18/24 08:34	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/18/24 08:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/18/24 08:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/18/24 08:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/18/24 08:34	1
Bromoform	<0.780		5.00	0.780	ug/L			06/18/24 08:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/18/24 08:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/18/24 08:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/18/24 08:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/18/24 08:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/18/24 08:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/18/24 08:34	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/18/24 08:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/18/24 08:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/18/24 08:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/18/24 08:34	1
Chloroform	<1.30		3.00	1.30	ug/L			06/18/24 08:34	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			06/18/24 08:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/18/24 08:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/18/24 08:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/18/24 08:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/18/24 08:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/18/24 08:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/18/24 08:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/18/24 08:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/18/24 08:34	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/18/24 08:34	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/18/24 08:34	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/18/24 08:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/18/24 08:34	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/18/24 08:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/18/24 08:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/18/24 08:34	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/18/24 08:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/18/24 08:34	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/18/24 08:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/18/24 08:34	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/18/24 08:34	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/18/24 08:34	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/18/24 08:34	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/18/24 08:34	1
Styrene	<0.370		1.00	0.370	ug/L			06/18/24 08:34	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/18/24 08:34	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-424743/5
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/18/24 08:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/18/24 08:34	1
Toluene	<0.430		1.00	0.430	ug/L			06/18/24 08:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/18/24 08:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/18/24 08:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/18/24 08:34	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/18/24 08:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/18/24 08:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/18/24 08:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/18/24 08:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/18/24 08:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/18/24 08:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/18/24 08:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/18/24 08:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/18/24 08:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*06/18/24 08:34*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/18/24 08:34*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*06/18/24 08:34*	*1*

Lab Sample ID: LCS 310-424743/6
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	94.8	75.90		ug/L		80	49 - 150
Allyl chloride	20.0	17.04		ug/L		85	49 - 150
2-Butanone (MEK)	40.0	36.12		ug/L		90	50 - 150
Acetone	40.0	34.96		ug/L		87	50 - 150
Acrylonitrile	200	181.1		ug/L		91	50 - 150
Benzene	20.0	18.37		ug/L		92	72 - 124
Chloroprene	20.0	17.02		ug/L		85	69 - 133
Bromochloromethane	20.0	19.05		ug/L		95	73 - 130
Bromodichloromethane	20.0	18.45		ug/L		92	74 - 122
1,2-Dibromo-3-Chloropropane	20.0	18.17		ug/L		91	50 - 150
Bromoform	20.0	18.30		ug/L		91	61 - 122
1,2-Dibromoethane (EDB)	20.0	19.16		ug/L		96	75 - 125
Carbon disulfide	20.0	17.84		ug/L		89	59 - 135
Carbon tetrachloride	20.0	17.54		ug/L		88	67 - 132
1,2-Dichlorobenzene	20.0	19.36		ug/L		97	74 - 120
Chlorobenzene	20.0	19.65		ug/L		98	76 - 120
1,3-Dichlorobenzene	20.0	20.26		ug/L		101	72 - 120
Chlorodibromomethane	20.0	19.05		ug/L		95	71 - 121
1,4-Dichlorobenzene	20.0	17.40		ug/L		87	72 - 120
Chloroform	20.0	17.88		ug/L		89	72 - 125
1,1-Dichloroethane	20.0	17.37		ug/L		87	70 - 127
1,2-Dichloroethane	20.0	16.93		ug/L		85	71 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-424743/6
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	18.02		ug/L		90	74 - 123
1,1-Dichloroethene	20.0	19.30		ug/L		96	63 - 132
cis-1,3-Dichloropropene	20.0	18.01		ug/L		90	71 - 125
1,2-Dichloropropane	20.0	18.96		ug/L		95	73 - 124
Dibromomethane	20.0	18.89		ug/L		94	74 - 125
1,3-Dichloropropane	20.0	19.05		ug/L		95	72 - 125
2,2-Dichloropropane	20.0	14.74		ug/L		74	50 - 150
1,1-Dichloropropene	20.0	17.73		ug/L		89	69 - 132
Ethylbenzene	20.0	18.35		ug/L		92	74 - 122
Ethyl methacrylate	20.0	21.64		ug/L		108	70 - 129
2-Hexanone	40.0	43.59		ug/L		109	60 - 140
Iodomethane	20.0	11.94		ug/L		60	10 - 150
Methacrylonitrile	200	187.5		ug/L		94	69 - 129
Methylene Chloride	20.0	19.53		ug/L		98	50 - 150
Methyl methacrylate	40.0	41.04		ug/L		103	68 - 131
4-Methyl-2-pentanone (MIBK)	40.0	40.42		ug/L		101	60 - 139
Naphthalene	20.0	17.30		ug/L		86	50 - 150
Propionitrile	200	195.4		ug/L		98	63 - 135
Styrene	20.0	19.09		ug/L		95	74 - 121
1,1,1,2-Tetrachloroethane	20.0	18.44		ug/L		92	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.29		ug/L		96	68 - 124
Tetrachloroethene	20.0	18.88		ug/L		94	71 - 130
Toluene	20.0	20.16		ug/L		101	74 - 123
trans-1,4-Dichloro-2-butene	20.0	14.26		ug/L		71	50 - 150
trans-1,2-Dichloroethene	20.0	16.98		ug/L		85	70 - 126
trans-1,3-Dichloropropene	20.0	17.12		ug/L		86	69 - 123
1,2,4-Trichlorobenzene	20.0	16.11		ug/L		81	68 - 124
1,1,1-Trichloroethane	20.0	18.22		ug/L		91	73 - 129
1,1,2-Trichloroethane	20.0	19.50		ug/L		98	73 - 123
Trichloroethene	20.0	20.16		ug/L		101	72 - 126
1,2,3-Trichloropropane	20.0	19.21		ug/L		96	65 - 127
Vinyl acetate	40.0	38.58		ug/L		96	50 - 150
Xylenes, Total	40.0	37.87		ug/L		95	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-424743/7
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	11.45		ug/L		57	23 - 150
Chloroethane	20.0	22.62		ug/L		113	54 - 136
Dichlorodifluoromethane	20.0	30.29	*+	ug/L		151	39 - 150
Chloromethane	20.0	21.15		ug/L		106	38 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-424743/7
Matrix: Water
Analysis Batch: 424743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	22.92		ug/L		115	54 - 149
Vinyl chloride	20.0	20.58		ug/L		103	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.640		10.0	0.640	ug/L		06/20/24 08:00	06/24/24 11:30	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		06/20/24 08:00	06/24/24 11:30	1
Acetophenone	<0.690		10.0	0.690	ug/L		06/20/24 08:00	06/24/24 11:30	1
Anthracene	<0.870		10.0	0.870	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 11:30	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		06/20/24 08:00	06/24/24 11:30	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		06/20/24 08:00	06/24/24 11:30	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		06/20/24 08:00	06/24/24 11:30	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		06/20/24 08:00	06/24/24 11:30	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		06/20/24 08:00	06/24/24 11:30	1
Chrysene	<0.870		10.0	0.870	ug/L		06/20/24 08:00	06/24/24 11:30	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		06/20/24 08:00	06/24/24 11:30	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		06/20/24 08:00	06/24/24 11:30	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		06/20/24 08:00	06/24/24 11:30	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		06/20/24 08:00	06/24/24 11:30	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		06/20/24 08:00	06/24/24 11:30	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		06/20/24 08:00	06/24/24 11:30	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		06/20/24 08:00	06/24/24 11:30	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		06/20/24 08:00	06/24/24 11:30	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		06/20/24 08:00	06/24/24 11:30	1
Diphenylamine	<6.00		10.0	6.00	ug/L		06/20/24 08:00	06/24/24 11:30	1
Fluoranthene	<1.70		10.0	1.70	ug/L		06/20/24 08:00	06/24/24 11:30	1
Fluorene	<0.790		10.0	0.790	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		06/20/24 08:00	06/24/24 11:30	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		06/20/24 08:00	06/24/24 11:30	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		06/20/24 08:00	06/24/24 11:30	1
Isophorone	<0.930		10.0	0.930	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		06/20/24 08:00	06/24/24 11:30	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		06/20/24 08:00	06/24/24 11:30	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		06/20/24 08:00	06/24/24 11:30	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		06/20/24 08:00	06/24/24 11:30	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		06/20/24 08:00	06/24/24 11:30	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		06/20/24 08:00	06/24/24 11:30	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		06/20/24 08:00	06/24/24 11:30	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		06/20/24 08:00	06/24/24 11:30	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		06/20/24 08:00	06/24/24 11:30	1
Phenanthrene	<0.790		10.0	0.790	ug/L		06/20/24 08:00	06/24/24 11:30	1
Phenol	<1.10		10.0	1.10	ug/L		06/20/24 08:00	06/24/24 11:30	1
Pyrene	<0.790		10.0	0.790	ug/L		06/20/24 08:00	06/24/24 11:30	1
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		06/20/24 08:00	06/24/24 11:30	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		06/20/24 08:00	06/24/24 11:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*39 - 118*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
2-Fluorophenol (Surr)	*63*		*25 - 110*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
Nitrobenzene-d5 (Surr)	*83*		*45 - 129*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
Phenol-d5 (Surr)	*51*		*21 - 110*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
Terphenyl-d14 (Surr)	*79*		*12 - 144*	*06/20/24 08:00*	*06/24/24 11:30*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*27 - 136*	*06/20/24 08:00*	*06/24/24 11:30*	*1*

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 12:01	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-425054/1-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzilate	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
Diallate	<4.00		10.0	4.00	ug/L		06/20/24 08:00	06/24/24 12:01	1
Dimethoate	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		06/20/24 08:00	06/24/24 12:01	1
Dinoseb	<2.40		10.0	2.40	ug/L		06/20/24 08:00	06/24/24 12:01	1
Disulfoton	<2.40		10.0	2.40	ug/L		06/20/24 08:00	06/24/24 12:01	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
Famphur	<3.80		10.0	3.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
Isodrin	<4.70		10.0	4.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
Isosafrole	<2.30		10.0	2.30	ug/L		06/20/24 08:00	06/24/24 12:01	1
Kepone	<1.00		10.0	1.00	ug/L		06/20/24 08:00	06/24/24 12:01	1
Methapyrilene	<0.760		10.0	0.760	ug/L		06/20/24 08:00	06/24/24 12:01	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		06/20/24 08:00	06/24/24 12:01	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		06/20/24 08:00	06/24/24 12:01	1
Methyl parathion	<2.30		10.0	2.30	ug/L		06/20/24 08:00	06/24/24 12:01	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		06/20/24 08:00	06/24/24 12:01	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		06/20/24 08:00	06/24/24 12:01	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		06/20/24 08:00	06/24/24 12:01	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
o-Toluidine	<2.90		10.0	2.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Phenacetin	<1.90		10.0	1.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		06/20/24 08:00	06/24/24 12:01	1
Phorate	<3.20		10.0	3.20	ug/L		06/20/24 08:00	06/24/24 12:01	1
Pronamide	<2.70		10.0	2.70	ug/L		06/20/24 08:00	06/24/24 12:01	1
Safrole	<2.80		10.0	2.80	ug/L		06/20/24 08:00	06/24/24 12:01	1
Thionazin	<3.50		10.0	3.50	ug/L		06/20/24 08:00	06/24/24 12:01	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		06/20/24 08:00	06/24/24 12:01	1

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	82.91		ug/L		83	43 - 110
Acenaphthylene	100	78.33		ug/L		78	40 - 110
Acetophenone	100	79.19		ug/L		79	48 - 119
Anthracene	100	91.43		ug/L		91	51 - 120

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]anthracene	100	89.15		ug/L		89	51 - 123
Benzo[a]pyrene	100	94.99		ug/L		95	48 - 125
Benzo[b]fluoranthene	100	111.6		ug/L		112	49 - 129
Benzo[g,h,i]perylene	100	98.15		ug/L		98	43 - 139
Benzo[k]fluoranthene	100	84.32		ug/L		84	47 - 130
Benzyl alcohol	100	90.36		ug/L		90	39 - 128
Bis(2-chloroethoxy)methane	100	95.36		ug/L		95	48 - 121
Bis(2-chloroethyl)ether	100	85.53		ug/L		86	43 - 123
bis (2-chloroisopropyl) ether	100	81.65		ug/L		82	34 - 123
Bis(2-ethylhexyl) phthalate	100	102.4		ug/L		102	43 - 143
4-Bromophenyl phenyl ether	100	89.84		ug/L		90	45 - 119
Butyl benzyl phthalate	100	99.54		ug/L		100	46 - 135
4-Chloroaniline	100	102.1		ug/L		102	21 - 139
4-Chloro-3-methylphenol	100	97.51		ug/L		98	49 - 130
2-Chloronaphthalene	100	77.40		ug/L		77	37 - 110
2-Chlorophenol	100	82.99		ug/L		83	44 - 117
4-Chlorophenyl phenyl ether	100	82.95		ug/L		83	44 - 116
Chrysene	100	85.72		ug/L		86	51 - 125
Dibenzo(a,h)anthracene	100	119.9		ug/L		120	38 - 149
Dibenzofuran	100	81.56		ug/L		82	45 - 112
2,4-Dichlorophenol	100	93.64		ug/L		94	41 - 124
2,6-Dichlorophenol	100	94.43		ug/L		94	30 - 130
Diethyl phthalate	100	91.84		ug/L		92	43 - 135
2,4-Dimethylphenol	100	88.63		ug/L		89	31 - 142
Dimethyl phthalate	100	93.82		ug/L		94	43 - 129
Di-n-butyl phthalate	100	108.4		ug/L		108	50 - 133
1,3-Dinitrobenzene	100	106.5		ug/L		106	45 - 138
4,6-Dinitro-2-methylphenol	200	196.1		ug/L		98	22 - 143
2,4-Dinitrophenol	200	96.59		ug/L		48	10 - 138
2,4-Dinitrotoluene	100	97.39		ug/L		97	47 - 137
2,6-Dinitrotoluene	100	106.0		ug/L		106	51 - 130
Di-n-octyl phthalate	100	116.5		ug/L		116	34 - 150
Diphenylamine	85.0	77.85		ug/L		92	48 - 122
Fluoranthene	100	100.2		ug/L		100	47 - 128
Fluorene	100	90.18		ug/L		90	45 - 119
Hexachlorobenzene	100	88.00		ug/L		88	48 - 119
Hexachlorobutadiene	100	62.43		ug/L		62	32 - 110
Hexachlorocyclopentadiene	100	21.16		ug/L		21	10 - 110
Hexachloroethane	100	52.38		ug/L		52	31 - 110
Indeno[1,2,3-cd]pyrene	100	113.0		ug/L		113	37 - 150
Isophorone	100	96.38		ug/L		96	50 - 125
2-Methylnaphthalene	100	71.13		ug/L		71	33 - 110
2-Methylphenol	100	82.31		ug/L		82	47 - 118
Methylphenol, 3 & 4	100	89.13		ug/L		89	46 - 117
2-Nitroaniline	100	102.7		ug/L		103	50 - 135
3-Nitroaniline	100	105.5		ug/L		105	42 - 139
4-Nitroaniline	100	105.7		ug/L		106	31 - 145
Nitrobenzene	100	91.97		ug/L		92	47 - 116
2-Nitrophenol	100	102.1		ug/L		102	41 - 129

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4-Nitrophenol	200	118.0		ug/L		59	18 - 110
N-Nitrosodimethylamine	100	73.70		ug/L		74	37 - 110
N-Nitrosodi-n-propylamine	100	94.07		ug/L		94	45 - 130
N-Nitrosodiphenylamine	100	91.59		ug/L		92	49 - 121
Pentachlorophenol	200	188.9		ug/L		94	26 - 133
Phenanthrene	100	89.12		ug/L		89	51 - 117
Phenol	100	60.17		ug/L		60	29 - 110
Pyrene	100	82.13		ug/L		82	48 - 127
1,2,4,5-Tetrachlorobenzene	100	71.71		ug/L		72	36 - 110
2,3,4,6-Tetrachlorophenol	100	102.0		ug/L		102	33 - 134
2,4,5-Trichlorophenol	100	86.08		ug/L		86	35 - 133
2,4,6-Trichlorophenol	100	90.76		ug/L		91	28 - 139

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*65*		*39 - 118*
2-Fluorophenol (Surr)	*67*		*25 - 110*
Nitrobenzene-d5 (Surr)	*86*		*45 - 129*
Phenol-d5 (Surr)	*53*		*21 - 110*
Terphenyl-d14 (Surr)	*85*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*97*		*27 - 136*

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Acetylaminofluorene	64.0	61.60		ug/L		96	35 - 150
4-Aminobiphenyl	64.0	51.33		ug/L		80	24 - 138
Chlorobenzilate	64.0	47.49		ug/L		74	52 - 138
Diallate	64.0	53.27		ug/L		83	42 - 141
Dimethoate	64.0	74.95		ug/L		117	51 - 150
7,12-Dimethylbenz(a)anthracene	64.0	53.57		ug/L		84	51 - 129
3,3'-Dimethylbenzidine	64.0	55.56		ug/L		87	10 - 150
Dinoseb	64.0	71.56		ug/L		112	25 - 146
Disulfoton	64.0	50.56		ug/L		79	54 - 131
Ethyl methanesulfonate	64.0	50.63		ug/L		79	48 - 120
Ethyl Parathion	64.0	57.03		ug/L		89	52 - 149
Famphur	64.0	107.3	E *+	ug/L		168	44 - 150
Hexachloropropene	64.0	17.81		ug/L		28	10 - 110
Isodrin	64.0	57.18		ug/L		89	52 - 125
Isosafrole	64.0	55.37		ug/L		87	31 - 123
Kepone	64.0	90.28		ug/L		141	10 - 150
Methapyrilene	64.0	38.21		ug/L		60	10 - 110
3-Methylcholanthrene	64.0	59.17		ug/L		92	43 - 150
Methyl methanesulfonate	64.0	26.68		ug/L		42	36 - 110
Methyl parathion	64.0	69.24		ug/L		108	50 - 150
1,4-Naphthoquinone	64.0	58.45		ug/L		91	37 - 149
1-Naphthylamine	64.0	39.11		ug/L		61	19 - 110

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425054/2-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Naphthylamine	64.0	41.99		ug/L		66	18 - 127
5-Nitro-o-toluidine	64.0	63.08		ug/L		99	47 - 145
N-Nitrosodiethylamine	64.0	60.65		ug/L		95	47 - 138
N-Nitrosodi-n-butylamine	64.0	65.05		ug/L		102	52 - 142
N-Nitrosomethylethylamine	64.0	50.24		ug/L		78	54 - 123
N-Nitrosopiperidine	64.0	50.81		ug/L		79	60 - 127
N-Nitrosopyrrolidine	64.0	57.69		ug/L		90	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	62.59		ug/L		98	45 - 113
o-Toluidine	64.0	56.77		ug/L		89	24 - 142
p-Dimethylamino azobenzene	64.0	56.61		ug/L		88	42 - 138
Pentachlorobenzene	64.0	43.01		ug/L		67	33 - 110
Pentachloronitrobenzene	64.0	53.79		ug/L		84	65 - 127
Phenacetin	64.0	54.72		ug/L		85	56 - 146
1,4-phenylenediamine	64.0	<1.90	*-	ug/L		-0.6	20 - 120
Phorate	64.0	47.89		ug/L		75	57 - 135
Pronamide	64.0	58.41		ug/L		91	61 - 144
Safrole	64.0	58.39		ug/L		91	34 - 110
Thionazin	64.0	61.20		ug/L		96	52 - 147
1,3,5-Trinitrobenzene	64.0	43.39		ug/L		68	39 - 144

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene	100	82.42		ug/L		82	43 - 110	1	35
Acenaphthylene	100	77.58		ug/L		78	40 - 110	1	35
Acetophenone	100	77.69		ug/L		78	48 - 119	2	35
Anthracene	100	90.78		ug/L		91	51 - 120	1	35
Benzo[a]anthracene	100	87.29		ug/L		87	51 - 123	2	35
Benzo[a]pyrene	100	94.06		ug/L		94	48 - 125	1	35
Benzo[b]fluoranthene	100	108.5		ug/L		108	49 - 129	3	35
Benzo[g,h,i]perylene	100	94.48		ug/L		94	43 - 139	4	35
Benzo[k]fluoranthene	100	85.37		ug/L		85	47 - 130	1	35
Benzyl alcohol	100	91.13		ug/L		91	39 - 128	1	35
Bis(2-chloroethoxy)methane	100	95.44		ug/L		95	48 - 121	0	35
Bis(2-chloroethyl)ether	100	85.08		ug/L		85	43 - 123	1	35
bis (2-chloroisopropyl) ether	100	80.75		ug/L		81	34 - 123	1	35
Bis(2-ethylhexyl) phthalate	100	101.7		ug/L		102	43 - 143	1	35
4-Bromophenyl phenyl ether	100	93.37		ug/L		93	45 - 119	4	35
Butyl benzyl phthalate	100	99.92		ug/L		100	46 - 135	0	35
4-Chloroaniline	100	103.6		ug/L		104	21 - 139	1	35
4-Chloro-3-methylphenol	100	93.46		ug/L		93	49 - 130	4	35
2-Chloronaphthalene	100	76.89		ug/L		77	37 - 110	1	35
2-Chlorophenol	100	77.17		ug/L		77	44 - 117	7	35
4-Chlorophenyl phenyl ether	100	80.68		ug/L		81	44 - 116	3	35
Chrysene	100	84.72		ug/L		85	51 - 125	1	35
Dibenzo(a,h)anthracene	100	116.0		ug/L		116	38 - 149	3	35
Dibenzofuran	100	79.23		ug/L		79	45 - 112	3	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-Dichlorophenol			100	87.69		ug/L		88	41 - 124	7	35
2,6-Dichlorophenol			100	74.61		ug/L		75	30 - 130	23	35
Diethyl phthalate			100	86.07		ug/L		86	43 - 135	6	35
2,4-Dimethylphenol			100	88.82		ug/L		89	31 - 142	0	35
Dimethyl phthalate			100	89.24		ug/L		89	43 - 129	5	35
Di-n-butyl phthalate			100	101.7		ug/L		102	50 - 133	6	35
1,3-Dinitrobenzene			100	102.9		ug/L		103	45 - 138	3	35
4,6-Dinitro-2-methylphenol			200	46.95	*1	ug/L		23	22 - 143	123	35
2,4-Dinitrophenol			200	20.75	*1	ug/L		10	10 - 138	129	35
2,4-Dinitrotoluene			100	87.99		ug/L		88	47 - 137	10	35
2,6-Dinitrotoluene			100	102.2		ug/L		102	51 - 130	4	35
Di-n-octyl phthalate			100	117.2		ug/L		117	34 - 150	1	35
Diphenylamine			85.0	80.31		ug/L		94	48 - 122	3	35
Fluoranthene			100	92.81		ug/L		93	47 - 128	8	35
Fluorene			100	85.12		ug/L		85	45 - 119	6	35
Hexachlorobenzene			100	91.28		ug/L		91	48 - 119	4	35
Hexachlorobutadiene			100	66.53		ug/L		67	32 - 110	6	35
Hexachlorocyclopentadiene			100	25.20		ug/L		25	10 - 110	17	35
Hexachloroethane			100	55.84		ug/L		56	31 - 110	6	35
Indeno[1,2,3-cd]pyrene			100	108.3		ug/L		108	37 - 150	4	35
Isophorone			100	95.97		ug/L		96	50 - 125	0	35
2-Methylnaphthalene			100	68.96		ug/L		69	33 - 110	3	35
2-Methylphenol			100	80.97		ug/L		81	47 - 118	2	35
Methylphenol, 3 & 4			100	87.72		ug/L		88	46 - 117	2	35
2-Nitroaniline			100	103.1		ug/L		103	50 - 135	0	35
3-Nitroaniline			100	99.13		ug/L		99	42 - 139	6	35
4-Nitroaniline			100	94.70		ug/L		95	31 - 145	11	35
Nitrobenzene			100	91.46		ug/L		91	47 - 116	1	35
2-Nitrophenol			100	96.00		ug/L		96	41 - 129	6	35
4-Nitrophenol			200	26.30	*- *1	ug/L		13	18 - 110	127	35
N-Nitrosodimethylamine			100	75.99		ug/L		76	37 - 110	3	35
N-Nitrosodi-n-propylamine			100	91.61		ug/L		92	45 - 130	3	35
N-Nitrosodiphenylamine			100	94.49		ug/L		94	49 - 121	3	35
Pentachlorophenol			200	71.05	*1	ug/L		36	26 - 133	91	35
Phenanthrene			100	88.40		ug/L		88	51 - 117	1	35
Phenol			100	61.69		ug/L		62	29 - 110	2	35
Pyrene			100	85.06		ug/L		85	48 - 127	4	35
1,2,4,5-Tetrachlorobenzene			100	72.31		ug/L		72	36 - 110	1	35
2,3,4,6-Tetrachlorophenol			100	59.39	*1	ug/L		59	33 - 134	53	35
2,4,5-Trichlorophenol			100	76.96		ug/L		77	35 - 133	11	35
2,4,6-Trichlorophenol			100	70.86		ug/L		71	28 - 139	25	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*39 - 118*
2-Fluorophenol (Surr)	*60*		*25 - 110*
Nitrobenzene-d5 (Surr)	*89*		*45 - 129*
Phenol-d5 (Surr)	*55*		*21 - 110*
Terphenyl-d14 (Surr)	*89*		*12 - 144*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*82*		*27 - 136*

Lab Sample ID: LCSD 310-425054/3-A
Matrix: Water
Analysis Batch: 425415

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425054

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Acetylaminofluorene			64.0	62.03		ug/L		97	35 - 150	1	28
4-Aminobiphenyl			64.0	53.99		ug/L		84	24 - 138	5	35
Chlorobenzilate			64.0	47.58		ug/L		74	52 - 138	0	28
Diallate			64.0	51.70		ug/L		81	42 - 141	3	35
Dimethoate			64.0	76.20		ug/L		119	51 - 150	2	26
7,12-Dimethylbenz(a)anthracene			64.0	55.00		ug/L		86	51 - 129	3	28
3,3'-Dimethylbenzidine			64.0	58.75		ug/L		92	10 - 150	6	35
Dinoseb			64.0	58.09		ug/L		91	25 - 146	21	35
Disulfoton			64.0	50.15		ug/L		78	54 - 131	1	24
Ethyl methanesulfonate			64.0	49.05		ug/L		77	48 - 120	3	27
Ethyl Parathion			64.0	56.64		ug/L		89	52 - 149	1	26
Famphur			64.0	113.4	E *+	ug/L		177	44 - 150	5	35
Hexachloropropene			64.0	16.68		ug/L		26	10 - 110	7	35
Isodrin			64.0	54.37		ug/L		85	52 - 125	5	26
Isosafrole			64.0	51.36		ug/L		80	31 - 123	8	35
Kepone			64.0	86.62		ug/L		135	10 - 150	4	35
Methapyrilene			64.0	30.53		ug/L		48	10 - 110	22	35
3-Methylcholanthrene			64.0	59.44		ug/L		93	43 - 150	0	32
Methyl methanesulfonate			64.0	25.57		ug/L		40	36 - 110	4	26
Methyl parathion			64.0	68.76		ug/L		107	50 - 150	1	25
1,4-Naphthoquinone			64.0	55.84		ug/L		87	37 - 149	5	29
1-Naphthylamine			64.0	41.66		ug/L		65	19 - 110	6	35
2-Naphthylamine			64.0	43.97		ug/L		69	18 - 127	5	35
5-Nitro-o-toluidine			64.0	62.96		ug/L		98	47 - 145	0	31
N-Nitrosodiethylamine			64.0	59.58		ug/L		93	47 - 138	2	26
N-Nitrosodi-n-butylamine			64.0	62.48		ug/L		98	52 - 142	4	27
N-Nitrosomethylethylamine			64.0	48.34		ug/L		76	54 - 123	4	26
N-Nitrosopiperidine			64.0	51.63		ug/L		81	60 - 127	2	26
N-Nitrosopyrrolidine			64.0	58.99		ug/L		92	56 - 143	2	25
o,o',o''-Triethylphosphorothioate			64.0	60.47		ug/L		94	45 - 113	3	33
o-Toluidine			64.0	55.61		ug/L		87	24 - 142	2	35
p-Dimethylamino azobenzene			64.0	55.97		ug/L		87	42 - 138	1	29
Pentachlorobenzene			64.0	37.13		ug/L		58	33 - 110	15	35
Pentachloronitrobenzene			64.0	53.40		ug/L		83	65 - 127	1	29
Phenacetin			64.0	59.51		ug/L		93	56 - 146	8	25
1,4-phenylenediamine			64.0	<1.90	*- *1	ug/L		-1	20 - 120	66	35
Phorate			64.0	47.42		ug/L		74	57 - 135	1	26
Pronamide			64.0	64.82		ug/L		101	61 - 144	10	27
Safrole			64.0	52.94		ug/L		83	34 - 110	10	35
Thionazin			64.0	59.33		ug/L		93	52 - 147	3	28
1,3,5-Trinitrobenzene			64.0	41.61		ug/L		65	39 - 144	4	35

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-424678/4
Matrix: Water
Analysis Batch: 424678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			06/15/24 09:40	1
Isobutanol	<2400		10000	2400	ug/L			06/15/24 09:40	1

Lab Sample ID: LCS 310-424678/5
Matrix: Water
Analysis Batch: 424678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	121100		ug/L		107	67 - 132
Isobutanol	104000	105800		ug/L		101	80 - 121

Lab Sample ID: 310-283618-5 MS
Matrix: Ground Water
Analysis Batch: 424678

Client Sample ID: MW-40A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	<2600		113000	113800		ug/L		100	60 - 138
Isobutanol	<2400		104000	105700		ug/L		101	72 - 131

Lab Sample ID: 310-283618-5 MSD
Matrix: Ground Water
Analysis Batch: 424678

Client Sample ID: MW-40A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetonitrile	<2600		113000	113100		ug/L		100	60 - 138	1	30
Isobutanol	<2400		104000	104600		ug/L		100	72 - 131	1	30

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-519678/1-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 519678

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		06/20/24 14:54	06/21/24 23:03	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		06/20/24 14:54	06/21/24 23:03	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		06/20/24 14:54	06/21/24 23:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*64*		*34 - 142*	*06/20/24 14:54*	*06/21/24 23:03*	*1*
DCAA	*60*		*34 - 142*	*06/20/24 14:54*	*06/21/24 23:03*	*1*

Lab Sample ID: LCS 410-519678/2-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 519678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-D	2.51	2.150		ug/L		86	53 - 159
Silvex (2,4,5-TP)	0.250	0.2088		ug/L		84	62 - 170

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-519678/2-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 519678

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4,5-T			0.250	0.1768		ug/L		71	57 - 171		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*63*		*34 - 142*
DCAA	*63*		*34 - 142*

Lab Sample ID: LCSD 410-519678/3-A
Matrix: Water
Analysis Batch: 519886

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 519678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4-D			2.51	2.247		ug/L		90	53 - 159	4	30
Silvex (2,4,5-TP)			0.250	0.2046		ug/L		82	62 - 170	2	30
2,4,5-T			0.250	0.1850		ug/L		74	57 - 171	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCAA	*70*		*34 - 142*
DCAA	*69*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-424661/1-A
Matrix: Water
Analysis Batch: 426465

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		06/17/24 09:00	07/03/24 20:42	1
Barium	<0.660		2.00	0.660	ug/L		06/17/24 09:00	07/03/24 20:42	1
Beryllium	<0.330		1.00	0.330	ug/L		06/17/24 09:00	07/03/24 20:42	1
Cadmium	<0.100		0.200	0.100	ug/L		06/17/24 09:00	07/03/24 20:42	1
Chromium	<1.20		5.00	1.20	ug/L		06/17/24 09:00	07/03/24 20:42	1
Cobalt	<0.170		0.500	0.170	ug/L		06/17/24 09:00	07/03/24 20:42	1
Copper	<1.80		5.00	1.80	ug/L		06/17/24 09:00	07/03/24 20:42	1
Lead	<0.260		0.500	0.260	ug/L		06/17/24 09:00	07/03/24 20:42	1
Nickel	<2.10		5.00	2.10	ug/L		06/17/24 09:00	07/03/24 20:42	1
Selenium	<1.40		5.00	1.40	ug/L		06/17/24 09:00	07/03/24 20:42	1
Vanadium	<1.10		5.00	1.10	ug/L		06/17/24 09:00	07/03/24 20:42	1
Zinc	<9.70		20.0	9.70	ug/L		06/17/24 09:00	07/03/24 20:42	1

Lab Sample ID: MB 310-424661/1-A
Matrix: Water
Analysis Batch: 426555

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/17/24 09:00	07/07/24 22:07	1
Silver	<0.500		1.00	0.500	ug/L		06/17/24 09:00	07/07/24 22:07	1
Thallium	<0.570		1.00	0.570	ug/L		06/17/24 09:00	07/07/24 22:07	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 424981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	217.1		ug/L		109	80 - 120
Lead	200	237.4		ug/L		119	80 - 120
Silver	100	88.34		ug/L		88	80 - 120

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 426079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	228.3		ug/L		114	80 - 120

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 426465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	120.0		ug/L		120	80 - 120
Cadmium	100	111.0		ug/L		111	80 - 120
Chromium	100	119.1		ug/L		119	80 - 120
Cobalt	100	119.2		ug/L		119	80 - 120
Copper	200	234.8		ug/L		117	80 - 120
Nickel	200	253.2	*+	ug/L		127	80 - 120
Selenium	400	429.4		ug/L		107	80 - 120
Vanadium	100	114.4		ug/L		114	80 - 120
Zinc	200	229.0		ug/L		114	80 - 120

Lab Sample ID: LCS 310-424661/2-A
Matrix: Water
Analysis Batch: 426645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	100	81.59		ug/L		82	80 - 120

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 424981

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.530		<0.530		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	1.69		1.658		ug/L		2	20
Lead	<0.260		<0.260		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 426079

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Antimony	<1.00			<1.00		ug/L				NC	20

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 426555

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 424661

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Thallium	<0.570			<0.570		ug/L				NC	20

Lab Sample ID: MB 310-426775/1-A
Matrix: Water
Analysis Batch: 427084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426775

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		07/10/24 09:00	07/11/24 19:56	1

Lab Sample ID: MB 310-426775/1-A
Matrix: Water
Analysis Batch: 427207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426775

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/10/24 09:00	07/12/24 14:40	1

Lab Sample ID: LCS 310-426775/2-A
Matrix: Water
Analysis Batch: 427084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426775

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nickel			200	194.5		ug/L		97	80 - 120		

Lab Sample ID: LCS 310-426775/2-A
Matrix: Water
Analysis Batch: 427207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426775

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			200	225.8		ug/L		113	80 - 120		
Thallium			100	111.2		ug/L		111	80 - 120		

Lab Sample ID: 310-283618-5 DU
Matrix: Ground Water
Analysis Batch: 427084

Client Sample ID: MW-40A
Prep Type: Total/NA
Prep Batch: 426775

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nickel	11.1			11.18		ug/L				1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-425722/1-A
Matrix: Water
Analysis Batch: 425884

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		06/26/24 15:25	06/27/24 13:13	1

Lab Sample ID: LCS 310-425722/2-A
Matrix: Water
Analysis Batch: 425884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.553		ug/L		93	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-425000/1-A
Matrix: Water
Analysis Batch: 425359

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425000

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		06/19/24 09:31	06/21/24 17:54	1

Lab Sample ID: LCS 310-425000/2-A
Matrix: Water
Analysis Batch: 425359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	193.2		ug/L		97	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-616870/1-A
Matrix: Water
Analysis Batch: 616909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 616870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1410		3000	1410	ug/L		06/18/24 07:50	06/18/24 09:24	1

Lab Sample ID: LCS 240-616870/2-A
Matrix: Water
Analysis Batch: 616909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 616870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8800	8533		ug/L		97	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-425005/1
Matrix: Water
Analysis Batch: 425005

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/19/24 09:51	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-425005/2
Matrix: Water
Analysis Batch: 425005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	105.0		mg/L		105	81 - 116		

Lab Sample ID: MB 310-425026/1
Matrix: Water
Analysis Batch: 425026

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/19/24 10:41	1

Lab Sample ID: LCS 310-425026/2
Matrix: Water
Analysis Batch: 425026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	110.0		mg/L		110	81 - 116		

QC Association Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

GC/MS VOA

Analysis Batch: 424743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	8260D	
310-283618-2	MW-38A	Total/NA	Ground Water	8260D	
310-283618-3	MW-38A-FD	Total/NA	Ground Water	8260D	
310-283618-4	MW-39A	Total/NA	Ground Water	8260D	
310-283618-5	MW-40A	Total/NA	Ground Water	8260D	
MB 310-424743/5	Method Blank	Total/NA	Water	8260D	
LCS 310-424743/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-424743/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 425054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	3510C	
MB 310-425054/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-425054/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-425054/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 425415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8270E	425054
MB 310-425054/1-A	Method Blank	Total/NA	Water	8270E	425054
LCS 310-425054/2-A	Lab Control Sample	Total/NA	Water	8270E	425054
LCSD 310-425054/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	425054

Analysis Batch: 425420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8270E	425054
MB 310-425054/1-A	Method Blank	Total/NA	Water	8270E	425054
LCS 310-425054/2-A	Lab Control Sample	Total/NA	Water	8270E	425054
LCSD 310-425054/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	425054

GC Semi VOA

Analysis Batch: 424678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8015C	
MB 310-424678/4	Method Blank	Total/NA	Water	8015C	
LCS 310-424678/5	Lab Control Sample	Total/NA	Water	8015C	
310-283618-5 MS	MW-40A	Total/NA	Ground Water	8015C	
310-283618-5 MSD	MW-40A	Total/NA	Ground Water	8015C	

Prep Batch: 424953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	3511	

Analysis Batch: 425056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8081B	424953

GC Semi VOA

Analysis Batch: 425057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8082A	424953

Prep Batch: 519678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8151A	
MB 410-519678/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-519678/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-519678/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 519886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	8151A	519678
MB 410-519678/1-A	Method Blank	Total/NA	Water	8151A	519678
LCS 410-519678/2-A	Lab Control Sample	Total/NA	Water	8151A	519678
LCSD 410-519678/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	519678

Metals

Prep Batch: 424661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	3005A	
310-283618-2	MW-38A	Total/NA	Ground Water	3005A	
310-283618-3	MW-38A-FD	Total/NA	Ground Water	3005A	
310-283618-4	MW-39A	Total/NA	Ground Water	3005A	
310-283618-5	MW-40A	Total/NA	Ground Water	3005A	
MB 310-424661/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-283618-5 DU	MW-40A	Total/NA	Ground Water	3005A	

Analysis Batch: 424981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	6020B	424661
310-283618-2	MW-38A	Total/NA	Ground Water	6020B	424661
310-283618-3	MW-38A-FD	Total/NA	Ground Water	6020B	424661
310-283618-4	MW-39A	Total/NA	Ground Water	6020B	424661
310-283618-5	MW-40A	Total/NA	Ground Water	6020B	424661
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	424661

Analysis Batch: 425254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	6020B	424661
310-283618-2	MW-38A	Total/NA	Ground Water	6020B	424661
310-283618-3	MW-38A-FD	Total/NA	Ground Water	6020B	424661
310-283618-4	MW-39A	Total/NA	Ground Water	6020B	424661
310-283618-5	MW-40A	Total/NA	Ground Water	6020B	424661

Prep Batch: 425722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	7470A	
MB 310-425722/1-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 425722 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-425722/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 425884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	7470A	425722
MB 310-425722/1-A	Method Blank	Total/NA	Water	7470A	425722
LCS 310-425722/2-A	Lab Control Sample	Total/NA	Water	7470A	425722

Analysis Batch: 426079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	424661

Analysis Batch: 426465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-424661/1-A	Method Blank	Total/NA	Water	6020B	424661
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661

Analysis Batch: 426555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-424661/1-A	Method Blank	Total/NA	Water	6020B	424661
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	424661

Analysis Batch: 426645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-424661/2-A	Lab Control Sample	Total/NA	Water	6020B	424661

Prep Batch: 426775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	3005A	
MB 310-426775/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-426775/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-283618-5 DU	MW-40A	Total/NA	Ground Water	3005A	

Analysis Batch: 427084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	6020B	426775
MB 310-426775/1-A	Method Blank	Total/NA	Water	6020B	426775
LCS 310-426775/2-A	Lab Control Sample	Total/NA	Water	6020B	426775
310-283618-5 DU	MW-40A	Total/NA	Ground Water	6020B	426775

Analysis Batch: 427207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-426775/1-A	Method Blank	Total/NA	Water	6020B	426775
LCS 310-426775/2-A	Lab Control Sample	Total/NA	Water	6020B	426775

General Chemistry

Prep Batch: 425000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9012B	

General Chemistry (Continued)

Prep Batch: 425000 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-425000/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-425000/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 425005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-2	MW-38A	Total/NA	Ground Water	I-3765-85	
310-283618-3	MW-38A-FD	Total/NA	Ground Water	I-3765-85	
MB 310-425005/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425005/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	I-3765-85	
310-283618-4	MW-39A	Total/NA	Ground Water	I-3765-85	
310-283618-5	MW-40A	Total/NA	Ground Water	I-3765-85	
MB 310-425026/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425026/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9012B	425000
MB 310-425000/1-A	Method Blank	Total/NA	Water	9012B	425000
LCS 310-425000/2-A	Lab Control Sample	Total/NA	Water	9012B	425000

Prep Batch: 616870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9030B	
MB 240-616870/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-616870/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 616909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-5	MW-40A	Total/NA	Ground Water	9034	616870
MB 240-616870/1-A	Method Blank	Total/NA	Water	9034	616870
LCS 240-616870/2-A	Lab Control Sample	Total/NA	Water	9034	616870

Field Service / Mobile Lab

Analysis Batch: 425298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283618-1	MW-25A	Total/NA	Ground Water	Field Sampling	
310-283618-2	MW-38A	Total/NA	Ground Water	Field Sampling	
310-283618-4	MW-39A	Total/NA	Ground Water	Field Sampling	
310-283618-5	MW-40A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Lab Sample ID: 310-283618-1
Date Collected: 06/13/24 15:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 14:13
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:22
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 18:53
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 15:00

Client Sample ID: MW-38A
Lab Sample ID: 310-283618-2
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 14:35
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:25
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 18:56
Total/NA	Analysis	I-3765-85		1	425005	HE7K	EET CF	06/19/24 09:51
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 10:30

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-283618-3
Date Collected: 06/13/24 10:30
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 14:58
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:29
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 18:58
Total/NA	Analysis	I-3765-85		1	425005	HE7K	EET CF	06/19/24 09:51

Client Sample ID: MW-39A
Lab Sample ID: 310-283618-4
Date Collected: 06/13/24 11:45
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 15:21
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:33
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 19:00
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41

Lab Chronicle

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Lab Sample ID: 310-283618-4
Date Collected: 06/13/24 11:45
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 11:45

Client Sample ID: MW-40A
Lab Sample ID: 310-283618-5
Date Collected: 06/13/24 13:00
Matrix: Ground Water
Date Received: 06/14/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424743	WSE8	EET CF	06/18/24 15:43
Total/NA	Prep	3510C			425054	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	8270E		1	425415	L0FS	EET CF	06/24/24 12:27
Total/NA	Prep	3510C			425054	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	8270E		1	425420	L0FS	EET CF	06/24/24 15:26
Total/NA	Analysis	8015C		1	424678	V7YZ	EET CF	06/15/24 10:55
Total/NA	Prep	3511			424953	D0DG	EET CF	06/19/24 07:06
Total/NA	Analysis	8081B		1	425056	BW2O	EET CF	06/19/24 20:06
Total/NA	Prep	3511			424953	D0DG	EET CF	06/19/24 07:06
Total/NA	Analysis	8082A		1	425057	BW2O	EET CF	06/19/24 20:06
Total/NA	Prep	8151A			519678	QJZ6	ELLE	06/20/24 14:54
Total/NA	Analysis	8151A		1	519886	UAMZ	ELLE	06/22/24 03:12
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 18:36
Total/NA	Prep	3005A			426775	QTZ5	EET CF	07/10/24 09:00
Total/NA	Analysis	6020B		1	427084	NFT2	EET CF	07/11/24 21:08
Total/NA	Prep	3005A			424661	QTZ5	EET CF	06/17/24 09:00
Total/NA	Analysis	6020B		1	424981	NFT2	EET CF	06/18/24 19:02
Total/NA	Prep	7470A			425722	DHM5	EET CF	06/26/24 15:25
Total/NA	Analysis	7470A		1	425884	DHM5	EET CF	06/27/24 13:41
Total/NA	Prep	9012B			425000	WZC8	EET CF	06/19/24 09:31
Total/NA	Analysis	9012B		1	425359	ZJX4	EET CF	06/21/24 18:12
Total/NA	Prep	9030B			616870	BLW	EET CLE	06/18/24 07:50
Total/NA	Analysis	9034		1	616909	BLW	EET CLE	06/18/24 09:24
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/13/24 13:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,2,4-Trichlorobenzene
8260D		Ground Water	Allyl chloride
8260D		Ground Water	Ethyl methacrylate
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	06-25-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-28-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-25
Alaska	State	PA00009	06-30-24
Alaska (UST)	State	17-027	02-28-25
Arizona	State	AZ0780	03-12-25
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-24
Colorado	State	PA00009	06-30-25
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-25
Delaware (DW)	State	N/A	01-31-25
Florida	NELAP	E87997	06-30-24
Georgia (DW)	State	C048	01-31-25

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	N/A	01-31-25
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-26
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-24
Louisiana (All)	NELAP	02055	06-30-24
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-25
Massachusetts	State	M-PA009	06-30-25
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-25
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-24
New York	NELAP	10670	04-01-25
North Carolina (DW)	State	42705	06-30-24
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24 *
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-25
Tennessee	State	02838	01-31-25
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	07-09-24
Washington	State	C457	04-11-24 *
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-25
Wyoming (UST)	A2LA	0001.01	11-30-24

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

Method Summary

Client: AECOM
Job ID: 310-283618-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-283618 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Johnston	STATE IA	Project: Wanstrick GW	
Receipt Information			
Date/Time Received. DATE 6/12/24	TIME 1035	Received By: JD	
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☑ Yes ☐ No	*If yes:* Cooler ID:		
Multiple Coolers? ☐ Yes ☑ No	*If yes:* Cooler # _____ of _____		
Cooler Custody Seals Present? ☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No		
Sample Custody Seals Present? ☐ Yes ☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No		
Trip Blank Present? ☑ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓ No trips		
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: P	Correction Factor (°C): 0.3		
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 2.5	Corrected Temp (°C): 2.8		
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-14-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes.
MW-1			G	GW		N		X	X			
MW-2R			G	GW		N		X	X			
MW-3			G	GW		N		X	X			
MW-4			G	GW		N		X	X			
MW-4B			G	GW		N		X	X			
MW-7A			G	GW		N		X			X	
MW-24A			G	GW		N		X			X	
MW-25A	6-13-24	1500	G	GW	5	N		X	X			Turbidity – 2.82 NTU
MW-29A			G	GW		N		X	X	X		
Trip Blank	6-13-24	0500	G	W	2	N			X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ | Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-14-24			6/14/24 1035
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-14-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Endosulfan I	All Appendix II Analytes	Sample Specific Notes
MW-31A			G	GW		N		X	X	X		
MW-33A			G	GW		N		X	X			
MW-34A			G	GW		N		X	X			
MW-34A-FD			G	GW		N		X	X			
MW-37A			G	GW		N		X	X			
MW-38A	6-13-24	1030	G	GW	5	N		X	X			Turbidity - 1.62 NTU
MW-38A-FD	6-13-24	1030	G	GW	5	N		X	X			
MW-39A	6-13-24	1145	G	GW	5	N		X	X			Turbidity - 25.54 NTU
MW-40A	6-13-24	1300	G	GW	18	N		X			X	Turbidity - 12.07 NTU
MW-41A			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp. (°C) Obs'd _____ Corr'd _____		Therm ID No _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 6-14-24	Received by:	Company	Date/Time: 6/14/24 1015
Relinquished by:	Company:	Date/Time:	Received by	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

2.3 | 3.8

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-73474.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-283618-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 7/5/2024	Analysis Requested		Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			Other:
Site: 310 - AECOM - Winneshiek County	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						652
MW-40A (310-283618-5)	6/13/24	13:00 Central		Water			X	1	

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/14/24 1425		JESSICA RIGBON	6-15-24 0930	EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins - Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Eurofins - CE Site Name _____ Cooler unpacked by: DWR

Cooler Received on 6-15-24 Opened on 6-15-24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # BC (Foam Box) Client Cooler Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 19 (CF +1.5 °C) Observed Cooler Temp. 2.3 °C Corrected Cooler Temp. 3.8 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes) No	**Tests that are not checked for pH by Receiving**
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes) No NA	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)	**VOAs**
-Were tamper/custody seals intact and uncompromised?	(Yes) No NA	**Oil and Grease**
3 Shippers' packing slip attached to the cooler(s)?	(Yes) No	**TOC**
4. Did custody papers accompany the sample(s)?	(Yes) No	
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes) No	
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)	
7 Did all bottles arrive in good condition (Unbroken)?	(Yes) No	
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No	
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes) No	
11 Sufficient quantity received to perform indicated analyses?	(Yes) No	
12. Are these work share samples and all listed on the COC?	(Yes) No	
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA	pH Strip Lot# HC339814
14. Were VOAs on the COC?	Yes No	
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes No NA	
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes No	
17 Was a LL Hg or Me Hg trip blank present? _____	Yes No	

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page — Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container

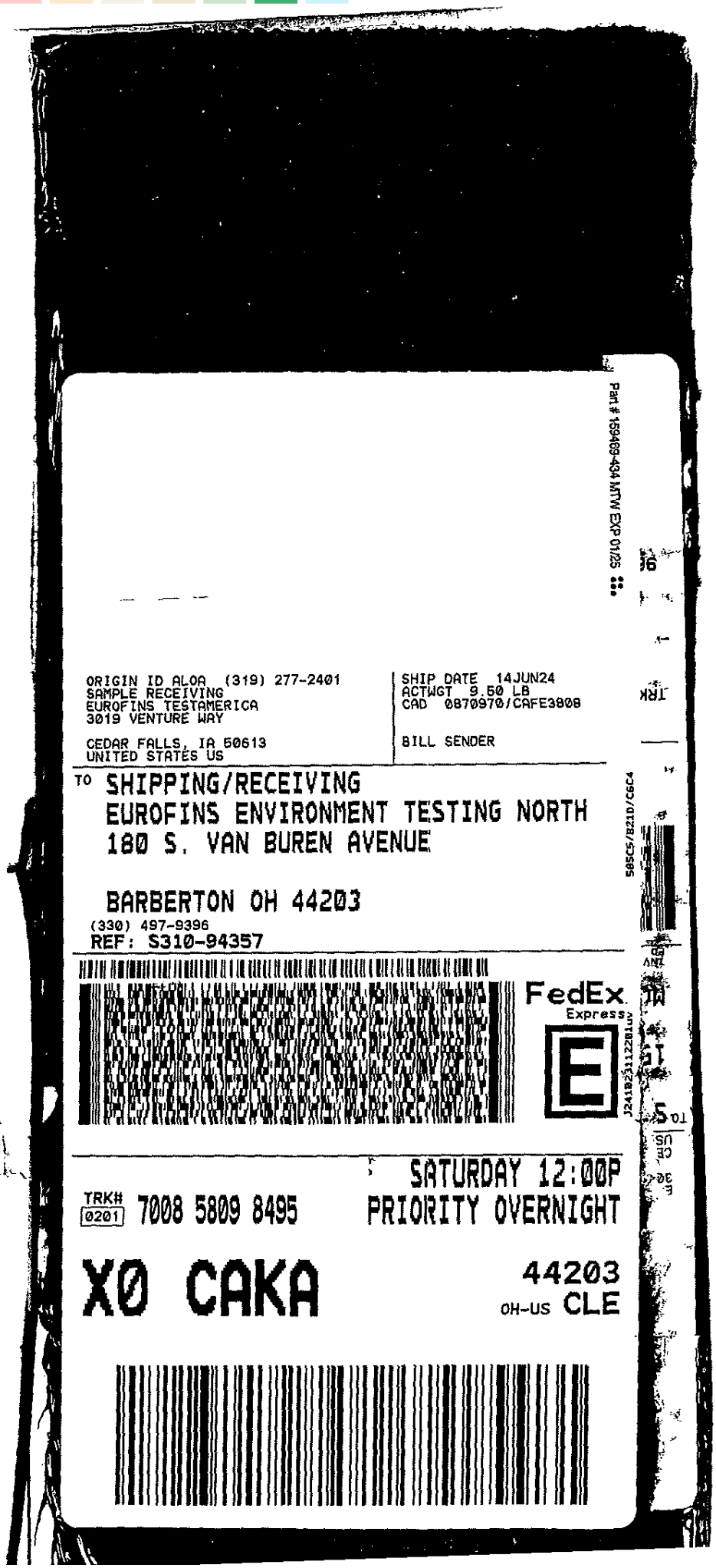
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved. _____ Preservative(s) added/Lot number(s). _____

VOA Sample Preservation - Date/Time VOAs Frozen. _____



Part # 159469-434 MTW EXP 01/25

ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 14JUN24
ACTWGT 9.50 LB
CAD 0870970/CAFE3808

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-94357

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7008 5809 8495

X0 CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-73475.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State Program - Iowa		Job #: 310-283618-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 7/5/2024	Analysis Requested		Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			Other:
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-40A (310-283618-5)	6/13/24	13:00 Central		Water			X	2	

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

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

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/14/24 1430				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	6/15/24 0930	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:	R: 5.2 C: 5.1

Ver: 04/02/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283618-1

Login Number: 283618
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283618-1

Login Number: 283618
List Number: 2
Creator: Santiago, Nathaniel

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 06/15/24 11:54 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 7/15/2024 10:53:47 AM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater

JOB NUMBER

310-283760-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
7/15/2024 10:53:47 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-283760-1 — Eurofins Cedar Falls

Job Narrative
310-283760-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/18/2024 8:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C.

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283760-1	SW-1	Ground Water	06/17/24 11:00	06/18/24 08:45
310-283760-2	SW-2	Ground Water	06/17/24 12:00	06/18/24 08:45
310-283760-3	SW-5	Ground Water	06/17/24 13:00	06/18/24 08:45
310-283760-4	Trip Blank	Water	06/17/24 13:00	06/18/24 08:45

Detection Summary

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-1 — Lab Sample ID: 310-283760-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	103		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	4.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	19.74				NTU	1		Field Sampling	Total/NA

Client Sample ID: SW-2 — Lab Sample ID: 310-283760-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.68	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.627	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	104		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.388	J	0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.583		0.500	0.260	ug/L	1		6020B	Total/NA
Vanadium	2.14	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	24.1		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	12.79				NTU	1		Field Sampling	Total/NA

Client Sample ID: SW-5 — Lab Sample ID: 310-283760-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.15	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.764	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	70.1		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.27	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.679		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.689		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	2.33	J	5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	2.40	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	37.0		2.50	1.85	mg/L	1		I-3765-85	Total/NA
Field Turbidity	17.89				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-283760-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-1
Lab Sample ID: 310-283760-1
Date Collected: 06/17/24 11:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/21/24 02:09	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/21/24 02:09	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/21/24 02:09	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/21/24 02:09	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/21/24 02:09	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/21/24 02:09	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/21/24 02:09	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/21/24 02:09	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/21/24 02:09	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/21/24 02:09	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/21/24 02:09	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/21/24 02:09	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/21/24 02:09	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/21/24 02:09	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/21/24 02:09	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/21/24 02:09	1
Acetone	<3.10		10.0	3.10	ug/L			06/21/24 02:09	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/21/24 02:09	1
Benzene	<0.220		0.500	0.220	ug/L			06/21/24 02:09	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/21/24 02:09	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/21/24 02:09	1
Bromoform	<0.780		5.00	0.780	ug/L			06/21/24 02:09	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/21/24 02:09	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/21/24 02:09	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/21/24 02:09	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/21/24 02:09	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/21/24 02:09	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/21/24 02:09	1
Chloroform	<1.30		3.00	1.30	ug/L			06/21/24 02:09	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/21/24 02:09	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/21/24 02:09	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/21/24 02:09	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/21/24 02:09	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/21/24 02:09	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/21/24 02:09	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/21/24 02:09	1
Styrene	<0.370		1.00	0.370	ug/L			06/21/24 02:09	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/21/24 02:09	1
Toluene	<0.430		1.00	0.430	ug/L			06/21/24 02:09	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/21/24 02:09	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/21/24 02:09	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/21/24 02:09	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/21/24 02:09	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/21/24 02:09	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/21/24 02:09	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/21/24 02:09	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/21/24 02:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*122*		*73 - 130*		*06/21/24 02:09*	*1*

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-1
Lab Sample ID: 310-283760-1
Date Collected: 06/17/24 11:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*06/21/24 02:09*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*06/21/24 02:09*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/11/24 09:00	07/12/24 20:40	1
Arsenic	<0.530		2.00	0.530	ug/L		06/20/24 08:30	07/09/24 17:23	1
Barium	**103**		2.00	0.660	ug/L		06/20/24 08:30	07/09/24 17:23	1
Beryllium	<0.330		1.00	0.330	ug/L		06/20/24 08:30	07/09/24 17:23	1
Cadmium	<0.100		0.200	0.100	ug/L		06/20/24 08:30	07/09/24 17:23	1
Chromium	<1.20		5.00	1.20	ug/L		06/20/24 08:30	07/09/24 17:23	1
Cobalt	<0.170		0.500	0.170	ug/L		06/20/24 08:30	07/09/24 17:23	1
Copper	<1.80		5.00	1.80	ug/L		07/11/24 09:00	07/12/24 20:40	1
Lead	<0.260		0.500	0.260	ug/L		06/20/24 08:30	07/09/24 17:23	1
Nickel	<2.10		5.00	2.10	ug/L		07/11/24 09:00	07/14/24 23:02	1
Selenium	<1.40		5.00	1.40	ug/L		06/20/24 08:30	07/09/24 17:23	1
Silver	<0.500		1.00	0.500	ug/L		06/20/24 08:30	07/09/24 17:23	1
Thallium	<0.570		1.00	0.570	ug/L		06/20/24 08:30	07/09/24 17:23	1
Vanadium	<1.10		5.00	1.10	ug/L		06/20/24 08:30	07/09/24 17:23	1
Zinc	<9.70		20.0	9.70	ug/L		06/20/24 08:30	07/09/24 17:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**4.75**		1.88	1.39	mg/L			06/20/24 10:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**19.74**				NTU			06/17/24 11:00	1

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-2
Lab Sample ID: 310-283760-2
Date Collected: 06/17/24 12:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/21/24 02:31	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/21/24 02:31	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/21/24 02:31	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/21/24 02:31	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/21/24 02:31	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/21/24 02:31	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/21/24 02:31	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/21/24 02:31	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/21/24 02:31	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/21/24 02:31	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/21/24 02:31	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/21/24 02:31	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/21/24 02:31	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/21/24 02:31	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/21/24 02:31	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/21/24 02:31	1
Acetone	**3.68**	**J**	10.0	3.10	ug/L			06/21/24 02:31	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/21/24 02:31	1
Benzene	<0.220		0.500	0.220	ug/L			06/21/24 02:31	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/21/24 02:31	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/21/24 02:31	1
Bromoform	<0.780		5.00	0.780	ug/L			06/21/24 02:31	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/21/24 02:31	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/21/24 02:31	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/21/24 02:31	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/21/24 02:31	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/21/24 02:31	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/21/24 02:31	1
Chloroform	<1.30		3.00	1.30	ug/L			06/21/24 02:31	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/21/24 02:31	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/21/24 02:31	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/21/24 02:31	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/21/24 02:31	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/21/24 02:31	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/21/24 02:31	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/21/24 02:31	1
Styrene	<0.370		1.00	0.370	ug/L			06/21/24 02:31	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/21/24 02:31	1
Toluene	<0.430		1.00	0.430	ug/L			06/21/24 02:31	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/21/24 02:31	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/21/24 02:31	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/21/24 02:31	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/21/24 02:31	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/21/24 02:31	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/21/24 02:31	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/21/24 02:31	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/21/24 02:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*06/21/24 02:31*	*1*

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-2
Lab Sample ID: 310-283760-2
Date Collected: 06/17/24 12:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*06/21/24 02:31*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*06/21/24 02:31*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/11/24 09:00	07/12/24 20:42	1
Arsenic	**0.627**	**J**	2.00	0.530	ug/L		06/20/24 08:30	07/09/24 17:34	1
Barium	**104**		2.00	0.660	ug/L		06/20/24 08:30	07/09/24 17:34	1
Beryllium	<0.330		1.00	0.330	ug/L		06/20/24 08:30	07/09/24 17:34	1
Cadmium	<0.100		0.200	0.100	ug/L		06/20/24 08:30	07/09/24 17:34	1
Chromium	<1.20		5.00	1.20	ug/L		06/20/24 08:30	07/09/24 17:34	1
Cobalt	**0.388**	**J**	0.500	0.170	ug/L		06/20/24 08:30	07/09/24 17:34	1
Copper	<1.80		5.00	1.80	ug/L		07/11/24 09:00	07/12/24 20:42	1
Lead	**0.583**		0.500	0.260	ug/L		06/20/24 08:30	07/09/24 17:34	1
Nickel	<2.10		5.00	2.10	ug/L		07/11/24 09:00	07/14/24 23:06	1
Selenium	<1.40		5.00	1.40	ug/L		06/20/24 08:30	07/09/24 17:34	1
Silver	<0.500		1.00	0.500	ug/L		06/20/24 08:30	07/09/24 17:34	1
Thallium	<0.570		1.00	0.570	ug/L		06/20/24 08:30	07/09/24 17:34	1
Vanadium	**2.14**	**J**	5.00	1.10	ug/L		06/20/24 08:30	07/09/24 17:34	1
Zinc	<9.70		20.0	9.70	ug/L		06/20/24 08:30	07/09/24 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**24.1**		1.88	1.39	mg/L			06/20/24 10:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.79**				NTU			06/17/24 12:00	1

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-5
Lab Sample ID: 310-283760-3
Date Collected: 06/17/24 13:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/21/24 02:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/21/24 02:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/21/24 02:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/21/24 02:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/21/24 02:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/21/24 02:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/21/24 02:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/21/24 02:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/21/24 02:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/21/24 02:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/21/24 02:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/21/24 02:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/21/24 02:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/21/24 02:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/21/24 02:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/21/24 02:53	1
Acetone	**5.15**	**J**	10.0	3.10	ug/L			06/21/24 02:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/21/24 02:53	1
Benzene	<0.220		0.500	0.220	ug/L			06/21/24 02:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/21/24 02:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/21/24 02:53	1
Bromoform	<0.780		5.00	0.780	ug/L			06/21/24 02:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/21/24 02:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/21/24 02:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/21/24 02:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/21/24 02:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/21/24 02:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/21/24 02:53	1
Chloroform	<1.30		3.00	1.30	ug/L			06/21/24 02:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/21/24 02:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/21/24 02:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/21/24 02:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/21/24 02:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/21/24 02:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/21/24 02:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/21/24 02:53	1
Styrene	<0.370		1.00	0.370	ug/L			06/21/24 02:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/21/24 02:53	1
Toluene	<0.430		1.00	0.430	ug/L			06/21/24 02:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/21/24 02:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/21/24 02:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/21/24 02:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/21/24 02:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/21/24 02:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/21/24 02:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/21/24 02:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/21/24 02:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*06/21/24 02:53*	*1*

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-5
Lab Sample ID: 310-283760-3
Date Collected: 06/17/24 13:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*06/21/24 02:53*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*06/21/24 02:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00	^3+	2.00	1.00	ug/L		06/20/24 08:30	07/09/24 17:37	1
Arsenic	**0.764**	**J**	2.00	0.530	ug/L		06/20/24 08:30	07/09/24 17:37	1
Barium	**70.1**		2.00	0.660	ug/L		06/20/24 08:30	07/09/24 17:37	1
Beryllium	<0.330		1.00	0.330	ug/L		07/11/24 09:00	07/12/24 20:44	1
Cadmium	<0.100		0.200	0.100	ug/L		06/20/24 08:30	07/09/24 17:37	1
Chromium	**1.27**	**J**	5.00	1.20	ug/L		06/20/24 08:30	07/09/24 17:37	1
Cobalt	**0.679**		0.500	0.170	ug/L		07/11/24 09:00	07/12/24 20:44	1
Copper	<1.80		5.00	1.80	ug/L		07/11/24 09:00	07/12/24 20:44	1
Lead	**0.689**		0.500	0.260	ug/L		07/11/24 09:00	07/12/24 20:44	1
Nickel	**2.33**	**J**	5.00	2.10	ug/L		07/11/24 09:00	07/14/24 23:09	1
Selenium	<1.40		5.00	1.40	ug/L		06/20/24 08:30	07/09/24 17:37	1
Silver	<0.500		1.00	0.500	ug/L		07/11/24 09:00	07/12/24 20:44	1
Thallium	<0.570		1.00	0.570	ug/L		07/11/24 09:00	07/12/24 20:44	1
Vanadium	**2.40**	**J**	5.00	1.10	ug/L		07/11/24 09:00	07/12/24 20:44	1
Zinc	<9.70		20.0	9.70	ug/L		06/20/24 08:30	07/09/24 17:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**37.0**		2.50	1.85	mg/L			06/20/24 10:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**17.89**				NTU			06/17/24 13:00	1

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283760-4
Date Collected: 06/17/24 13:00
Matrix: Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 22:10	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 22:10	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 22:10	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 22:10	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 22:10	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 22:10	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 22:10	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 22:10	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 22:10	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 22:10	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 22:10	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 22:10	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 22:10	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 22:10	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 22:10	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 22:10	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 22:10	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 22:10	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 22:10	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 22:10	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 22:10	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 22:10	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 22:10	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 22:10	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 22:10	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 22:10	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 22:10	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 22:10	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 22:10	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 22:10	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 22:10	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 22:10	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 22:10	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 22:10	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 22:10	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 22:10	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 22:10	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 22:10	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 22:10	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 22:10	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 22:10	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 22:10	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 22:10	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 22:10	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 22:10	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 22:10	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 22:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*06/20/24 22:10*	*1*

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283760-4
Date Collected: 06/17/24 13:00
Matrix: Water
Date Received: 06/18/24 08:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*92*		*80 - 120*		*06/20/24 22:10*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/20/24 22:10*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283760-1	SW-1	122	90	107
310-283760-1 MS	SW-1	95	101	103
310-283760-1 MSD	SW-1	94	101	101
310-283760-2	SW-2	117	93	109
310-283760-3	SW-5	118	91	109

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283760-4	Trip Blank	118	92	103
LCS 310-425119/6	Lab Control Sample	94	102	105
LCS 310-425119/7	Lab Control Sample	115	92	109
MB 310-425119/5	Method Blank	114	92	113

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-425119/5
Matrix: Water
Analysis Batch: 425119

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/20/24 19:38	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/20/24 19:38	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/20/24 19:38	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/20/24 19:38	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/20/24 19:38	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/20/24 19:38	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/20/24 19:38	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/20/24 19:38	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/20/24 19:38	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/20/24 19:38	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/20/24 19:38	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/20/24 19:38	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/20/24 19:38	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/20/24 19:38	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/20/24 19:38	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/20/24 19:38	1
Acetone	<3.10		10.0	3.10	ug/L			06/20/24 19:38	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/20/24 19:38	1
Benzene	<0.220		0.500	0.220	ug/L			06/20/24 19:38	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/20/24 19:38	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/20/24 19:38	1
Bromoform	<0.780		5.00	0.780	ug/L			06/20/24 19:38	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/20/24 19:38	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/20/24 19:38	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/20/24 19:38	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/20/24 19:38	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/20/24 19:38	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/20/24 19:38	1
Chloroform	<1.30		3.00	1.30	ug/L			06/20/24 19:38	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/20/24 19:38	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/20/24 19:38	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/20/24 19:38	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/20/24 19:38	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/20/24 19:38	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/20/24 19:38	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/20/24 19:38	1
Styrene	<0.370		1.00	0.370	ug/L			06/20/24 19:38	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/20/24 19:38	1
Toluene	<0.430		1.00	0.430	ug/L			06/20/24 19:38	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/20/24 19:38	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/20/24 19:38	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/20/24 19:38	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/20/24 19:38	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/20/24 19:38	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/20/24 19:38	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/20/24 19:38	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/20/24 19:38	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-425119/5
Matrix: Water
Analysis Batch: 425119

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*06/20/24 19:38*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*06/20/24 19:38*	*1*
4-Bromofluorobenzene (Surr)	*113*		*80 - 120*		*06/20/24 19:38*	*1*

Lab Sample ID: LCS 310-425119/6
Matrix: Water
Analysis Batch: 425119

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.42		ug/L		102	71 - 120
1,1,1-Trichloroethane	20.0	20.65		ug/L		103	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.23		ug/L		96	68 - 124
1,1,2-Trichloroethane	20.0	19.35		ug/L		97	73 - 123
1,1-Dichloroethane	20.0	19.40		ug/L		97	70 - 127
1,1-Dichloroethene	20.0	22.87		ug/L		114	63 - 132
1,2,3-Trichloropropane	20.0	20.84		ug/L		104	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	18.98		ug/L		95	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.52		ug/L		98	75 - 125
1,2-Dichlorobenzene	20.0	18.98		ug/L		95	74 - 120
1,2-Dichloroethane	20.0	19.81		ug/L		99	71 - 125
1,2-Dichloropropane	20.0	19.53		ug/L		98	73 - 124
1,4-Dichlorobenzene	20.0	19.00		ug/L		95	72 - 120
2-Butanone (MEK)	40.0	38.72		ug/L		97	50 - 150
2-Hexanone	40.0	38.32		ug/L		96	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.98		ug/L		95	60 - 139
Acetone	40.0	40.96		ug/L		102	50 - 150
Acrylonitrile	200	206.9		ug/L		103	50 - 150
Benzene	20.0	19.88		ug/L		99	72 - 124
Bromochloromethane	20.0	18.51		ug/L		93	73 - 130
Bromodichloromethane	20.0	19.05		ug/L		95	74 - 122
Bromoform	20.0	20.81		ug/L		104	61 - 122
Carbon disulfide	20.0	23.48		ug/L		117	59 - 135
Carbon tetrachloride	20.0	20.56		ug/L		103	67 - 132
Chlorobenzene	20.0	18.36		ug/L		92	76 - 120
Chlorodibromomethane	20.0	18.14		ug/L		91	71 - 121
Chloroform	20.0	18.85		ug/L		94	72 - 125
cis-1,2-Dichloroethene	20.0	19.70		ug/L		98	74 - 123
cis-1,3-Dichloropropene	20.0	19.49		ug/L		97	71 - 125
Dibromomethane	20.0	19.31		ug/L		97	74 - 125
Ethylbenzene	20.0	19.99		ug/L		100	74 - 122
Iodomethane	20.0	18.10		ug/L		90	10 - 150
Methylene Chloride	20.0	23.03		ug/L		115	50 - 150
Styrene	20.0	21.07		ug/L		105	74 - 121
Tetrachloroethene	20.0	19.81		ug/L		99	71 - 130
Toluene	20.0	18.59		ug/L		93	74 - 123
trans-1,2-Dichloroethene	20.0	21.12		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	19.40		ug/L		97	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.00		ug/L		95	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-425119/6
Matrix: Water
Analysis Batch: 425119

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.90		ug/L		100	72 - 126		
Vinyl acetate			40.0	41.19		ug/L		103	50 - 150		
Xylenes, Total			40.0	39.01		ug/L		98	73 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*

Lab Sample ID: LCS 310-425119/7
Matrix: Water
Analysis Batch: 425119

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	14.80		ug/L		74	23 - 150		
Chloroethane			20.0	15.88		ug/L		79	54 - 136		
Chloromethane			20.0	17.14		ug/L		86	38 - 150		
Trichlorofluoromethane			20.0	17.24		ug/L		86	54 - 149		
Vinyl chloride			20.0	16.15		ug/L		81	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*73 - 130*
Toluene-d8 (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*

Lab Sample ID: 310-283760-1 MS
Matrix: Ground Water
Analysis Batch: 425119

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<0.380		25.0	23.61		ug/L		94	55 - 130		
1,1,1-Trichloroethane	<0.190		25.0	25.15		ug/L		101	52 - 130		
1,1,2,2-Tetrachloroethane	<0.470		25.0	21.67		ug/L		87	54 - 130		
1,1,2-Trichloroethane	<0.450		25.0	22.87		ug/L		91	58 - 130		
1,1-Dichloroethane	<0.220		25.0	23.60		ug/L		94	49 - 130		
1,1-Dichloroethene	<0.560		25.0	27.28		ug/L		109	37 - 132		
1,2,3-Trichloropropane	<0.590		25.0	22.12		ug/L		88	49 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		25.0	21.37		ug/L		85	38 - 150		
1,2-Dibromoethane (EDB)	<0.340		25.0	22.09		ug/L		88	60 - 130		
1,2-Dichlorobenzene	<0.370		25.0	22.01		ug/L		88	59 - 130		
1,2-Dichloroethane	<0.390		25.0	23.77		ug/L		95	51 - 130		
1,2-Dichloropropane	<0.270		25.0	23.01		ug/L		92	57 - 130		
1,4-Dichlorobenzene	<0.230		25.0	21.74		ug/L		87	57 - 130		
2-Butanone (MEK)	<2.10		50.0	43.35		ug/L		87	38 - 150		
2-Hexanone	<2.00		50.0	40.16		ug/L		80	46 - 140		
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	43.62		ug/L		87	47 - 139		
Acetone	<3.10		50.0	44.75		ug/L		90	31 - 150		
Acrylonitrile	<2.20		250	238.1		ug/L		95	40 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-283760-1 MS
Matrix: Ground Water
Analysis Batch: 425119

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.220		25.0	24.25		ug/L		97	46 - 130
Bromochloromethane	<0.540		25.0	23.13		ug/L		93	57 - 130
Bromodichloromethane	<0.390		25.0	22.74		ug/L		91	57 - 130
Bromoform	<0.780		25.0	24.20		ug/L		97	44 - 130
Carbon disulfide	<0.450		25.0	29.82		ug/L		119	38 - 135
Carbon tetrachloride	<0.650		25.0	24.94		ug/L		100	45 - 132
Chlorobenzene	<0.400		25.0	21.84		ug/L		87	59 - 130
Chlorodibromomethane	<0.750		25.0	21.58		ug/L		86	54 - 130
Chloroform	<1.30		25.0	23.15		ug/L		93	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	23.81		ug/L		95	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	22.06		ug/L		88	53 - 130
Dibromomethane	<0.330		25.0	22.94		ug/L		92	59 - 130
Ethylbenzene	<0.310		25.0	23.74		ug/L		95	45 - 130
Iodomethane	<7.00		25.0	21.87		ug/L		87	10 - 150
Methylene Chloride	<1.70		25.0	26.47		ug/L		106	37 - 150
Styrene	<0.370		25.0	24.47		ug/L		98	47 - 130
Tetrachloroethene	<0.480		25.0	24.20		ug/L		97	47 - 130
Toluene	<0.430		25.0	22.85		ug/L		91	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	25.87		ug/L		103	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.83		ug/L		87	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	20.91		ug/L		84	26 - 150
Trichloroethene	<0.430		25.0	24.34		ug/L		97	51 - 130
Vinyl acetate	<2.50		50.0	41.92		ug/L		84	29 - 150
Xylenes, Total	<0.400		50.0	46.02		ug/L		92	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Lab Sample ID: 310-283760-1 MSD
Matrix: Ground Water
Analysis Batch: 425119

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	22.00		ug/L		88	55 - 130	7	20
1,1,1-Trichloroethane	<0.190		25.0	23.10		ug/L		92	52 - 130	8	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	20.52		ug/L		82	54 - 130	5	20
1,1,2-Trichloroethane	<0.450		25.0	21.91		ug/L		88	58 - 130	4	20
1,1-Dichloroethane	<0.220		25.0	20.80		ug/L		83	49 - 130	13	20
1,1-Dichloroethene	<0.560		25.0	25.85		ug/L		103	37 - 132	5	26
1,2,3-Trichloropropane	<0.590		25.0	22.08		ug/L		88	49 - 130	0	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	21.22		ug/L		85	38 - 150	1	20
1,2-Dibromoethane (EDB)	<0.340		25.0	21.44		ug/L		86	60 - 130	3	20
1,2-Dichlorobenzene	<0.370		25.0	20.97		ug/L		84	59 - 130	5	20
1,2-Dichloroethane	<0.390		25.0	21.34		ug/L		85	51 - 130	11	20
1,2-Dichloropropane	<0.270		25.0	21.15		ug/L		85	57 - 130	8	20
1,4-Dichlorobenzene	<0.230		25.0	20.81		ug/L		83	57 - 130	4	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-283760-1 MSD
Matrix: Ground Water
Analysis Batch: 425119

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	<2.10		50.0	43.28		ug/L		87	38 - 150	0	20
2-Hexanone	<2.00		50.0	40.17		ug/L		80	46 - 140	0	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	43.20		ug/L		86	47 - 139	1	20
Acetone	<3.10		50.0	43.82		ug/L		88	31 - 150	2	29
Acrylonitrile	<2.20		250	226.4		ug/L		91	40 - 150	5	20
Benzene	<0.220		25.0	21.91		ug/L		88	46 - 130	10	20
Bromochloromethane	<0.540		25.0	21.25		ug/L		85	57 - 130	8	20
Bromodichloromethane	<0.390		25.0	20.81		ug/L		83	57 - 130	9	20
Bromoform	<0.780		25.0	22.99		ug/L		92	44 - 130	5	20
Carbon disulfide	<0.450		25.0	25.79		ug/L		103	38 - 135	14	30
Carbon tetrachloride	<0.650		25.0	23.15		ug/L		93	45 - 132	7	20
Chlorobenzene	<0.400		25.0	19.95		ug/L		80	59 - 130	9	20
Chlorodibromomethane	<0.750		25.0	20.18		ug/L		81	54 - 130	7	20
Chloroform	<1.30		25.0	20.93		ug/L		84	51 - 130	10	20
cis-1,2-Dichloroethene	<0.210		25.0	21.37		ug/L		85	45 - 130	11	20
cis-1,3-Dichloropropene	<0.250		25.0	20.88		ug/L		84	53 - 130	6	20
Dibromomethane	<0.330		25.0	21.24		ug/L		85	59 - 130	8	20
Ethylbenzene	<0.310		25.0	21.97		ug/L		88	45 - 130	8	20
Iodomethane	<7.00		25.0	23.94		ug/L		96	10 - 150	9	35
Methylene Chloride	<1.70		25.0	24.09		ug/L		96	37 - 150	9	24
Styrene	<0.370		25.0	22.47		ug/L		90	47 - 130	9	20
Tetrachloroethene	<0.480		25.0	22.45		ug/L		90	47 - 130	7	20
Toluene	<0.430		25.0	20.74		ug/L		83	51 - 130	10	20
trans-1,2-Dichloroethene	<0.270		25.0	23.48		ug/L		94	48 - 130	10	22
trans-1,3-Dichloropropene	<0.560		25.0	21.17		ug/L		85	50 - 130	3	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	19.20		ug/L		77	26 - 150	9	23
Trichloroethene	<0.430		25.0	21.67		ug/L		87	51 - 130	12	20
Vinyl acetate	<2.50		50.0	42.70		ug/L		85	29 - 150	2	23
Xylenes, Total	<0.400		50.0	42.73		ug/L		85	43 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-425069/1-A
Matrix: Water
Analysis Batch: 426421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425069

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		06/20/24 08:30	07/03/24 14:36	1
Silver	<0.500		1.00	0.500	ug/L		06/20/24 08:30	07/03/24 14:36	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-425069/1-A
Matrix: Water
Analysis Batch: 426465

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425069

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		06/20/24 08:30	07/03/24 16:13	1
Barium	<0.660		2.00	0.660	ug/L		06/20/24 08:30	07/03/24 16:13	1
Beryllium	<0.330		1.00	0.330	ug/L		06/20/24 08:30	07/03/24 16:13	1
Cadmium	<0.100		0.200	0.100	ug/L		06/20/24 08:30	07/03/24 16:13	1
Chromium	<1.20		5.00	1.20	ug/L		06/20/24 08:30	07/03/24 16:13	1
Cobalt	<0.170		0.500	0.170	ug/L		06/20/24 08:30	07/03/24 16:13	1
Lead	<0.260		0.500	0.260	ug/L		06/20/24 08:30	07/03/24 16:13	1
Nickel	<2.10		5.00	2.10	ug/L		06/20/24 08:30	07/03/24 16:13	1
Selenium	<1.40		5.00	1.40	ug/L		06/20/24 08:30	07/03/24 16:13	1
Thallium	<0.570		1.00	0.570	ug/L		06/20/24 08:30	07/03/24 16:13	1
Vanadium	<1.10		5.00	1.10	ug/L		06/20/24 08:30	07/03/24 16:13	1
Zinc	<9.70		20.0	9.70	ug/L		06/20/24 08:30	07/03/24 16:13	1

Lab Sample ID: LCS 310-425069/2-A
Matrix: Water
Analysis Batch: 426421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425069

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	221.7		ug/L		111	80 - 120
Silver	100	90.45		ug/L		90	80 - 120

Lab Sample ID: LCS 310-425069/2-A
Matrix: Water
Analysis Batch: 426465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425069

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	197.6		ug/L		99	80 - 120
Barium	100	96.23		ug/L		96	80 - 120
Beryllium	100	97.09		ug/L		97	80 - 120
Cadmium	100	90.09		ug/L		90	80 - 120
Chromium	100	94.85		ug/L		95	80 - 120
Cobalt	100	96.34		ug/L		96	80 - 120
Lead	200	193.1		ug/L		97	80 - 120
Nickel	200	194.5		ug/L		97	80 - 120
Selenium	400	354.0		ug/L		88	80 - 120
Thallium	100	85.86		ug/L		86	80 - 120
Vanadium	100	91.58		ug/L		92	80 - 120
Zinc	200	184.4		ug/L		92	80 - 120

Lab Sample ID: MB 310-426923/1-A
Matrix: Water
Analysis Batch: 427207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/11/24 09:00	07/12/24 19:41	1
Arsenic	<0.530		2.00	0.530	ug/L		07/11/24 09:00	07/12/24 19:41	1
Barium	<0.660		2.00	0.660	ug/L		07/11/24 09:00	07/12/24 19:41	1
Beryllium	<0.330		1.00	0.330	ug/L		07/11/24 09:00	07/12/24 19:41	1
Cadmium	<0.100		0.200	0.100	ug/L		07/11/24 09:00	07/12/24 19:41	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-426923/1-A
Matrix: Water
Analysis Batch: 427207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<1.20		5.00	1.20	ug/L		07/11/24 09:00	07/12/24 19:41	1
Cobalt	<0.170		0.500	0.170	ug/L		07/11/24 09:00	07/12/24 19:41	1
Copper	<1.80		5.00	1.80	ug/L		07/11/24 09:00	07/12/24 19:41	1
Lead	<0.260		0.500	0.260	ug/L		07/11/24 09:00	07/12/24 19:41	1
Selenium	<1.40		5.00	1.40	ug/L		07/11/24 09:00	07/12/24 19:41	1
Silver	<0.500		1.00	0.500	ug/L		07/11/24 09:00	07/12/24 19:41	1
Thallium	<0.570		1.00	0.570	ug/L		07/11/24 09:00	07/12/24 19:41	1
Vanadium	<1.10		5.00	1.10	ug/L		07/11/24 09:00	07/12/24 19:41	1

Lab Sample ID: MB 310-426923/1-A
Matrix: Water
Analysis Batch: 427230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		07/11/24 09:00	07/14/24 22:30	1

Lab Sample ID: LCS 310-426923/2-A
Matrix: Water
Analysis Batch: 427207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	215.6		ug/L		108	80 - 120
Arsenic	200	204.7		ug/L		102	80 - 120
Barium	100	102.5		ug/L		103	80 - 120
Beryllium	100	102.4		ug/L		102	80 - 120
Cadmium	100	99.22		ug/L		99	80 - 120
Chromium	100	98.49		ug/L		98	80 - 120
Cobalt	100	104.1		ug/L		104	80 - 120
Copper	200	199.1		ug/L		100	80 - 120
Lead	200	204.8		ug/L		102	80 - 120
Selenium	400	393.7		ug/L		98	80 - 120
Silver	100	103.1		ug/L		103	80 - 120
Thallium	100	110.0		ug/L		110	80 - 120
Vanadium	100	97.15		ug/L		97	80 - 120
Zinc	200	188.9		ug/L		94	80 - 120

Lab Sample ID: LCS 310-426923/2-A
Matrix: Water
Analysis Batch: 427230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	190.1		ug/L		95	80 - 120

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-425161/1
Matrix: Water
Analysis Batch: 425161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/20/24 10:27	1

Lab Sample ID: LCS 310-425161/2
Matrix: Water
Analysis Batch: 425161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	81 - 116

GC/MS VOA

Analysis Batch: 425119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	8260D	
310-283760-2	SW-2	Total/NA	Ground Water	8260D	
310-283760-3	SW-5	Total/NA	Ground Water	8260D	
310-283760-4	Trip Blank	Total/NA	Water	8260D	
MB 310-425119/5	Method Blank	Total/NA	Water	8260D	
LCS 310-425119/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-425119/7	Lab Control Sample	Total/NA	Water	8260D	
310-283760-1 MS	SW-1	Total/NA	Ground Water	8260D	
310-283760-1 MSD	SW-1	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 425069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	3005A	
310-283760-2	SW-2	Total/NA	Ground Water	3005A	
310-283760-3	SW-5	Total/NA	Ground Water	3005A	
MB 310-425069/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-425069/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 426421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-425069/1-A	Method Blank	Total/NA	Water	6020B	425069
LCS 310-425069/2-A	Lab Control Sample	Total/NA	Water	6020B	425069

Analysis Batch: 426437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-425069/1-A	Method Blank	Total/NA	Water	6020B	425069
LCS 310-425069/2-A	Lab Control Sample	Total/NA	Water	6020B	425069

Analysis Batch: 426465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-425069/1-A	Method Blank	Total/NA	Water	6020B	425069
LCS 310-425069/2-A	Lab Control Sample	Total/NA	Water	6020B	425069

Analysis Batch: 426819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	6020B	425069
310-283760-2	SW-2	Total/NA	Ground Water	6020B	425069
310-283760-3	SW-5	Total/NA	Ground Water	6020B	425069

Prep Batch: 426923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	3005A	
310-283760-2	SW-2	Total/NA	Ground Water	3005A	
310-283760-3	SW-5	Total/NA	Ground Water	3005A	
MB 310-426923/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-426923/2-A	Lab Control Sample	Total/NA	Water	3005A	

Metals

Analysis Batch: 427207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	6020B	426923
310-283760-2	SW-2	Total/NA	Ground Water	6020B	426923
310-283760-3	SW-5	Total/NA	Ground Water	6020B	426923
MB 310-426923/1-A	Method Blank	Total/NA	Water	6020B	426923
LCS 310-426923/2-A	Lab Control Sample	Total/NA	Water	6020B	426923

Analysis Batch: 427230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	6020B	426923
310-283760-2	SW-2	Total/NA	Ground Water	6020B	426923
310-283760-3	SW-5	Total/NA	Ground Water	6020B	426923
MB 310-426923/1-A	Method Blank	Total/NA	Water	6020B	426923
LCS 310-426923/2-A	Lab Control Sample	Total/NA	Water	6020B	426923

General Chemistry

Analysis Batch: 425161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	I-3765-85	
310-283760-2	SW-2	Total/NA	Ground Water	I-3765-85	
310-283760-3	SW-5	Total/NA	Ground Water	I-3765-85	
MB 310-425161/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425161/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 425298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283760-1	SW-1	Total/NA	Ground Water	Field Sampling	
310-283760-2	SW-2	Total/NA	Ground Water	Field Sampling	
310-283760-3	SW-5	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-1
Lab Sample ID: 310-283760-1
Date Collected: 06/17/24 11:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425119	WSE8	EET CF	06/21/24 02:09
Total/NA	Prep	3005A			426923	QTZ5	EET CF	07/11/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 23:02
Total/NA	Prep	3005A			425069	QTZ5	EET CF	06/20/24 08:30
Total/NA	Analysis	6020B		1	426819	NFT2	EET CF	07/09/24 17:23
Total/NA	Prep	3005A			426923	QTZ5	EET CF	07/11/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 20:40
Total/NA	Analysis	I-3765-85		1	425161	DGU1	EET CF	06/20/24 10:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/17/24 11:00

Client Sample ID: SW-2
Lab Sample ID: 310-283760-2
Date Collected: 06/17/24 12:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425119	WSE8	EET CF	06/21/24 02:31
Total/NA	Prep	3005A			426923	QTZ5	EET CF	07/11/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 23:06
Total/NA	Prep	3005A			425069	QTZ5	EET CF	06/20/24 08:30
Total/NA	Analysis	6020B		1	426819	NFT2	EET CF	07/09/24 17:34
Total/NA	Prep	3005A			426923	QTZ5	EET CF	07/11/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 20:42
Total/NA	Analysis	I-3765-85		1	425161	DGU1	EET CF	06/20/24 10:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/17/24 12:00

Client Sample ID: SW-5
Lab Sample ID: 310-283760-3
Date Collected: 06/17/24 13:00
Matrix: Ground Water
Date Received: 06/18/24 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425119	WSE8	EET CF	06/21/24 02:53
Total/NA	Prep	3005A			426923	QTZ5	EET CF	07/11/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 23:09
Total/NA	Prep	3005A			425069	QTZ5	EET CF	06/20/24 08:30
Total/NA	Analysis	6020B		1	426819	NFT2	EET CF	07/09/24 17:37
Total/NA	Prep	3005A			426923	QTZ5	EET CF	07/11/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 20:44
Total/NA	Analysis	I-3765-85		1	425161	DGU1	EET CF	06/20/24 10:27
Total/NA	Analysis	Field Sampling		1	425298	BJ0R	EET CF	06/17/24 13:00

Lab Chronicle

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-283760-4
Date Collected: 06/17/24 13:00
Matrix: Water
Date Received: 06/18/24 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425119	WSE8	EET CF	06/20/24 22:10

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-283760-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-283760 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA | Project: Winnestick Co.

Receipt Information

Date/Time Received: DATE 6/18/24 TIME 0845 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	1 LT NT	
Uncorrected Temp (°C):	1.6	
Corrected Temp (°C):	1.6	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Document. CED-P-SAM-FRM45521
Revision. 26
Date 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date 6-18-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St. Suite 222	Tel/Fax (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	CALENDAR DAYS WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	2 weeks			
Site Winneshiek County Landfill	1 week			Job / SDG No
P O #	2 days			
	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Sample Specific Notes
GU-1			G	GW		N		X	X	
GU-2			G	GW		N		X	X	
SW-1	6-17-24	1100	G	GW	5	N		X	X	Turbidity - 19.74 NTU
SW-2	6-17-24	1200	G	GW	5	N		X	X	Turbidity - 12.79 NTU
SW-2-FD			G	GW		N		X	X	
SW-5	6-17-24	1300	G	GW	5	N		X	X	Turbidity - 17.89 NTU
MH-1AA			G	GW		N		X	X	
MH-4-2			G	GW		N		X	X	
Equipment Blank #1 Shallow			G	GW		N		X	X	
Equipment Blank #2 Deep			G	GW		N		X	X	
Trip Blank	6-17-24	1300	G	W	2	N			X	

Preservation Used. 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: Yes No | Custody Seal No | Cooler Temp (°C): Obs'd _____ Corr'd _____ | Therm ID No _____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 6-18-24	Received by:	Company:	Date/Time: 6/18/24 3245
Relinquished by:	Company	Date/Time	Received by:	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company:	Date/Time

Form No. CA-C-WI-002, Rev 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-283760-1

Login Number: 283760

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Spring Groundwater

JOB NUMBER

310-284515-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
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(319)595-2016

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Job ID: 310-284515-1 Eurofins Cedar Falls

Job Narrative
310-284515-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/27/2024 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C.

GC/MS VOA
Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: MW-29A (310-284515-1).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-425979 recovered above the upper control limit for Tetrachloroethene (26.8%D) and Bromoform (22.5%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-425979/3).

Method 8260D: The initial calibration verification (ICV) result for batch 310-425979 was above the upper control limit. The affected analyte is: Methyl methacrylate. Sample results were non-detects, and have been reported as qualified data.

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

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-426155.

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-426950 recovered above the upper control limit for Diethyl phthalate (21.0%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-426155 and analytical batch 310-426950 recovered outside control limits for the following analytes: Famphur and Kepone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-426155 and analytical batch 310-426950 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-426155 and analytical batch 310-426950 recovered outside control limits for the following analytes: 3,3'-Dimethylbenzidine and Hexachloropropene.

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

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

Job ID: 310-284515-1 (Continued) Eurofins Cedar Falls

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

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

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

Metals
Method 7470A: The laboratory control sample (LCS) for preparation batch 310-426638 and analytical batch 310-426778 recovered outside control limits for the following analytes: Mercury. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. MW-44A (310-284515-3)

Method 7470A: The laboratory control sample (LCS) for preparation batch 310-426638 and analytical batch 310-426778 recovered outside control limits for the following analytes: Mercury. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. (LCS 310-426638/2-A)

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-284515-1	MW-29A	Ground Water	06/26/24 13:30	06/27/24 10:15
310-284515-2	Trip Blank	Water	06/26/24 05:00	06/27/24 10:15
310-284515-3	MW-44A	Ground Water	06/26/24 16:00	06/27/24 10:15
310-284515-4	MW-101	Ground Water	06/26/24 10:30	06/27/24 10:15
310-284515-5	MW-22	Ground Water	06/26/24 12:00	06/27/24 10:15
310-284515-6	MW-22-FD	Ground Water	06/26/24 12:00	06/27/24 10:15
310-284515-7	Equipment Blank #2 Deep	Ground Water	06/26/24 12:00	06/27/24 10:15

Detection Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-29A — Lab Sample ID: 310-284515-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.54		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	151		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	11.2		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	1.82	J B	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	63.9		5.00	2.10	ug/L	1		6020B	Total/NA
Silver	1.10		1.00	0.500	ug/L	1		6020B	Total/NA
Total Suspended Solids	7.00		3.75	2.78	mg/L	1		I-3765-85	Total/NA
Field Turbidity	55.13				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-284515-2

No Detections.

Client Sample ID: MW-44A — Lab Sample ID: 310-284515-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.663	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	137		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.389		0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	0.423	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	9.56	B	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.313	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	21.6		5.00	2.10	ug/L	1		6020B	Total/NA
Selenium	1.99	J	5.00	1.40	ug/L	1		6020B	Total/NA
Silver	1.01		1.00	0.500	ug/L	1		6020B	Total/NA
Thallium	0.748	J	1.00	0.570	ug/L	1		6020B	Total/NA
Zinc	13.8	J	20.0	9.70	ug/L	1		6020B	Total/NA
Tin	3.28	J	5.00	2.30	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.63				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-101 — Lab Sample ID: 310-284515-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.541	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	177		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	1.36		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	3.57	J B	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	6.92		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.75	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	4.32				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-22 — Lab Sample ID: 310-284515-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.52	J	10.0	2.10	ug/L	1		8260D	Total/NA
Arsenic	0.801	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	137		2.00	0.660	ug/L	1		6020B	Total/NA
Nickel	6.65		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.83				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22-FD
Lab Sample ID: 310-284515-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.26	J	10.0	2.10	ug/L	1		8260D	Total/NA
Arsenic	0.647	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	153		2.00	0.660	ug/L	1		6020B	Total/NA
Nickel	6.46		5.00	2.10	ug/L	1		6020B	Total/NA

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-284515-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	69.9		2.00	0.660	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-29A
Lab Sample ID: 310-284515-1
Date Collected: 06/26/24 13:30
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 17:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 17:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 17:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 17:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 17:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 17:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 17:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 17:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 17:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 17:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 17:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 17:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 17:45	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/28/24 17:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 17:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 17:45	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 17:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 17:45	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 17:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 17:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 17:45	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 17:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 17:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 17:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 17:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 17:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 17:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 17:45	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 17:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 17:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 17:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 17:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 17:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 17:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 17:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 17:45	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 17:45	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 17:45	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 17:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 17:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 17:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 17:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 17:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 17:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 17:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 17:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 17:45	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-29A
Lab Sample ID: 310-284515-1
Date Collected: 06/26/24 13:30
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*122*		*73 - 130*		*06/28/24 17:45*	*1*
Toluene-d8 (Surr)	*86*		*80 - 120*		*06/28/24 17:45*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*06/28/24 17:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/08/24 14:33	1
Arsenic	**4.54**		2.00	0.530	ug/L		07/01/24 09:00	07/08/24 14:33	1
Barium	**151**		2.00	0.660	ug/L		07/01/24 09:00	07/09/24 17:30	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/09/24 17:30	1
Cadmium	<0.100		0.200	0.100	ug/L		07/01/24 09:00	07/09/24 17:30	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/09/24 17:30	1
Cobalt	**11.2**		0.500	0.170	ug/L		07/01/24 09:00	07/09/24 17:30	1
Copper	**1.82**	**J B**	5.00	1.80	ug/L		07/01/24 09:00	07/09/24 17:30	1
Lead	<0.260		0.500	0.260	ug/L		07/01/24 09:00	07/09/24 17:30	1
Nickel	**63.9**		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 17:30	1
Selenium	<1.40		5.00	1.40	ug/L		07/01/24 09:00	07/09/24 17:30	1
Silver	**1.10**		1.00	0.500	ug/L		07/01/24 09:00	07/09/24 17:30	1
Thallium	<0.570	F1	1.00	0.570	ug/L		07/01/24 09:00	07/09/24 17:30	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/09/24 17:30	1
Zinc	<9.70		20.0	9.70	ug/L		07/01/24 09:00	07/09/24 17:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1410		3000	1410	ug/L		07/02/24 09:28	07/02/24 13:47	1
Total Suspended Solids (USGS I-3765-85)	**7.00**		3.75	2.78	mg/L			06/27/24 13:13	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**55.13**				NTU			06/26/24 13:30	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-284515-2
Date Collected: 06/26/24 05:00
Matrix: Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 14:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 14:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 14:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 14:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 14:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 14:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 14:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 14:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 14:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 14:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 14:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 14:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 14:08	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/28/24 14:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 14:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 14:08	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 14:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 14:08	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 14:08	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 14:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 14:08	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 14:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 14:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 14:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 14:08	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 14:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 14:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 14:08	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 14:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 14:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 14:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 14:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 14:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 14:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 14:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 14:08	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 14:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 14:08	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 14:08	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 14:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 14:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 14:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 14:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 14:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 14:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 14:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 14:08	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-284515-2
Date Collected: 06/26/24 05:00
Matrix: Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	116		73 - 130		06/28/24 14:08	1
Toluene-d8 (Surr)	88		80 - 120		06/28/24 14:08	1
4-Bromofluorobenzene (Surr)	107		80 - 120		06/28/24 14:08	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-44A
Lab Sample ID: 310-284515-3
Date Collected: 06/26/24 16:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 18:07	1
Acrolein	<3.60		10.0	3.60	ug/L			06/28/24 18:07	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 18:07	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/28/24 18:07	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 18:07	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 18:07	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 18:07	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 18:07	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 18:07	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/28/24 18:07	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 18:07	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 18:07	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 18:07	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 18:07	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 18:07	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 18:07	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 18:07	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/28/24 18:07	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 18:07	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 18:07	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 18:07	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 18:07	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 18:07	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 18:07	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/28/24 18:07	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 18:07	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			06/28/24 18:07	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 18:07	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 18:07	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 18:07	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 18:07	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/28/24 18:07	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/28/24 18:07	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/28/24 18:07	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 18:07	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/28/24 18:07	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 18:07	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 18:07	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/28/24 18:07	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 18:07	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/28/24 18:07	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 18:07	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/28/24 18:07	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/28/24 18:07	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/28/24 18:07	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/28/24 18:07	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 18:07	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 18:07	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 18:07	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-44A
Lab Sample ID: 310-284515-3
Date Collected: 06/26/24 16:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 18:07	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 18:07	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 18:07	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 18:07	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 18:07	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/28/24 18:07	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 18:07	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 18:07	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 18:07	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 18:07	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 18:07	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 18:07	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 18:07	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 18:07	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*80 - 120*		*06/28/24 18:07*	*1*
Dibromofluoromethane (Surr)	*120*		*73 - 130*		*06/28/24 18:07*	*1*
Toluene-d8 (Surr)	*86*		*80 - 120*		*06/28/24 18:07*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.640		10.0	0.640	ug/L		07/02/24 08:00	07/11/24 12:14	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		07/02/24 08:00	07/11/24 12:14	1
Acetophenone	<0.690		10.0	0.690	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
Anthracene	<0.870		10.0	0.870	ug/L		07/02/24 08:00	07/11/24 12:14	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		07/02/24 08:00	07/11/24 12:14	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		07/02/24 08:00	07/11/24 12:14	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		07/02/24 08:00	07/11/24 12:14	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		07/02/24 08:00	07/11/24 12:14	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		07/02/24 08:00	07/11/24 12:14	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		07/02/24 08:00	07/11/24 12:14	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		07/02/24 08:00	07/11/24 12:14	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		07/02/24 08:00	07/11/24 12:14	1
Chrysene	<0.870		10.0	0.870	ug/L		07/02/24 08:00	07/11/24 12:14	1
Diallate	<4.00		10.0	4.00	ug/L		07/02/24 08:00	07/11/24 12:14	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		07/02/24 08:00	07/11/24 12:14	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-44A
Lab Sample ID: 310-284515-3
Date Collected: 06/26/24 16:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	<0.740		10.0	0.740	ug/L		07/02/24 08:00	07/11/24 12:14	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		07/02/24 08:00	07/11/24 12:14	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
Dimethoate	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
3,3'-Dimethylbenzidine	<1.50	*1	10.0	1.50	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		07/02/24 08:00	07/11/24 12:14	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		07/02/24 08:00	07/11/24 12:14	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		07/02/24 08:00	07/11/24 12:14	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		07/02/24 08:00	07/11/24 12:14	1
Dinoseb	<2.40		10.0	2.40	ug/L		07/02/24 08:00	07/11/24 12:14	1
Diphenylamine	<6.00		10.0	6.00	ug/L		07/02/24 08:00	07/11/24 12:14	1
Disulfoton	<2.40		10.0	2.40	ug/L		07/02/24 08:00	07/11/24 12:14	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
Famphur	<3.80	*+	10.0	3.80	ug/L		07/02/24 08:00	07/11/24 12:14	1
Fluoranthene	<1.70		10.0	1.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
Fluorene	<0.790		10.0	0.790	ug/L		07/02/24 08:00	07/11/24 12:14	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		07/02/24 08:00	07/11/24 12:14	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		07/02/24 08:00	07/11/24 12:14	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		07/02/24 08:00	07/11/24 12:14	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		07/02/24 08:00	07/11/24 12:14	1
Hexachloropropene	<2.60	*1	10.0	2.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
Isodrin	<4.70		10.0	4.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
Isophorone	<0.930		10.0	0.930	ug/L		07/02/24 08:00	07/11/24 12:14	1
Isosafrole	<2.30		10.0	2.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
Kepone	<1.00	*+	10.0	1.00	ug/L		07/02/24 08:00	07/11/24 12:14	1
Methapyrilene	<0.760		10.0	0.760	ug/L		07/02/24 08:00	07/11/24 12:14	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		07/02/24 08:00	07/11/24 12:14	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		07/02/24 08:00	07/11/24 12:14	1
Methyl parathion	<2.30		10.0	2.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		07/02/24 08:00	07/11/24 12:14	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		07/02/24 08:00	07/11/24 12:14	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		07/02/24 08:00	07/11/24 12:14	1

Client Sample ID: MW-44A
Lab Sample ID: 310-284515-3
Date Collected: 06/26/24 16:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		07/02/24 08:00	07/11/24 12:14	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		07/02/24 08:00	07/11/24 12:14	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
o-Toluidine	<2.90		10.0	2.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		07/02/24 08:00	07/11/24 12:14	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		07/02/24 08:00	07/11/24 12:14	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		07/02/24 08:00	07/11/24 12:14	1
Phenacetin	<1.90		10.0	1.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
Phenanthrene	<0.790		10.0	0.790	ug/L		07/02/24 08:00	07/11/24 12:14	1
Phenol	<1.10		10.0	1.10	ug/L		07/02/24 08:00	07/11/24 12:14	1
1,4-phenylenediamine	<1.90	*-	10.0	1.90	ug/L		07/02/24 08:00	07/11/24 12:14	1
Phorate	<3.20		10.0	3.20	ug/L		07/02/24 08:00	07/11/24 12:14	1
Pronamide	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 12:14	1
Pyrene	<0.790		10.0	0.790	ug/L		07/02/24 08:00	07/11/24 12:14	1
Safrole	<2.80		10.0	2.80	ug/L		07/02/24 08:00	07/11/24 12:14	1
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
Thionazin	<3.50		10.0	3.50	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		07/02/24 08:00	07/11/24 12:14	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		07/02/24 08:00	07/11/24 12:14	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		07/02/24 08:00	07/11/24 12:14	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*39 - 118*	*07/02/24 08:00*	*07/11/24 12:14*	*1*
2-Fluorophenol (Surr)	*68*		*25 - 110*	*07/02/24 08:00*	*07/11/24 12:14*	*1*
Nitrobenzene-d5 (Surr)	*103*		*45 - 129*	*07/02/24 08:00*	*07/11/24 12:14*	*1*
Phenol-d5 (Surr)	*68*		*21 - 110*	*07/02/24 08:00*	*07/11/24 12:14*	*1*
Terphenyl-d14 (Surr)	*121*		*12 - 144*	*07/02/24 08:00*	*07/11/24 12:14*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*27 - 136*	*07/02/24 08:00*	*07/11/24 12:14*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			07/01/24 11:14	1
Isobutanol	<2400		10000	2400	ug/L			07/01/24 11:14	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0200		0.0909	0.0200	ug/L		06/27/24 13:00	06/28/24 14:50	1
alpha-BHC	<0.00909		0.0909	0.00909	ug/L		06/27/24 13:00	06/28/24 14:50	1

Client Sample ID: MW-44A
Lab Sample ID: 310-284515-3
Date Collected: 06/26/24 16:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0382		0.0909	0.0382	ug/L		06/27/24 13:00	06/28/24 14:50	1
Chlordane (technical)	<0.355		1.82	0.355	ug/L		06/27/24 13:00	06/28/24 14:50	1
4,4'-DDD	<0.0227		0.0909	0.0227	ug/L		06/27/24 13:00	06/28/24 14:50	1
4,4'-DDE	<0.0273		0.0909	0.0273	ug/L		06/27/24 13:00	06/28/24 14:50	1
4,4'-DDT	<0.0182		0.0909	0.0182	ug/L		06/27/24 13:00	06/28/24 14:50	1
delta-BHC	<0.0291		0.0909	0.0291	ug/L		06/27/24 13:00	06/28/24 14:50	1
Dieldrin	<0.0191		0.0909	0.0191	ug/L		06/27/24 13:00	06/28/24 14:50	1
Endosulfan I	<0.0255		0.0909	0.0255	ug/L		06/27/24 13:00	06/28/24 14:50	1
Endosulfan II	<0.0236		0.0909	0.0236	ug/L		06/27/24 13:00	06/28/24 14:50	1
Endosulfan sulfate	<0.0164		0.0909	0.0164	ug/L		06/27/24 13:00	06/28/24 14:50	1
Endrin	<0.0255		0.0909	0.0255	ug/L		06/27/24 13:00	06/28/24 14:50	1
Endrin aldehyde	<0.0245		0.0909	0.0245	ug/L		06/27/24 13:00	06/28/24 14:50	1
gamma-BHC (Lindane)	<0.00909		0.0909	0.00909	ug/L		06/27/24 13:00	06/28/24 14:50	1
Heptachlor	<0.0209		0.0909	0.0209	ug/L		06/27/24 13:00	06/28/24 14:50	1
Heptachlor epoxide	<0.0291		0.0909	0.0291	ug/L		06/27/24 13:00	06/28/24 14:50	1
Methoxychlor	<0.0291		0.0909	0.0291	ug/L		06/27/24 13:00	06/28/24 14:50	1
Toxaphene	<0.909		1.82	0.909	ug/L		06/27/24 13:00	06/28/24 14:50	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*71*		*10 - 136*	*06/27/24 13:00*	*06/28/24 14:50*	*1*
Tetrachloro-m-xylene	*101*		*10 - 130*	*06/27/24 13:00*	*06/28/24 14:50*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.745		1.82	0.745	ug/L		06/27/24 13:00	07/01/24 14:44	1
PCB-1221	<0.745		1.82	0.745	ug/L		06/27/24 13:00	07/01/24 14:44	1
PCB-1232	<0.745		1.82	0.745	ug/L		06/27/24 13:00	07/01/24 14:44	1
PCB-1242	<0.745		1.82	0.745	ug/L		06/27/24 13:00	07/01/24 14:44	1
PCB-1248	<0.627		1.82	0.627	ug/L		06/27/24 13:00	07/01/24 14:44	1
PCB-1254	<0.627		1.82	0.627	ug/L		06/27/24 13:00	07/01/24 14:44	1
PCB-1260	<0.627		1.82	0.627	ug/L		06/27/24 13:00	07/01/24 14:44	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*75*		*10 - 136*	*06/27/24 13:00*	*07/01/24 14:44*	*1*
Tetrachloro-m-xylene	*103*		*10 - 130*	*06/27/24 13:00*	*07/01/24 14:44*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.286		0.688	0.286	ug/L		07/02/24 15:15	07/03/24 11:24	1
Silvex (2,4,5-TP)	<0.0252		0.0573	0.0252	ug/L		07/02/24 15:15	07/03/24 11:24	1
2,4,5-T	<0.0745		0.172	0.0745	ug/L		07/02/24 15:15	07/03/24 11:24	1

Method: SW846 8151A - Herbicides (GC)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*74*		*34 - 142*	*07/02/24 15:15*	*07/03/24 11:24*	*1*
DCAA	*93*		*34 - 142*	*07/02/24 15:15*	*07/03/24 11:24*	*1*

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-44A
Date Collected: 06/26/24 16:00
Date Received: 06/27/24 10:15

Lab Sample ID: 310-284515-3
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/08/24 14:40	1
Arsenic	**0.663**	**J**	2.00	0.530	ug/L		07/01/24 09:00	07/08/24 14:40	1
Barium	**137**		2.00	0.660	ug/L		07/01/24 09:00	07/09/24 17:40	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/09/24 17:40	1
Cadmium	**0.389**		0.200	0.100	ug/L		07/01/24 09:00	07/09/24 17:40	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/09/24 17:40	1
Cobalt	**0.423**	**J**	0.500	0.170	ug/L		07/01/24 09:00	07/09/24 17:40	1
Copper	**9.56**	**B**	5.00	1.80	ug/L		07/01/24 09:00	07/09/24 17:40	1
Lead	**0.313**	**J**	0.500	0.260	ug/L		07/01/24 09:00	07/09/24 17:40	1
Nickel	**21.6**		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 17:40	1
Selenium	**1.99**	**J**	5.00	1.40	ug/L		07/01/24 09:00	07/09/24 17:40	1
Silver	**1.01**		1.00	0.500	ug/L		07/01/24 09:00	07/09/24 17:40	1
Thallium	**0.748**	**J**	1.00	0.570	ug/L		07/01/24 09:00	07/09/24 17:40	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/09/24 17:40	1
Zinc	**13.8**	**J**	20.0	9.70	ug/L		07/01/24 09:00	07/09/24 17:40	1
Tin	**3.28**	**J**	5.00	2.30	ug/L		07/01/24 09:00	07/09/24 17:40	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110	*+	0.200	0.110	ug/L		07/09/24 08:18	07/09/24 14:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		07/02/24 10:36	07/03/24 17:09	1
Sulfide (SW846 9034)	<1410		3000	1410	ug/L		07/02/24 09:28	07/02/24 13:47	1
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.39	mg/L			06/27/24 11:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.63**				NTU			06/26/24 16:00	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-101
Lab Sample ID: 310-284515-4
Date Collected: 06/26/24 10:30
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 18:28	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 18:28	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 18:28	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 18:28	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 18:28	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 18:28	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 18:28	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 18:28	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 18:28	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 18:28	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 18:28	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 18:28	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 18:28	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/28/24 18:28	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 18:28	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 18:28	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 18:28	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 18:28	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 18:28	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 18:28	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 18:28	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 18:28	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 18:28	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 18:28	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 18:28	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 18:28	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 18:28	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 18:28	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 18:28	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 18:28	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 18:28	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 18:28	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 18:28	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 18:28	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 18:28	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 18:28	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 18:28	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 18:28	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 18:28	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 18:28	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 18:28	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 18:28	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 18:28	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 18:28	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 18:28	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 18:28	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 18:28	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-101
Lab Sample ID: 310-284515-4

Date Collected: 06/26/24 10:30
Matrix: Ground Water

Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*124*		*73 - 130*		*06/28/24 18:28*	*1*
Toluene-d8 (Surr)	*87*		*80 - 120*		*06/28/24 18:28*	*1*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*06/28/24 18:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/08/24 14:42	1
Arsenic	**0.541**	**J**	2.00	0.530	ug/L		07/01/24 09:00	07/08/24 14:42	1
Barium	**177**		2.00	0.660	ug/L		07/01/24 09:00	07/09/24 17:43	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/09/24 17:43	1
Cadmium	<0.100		0.200	0.100	ug/L		07/01/24 09:00	07/09/24 17:43	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/09/24 17:43	1
Cobalt	**1.36**		0.500	0.170	ug/L		07/01/24 09:00	07/09/24 17:43	1
Copper	**3.57**	**J B**	5.00	1.80	ug/L		07/01/24 09:00	07/09/24 17:43	1
Lead	<0.260		0.500	0.260	ug/L		07/01/24 09:00	07/09/24 17:43	1
Nickel	**6.92**		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 17:43	1
Selenium	<1.40		5.00	1.40	ug/L		07/01/24 09:00	07/09/24 17:43	1
Silver	<0.500		1.00	0.500	ug/L		07/01/24 09:00	07/09/24 17:43	1
Thallium	<0.570		1.00	0.570	ug/L		07/01/24 09:00	07/09/24 17:43	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/09/24 17:43	1
Zinc	<9.70		20.0	9.70	ug/L		07/01/24 09:00	07/09/24 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.75**	**J**	1.88	1.39	mg/L			06/27/24 11:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.32**				NTU			06/26/24 10:30	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22
Lab Sample ID: 310-284515-5
Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 18:50	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 18:50	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 18:50	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 18:50	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 18:50	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 18:50	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 18:50	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 18:50	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 18:50	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 18:50	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 18:50	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 18:50	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 18:50	1
2-Butanone (MEK)	**2.52**	**J**	10.0	2.10	ug/L			06/28/24 18:50	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 18:50	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 18:50	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 18:50	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 18:50	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 18:50	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 18:50	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 18:50	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 18:50	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 18:50	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 18:50	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 18:50	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 18:50	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 18:50	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 18:50	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 18:50	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 18:50	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 18:50	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 18:50	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 18:50	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 18:50	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 18:50	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 18:50	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 18:50	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 18:50	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 18:50	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 18:50	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 18:50	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 18:50	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 18:50	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 18:50	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 18:50	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 18:50	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 18:50	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22
Lab Sample ID: 310-284515-5

Date Collected: 06/26/24 12:00
Matrix: Ground Water

Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*06/28/24 18:50*	*1*
Toluene-d8 (Surr)	*88*		*80 - 120*		*06/28/24 18:50*	*1*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*06/28/24 18:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/08/24 14:44	1
Arsenic	**0.801**	**J**	2.00	0.530	ug/L		07/01/24 09:00	07/08/24 14:44	1
Barium	**137**		2.00	0.660	ug/L		07/01/24 09:00	07/09/24 17:47	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/09/24 17:47	1
Cadmium	<0.100		0.200	0.100	ug/L		07/01/24 09:00	07/09/24 17:47	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/09/24 17:47	1
Cobalt	<0.170		0.500	0.170	ug/L		07/01/24 09:00	07/09/24 17:47	1
Copper	<1.80		5.00	1.80	ug/L		07/01/24 09:00	07/09/24 17:47	1
Lead	<0.260		0.500	0.260	ug/L		07/01/24 09:00	07/09/24 17:47	1
Nickel	**6.65**		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 17:47	1
Selenium	<1.40		5.00	1.40	ug/L		07/01/24 09:00	07/09/24 17:47	1
Silver	<0.500		1.00	0.500	ug/L		07/01/24 09:00	07/09/24 17:47	1
Thallium	<0.570		1.00	0.570	ug/L		07/01/24 09:00	07/09/24 17:47	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/09/24 17:47	1
Zinc	<9.70		20.0	9.70	ug/L		07/01/24 09:00	07/09/24 17:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.39	mg/L			06/27/24 11:38	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.83**				NTU			06/26/24 12:00	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22-FD
Lab Sample ID: 310-284515-6
Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 19:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 19:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 19:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 19:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 19:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 19:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 19:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 19:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 19:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 19:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 19:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 19:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 19:12	1
2-Butanone (MEK)	**2.26**	**J**	10.0	2.10	ug/L			06/28/24 19:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 19:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 19:12	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 19:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 19:12	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 19:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 19:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 19:12	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 19:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 19:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 19:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 19:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 19:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 19:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 19:12	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 19:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 19:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 19:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 19:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 19:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 19:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 19:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 19:12	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 19:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 19:12	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 19:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 19:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 19:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 19:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 19:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 19:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 19:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 19:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 19:12	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22-FD
Lab Sample ID: 310-284515-6

Date Collected: 06/26/24 12:00
Matrix: Ground Water

Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*119*		*73 - 130*		*06/28/24 19:12*	*1*
Toluene-d8 (Surr)	*87*		*80 - 120*		*06/28/24 19:12*	*1*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*06/28/24 19:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/10/24 18:51	1
Arsenic	**0.647**	**J**	2.00	0.530	ug/L		07/01/24 09:00	07/10/24 18:51	1
Barium	**153**		2.00	0.660	ug/L		07/01/24 09:00	07/10/24 18:51	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/10/24 18:51	1
Cadmium	<0.100		0.200	0.100	ug/L		07/01/24 09:00	07/10/24 18:51	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/10/24 18:51	1
Cobalt	<0.170		0.500	0.170	ug/L		07/01/24 09:00	07/10/24 18:51	1
Copper	<1.80		5.00	1.80	ug/L		07/01/24 09:00	07/10/24 18:51	1
Lead	<0.260		0.500	0.260	ug/L		07/01/24 09:00	07/10/24 18:51	1
Nickel	**6.46**		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 18:05	1
Selenium	<1.40		5.00	1.40	ug/L		07/01/24 09:00	07/10/24 18:51	1
Silver	<0.500		1.00	0.500	ug/L		07/01/24 09:00	07/10/24 18:51	1
Thallium	<0.570		1.00	0.570	ug/L		07/01/24 09:00	07/10/24 18:51	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/10/24 18:51	1
Zinc	<9.70		20.0	9.70	ug/L		07/01/24 09:00	07/10/24 18:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/27/24 11:38	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-284515-7
Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 19:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 19:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 19:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 19:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 19:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 19:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 19:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 19:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 19:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 19:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 19:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 19:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 19:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/28/24 19:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 19:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 19:34	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 19:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 19:34	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 19:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 19:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 19:34	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 19:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 19:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 19:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 19:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 19:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 19:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 19:34	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 19:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 19:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 19:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 19:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 19:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 19:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 19:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 19:34	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 19:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 19:34	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 19:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 19:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 19:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 19:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 19:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 19:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 19:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 19:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 19:34	1

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-284515-7

Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*06/28/24 19:34*	*1*
Toluene-d8 (Surr)	*89*		*80 - 120*		*06/28/24 19:34*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*06/28/24 19:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/10/24 18:53	1
Arsenic	<0.530		2.00	0.530	ug/L		07/01/24 09:00	07/10/24 18:53	1
Barium	**69.9**		2.00	0.660	ug/L		07/01/24 09:00	07/10/24 18:53	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/10/24 18:53	1
Cadmium	<0.100		0.200	0.100	ug/L		07/01/24 09:00	07/10/24 18:53	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/10/24 18:53	1
Cobalt	<0.170		0.500	0.170	ug/L		07/01/24 09:00	07/10/24 18:53	1
Copper	<1.80		5.00	1.80	ug/L		07/01/24 09:00	07/10/24 18:53	1
Lead	<0.260		0.500	0.260	ug/L		07/01/24 09:00	07/10/24 18:53	1
Nickel	<2.10		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 18:09	1
Selenium	<1.40		5.00	1.40	ug/L		07/01/24 09:00	07/10/24 18:53	1
Silver	<0.500		1.00	0.500	ug/L		07/01/24 09:00	07/10/24 18:53	1
Thallium	<0.570		1.00	0.570	ug/L		07/01/24 09:00	07/10/24 18:53	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/10/24 18:53	1
Zinc	<9.70		20.0	9.70	ug/L		07/01/24 09:00	07/10/24 18:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			06/27/24 11:38	1

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

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

Glossary

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Surrogate Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-284515-1	MW-29A	122	86	109
310-284515-3	MW-44A	120	86	111
310-284515-4	MW-101	124	87	110
310-284515-5	MW-22	118	88	110
310-284515-6	MW-22-FD	119	87	108
310-284515-7	Equipment Blank #2 Deep	117	89	109

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-284515-2	Trip Blank	116	88	107
LCS 310-425979/6	Lab Control Sample	91	98	101
LCS 310-425979/7	Lab Control Sample	115	86	110
MB 310-425979/5	Method Blank	114	89	110

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
310-284515-3	MW-44A	88	68	103	68	121	98

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCS 310-426155/2-A	Lab Control Sample	77	69	96	66	108	103
LCSD 310-426155/3-A	Lab Control Sample Dup	70	65	89	63	106	100

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
MB 310-426155/1-A	Method Blank	70	60	89	58	102	84

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-284515-3	MW-44A	71	101

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-284515-3	MW-44A	75	103

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
LCS 310-425857/23-A	Lab Control Sample	31	43
MB 310-425857/21-A	Method Blank	24	72

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(34-142)	(34-142)
310-284515-3	MW-44A	74	93

Surrogate Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Surrogate Legend
DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)								
LCS 410-524027/2-A	Lab Control Sample	69	68								
MB 410-524027/1-A	Method Blank	71	61								

Surrogate Legend
DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-425979/5
Matrix: Water
Analysis Batch: 425979

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	<3.60		10.0	3.60	ug/L			06/28/24 11:57	1
Allyl chloride	<0.700		2.00	0.700	ug/L			06/28/24 11:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			06/28/24 11:57	1
Acetone	<3.10		10.0	3.10	ug/L			06/28/24 11:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			06/28/24 11:57	1
Benzene	<0.220		0.500	0.220	ug/L			06/28/24 11:57	1
Chloroprene	<0.230		1.00	0.230	ug/L			06/28/24 11:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			06/28/24 11:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			06/28/24 11:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			06/28/24 11:57	1
Bromoform	<0.780		5.00	0.780	ug/L			06/28/24 11:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			06/28/24 11:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			06/28/24 11:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			06/28/24 11:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			06/28/24 11:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			06/28/24 11:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			06/28/24 11:57	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			06/28/24 11:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			06/28/24 11:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			06/28/24 11:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			06/28/24 11:57	1
Chloroform	<1.30		3.00	1.30	ug/L			06/28/24 11:57	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			06/28/24 11:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			06/28/24 11:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			06/28/24 11:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			06/28/24 11:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			06/28/24 11:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			06/28/24 11:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			06/28/24 11:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			06/28/24 11:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			06/28/24 11:57	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			06/28/24 11:57	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			06/28/24 11:57	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			06/28/24 11:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			06/28/24 11:57	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			06/28/24 11:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			06/28/24 11:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			06/28/24 11:57	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			06/28/24 11:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			06/28/24 11:57	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			06/28/24 11:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			06/28/24 11:57	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			06/28/24 11:57	1
Naphthalene	<3.00		5.00	3.00	ug/L			06/28/24 11:57	1
o-Xylene	<0.400		1.00	0.400	ug/L			06/28/24 11:57	1
Propionitrile	<3.40		10.0	3.40	ug/L			06/28/24 11:57	1
Styrene	<0.370		1.00	0.370	ug/L			06/28/24 11:57	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			06/28/24 11:57	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-425979/5
Matrix: Water
Analysis Batch: 425979

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			06/28/24 11:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			06/28/24 11:57	1
Toluene	<0.430		1.00	0.430	ug/L			06/28/24 11:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			06/28/24 11:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			06/28/24 11:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			06/28/24 11:57	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			06/28/24 11:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			06/28/24 11:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			06/28/24 11:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			06/28/24 11:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			06/28/24 11:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			06/28/24 11:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			06/28/24 11:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			06/28/24 11:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			06/28/24 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*06/28/24 11:57*	*1*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*06/28/24 11:57*	*1*
Toluene-d8 (Surr)	*89*		*80 - 120*		*06/28/24 11:57*	*1*

Lab Sample ID: LCS 310-425979/6
Matrix: Water
Analysis Batch: 425979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	94.8	85.93		ug/L		91	49 - 150
Allyl chloride	20.0	22.66		ug/L		113	49 - 150
2-Butanone (MEK)	40.0	39.68		ug/L		99	50 - 150
Acetone	40.0	33.30		ug/L		83	50 - 150
Acrylonitrile	200	193.5		ug/L		97	50 - 150
Benzene	20.0	21.28		ug/L		106	72 - 124
Chloroprene	20.0	22.81		ug/L		114	69 - 133
Bromochloromethane	20.0	19.91		ug/L		100	73 - 130
Bromodichloromethane	20.0	19.11		ug/L		96	74 - 122
1,2-Dibromo-3-Chloropropane	20.0	15.68		ug/L		78	50 - 150
Bromoform	20.0	20.26		ug/L		101	61 - 122
1,2-Dibromoethane (EDB)	20.0	19.85		ug/L		99	75 - 125
Carbon disulfide	20.0	25.81		ug/L		129	59 - 135
Carbon tetrachloride	20.0	22.17		ug/L		111	67 - 132
1,2-Dichlorobenzene	20.0	17.98		ug/L		90	74 - 120
Chlorobenzene	20.0	19.31		ug/L		97	76 - 120
1,3-Dichlorobenzene	20.0	19.92		ug/L		100	72 - 120
Chlorodibromomethane	20.0	19.25		ug/L		96	71 - 121
1,4-Dichlorobenzene	20.0	18.17		ug/L		91	72 - 120
Chloroform	20.0	20.17		ug/L		101	72 - 125
1,1-Dichloroethane	20.0	20.09		ug/L		100	70 - 127
1,2-Dichloroethane	20.0	19.68		ug/L		98	71 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-425979/6
Matrix: Water
Analysis Batch: 425979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	20.99		ug/L		105	74 - 123
1,1-Dichloroethene	20.0	24.66		ug/L		123	63 - 132
cis-1,3-Dichloropropene	20.0	20.77		ug/L		104	71 - 125
1,2-Dichloropropane	20.0	20.17		ug/L		101	73 - 124
Dibromomethane	20.0	19.68		ug/L		98	74 - 125
1,3-Dichloropropane	20.0	19.99		ug/L		100	72 - 125
2,2-Dichloropropane	20.0	22.55		ug/L		113	50 - 150
1,1-Dichloropropene	20.0	22.88		ug/L		114	69 - 132
Ethylbenzene	20.0	20.75		ug/L		104	74 - 122
Ethyl methacrylate	20.0	19.07		ug/L		95	70 - 129
2-Hexanone	40.0	38.31		ug/L		96	60 - 140
Iodomethane	20.0	22.36		ug/L		112	10 - 150
Methacrylonitrile	200	190.9		ug/L		95	69 - 129
Methylene Chloride	20.0	21.73		ug/L		109	50 - 150
Methyl methacrylate	40.0	39.92		ug/L		100	68 - 131
4-Methyl-2-pentanone (MIBK)	40.0	36.68		ug/L		92	60 - 139
Naphthalene	20.0	18.27		ug/L		91	50 - 150
Propionitrile	200	194.7		ug/L		97	63 - 135
Styrene	20.0	21.37		ug/L		107	74 - 121
1,1,1,2-Tetrachloroethane	20.0	20.29		ug/L		101	71 - 120
1,1,2,2-Tetrachloroethane	20.0	18.02		ug/L		90	68 - 124
Tetrachloroethene	20.0	23.30		ug/L		117	71 - 130
Toluene	20.0	20.87		ug/L		104	74 - 123
trans-1,4-Dichloro-2-butene	20.0	16.61		ug/L		83	50 - 150
trans-1,2-Dichloroethene	20.0	23.03		ug/L		115	70 - 126
trans-1,3-Dichloropropene	20.0	19.35		ug/L		97	69 - 123
1,2,4-Trichlorobenzene	20.0	17.63		ug/L		88	68 - 124
1,1,1-Trichloroethane	20.0	22.33		ug/L		112	73 - 129
1,1,2-Trichloroethane	20.0	19.75		ug/L		99	73 - 123
Trichloroethene	20.0	21.84		ug/L		109	72 - 126
1,2,3-Trichloropropane	20.0	19.37		ug/L		97	65 - 127
Vinyl acetate	40.0	41.88		ug/L		105	50 - 150
Xylenes, Total	40.0	40.90		ug/L		102	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*91*		*73 - 130*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-425979/7
Matrix: Water
Analysis Batch: 425979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	14.07		ug/L		70	23 - 150
Chloroethane	20.0	18.02		ug/L		90	54 - 136
Dichlorodifluoromethane	20.0	15.29		ug/L		76	39 - 150
Chloromethane	20.0	17.32		ug/L		87	38 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-425979/7
Matrix: Water
Analysis Batch: 425979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	21.25		ug/L		106	54 - 149
Vinyl chloride	20.0	17.97		ug/L		90	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*73 - 130*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*
Toluene-d8 (Surr)	*86*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-426155/1-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.640		10.0	0.640	ug/L		07/02/24 08:00	07/11/24 11:00	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		07/02/24 08:00	07/11/24 11:00	1
Acetophenone	<0.690		10.0	0.690	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
Anthracene	<0.870		10.0	0.870	ug/L		07/02/24 08:00	07/11/24 11:00	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		07/02/24 08:00	07/11/24 11:00	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		07/02/24 08:00	07/11/24 11:00	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		07/02/24 08:00	07/11/24 11:00	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		07/02/24 08:00	07/11/24 11:00	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		07/02/24 08:00	07/11/24 11:00	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		07/02/24 08:00	07/11/24 11:00	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		07/02/24 08:00	07/11/24 11:00	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		07/02/24 08:00	07/11/24 11:00	1
Chrysene	<0.870		10.0	0.870	ug/L		07/02/24 08:00	07/11/24 11:00	1
Diallate	<4.00		10.0	4.00	ug/L		07/02/24 08:00	07/11/24 11:00	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		07/02/24 08:00	07/11/24 11:00	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		07/02/24 08:00	07/11/24 11:00	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
Dimethoate	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		07/02/24 08:00	07/11/24 11:00	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426155/1-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		07/02/24 08:00	07/11/24 11:00	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		07/02/24 08:00	07/11/24 11:00	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		07/02/24 08:00	07/11/24 11:00	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		07/02/24 08:00	07/11/24 11:00	1
Dinoseb	<2.40		10.0	2.40	ug/L		07/02/24 08:00	07/11/24 11:00	1
Diphenylamine	<6.00		10.0	6.00	ug/L		07/02/24 08:00	07/11/24 11:00	1
Disulfoton	<2.40		10.0	2.40	ug/L		07/02/24 08:00	07/11/24 11:00	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
Famphur	<3.80		10.0	3.80	ug/L		07/02/24 08:00	07/11/24 11:00	1
Fluoranthene	<1.70		10.0	1.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
Fluorene	<0.790		10.0	0.790	ug/L		07/02/24 08:00	07/11/24 11:00	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		07/02/24 08:00	07/11/24 11:00	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		07/02/24 08:00	07/11/24 11:00	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		07/02/24 08:00	07/11/24 11:00	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		07/02/24 08:00	07/11/24 11:00	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
Isodrin	<4.70		10.0	4.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
Isophorone	<0.930		10.0	0.930	ug/L		07/02/24 08:00	07/11/24 11:00	1
Isosafrole	<2.30		10.0	2.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
Kepone	<1.00		10.0	1.00	ug/L		07/02/24 08:00	07/11/24 11:00	1
Methapyrilene	<0.760		10.0	0.760	ug/L		07/02/24 08:00	07/11/24 11:00	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		07/02/24 08:00	07/11/24 11:00	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		07/02/24 08:00	07/11/24 11:00	1
Methyl parathion	<2.30		10.0	2.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		07/02/24 08:00	07/11/24 11:00	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		07/02/24 08:00	07/11/24 11:00	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		07/02/24 08:00	07/11/24 11:00	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		07/02/24 08:00	07/11/24 11:00	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		07/02/24 08:00	07/11/24 11:00	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		07/02/24 08:00	07/11/24 11:00	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426155/1-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
o-Toluidine	<2.90		10.0	2.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		07/02/24 08:00	07/11/24 11:00	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		07/02/24 08:00	07/11/24 11:00	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		07/02/24 08:00	07/11/24 11:00	1
Phenacetin	<1.90		10.0	1.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
Phenanthrene	<0.790		10.0	0.790	ug/L		07/02/24 08:00	07/11/24 11:00	1
Phenol	<1.10		10.0	1.10	ug/L		07/02/24 08:00	07/11/24 11:00	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		07/02/24 08:00	07/11/24 11:00	1
Phorate	<3.20		10.0	3.20	ug/L		07/02/24 08:00	07/11/24 11:00	1
Pronamide	<2.70		10.0	2.70	ug/L		07/02/24 08:00	07/11/24 11:00	1
Pyrene	<0.790		10.0	0.790	ug/L		07/02/24 08:00	07/11/24 11:00	1
Safrole	<2.80		10.0	2.80	ug/L		07/02/24 08:00	07/11/24 11:00	1
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
Thionazin	<3.50		10.0	3.50	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		07/02/24 08:00	07/11/24 11:00	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		07/02/24 08:00	07/11/24 11:00	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		07/02/24 08:00	07/11/24 11:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*39 - 118*	*07/02/24 08:00*	*07/11/24 11:00*	*1*
2-Fluorophenol (Surr)	*60*		*25 - 110*	*07/02/24 08:00*	*07/11/24 11:00*	*1*
Nitrobenzene-d5 (Surr)	*89*		*45 - 129*	*07/02/24 08:00*	*07/11/24 11:00*	*1*
Phenol-d5 (Surr)	*58*		*21 - 110*	*07/02/24 08:00*	*07/11/24 11:00*	*1*
Terphenyl-d14 (Surr)	*102*		*12 - 144*	*07/02/24 08:00*	*07/11/24 11:00*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*27 - 136*	*07/02/24 08:00*	*07/11/24 11:00*	*1*

Lab Sample ID: LCS 310-426155/2-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	80.42		ug/L		80	43 - 110
Acenaphthylene	100	74.90		ug/L		75	40 - 110
Acetophenone	100	86.92		ug/L		87	48 - 119
2-Acetylaminofluorene	64.0	43.63		ug/L		68	35 - 150
4-Aminobiphenyl	64.0	47.49		ug/L		74	24 - 138
Anthracene	100	87.57		ug/L		88	51 - 120
Benzo[a]anthracene	100	81.68		ug/L		82	51 - 123
Benzo[a]pyrene	100	88.20		ug/L		88	48 - 125
Benzo[b]fluoranthene	100	85.34		ug/L		85	49 - 129
Benzo[g,h,i]perylene	100	88.62		ug/L		89	43 - 139

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426155/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426950
Prep Batch: 426155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[k]fluoranthene	100	91.73		ug/L		92	47 - 130
Benzyl alcohol	100	86.19		ug/L		86	39 - 128
Bis(2-chloroethoxy)methane	100	84.50		ug/L		85	48 - 121
Bis(2-chloroethyl)ether	100	87.78		ug/L		88	43 - 123
bis (2-chloroisopropyl) ether	100	73.15		ug/L		73	34 - 123
Bis(2-ethylhexyl) phthalate	100	92.13		ug/L		92	43 - 143
4-Bromophenyl phenyl ether	100	84.12		ug/L		84	45 - 119
Butyl benzyl phthalate	100	87.47		ug/L		87	46 - 135
4-Chloroaniline	100	76.30		ug/L		76	21 - 139
Chlorobenzilate	64.0	56.85		ug/L		89	52 - 138
4-Chloro-3-methylphenol	100	85.23		ug/L		85	49 - 130
2-Chloronaphthalene	100	67.71		ug/L		68	37 - 110
2-Chlorophenol	100	91.27		ug/L		91	44 - 117
4-Chlorophenyl phenyl ether	100	73.95		ug/L		74	44 - 116
Chrysene	100	86.52		ug/L		87	51 - 125
Diallate	64.0	54.23		ug/L		85	42 - 141
Dibenzo(a,h)anthracene	100	78.97		ug/L		79	38 - 149
Dibenzofuran	100	78.81		ug/L		79	45 - 112
2,4-Dichlorophenol	100	88.44		ug/L		88	41 - 124
2,6-Dichlorophenol	100	87.28		ug/L		87	30 - 130
Diethyl phthalate	100	104.7		ug/L		105	43 - 135
Dimethoate	64.0	63.90		ug/L		100	51 - 150
7,12-Dimethylbenz(a)anthracene	64.0	56.73		ug/L		89	51 - 129
3,3'-Dimethylbenzidine	64.0	10.54		ug/L		16	10 - 150
2,4-Dimethylphenol	100	83.53		ug/L		84	31 - 142
Dimethyl phthalate	100	97.65		ug/L		98	43 - 129
Di-n-butyl phthalate	100	95.39		ug/L		95	50 - 133
1,3-Dinitrobenzene	100	96.78		ug/L		97	45 - 138
4,6-Dinitro-2-methylphenol	200	192.6		ug/L		96	22 - 143
2,4-Dinitrophenol	200	170.5		ug/L		85	10 - 138
2,4-Dinitrotoluene	100	84.30		ug/L		84	47 - 137
2,6-Dinitrotoluene	100	86.10		ug/L		86	51 - 130
Di-n-octyl phthalate	100	73.97		ug/L		74	34 - 150
Dinoseb	64.0	64.01		ug/L		100	25 - 146
Diphenylamine	85.0	73.12		ug/L		86	48 - 122
Disulfoton	64.0	44.72		ug/L		70	54 - 131
Ethyl methanesulfonate	64.0	48.58		ug/L		76	48 - 120
Ethyl Parathion	64.0	55.94		ug/L		87	52 - 149
Famphur	64.0	114.0	E *+	ug/L		178	44 - 150
Fluoranthene	100	84.01		ug/L		84	47 - 128
Fluorene	100	83.30		ug/L		83	45 - 119
Hexachlorobenzene	100	87.00		ug/L		87	48 - 119
Hexachlorobutadiene	100	64.62		ug/L		65	32 - 110
Hexachlorocyclopentadiene	100	39.62		ug/L		40	10 - 110
Hexachloroethane	100	51.11		ug/L		51	31 - 110
Hexachloropropene	64.0	10.02		ug/L		16	10 - 110
Indeno[1,2,3-cd]pyrene	100	84.05		ug/L		84	37 - 150
Isodrin	64.0	53.75		ug/L		84	52 - 125
Isophorone	100	80.93		ug/L		81	50 - 125

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426155/2-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Isosafrole	64.0	46.20		ug/L		72	31 - 123
Kepone	64.0	113.0	*+	ug/L		177	10 - 150
Methapyrilene	64.0	15.86		ug/L		25	10 - 110
3-Methylcholanthrene	64.0	43.32		ug/L		68	43 - 150
Methyl methanesulfonate	64.0	29.92		ug/L		47	36 - 110
2-Methylnaphthalene	100	68.66		ug/L		69	33 - 110
Methyl parathion	64.0	63.66		ug/L		99	50 - 150
2-Methylphenol	100	82.17		ug/L		82	47 - 118
Methylphenol, 3 & 4	100	83.66		ug/L		84	46 - 117
1,4-Naphthoquinone	64.0	49.27		ug/L		77	37 - 149
1-Naphthylamine	64.0	26.80		ug/L		42	19 - 110
2-Naphthylamine	64.0	41.09		ug/L		64	18 - 127
2-Nitroaniline	100	96.44		ug/L		96	50 - 135
3-Nitroaniline	100	91.80		ug/L		92	42 - 139
4-Nitroaniline	100	82.02		ug/L		82	31 - 145
Nitrobenzene	100	78.91		ug/L		79	47 - 116
5-Nitro-o-toluidine	64.0	54.31		ug/L		85	47 - 145
2-Nitrophenol	100	84.27		ug/L		84	41 - 129
4-Nitrophenol	200	103.6		ug/L		52	18 - 110
N-Nitrosodiethylamine	64.0	51.50		ug/L		80	47 - 138
N-Nitrosodimethylamine	100	67.95		ug/L		68	37 - 110
N-Nitrosodi-n-butylamine	64.0	54.91		ug/L		86	52 - 142
N-Nitrosodi-n-propylamine	100	89.54		ug/L		90	45 - 130
N-Nitrosodiphenylamine	100	86.54		ug/L		87	49 - 121
N-Nitrosomethylethylamine	64.0	55.34		ug/L		86	54 - 123
N-Nitrosopiperidine	64.0	55.48		ug/L		87	60 - 127
N-Nitrosopyrrolidine	64.0	53.52		ug/L		84	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	51.36		ug/L		80	45 - 113
o-Toluidine	64.0	48.17		ug/L		75	24 - 142
p-Dimethylamino azobenzene	64.0	56.12		ug/L		88	42 - 138
Pentachlorobenzene	64.0	33.08		ug/L		52	33 - 110
Pentachloronitrobenzene	64.0	59.59		ug/L		93	65 - 127
Pentachlorophenol	200	179.0		ug/L		90	26 - 133
Phenacetin	64.0	57.60		ug/L		90	56 - 146
Phenanthrene	100	88.45		ug/L		88	51 - 117
Phenol	100	58.71		ug/L		59	29 - 110
1,4-phenylenediamine	64.0	<1.90	*-	ug/L		-1	20 - 120
Phorate	64.0	51.00		ug/L		80	57 - 135
Pronamide	64.0	55.82		ug/L		87	61 - 144
Pyrene	100	90.12		ug/L		90	48 - 127
Safrole	64.0	43.90		ug/L		69	34 - 110
1,2,4,5-Tetrachlorobenzene	100	68.12		ug/L		68	36 - 110
2,3,4,6-Tetrachlorophenol	100	64.35		ug/L		64	33 - 134
Thionazin	64.0	54.64		ug/L		85	52 - 147
2,4,5-Trichlorophenol	100	88.88		ug/L		89	35 - 133
2,4,6-Trichlorophenol	100	99.17		ug/L		99	28 - 139
1,3,5-Trinitrobenzene	64.0	51.32		ug/L		80	39 - 144

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426155/2-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426155

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	77		39 - 118
2-Fluorophenol (Surr)	69		25 - 110
Nitrobenzene-d5 (Surr)	96		45 - 129
Phenol-d5 (Surr)	66		21 - 110
Terphenyl-d14 (Surr)	108		12 - 144
2,4,6-Tribromophenol (Surr)	103		27 - 136

Lab Sample ID: LCSD 310-426155/3-A
Matrix: Water
Analysis Batch: 426950

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426155

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene			100	74.31		ug/L		74	43 - 110	8	35
Acenaphthylene			100	69.46		ug/L		69	40 - 110	8	35
Acetophenone			100	78.17		ug/L		78	48 - 119	11	35
2-Acetylaminofluorene			64.0	46.68		ug/L		73	35 - 150	7	28
4-Aminobiphenyl			64.0	46.33		ug/L		72	24 - 138	2	35
Anthracene			100	83.33		ug/L		83	51 - 120	5	35
Benzo[a]anthracene			100	82.46		ug/L		82	51 - 123	1	35
Benzo[a]pyrene			100	86.63		ug/L		87	48 - 125	2	35
Benzo[b]fluoranthene			100	83.46		ug/L		83	49 - 129	2	35
Benzo[g,h,i]perylene			100	92.81		ug/L		93	43 - 139	5	35
Benzo[k]fluoranthene			100	96.31		ug/L		96	47 - 130	5	35
Benzyl alcohol			100	83.23		ug/L		83	39 - 128	3	35
Bis(2-chloroethoxy)methane			100	80.48		ug/L		80	48 - 121	5	35
Bis(2-chloroethyl)ether			100	82.75		ug/L		83	43 - 123	6	35
bis (2-chloroisopropyl) ether			100	65.11		ug/L		65	34 - 123	12	35
Bis(2-ethylhexyl) phthalate			100	92.67		ug/L		93	43 - 143	1	35
4-Bromophenyl phenyl ether			100	84.02		ug/L		84	45 - 119	0	35
Butyl benzyl phthalate			100	87.60		ug/L		88	46 - 135	0	35
4-Chloroaniline			100	73.16		ug/L		73	21 - 139	4	35
Chlorobenzilate			64.0	55.81		ug/L		87	52 - 138	2	28
4-Chloro-3-methylphenol			100	80.84		ug/L		81	49 - 130	5	35
2-Chloronaphthalene			100	66.47		ug/L		66	37 - 110	2	35
2-Chlorophenol			100	85.26		ug/L		85	44 - 117	7	35
4-Chlorophenyl phenyl ether			100	71.40		ug/L		71	44 - 116	4	35
Chrysene			100	89.28		ug/L		89	51 - 125	3	35
Diallate			64.0	56.84		ug/L		89	42 - 141	5	35
Dibenzo(a,h)anthracene			100	82.77		ug/L		83	38 - 149	5	35
Dibenzofuran			100	72.86		ug/L		73	45 - 112	8	35
2,4-Dichlorophenol			100	85.78		ug/L		86	41 - 124	3	35
2,6-Dichlorophenol			100	81.60		ug/L		82	30 - 130	7	35
Diethyl phthalate			100	91.34		ug/L		91	43 - 135	14	35
Dimethoate			64.0	61.18		ug/L		96	51 - 150	4	26
7,12-Dimethylbenz(a)anthracene			64.0	53.68		ug/L		84	51 - 129	6	28
3,3'-Dimethylbenzidine			64.0	31.04	*1	ug/L		48	10 - 150	99	35
2,4-Dimethylphenol			100	84.12		ug/L		84	31 - 142	1	35
Dimethyl phthalate			100	91.04		ug/L		91	43 - 129	7	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-426155/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426950
Prep Batch: 426155

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Di-n-butyl phthalate	100	92.26		ug/L		92	50 - 133	3	35
1,3-Dinitrobenzene	100	90.63		ug/L		91	45 - 138	7	35
4,6-Dinitro-2-methylphenol	200	171.2		ug/L		86	22 - 143	12	35
2,4-Dinitrophenol	200	159.3		ug/L		80	10 - 138	7	35
2,4-Dinitrotoluene	100	79.19		ug/L		79	47 - 137	6	35
2,6-Dinitrotoluene	100	80.76		ug/L		81	51 - 130	6	35
Di-n-octyl phthalate	100	75.33		ug/L		75	34 - 150	2	35
Dinoseb	64.0	60.83		ug/L		95	25 - 146	5	35
Diphenylamine	85.0	67.53		ug/L		79	48 - 122	8	35
Disulfoton	64.0	44.65		ug/L		70	54 - 131	0	24
Ethyl methanesulfonate	64.0	45.49		ug/L		71	48 - 120	7	27
Ethyl Parathion	64.0	55.25		ug/L		86	52 - 149	1	26
Famphur	64.0	112.1	E *+	ug/L		175	44 - 150	2	35
Fluoranthene	100	80.15		ug/L		80	47 - 128	5	35
Fluorene	100	77.39		ug/L		77	45 - 119	7	35
Hexachlorobenzene	100	87.50		ug/L		87	48 - 119	1	35
Hexachlorobutadiene	100	71.84		ug/L		72	32 - 110	11	35
Hexachlorocyclopentadiene	100	41.51		ug/L		42	10 - 110	5	35
Hexachloroethane	100	52.73		ug/L		53	31 - 110	3	35
Hexachloropropene	64.0	17.36	*1	ug/L		27	10 - 110	54	35
Indeno[1,2,3-cd]pyrene	100	86.61		ug/L		87	37 - 150	3	35
Isodrin	64.0	51.69		ug/L		81	52 - 125	4	26
Isophorone	100	76.66		ug/L		77	50 - 125	5	35
Isosafrole	64.0	45.94		ug/L		72	31 - 123	1	35
Kepone	64.0	125.2	*+	ug/L		196	10 - 150	10	35
Methapyrilene	64.0	11.22		ug/L		18	10 - 110	34	35
3-Methylcholanthrene	64.0	46.52		ug/L		73	43 - 150	7	32
Methyl methanesulfonate	64.0	29.65		ug/L		46	36 - 110	1	26
2-Methylnaphthalene	100	65.34		ug/L		65	33 - 110	5	35
Methyl parathion	64.0	59.11		ug/L		92	50 - 150	7	25
2-Methylphenol	100	77.76		ug/L		78	47 - 118	6	35
Methylphenol, 3 & 4	100	78.97		ug/L		79	46 - 117	6	35
1,4-Naphthoquinone	64.0	46.61		ug/L		73	37 - 149	6	29
1-Naphthylamine	64.0	25.84		ug/L		40	19 - 110	4	35
2-Naphthylamine	64.0	37.70		ug/L		59	18 - 127	9	35
2-Nitroaniline	100	88.02		ug/L		88	50 - 135	9	35
3-Nitroaniline	100	86.35		ug/L		86	42 - 139	6	35
4-Nitroaniline	100	77.03		ug/L		77	31 - 145	6	35
Nitrobenzene	100	73.66		ug/L		74	47 - 116	7	35
5-Nitro-o-toluidine	64.0	50.23		ug/L		78	47 - 145	8	31
2-Nitrophenol	100	79.84		ug/L		80	41 - 129	5	35
4-Nitrophenol	200	97.98		ug/L		49	18 - 110	6	35
N-Nitrosodiethylamine	64.0	49.82		ug/L		78	47 - 138	3	26
N-Nitrosodimethylamine	100	68.48		ug/L		68	37 - 110	1	35
N-Nitrosodi-n-butylamine	64.0	54.05		ug/L		84	52 - 142	2	27
N-Nitrosodi-n-propylamine	100	80.37		ug/L		80	45 - 130	11	35
N-Nitrosodiphenylamine	100	80.46		ug/L		80	49 - 121	7	35
N-Nitrosomethylethylamine	64.0	53.33		ug/L		83	54 - 123	4	26
N-Nitrosopiperidine	64.0	52.47		ug/L		82	60 - 127	6	26

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-426155/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426950
Prep Batch: 426155

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosopyrrolidine			64.0	50.82		ug/L		79	56 - 143	5	25
o,o',o''-Triethylphosphorothioate			64.0	46.23		ug/L		72	45 - 113	11	33
o-Toluidine			64.0	46.02		ug/L		72	24 - 142	5	35
p-Dimethylamino azobenzene			64.0	52.82		ug/L		83	42 - 138	6	29
Pentachlorobenzene			64.0	36.56		ug/L		57	33 - 110	10	35
Pentachloronitrobenzene			64.0	57.43		ug/L		90	65 - 127	4	29
Pentachlorophenol			200	177.6		ug/L		89	26 - 133	1	35
Phenacetin			64.0	53.33		ug/L		83	56 - 146	8	25
Phenanthrene			100	85.10		ug/L		85	51 - 117	4	35
Phenol			100	55.63		ug/L		56	29 - 110	5	35
1,4-phenylenediamine			64.0	<1.90	*-	ug/L		-2	20 - 120	25	35
Phorate			64.0	51.04		ug/L		80	57 - 135	0	26
Pronamide			64.0	54.71		ug/L		85	61 - 144	2	27
Pyrene			100	87.25		ug/L		87	48 - 127	3	35
Safrole			64.0	41.21		ug/L		64	34 - 110	6	35
1,2,4,5-Tetrachlorobenzene			100	71.18		ug/L		71	36 - 110	4	35
2,3,4,6-Tetrachlorophenol			100	62.66		ug/L		63	33 - 134	3	35
Thionazin			64.0	50.03		ug/L		78	52 - 147	9	28
2,4,5-Trichlorophenol			100	87.46		ug/L		87	35 - 133	2	35
2,4,6-Trichlorophenol			100	92.00		ug/L		92	28 - 139	7	35
1,3,5-Trinitrobenzene			64.0	47.89		ug/L		75	39 - 144	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*70*		*39 - 118*
2-Fluorophenol (Surr)	*65*		*25 - 110*
Nitrobenzene-d5 (Surr)	*89*		*45 - 129*
Phenol-d5 (Surr)	*63*		*21 - 110*
Terphenyl-d14 (Surr)	*106*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*100*		*27 - 136*

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-426054/4
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			07/01/24 09:02	1
Isobutanol	<2400		10000	2400	ug/L			07/01/24 09:02	1

Lab Sample ID: LCS 310-426054/5
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426054

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetonitrile			113000	110700		ug/L		98	67 - 132		
Isobutanol			104000	96350		ug/L		92	80 - 121		

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-425857/21-A
Matrix: Water
Analysis Batch: 425939

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.804		1.96	0.804	ug/L		06/27/24 12:42	06/28/24 12:21	1
PCB-1221	<0.804		1.96	0.804	ug/L		06/27/24 12:42	06/28/24 12:21	1
PCB-1232	<0.804		1.96	0.804	ug/L		06/27/24 12:42	06/28/24 12:21	1
PCB-1242	<0.804		1.96	0.804	ug/L		06/27/24 12:42	06/28/24 12:21	1
PCB-1248	<0.676		1.96	0.676	ug/L		06/27/24 12:42	06/28/24 12:21	1
PCB-1254	<0.676		1.96	0.676	ug/L		06/27/24 12:42	06/28/24 12:21	1
PCB-1260	<0.676		1.96	0.676	ug/L		06/27/24 12:42	06/28/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*24*		*10 - 136*	*06/27/24 12:42*	*06/28/24 12:21*	*1*
Tetrachloro-m-xylene	*72*		*10 - 130*	*06/27/24 12:42*	*06/28/24 12:21*	*1*

Lab Sample ID: LCS 310-425857/23-A
Matrix: Water
Analysis Batch: 425939

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425857

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			26.6	18.31		ug/L		69	30 - 133		
PCB-1260			26.6	19.88		ug/L		75	31 - 133		

Surrogate			*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)			*31*		*10 - 136*
Tetrachloro-m-xylene			*43*		*10 - 130*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-524027/1-A
Matrix: Water
Analysis Batch: 524207

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 524027

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		07/02/24 15:15	07/03/24 09:31	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		07/02/24 15:15	07/03/24 09:31	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		07/02/24 15:15	07/03/24 09:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*71*		*34 - 142*	*07/02/24 15:15*	*07/03/24 09:31*	*1*
DCAA	*61*		*34 - 142*	*07/02/24 15:15*	*07/03/24 09:31*	*1*

Lab Sample ID: LCS 410-524027/2-A
Matrix: Water
Analysis Batch: 524207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 524027

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4-D			2.51	2.133		ug/L		85	53 - 159		
Silvex (2,4,5-TP)			0.250	0.2268		ug/L		91	62 - 170		
2,4,5-T			0.250	0.2607		ug/L		104	57 - 171		

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-524027/2-A
Matrix: Water
Analysis Batch: 524207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 524027

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*69*		*34 - 142*
DCAA	*68*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-426022/1-A
Matrix: Water
Analysis Batch: 426684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/01/24 09:00	07/08/24 14:28	1
Arsenic	<0.530		2.00	0.530	ug/L		07/01/24 09:00	07/08/24 14:28	1

Lab Sample ID: MB 310-426022/1-A
Matrix: Water
Analysis Batch: 426818

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.660		2.00	0.660	ug/L		07/01/24 09:00	07/09/24 17:23	1
Beryllium	<0.330		1.00	0.330	ug/L		07/01/24 09:00	07/09/24 17:23	1
Cadmium	<0.100		0.200	0.100	ug/L		07/01/24 09:00	07/09/24 17:23	1
Chromium	<1.20		5.00	1.20	ug/L		07/01/24 09:00	07/09/24 17:23	1
Cobalt	<0.170		0.500	0.170	ug/L		07/01/24 09:00	07/09/24 17:23	1
Copper	2.115	J	5.00	1.80	ug/L		07/01/24 09:00	07/09/24 17:23	1
Lead	<0.260		0.500	0.260	ug/L		07/01/24 09:00	07/09/24 17:23	1
Nickel	<2.10		5.00	2.10	ug/L		07/01/24 09:00	07/09/24 17:23	1
Selenium	<1.40		5.00	1.40	ug/L		07/01/24 09:00	07/09/24 17:23	1
Silver	<0.500		1.00	0.500	ug/L		07/01/24 09:00	07/09/24 17:23	1
Thallium	<0.570		1.00	0.570	ug/L		07/01/24 09:00	07/09/24 17:23	1
Vanadium	<1.10		5.00	1.10	ug/L		07/01/24 09:00	07/09/24 17:23	1
Zinc	<9.70		20.0	9.70	ug/L		07/01/24 09:00	07/09/24 17:23	1
Tin	<2.30		5.00	2.30	ug/L		07/01/24 09:00	07/09/24 17:23	1

Lab Sample ID: LCS 310-426022/2-A
Matrix: Water
Analysis Batch: 426684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	216.7		ug/L		108	80 - 120
Arsenic	200	215.2		ug/L		108	80 - 120

Lab Sample ID: LCS 310-426022/2-A
Matrix: Water
Analysis Batch: 426818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	100	99.66		ug/L		100	80 - 120
Beryllium	100	97.70		ug/L		98	80 - 120
Cadmium	100	95.20		ug/L		95	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-426022/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426818
Prep Batch: 426022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	100	100.4		ug/L		100	80 - 120
Cobalt	100	102.9		ug/L		103	80 - 120
Copper	200	202.8		ug/L		101	80 - 120
Lead	200	204.0		ug/L		102	80 - 120
Nickel	200	204.3		ug/L		102	80 - 120
Selenium	400	351.7		ug/L		88	80 - 120
Silver	100	97.47		ug/L		97	80 - 120
Thallium	100	80.47		ug/L		80	80 - 120
Vanadium	100	99.27		ug/L		99	80 - 120
Zinc	200	180.1		ug/L		90	80 - 120
Tin	200	206.0		ug/L		103	80 - 120

Lab Sample ID: 310-284515-1 MS
Client Sample ID: MW-29A
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 426541
Prep Batch: 426022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	3.93		200	203.5		ug/L		100	75 - 125
Barium	143		100	239.7		ug/L		97	75 - 125
Cadmium	<0.100		100	89.35		ug/L		89	75 - 125
Chromium	<1.20		100	103.6		ug/L		104	75 - 125
Copper	1.98	J B	200	198.0		ug/L		98	75 - 125
Lead	<0.260		200	210.3		ug/L		105	75 - 125
Selenium	<1.40		400	394.2		ug/L		99	75 - 125
Silver	<0.500		100	80.30		ug/L		80	75 - 125

Lab Sample ID: 310-284515-1 MS
Client Sample ID: MW-29A
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 426684
Prep Batch: 426022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	215.4		ug/L		108	75 - 125
Cobalt	11.9		100	113.1		ug/L		101	75 - 125
Thallium	0.579	J	100	93.79		ug/L		93	75 - 125
Vanadium	<1.10		100	100.6		ug/L		101	75 - 125
Tin	<2.30		200	185.6		ug/L		93	75 - 125

Lab Sample ID: 310-284515-1 MS
Client Sample ID: MW-29A
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 426818
Prep Batch: 426022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	<0.330		100	99.26		ug/L		99	75 - 125
Nickel	63.9		200	256.0		ug/L		96	75 - 125
Zinc	<9.70		200	183.0		ug/L		92	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-284515-1 MSD — **Client Sample ID: MW-29A**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 426541 — **Prep Batch: 426022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	3.93		200	206.3		ug/L		101	75 - 125	1	20
Barium	143		100	241.7		ug/L		99	75 - 125	1	20
Cadmium	<0.100		100	89.58		ug/L		90	75 - 125	0	20
Chromium	<1.20		100	104.2		ug/L		104	75 - 125	1	20
Copper	1.98	J B	200	200.8		ug/L		99	75 - 125	1	20
Lead	<0.260		200	212.1		ug/L		106	75 - 125	1	20
Selenium	<1.40		400	399.4		ug/L		100	75 - 125	1	20
Silver	<0.500		100	81.05		ug/L		81	75 - 125	1	20

Lab Sample ID: 310-284515-1 MSD — **Client Sample ID: MW-29A**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 426684 — **Prep Batch: 426022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	217.2		ug/L		109	75 - 125	1	20
Cobalt	11.9		100	114.0		ug/L		102	75 - 125	1	20
Thallium	0.579	J	100	92.42		ug/L		92	75 - 125	1	20
Vanadium	<1.10		100	101.4		ug/L		101	75 - 125	1	20
Tin	<2.30		200	188.0		ug/L		94	75 - 125	1	20

Lab Sample ID: 310-284515-1 MSD — **Client Sample ID: MW-29A**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 426818 — **Prep Batch: 426022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Beryllium	<0.330		100	93.75		ug/L		94	75 - 125	6	20
Nickel	63.9		200	245.0		ug/L		91	75 - 125	4	20
Zinc	<9.70		200	173.9		ug/L		87	75 - 125	5	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-426638/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 426778 — **Prep Batch: 426638**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		07/08/24 14:02	07/09/24 13:24	1

Lab Sample ID: LCS 310-426638/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 426778 — **Prep Batch: 426638**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			1.67	2.235	*+	ug/L		134	80 - 120		

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-426227/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426438
Prep Batch: 426227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		07/02/24 10:36	07/03/24 16:33	1

Lab Sample ID: LCS 310-426227/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426438
Prep Batch: 426227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	197.5		ug/L		99	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-618564/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 618637
Prep Batch: 618564

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1410		3000	1410	ug/L		07/02/24 09:28	07/02/24 13:47	1

Lab Sample ID: LCS 240-618564/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 618637
Prep Batch: 618564

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	7470	7467		ug/L		100	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-425833/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/27/24 11:38	1

Lab Sample ID: LCS 310-425833/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425833

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	103.0		mg/L		103	81 - 116

Lab Sample ID: MB 310-425861/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 425861

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			06/27/24 13:13	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-425861/2
Matrix: Water
Analysis Batch: 425861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101.0		mg/L		101	81 - 116

GC/MS VOA

Analysis Batch: 425979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	8260D	
310-284515-2	Trip Blank	Total/NA	Water	8260D	
310-284515-3	MW-44A	Total/NA	Ground Water	8260D	
310-284515-4	MW-101	Total/NA	Ground Water	8260D	
310-284515-5	MW-22	Total/NA	Ground Water	8260D	
310-284515-6	MW-22-FD	Total/NA	Ground Water	8260D	
310-284515-7	Equipment Blank #2 Deep	Total/NA	Ground Water	8260D	
MB 310-425979/5	Method Blank	Total/NA	Water	8260D	
LCS 310-425979/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-425979/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 426155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	3510C	
MB 310-426155/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-426155/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-426155/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 426950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	8270E	426155
MB 310-426155/1-A	Method Blank	Total/NA	Water	8270E	426155
LCS 310-426155/2-A	Lab Control Sample	Total/NA	Water	8270E	426155
LCSD 310-426155/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	426155

GC Semi VOA

Prep Batch: 425857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	3511	
MB 310-425857/21-A	Method Blank	Total/NA	Water	3511	
LCS 310-425857/23-A	Lab Control Sample	Total/NA	Water	3511	

Analysis Batch: 425934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	8081B	425857

Analysis Batch: 425939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-425857/21-A	Method Blank	Total/NA	Water	8082A	425857
LCS 310-425857/23-A	Lab Control Sample	Total/NA	Water	8082A	425857

Analysis Batch: 426054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	8015C	
MB 310-426054/4	Method Blank	Total/NA	Water	8015C	
LCS 310-426054/5	Lab Control Sample	Total/NA	Water	8015C	

GC Semi VOA

Analysis Batch: 426081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	8082A	425857

Prep Batch: 524027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	8151A	
MB 410-524027/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-524027/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 524207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	8151A	524027
MB 410-524027/1-A	Method Blank	Total/NA	Water	8151A	524027
LCS 410-524027/2-A	Lab Control Sample	Total/NA	Water	8151A	524027

Metals

Prep Batch: 426022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	3005A	
310-284515-3	MW-44A	Total/NA	Ground Water	3005A	
310-284515-4	MW-101	Total/NA	Ground Water	3005A	
310-284515-5	MW-22	Total/NA	Ground Water	3005A	
310-284515-6	MW-22-FD	Total/NA	Ground Water	3005A	
310-284515-7	Equipment Blank #2 Deep	Total/NA	Ground Water	3005A	
MB 310-426022/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-426022/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-284515-1 MS	MW-29A	Total/NA	Ground Water	3005A	
310-284515-1 MSD	MW-29A	Total/NA	Ground Water	3005A	

Analysis Batch: 426541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1 MS	MW-29A	Total/NA	Ground Water	6020B	426022
310-284515-1 MSD	MW-29A	Total/NA	Ground Water	6020B	426022

Prep Batch: 426638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	7470A	
MB 310-426638/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-426638/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 426684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	6020B	426022
310-284515-3	MW-44A	Total/NA	Ground Water	6020B	426022
310-284515-4	MW-101	Total/NA	Ground Water	6020B	426022
310-284515-5	MW-22	Total/NA	Ground Water	6020B	426022
MB 310-426022/1-A	Method Blank	Total/NA	Water	6020B	426022
LCS 310-426022/2-A	Lab Control Sample	Total/NA	Water	6020B	426022
310-284515-1 MS	MW-29A	Total/NA	Ground Water	6020B	426022
310-284515-1 MSD	MW-29A	Total/NA	Ground Water	6020B	426022

Metals

Analysis Batch: 426778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	7470A	426638
MB 310-426638/1-A	Method Blank	Total/NA	Water	7470A	426638
LCS 310-426638/2-A	Lab Control Sample	Total/NA	Water	7470A	426638

Analysis Batch: 426818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	6020B	426022
310-284515-3	MW-44A	Total/NA	Ground Water	6020B	426022
310-284515-4	MW-101	Total/NA	Ground Water	6020B	426022
310-284515-5	MW-22	Total/NA	Ground Water	6020B	426022
310-284515-6	MW-22-FD	Total/NA	Ground Water	6020B	426022
310-284515-7	Equipment Blank #2 Deep	Total/NA	Ground Water	6020B	426022
MB 310-426022/1-A	Method Blank	Total/NA	Water	6020B	426022
LCS 310-426022/2-A	Lab Control Sample	Total/NA	Water	6020B	426022
310-284515-1 MS	MW-29A	Total/NA	Ground Water	6020B	426022
310-284515-1 MSD	MW-29A	Total/NA	Ground Water	6020B	426022

Analysis Batch: 426959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-6	MW-22-FD	Total/NA	Ground Water	6020B	426022
310-284515-7	Equipment Blank #2 Deep	Total/NA	Ground Water	6020B	426022

General Chemistry

Analysis Batch: 425833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	I-3765-85	
310-284515-4	MW-101	Total/NA	Ground Water	I-3765-85	
310-284515-5	MW-22	Total/NA	Ground Water	I-3765-85	
310-284515-6	MW-22-FD	Total/NA	Ground Water	I-3765-85	
310-284515-7	Equipment Blank #2 Deep	Total/NA	Ground Water	I-3765-85	
MB 310-425833/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425833/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	I-3765-85	
MB 310-425861/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425861/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 426227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	9012B	
MB 310-426227/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-426227/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 426438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-3	MW-44A	Total/NA	Ground Water	9012B	426227
MB 310-426227/1-A	Method Blank	Total/NA	Water	9012B	426227
LCS 310-426227/2-A	Lab Control Sample	Total/NA	Water	9012B	426227

QC Association Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

General Chemistry

Prep Batch: 618564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	9030B	
310-284515-3	MW-44A	Total/NA	Ground Water	9030B	
MB 240-618564/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-618564/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 618637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	9034	618564
310-284515-3	MW-44A	Total/NA	Ground Water	9034	618564
MB 240-618564/1-A	Method Blank	Total/NA	Water	9034	618564
LCS 240-618564/2-A	Lab Control Sample	Total/NA	Water	9034	618564

Field Service / Mobile Lab

Analysis Batch: 426656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284515-1	MW-29A	Total/NA	Ground Water	Field Sampling	
310-284515-3	MW-44A	Total/NA	Ground Water	Field Sampling	
310-284515-4	MW-101	Total/NA	Ground Water	Field Sampling	
310-284515-5	MW-22	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-29A
Lab Sample ID: 310-284515-1
Date Collected: 06/26/24 13:30
Matrix: Ground Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 17:45
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426818	NFT2	EET CF	07/09/24 17:30
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426684	NFT2	EET CF	07/08/24 14:33
Total/NA	Prep	9030B			618564	C5SV	EET CLE	07/02/24 09:28
Total/NA	Analysis	9034		1	618637	C5SV	EET CLE	07/02/24 13:47
Total/NA	Analysis	I-3765-85		1	425861	DGU1	EET CF	06/27/24 13:13
Total/NA	Analysis	Field Sampling		1	426656	BJ0R	EET CF	06/26/24 13:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-284515-2
Date Collected: 06/26/24 05:00
Matrix: Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 14:08

Client Sample ID: MW-44A
Lab Sample ID: 310-284515-3
Date Collected: 06/26/24 16:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 18:07
Total/NA	Prep	3510C			426155	C3AA	EET CF	07/02/24 08:00
Total/NA	Analysis	8270E		1	426950	L0FS	EET CF	07/11/24 12:14
Total/NA	Analysis	8015C		1	426054	V7YZ	EET CF	07/01/24 11:14
Total/NA	Prep	3511			425857	D2YP	EET CF	06/27/24 13:00
Total/NA	Analysis	8081B		1	425934	BW2O	EET CF	06/28/24 14:50
Total/NA	Prep	3511			425857	D2YP	EET CF	06/27/24 13:00
Total/NA	Analysis	8082A		1	426081	BW2O	EET CF	07/01/24 14:44
Total/NA	Prep	8151A			524027	QJZ6	ELLE	07/02/24 15:15
Total/NA	Analysis	8151A		1	524207	UAMZ	ELLE	07/03/24 11:24
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426818	NFT2	EET CF	07/09/24 17:40
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426684	NFT2	EET CF	07/08/24 14:40
Total/NA	Prep	7470A			426638	A6US	EET CF	07/09/24 08:18
Total/NA	Analysis	7470A		1	426778	A6US	EET CF	07/09/24 14:15
Total/NA	Prep	9012B			426227	WZC8	EET CF	07/02/24 10:36
Total/NA	Analysis	9012B		1	426438	ZJX4	EET CF	07/03/24 17:09
Total/NA	Prep	9030B			618564	C5SV	EET CLE	07/02/24 09:28
Total/NA	Analysis	9034		1	618637	C5SV	EET CLE	07/02/24 13:47
Total/NA	Analysis	I-3765-85		1	425833	DGU1	EET CF	06/27/24 11:38
Total/NA	Analysis	Field Sampling		1	426656	BJ0R	EET CF	06/26/24 16:00

Lab Chronicle

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-101
Lab Sample ID: 310-284515-4
Date Collected: 06/26/24 10:30
Matrix: Ground Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 18:28
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426818	NFT2	EET CF	07/09/24 17:43
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426684	NFT2	EET CF	07/08/24 14:42
Total/NA	Analysis	I-3765-85		1	425833	DGU1	EET CF	06/27/24 11:38
Total/NA	Analysis	Field Sampling		1	426656	BJ0R	EET CF	06/26/24 10:30

Client Sample ID: MW-22
Lab Sample ID: 310-284515-5
Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 18:50
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426818	NFT2	EET CF	07/09/24 17:47
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426684	NFT2	EET CF	07/08/24 14:44
Total/NA	Analysis	I-3765-85		1	425833	DGU1	EET CF	06/27/24 11:38
Total/NA	Analysis	Field Sampling		1	426656	BJ0R	EET CF	06/26/24 12:00

Client Sample ID: MW-22-FD
Lab Sample ID: 310-284515-6
Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 19:12
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426818	NFT2	EET CF	07/09/24 18:05
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 18:51
Total/NA	Analysis	I-3765-85		1	425833	DGU1	EET CF	06/27/24 11:38

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-284515-7
Date Collected: 06/26/24 12:00
Matrix: Ground Water
Date Received: 06/27/24 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425979	WSE8	EET CF	06/28/24 19:34
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426818	NFT2	EET CF	07/09/24 18:09
Total/NA	Prep	3005A			426022	QTZ5	EET CF	07/01/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 18:53
Total/NA	Analysis	I-3765-85		1	425833	DGU1	EET CF	06/27/24 11:38

Lab Chronicle

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,2,4-Trichlorobenzene
8260D		Ground Water	Allyl chloride
8260D		Ground Water	Ethyl methacrylate
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-28-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-25
Alaska	State	PA00009	06-30-25
Alaska (UST)	State	17-027	02-28-25
Arizona	State	AZ0780	03-12-25
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-24
Colorado	State	PA00009	06-30-25
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-25
Delaware (DW)	State	N/A	01-31-25
Florida	NELAP	E87997	06-30-25
Georgia (DW)	State	C048	01-31-25

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	N/A	01-31-25
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-26
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-24
Louisiana (All)	NELAP	02055	06-30-25
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-25
Massachusetts	State	M-PA009	06-30-25
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-25
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-25
New York	NELAP	10670	04-01-25
North Carolina (DW)	State	42705	07-31-25
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24 *
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-25
Tennessee	State	02838	01-31-25
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24 *
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-25
Wyoming (UST)	A2LA	0001.01	11-30-24

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

Method Summary

Client: AECOM
Job ID: 310-284515-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-284515 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 6.27-24 | TIME 1015 | Received By: MC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.7 | Corrected Temp (°C): 1.7

• **Sample Container Temperature**

Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other: **Iowa DNR**

TestAmerica Laboratories, Inc d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date 6-27-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☐ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No:
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
MW-1			G	GW		N		X	X			
MW-2R			G	GW		N		X	X			
MW-3			G	GW		N		X	X			
MW-4			G	GW		N		X	X			
MW-4B			G	GW		N		X	X			
MW-7A			G	GW		N		X			X	
MW-24A			G	GW		N		X			X	
MW-25A			G	GW		N		X	X			
MW-29A	6-26-24	1330	G	GW	6	N		X	X	X		Turbidity - 55.13 NTU
Trip Blank	6-26-24	0500	G	W	2	N			X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: ☐ Yes No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____		Therm ID No ____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 6-27-24	Received by:	Company:	Date/Time: 6/27 - 1010
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

7/11/2024

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program. DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-27-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	CALENDAR DAYS / WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below: 2 weeks, 1 week, 2 days, 1 day			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring				Job / SDG No:
Site: Winneshiek County Landfill				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
~~MW-42A~~			G	GW		N		X			X	
~~MW-43A~~			G	GW		N		X			X	
~~MW-44A~~	6-26-24	1600	G	GW	18	N		X			X	Turbidity - 2.63 NTU
MW-45A			G	GW		N		X	X			
MW-46A			G	GW		N		X	X			
MW-101	6-26-24	1030	G	GW	5	N		X	X			Turbidity - 4.32 NTU
MW-11			G	GW		N		X			X	
MW-19R			G	GW		N		X	X			
MW-22	6-26-24	1200	G	GW	5	N		X	X			Turbidity - 1.83 NTU
MW-22-FD	6-26-24	1200	G	GW	5	N		X	X			
MW-35			G	GW		N		X	X			
~~MW-18~~			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments.

Custody Seals Intact. Yes No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-27-24			6-27-24 1015
Relinquished by:	Company	Date/Time	Received by	Company	Date/Time
Relinquished by:	Company	Date/Time	Received in Laboratory by	Company	Date/Time.

Form No CA-C-WI-002, Rev 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 6-27-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	3 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site. Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sample Specific Notes
GU-1			G	GW		N		X	X	
GU-2			G	GW		N		X	X	
SW-1			G	GW		N		X	X	
SW-2			G	GW		N		X	X	
SW-2-FD			G	GW		N		X	X	
SW-5			G	GW		N		X	X	
MH-1AA			G	GW		N		X	X	
MH-4-2			G	GW		N		X	X	
Equipment Blank #1 Shallow			G	GW		N		X	X	
Equipment Blank #2 Deep	6-26-24	1200	G	GW	5	N		X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	6-27-24			6/27/24 1615
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

1.4/2.9

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-73873.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-284515-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 7/11/2024			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			

Analysis Requested

Preservation Codes: -

Other: G079

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-29A (310-284515-1)	6/26/24	13:30 Central		Water			X	1	
MW-44A (310-284515-3)	6/26/24	16:00 Central		Water			X	1	

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

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

Relinquished by:	Date/Time: 6.27.24 1600	Company	Received by: JESSICA RIGDON	Date/Time: 6.28.24 1030	Company EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins – Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Eurofins - CF Site Name

Cooler Received on 6-28-24 Opened on 6-28-24

Cooler unpacked by: JMR

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 19 (CF +1.5 °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp 2.9 °C

2	Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes No
	-Were the seals on the outside of the cooler(s) signed & dated?	Yes No NA
	-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No
	-Were tamper/custody seals intact and uncompromised?	Yes No NA
3	Shippers' packing slip attached to the cooler(s)?	Yes No
4.	Did custody papers accompany the sample(s)?	Yes No
5	Were the custody papers relinquished & signed in the appropriate place?	Yes No
6.	Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No
7	Did all bottles arrive in good condition (Unbroken)?	Yes No
8	Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes No
9	For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?	
10	Were correct bottle(s) used for the test(s) indicated?	Yes No
11	Sufficient quantity received to perform indicated analyses?	Yes No
12.	Are these work share samples and all listed on the COC?	Yes No
	If yes, Questions 13-17 have been checked at the originating laboratory	
13	Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC442471
14.	Were VOAs on the COC?	Yes No
15	Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA
16	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes No
17	Was a LL Hg or Me Hg trip blank present?	Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container

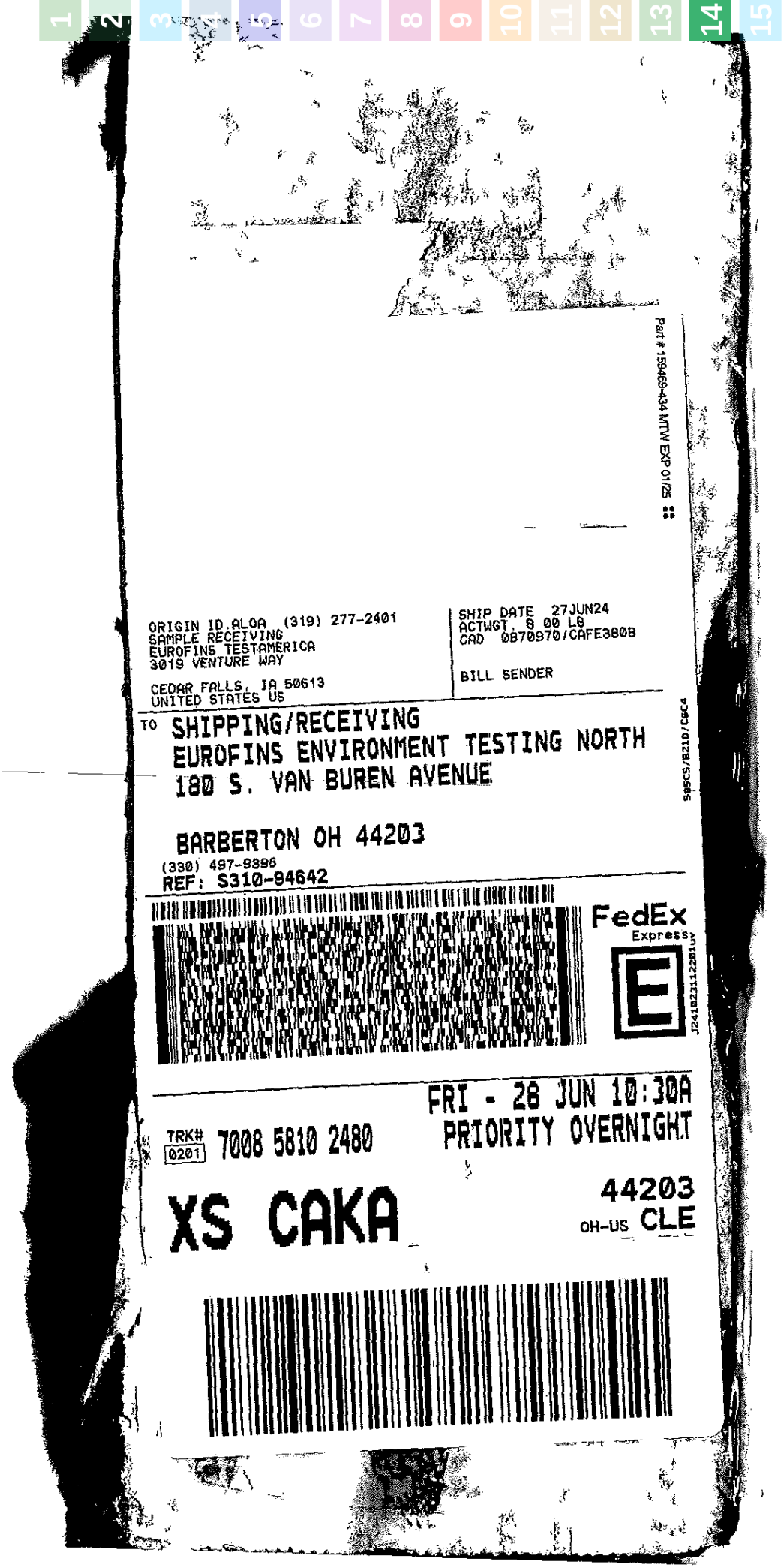
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen



Part # 159469-494 MTW EXP 01/25

ORIGIN ID:ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE: 27JUN24
ACTWGT: 8.00 LB
CAD: 0870970/CAFE3808

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-94642

585CS/8210/C6C4

FedEx Express

J241823112281UV

FRI - 28 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7008 5810 2480

XS CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-73874.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State Program - Iowa		Job #: 310-284515-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 7/11/2024	Analysis Requested		Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-44A (310-284515-3)	6/26/24	16:00 Central		Water			X	2	

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/27/24 1610				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Debra A. Byrne	Date/Time: 6-28-24 10:00	Company ELLET

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R: 0.4 C: 0.7

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-284515-1

Login Number: 284515

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-284515-1

Login Number: 284515
List Number: 3
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 06/28/24 01:44 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 7/19/2024 4:19:43 PM

JOB DESCRIPTION

Winneshiek Groundwater Monitoring

JOB NUMBER

310-284799-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
7/19/2024 4:19:43 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-284799-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 7/2/2024 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: MW-31A (310-284799-1), MW-41A (310-284799-2), Trip Blank (310-284799-3), MW-45A (310-284799-4), MW-11 (310-284799-5), MW-18 (310-284799-6), MW-2R (310-284799-7), MW-3 (310-284799-8) and Unknown (310-284799-9). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-284799-3).

Method 8260D: The method blank for analytical batch 310-426359 contained Benzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-analysis of samples was not performed.

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-284799-3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-426575 recovered outside of the control limits for Chloroethane (-21.7%D). The LCS associated with this CCV passed CCV criteria for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-426575/4).

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

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-426626. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-426735 recovered above the upper control limit for Indeno[1,2,3-cd]pyrene (26.1%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-426626 and analytical batch 310-426735 recovered outside control limits for the following analytes: Famphur. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-426626 and analytical batch 310-426735 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Job ID: 310-284799-1 (Continued) — Eurofins Cedar Falls

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-426626 and analytical batch 310-426735 recovered outside control limits for the following analytes: 3,3'-Dimethylbenzidine, Methapyrilene and Hexachloropropene.

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

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

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

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

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-284799-1	MW-31A	Ground Water	07/01/24 10:45	07/02/24 09:50
310-284799-2	MW-41A	Ground Water	07/01/24 17:00	07/02/24 09:50
310-284799-3	Trip Blank	Water	07/01/24 05:00	07/02/24 09:50
310-284799-4	MW-45A	Ground Water	07/01/24 10:00	07/02/24 09:50
310-284799-5	MW-11	Ground Water	07/01/24 12:30	07/02/24 09:50
310-284799-6	MW-18	Ground Water	07/01/24 15:30	07/02/24 09:50
310-284799-7	MW-2R	Ground Water	07/01/24 14:00	07/02/24 09:50
310-284799-8	MW-3	Ground Water	07/01/24 14:45	07/02/24 09:50

Detection Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-31A — Lab Sample ID: 310-284799-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.358	J	1.00	0.220	ug/L	1		8260D	Total/NA
Barium	243		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.160	J	0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	3.48		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	1.91	J	5.00	1.80	ug/L	1		6020B	Total/NA
Nickel	30.3		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.38				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-41A — Lab Sample ID: 310-284799-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.595	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	125		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.215	J	0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.63		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	1.73				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-284799-3

No Detections.

Client Sample ID: MW-45A — Lab Sample ID: 310-284799-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	103		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.257	J	0.500	0.170	ug/L	1		6020B	Total/NA
Field Turbidity	0.67				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 310-284799-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	2.49	J	10.0	2.10	ug/L	1		8260D	Total/NA
Barium	14.3		2.00	0.660	ug/L	1		6020B	Total/NA
Nickel	16.3		5.00	2.10	ug/L	1		6020B	Total/NA
Selenium	1.91	J	5.00	1.40	ug/L	1		6020B	Total/NA
Zinc	60.0		20.0	9.70	ug/L	1		6020B	Total/NA
Field Turbidity	1.01				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-18 — Lab Sample ID: 310-284799-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	60.5		2.00	0.660	ug/L	1		6020B	Total/NA
Copper	2.72	J	5.00	1.80	ug/L	1		6020B	Total/NA
Field Turbidity	6.40				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-2R — Lab Sample ID: 310-284799-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	91.0		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	1.37				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-3
Lab Sample ID: 310-284799-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	146		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	4.19				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Project/Site: Winneshiek Groundwater Monitoring

Job ID: 310-284799-1

Client Sample ID: MW-31A
Date Collected: 07/01/24 10:45
Date Received: 07/02/24 09:50

Lab Sample ID: 310-284799-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 16:38	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 16:38	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 16:38	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 16:38	1
1,1-Dichloroethane	**0.358**	**J**	1.00	0.220	ug/L			07/08/24 13:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 16:38	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 16:38	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 16:38	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 16:38	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 16:38	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 16:38	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 16:38	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 16:38	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 16:38	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 16:38	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 16:38	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 16:38	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 16:38	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 16:38	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 16:38	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 16:38	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 16:38	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 16:38	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 16:38	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 16:38	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 16:38	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 16:38	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 16:38	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 16:38	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 16:38	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 16:38	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 16:38	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 16:38	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 16:38	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 16:38	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 16:38	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 16:38	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 16:38	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 13:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 16:38	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 16:38	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 16:38	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 16:38	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 16:38	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 16:38	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 16:38	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*07/03/24 16:38*	*1*

Client Sample ID: MW-31A
Lab Sample ID: 310-284799-1
Date Collected: 07/01/24 10:45
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*07/08/24 13:42*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*07/03/24 16:38*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*07/08/24 13:42*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*07/03/24 16:38*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*07/08/24 13:42*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	<0.0263		0.0938	0.0263	ug/L		07/03/24 08:55	07/10/24 14:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*69*		*10 - 136*	*07/03/24 08:55*	*07/10/24 14:49*	*1*
Tetrachloro-m-xylene	*69*		*10 - 130*	*07/03/24 08:55*	*07/10/24 14:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 12:46	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:05	1
Barium	**243**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:05	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:05	1
Cadmium	**0.160**	**J**	0.200	0.100	ug/L		07/03/24 09:00	07/08/24 12:46	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:05	1
Cobalt	**3.48**		0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:05	1
Copper	**1.91**	**J**	5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:05	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:05	1
Nickel	**30.3**		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:05	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:05	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 12:46	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:05	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:05	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.25**		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.38**				NTU			07/01/24 10:45	1

Client: AECOM
Project/Site: Winneshiek Groundwater Monitoring

Job ID: 310-284799-1

Client Sample ID: MW-41A

Date Collected: 07/01/24 17:00
Date Received: 07/02/24 09:50

Lab Sample ID: 310-284799-2

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 17:00	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 17:00	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 17:00	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 17:00	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 17:00	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 17:00	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 17:00	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 17:00	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 17:00	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 17:00	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 17:00	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 17:00	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 17:00	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 17:00	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 17:00	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 17:00	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 17:00	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 17:00	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 17:00	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 17:00	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 17:00	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 17:00	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 17:00	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 17:00	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 17:00	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 17:00	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 17:00	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 17:00	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 17:00	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 17:00	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 17:00	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 17:00	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 17:00	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 17:00	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 17:00	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 17:00	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 17:00	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 17:00	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 17:00	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 17:00	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 17:00	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 17:00	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 17:00	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 17:00	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 17:00	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 17:00	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*07/03/24 17:00*	*1*

Client Sample ID: MW-41A
Lab Sample ID: 310-284799-2
Date Collected: 07/01/24 17:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*07/03/24 17:00*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*07/03/24 17:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 12:51	1
Arsenic	**0.595**	**J**	2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:27	1
Barium	**125**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:27	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:27	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 12:51	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:27	1
Cobalt	**0.215**	**J**	0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:27	1
Copper	<1.80		5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:27	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:27	1
Nickel	<2.10		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:27	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:27	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 12:51	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:27	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:27	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.63**		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.73**				NTU			07/01/24 17:00	1

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: Trip Blank
Lab Sample ID: 310-284799-3
Date Collected: 07/01/24 05:00
Matrix: Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 15:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 15:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 15:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 15:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 15:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 15:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 15:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 15:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 15:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 15:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 15:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 15:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 15:08	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 15:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 15:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 15:08	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 15:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 15:08	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 11:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 15:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 15:08	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 15:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 15:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 15:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 15:08	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 15:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 15:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 15:08	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 15:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 15:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 15:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 15:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 15:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 15:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 15:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 15:08	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 15:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 15:08	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 11:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 15:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 15:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 15:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 15:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 15:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 15:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 15:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*07/03/24 15:08*	*1*

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: Trip Blank
Lab Sample ID: 310-284799-3
Date Collected: 07/01/24 05:00
Matrix: Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		73 - 130		07/08/24 11:04	1
Toluene-d8 (Surr)	98		80 - 120		07/03/24 15:08	1
Toluene-d8 (Surr)	97		80 - 120		07/08/24 11:04	1
4-Bromofluorobenzene (Surr)	101		80 - 120		07/03/24 15:08	1
4-Bromofluorobenzene (Surr)	103		80 - 120		07/08/24 11:04	1

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-45A
Lab Sample ID: 310-284799-4
Date Collected: 07/01/24 10:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 17:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 17:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 17:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 17:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 17:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 17:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 17:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 17:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 17:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 17:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 17:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 17:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 17:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 17:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 17:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 17:23	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 17:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 17:23	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 17:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 17:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 17:23	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 17:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 17:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 17:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 17:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 17:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 17:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 17:23	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 17:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 17:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 17:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 17:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 17:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 17:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 17:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 17:23	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 17:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 17:23	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 17:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 17:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 17:23	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 17:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 17:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 17:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 17:23	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 17:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*07/03/24 17:23*	*1*

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-45A
Lab Sample ID: 310-284799-4
Date Collected: 07/01/24 10:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*07/03/24 17:23*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*07/03/24 17:23*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 12:53	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:31	1
Barium	**103**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:31	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:31	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 12:53	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:31	1
Cobalt	**0.257**	**J**	0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:31	1
Copper	<1.80		5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:31	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:31	1
Nickel	<2.10		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:31	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:31	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 12:53	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:31	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:31	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.67**				NTU			07/01/24 10:00	1

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-11
Lab Sample ID: 310-284799-5
Date Collected: 07/01/24 12:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 17:45	1
Acrolein	<3.60		10.0	3.60	ug/L			07/03/24 17:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 17:45	1
Allyl chloride	<0.700		2.00	0.700	ug/L			07/03/24 17:45	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 17:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 17:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 17:45	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 17:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 17:45	1
2-Butanone (MEK)	**2.49**	**J**	10.0	2.10	ug/L			07/03/24 17:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 17:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 17:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 17:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 17:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 17:45	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 17:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 17:45	1
Chloroprene	<0.230		1.00	0.230	ug/L			07/03/24 17:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 17:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 17:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 17:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 17:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 17:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 17:45	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			07/03/24 17:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 17:45	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			07/03/24 17:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 17:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 17:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 17:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 17:45	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			07/03/24 17:45	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			07/03/24 17:45	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			07/03/24 17:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 17:45	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			07/03/24 17:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 17:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 17:45	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			07/03/24 17:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 17:45	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			07/03/24 17:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 17:45	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			07/03/24 17:45	1
Naphthalene	<3.00		5.00	3.00	ug/L			07/03/24 17:45	1
o-Xylene	<0.400		1.00	0.400	ug/L			07/03/24 17:45	1
Propionitrile	<3.40		10.0	3.40	ug/L			07/03/24 17:45	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 17:45	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 17:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 17:45	1

Client Sample ID: MW-11
Lab Sample ID: 310-284799-5
Date Collected: 07/01/24 12:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 17:45	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 17:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 17:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 17:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 17:45	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			07/03/24 17:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 17:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 17:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 17:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 17:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 17:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 17:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 17:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*07/03/24 17:45*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*07/03/24 17:45*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*07/03/24 17:45*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.800		12.5	0.800	ug/L		07/08/24 12:37	07/09/24 14:16	1
Acenaphthylene	<0.900		12.5	0.900	ug/L		07/08/24 12:37	07/09/24 14:16	1
Acetophenone	<0.863		12.5	0.863	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Acetylaminofluorene	<3.38		12.5	3.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Aminobiphenyl	<2.75		12.5	2.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
Anthracene	<1.09		12.5	1.09	ug/L		07/08/24 12:37	07/09/24 14:16	1
Benzo[a]anthracene	<1.06		12.5	1.06	ug/L		07/08/24 12:37	07/09/24 14:16	1
Benzo[a]pyrene	<10.1		12.5	10.1	ug/L		07/08/24 12:37	07/09/24 14:16	1
Benzo[b]fluoranthene	<6.13		12.5	6.13	ug/L		07/08/24 12:37	07/09/24 14:16	1
Benzo[g,h,i]perylene	<7.88		12.5	7.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
Benzo[k]fluoranthene	<2.75		12.5	2.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
Benzyl alcohol	<1.63		12.5	1.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
Bis(2-chloroethoxy)methane	<0.950		12.5	0.950	ug/L		07/08/24 12:37	07/09/24 14:16	1
Bis(2-chloroethyl)ether	<1.03		12.5	1.03	ug/L		07/08/24 12:37	07/09/24 14:16	1
bis (2-chloroisopropyl) ether	<0.675		12.5	0.675	ug/L		07/08/24 12:37	07/09/24 14:16	1
Bis(2-ethylhexyl) phthalate	<6.88		12.5	6.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Bromophenyl phenyl ether	<0.875		12.5	0.875	ug/L		07/08/24 12:37	07/09/24 14:16	1
Butyl benzyl phthalate	<6.75		12.5	6.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Chloroaniline	<0.775		12.5	0.775	ug/L		07/08/24 12:37	07/09/24 14:16	1
Chlorobenzilate	<4.50		12.5	4.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Chloro-3-methylphenol	<1.05		12.5	1.05	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Chloronaphthalene	<0.800		12.5	0.800	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Chlorophenol	<0.675		12.5	0.675	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Chlorophenyl phenyl ether	<0.863		12.5	0.863	ug/L		07/08/24 12:37	07/09/24 14:16	1
Chrysene	<1.09		12.5	1.09	ug/L		07/08/24 12:37	07/09/24 14:16	1
Diallate	<5.00		12.5	5.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
Dibenzo(a,h)anthracene	<4.88		12.5	4.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
Dibenzofuran	<0.925		12.5	0.925	ug/L		07/08/24 12:37	07/09/24 14:16	1

Client Sample ID: MW-11
Lab Sample ID: 310-284799-5
Date Collected: 07/01/24 12:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	<1.75		12.5	1.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,4-Dichlorophenol	<1.06		12.5	1.06	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,6-Dichlorophenol	<0.863		12.5	0.863	ug/L		07/08/24 12:37	07/09/24 14:16	1
Diethyl phthalate	<2.13		12.5	2.13	ug/L		07/08/24 12:37	07/09/24 14:16	1
Dimethoate	<4.50		12.5	4.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
7,12-Dimethylbenz(a)anthracene	<2.38		12.5	2.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
3,3'-Dimethylbenzidine	<1.88	*1	12.5	1.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,4-Dimethylphenol	<0.725		12.5	0.725	ug/L		07/08/24 12:37	07/09/24 14:16	1
Dimethyl phthalate	<1.25		12.5	1.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
Di-n-butyl phthalate	<7.00		12.5	7.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
1,3-Dinitrobenzene	<4.00		12.5	4.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
4,6-Dinitro-2-methylphenol	<8.63		12.5	8.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,4-Dinitrophenol	<16.3		25.0	16.3	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,4-Dinitrotoluene	<8.00		12.5	8.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,6-Dinitrotoluene	<0.650		12.5	0.650	ug/L		07/08/24 12:37	07/09/24 14:16	1
Di-n-octyl phthalate	<8.75		25.0	8.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
Dinoseb	<3.00		12.5	3.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
Diphenylamine	<7.50		12.5	7.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
Disulfoton	<3.00		12.5	3.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
Ethyl methanesulfonate	<4.50		12.5	4.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
Ethyl Parathion	<2.75		12.5	2.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
Famphur	<4.75	*+	12.5	4.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
Fluoranthene	<2.13		12.5	2.13	ug/L		07/08/24 12:37	07/09/24 14:16	1
Fluorene	<0.988		12.5	0.988	ug/L		07/08/24 12:37	07/09/24 14:16	1
Hexachlorobenzene	<0.875		12.5	0.875	ug/L		07/08/24 12:37	07/09/24 14:16	1
Hexachlorobutadiene	<1.08		12.5	1.08	ug/L		07/08/24 12:37	07/09/24 14:16	1
Hexachlorocyclopentadiene	<6.38		12.5	6.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
Hexachloroethane	<1.21		12.5	1.21	ug/L		07/08/24 12:37	07/09/24 14:16	1
Hexachloropropene	<3.25	*1	12.5	3.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
Indeno[1,2,3-cd]pyrene	<5.25		12.5	5.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
Isodrin	<5.88		12.5	5.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
Isophorone	<1.16		12.5	1.16	ug/L		07/08/24 12:37	07/09/24 14:16	1
Isosafrole	<2.88		12.5	2.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
Kepone	<1.25		12.5	1.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
Methapyrilene	<0.950	*1	12.5	0.950	ug/L		07/08/24 12:37	07/09/24 14:16	1
3-Methylcholanthrene	<0.400		12.5	0.400	ug/L		07/08/24 12:37	07/09/24 14:16	1
Methyl methanesulfonate	<4.13		12.5	4.13	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Methylnaphthalene	<0.738		12.5	0.738	ug/L		07/08/24 12:37	07/09/24 14:16	1
Methyl parathion	<2.88		12.5	2.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Methylphenol	<0.813		12.5	0.813	ug/L		07/08/24 12:37	07/09/24 14:16	1
Methylphenol, 3 & 4	<0.875		12.5	0.875	ug/L		07/08/24 12:37	07/09/24 14:16	1
1,4-Naphthoquinone	<4.50		12.5	4.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
1-Naphthylamine	<3.13		12.5	3.13	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Naphthylamine	<2.63		12.5	2.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
2-Nitroaniline	<7.38		12.5	7.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
3-Nitroaniline	<3.38		12.5	3.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Nitroaniline	<1.63		12.5	1.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
Nitrobenzene	<1.00		12.5	1.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
5-Nitro-o-toluidine	<3.50		12.5	3.50	ug/L		07/08/24 12:37	07/09/24 14:16	1

Client Sample ID: MW-11
Lab Sample ID: 310-284799-5
Date Collected: 07/01/24 12:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	<8.50		12.5	8.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
4-Nitrophenol	<9.50		12.5	9.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosodiethylamine	<4.25		12.5	4.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosodimethylamine	<0.900		12.5	0.900	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosodi-n-butylamine	<4.88		12.5	4.88	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosodi-n-propylamine	<1.15		12.5	1.15	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosodiphenylamine	<0.938		12.5	0.938	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosomethylethylamine	<6.13		12.5	6.13	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosopiperidine	<3.38		12.5	3.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
N-Nitrosopyrrolidine	<4.50		12.5	4.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
o,o',o''-Triethylphosphorothioate	<4.00		12.5	4.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
o-Toluidine	<3.63		12.5	3.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
p-Dimethylamino azobenzene	<2.75		12.5	2.75	ug/L		07/08/24 12:37	07/09/24 14:16	1
Pentachlorobenzene	<3.50		12.5	3.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
Pentachloronitrobenzene	<7.25		12.5	7.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
Pentachlorophenol	<12.0		12.5	12.0	ug/L		07/08/24 12:37	07/09/24 14:16	1
Phenacetin	<2.38		12.5	2.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
Phenanthrene	<0.988		12.5	0.988	ug/L		07/08/24 12:37	07/09/24 14:16	1
Phenol	<1.38		12.5	1.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
1,4-phenylenediamine	<2.38	*-	12.5	2.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
Phorate	<4.00		12.5	4.00	ug/L		07/08/24 12:37	07/09/24 14:16	1
Pronamide	<3.38		12.5	3.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
Pyrene	<0.988		12.5	0.988	ug/L		07/08/24 12:37	07/09/24 14:16	1
Safrole	<3.50		12.5	3.50	ug/L		07/08/24 12:37	07/09/24 14:16	1
1,2,4,5-Tetrachlorobenzene	<0.675		12.5	0.675	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,3,4,6-Tetrachlorophenol	<6.63		12.5	6.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
Thionazin	<4.38		12.5	4.38	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,4,5-Trichlorophenol	<6.63		12.5	6.63	ug/L		07/08/24 12:37	07/09/24 14:16	1
2,4,6-Trichlorophenol	<6.25		12.5	6.25	ug/L		07/08/24 12:37	07/09/24 14:16	1
1,3,5-Trinitrobenzene	<2.88		12.5	2.88	ug/L		07/08/24 12:37	07/09/24 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*92*		*39 - 118*	*07/08/24 12:37*	*07/09/24 14:16*	*1*
2-Fluorophenol (Surr)	*37*		*25 - 110*	*07/08/24 12:37*	*07/09/24 14:16*	*1*
Nitrobenzene-d5 (Surr)	*104*		*45 - 129*	*07/08/24 12:37*	*07/09/24 14:16*	*1*
Phenol-d5 (Surr)	*66*		*21 - 110*	*07/08/24 12:37*	*07/09/24 14:16*	*1*
Terphenyl-d14 (Surr)	*120*		*12 - 144*	*07/08/24 12:37*	*07/09/24 14:16*	*1*
2,4,6-Tribromophenol (Surr)	*42*		*27 - 136*	*07/08/24 12:37*	*07/09/24 14:16*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			07/10/24 18:49	1
Isobutanol	<2400		10000	2400	ug/L			07/10/24 18:49	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0206		0.0936	0.0206	ug/L		07/03/24 08:55	07/10/24 14:30	1
alpha-BHC	<0.00936		0.0936	0.00936	ug/L		07/03/24 08:55	07/10/24 14:30	1
beta-BHC	<0.0393		0.0936	0.0393	ug/L		07/03/24 08:55	07/10/24 14:30	1
Chlordane (technical)	<0.365		1.87	0.365	ug/L		07/03/24 08:55	07/10/24 14:30	1

Client Sample ID: MW-11
Lab Sample ID: 310-284799-5
Date Collected: 07/01/24 12:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0234		0.0936	0.0234	ug/L		07/03/24 08:55	07/10/24 14:30	1
4,4'-DDE	<0.0281		0.0936	0.0281	ug/L		07/03/24 08:55	07/10/24 14:30	1
4,4'-DDT	<0.0187		0.0936	0.0187	ug/L		07/03/24 08:55	07/10/24 14:30	1
delta-BHC	<0.0299		0.0936	0.0299	ug/L		07/03/24 08:55	07/10/24 14:30	1
Dieldrin	<0.0197		0.0936	0.0197	ug/L		07/03/24 08:55	07/10/24 14:30	1
Endosulfan I	<0.0262		0.0936	0.0262	ug/L		07/03/24 08:55	07/10/24 14:30	1
Endosulfan II	<0.0243		0.0936	0.0243	ug/L		07/03/24 08:55	07/10/24 14:30	1
Endosulfan sulfate	<0.0168		0.0936	0.0168	ug/L		07/03/24 08:55	07/10/24 14:30	1
Endrin	<0.0262		0.0936	0.0262	ug/L		07/03/24 08:55	07/10/24 14:30	1
Endrin aldehyde	<0.0253		0.0936	0.0253	ug/L		07/03/24 08:55	07/10/24 14:30	1
gamma-BHC (Lindane)	<0.00936		0.0936	0.00936	ug/L		07/03/24 08:55	07/10/24 14:30	1
Heptachlor	<0.0215		0.0936	0.0215	ug/L		07/03/24 08:55	07/10/24 14:30	1
Heptachlor epoxide	<0.0299		0.0936	0.0299	ug/L		07/03/24 08:55	07/10/24 14:30	1
Methoxychlor	<0.0299		0.0936	0.0299	ug/L		07/03/24 08:55	07/10/24 14:30	1
Toxaphene	<0.936		1.87	0.936	ug/L		07/03/24 08:55	07/10/24 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*103*		*10 - 136*	*07/03/24 08:55*	*07/10/24 14:30*	*1*
Tetrachloro-m-xylene	*100*		*10 - 130*	*07/03/24 08:55*	*07/10/24 14:30*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.767		1.87	0.767	ug/L		07/03/24 08:55	07/10/24 14:30	1
PCB-1221	<0.767		1.87	0.767	ug/L		07/03/24 08:55	07/10/24 14:30	1
PCB-1232	<0.767		1.87	0.767	ug/L		07/03/24 08:55	07/10/24 14:30	1
PCB-1242	<0.767		1.87	0.767	ug/L		07/03/24 08:55	07/10/24 14:30	1
PCB-1248	<0.646		1.87	0.646	ug/L		07/03/24 08:55	07/10/24 14:30	1
PCB-1254	<0.646		1.87	0.646	ug/L		07/03/24 08:55	07/10/24 14:30	1
PCB-1260	<0.646		1.87	0.646	ug/L		07/03/24 08:55	07/10/24 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*103*		*10 - 136*	*07/03/24 08:55*	*07/10/24 14:30*	*1*
Tetrachloro-m-xylene	*100*		*10 - 130*	*07/03/24 08:55*	*07/10/24 14:30*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.355		0.852	0.355	ug/L		07/06/24 04:53	07/08/24 13:16	1
Silvex (2,4,5-TP)	<0.0312		0.0710	0.0312	ug/L		07/06/24 04:53	07/08/24 13:16	1
2,4,5-T	<0.0923		0.213	0.0923	ug/L		07/06/24 04:53	07/08/24 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*89*		*34 - 142*	*07/06/24 04:53*	*07/08/24 13:16*	*1*
DCAA	*91*		*34 - 142*	*07/06/24 04:53*	*07/08/24 13:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 12:56	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:34	1
Barium	**14.3**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:34	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:34	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 12:56	1

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-11
Lab Sample ID: 310-284799-5
Date Collected: 07/01/24 12:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:34	1
Cobalt	<0.170		0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:34	1
Copper	<1.80		5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:34	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:34	1
Nickel	**16.3**		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:34	1
Selenium	**1.91**	**J**	5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:34	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 12:56	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:34	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:34	1
Zinc	**60.0**		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:34	1
Tin	<2.30		5.00	2.30	ug/L		07/03/24 09:00	07/05/24 22:34	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		07/19/24 09:50	07/19/24 13:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		07/03/24 09:55	07/03/24 17:40	1
Sulfide (SW846 9034)	<1410		3000	1410	ug/L		07/08/24 07:34	07/08/24 09:49	1
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.01**				NTU			07/01/24 12:30	1

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-18
Lab Sample ID: 310-284799-6
Date Collected: 07/01/24 15:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 18:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 18:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 18:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 18:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 18:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 18:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 18:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 18:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 18:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 18:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 18:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 18:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 18:08	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 18:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 18:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 18:08	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 18:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 18:08	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 18:08	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 18:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 18:08	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 18:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 18:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 18:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 18:08	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 18:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 18:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 18:08	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 18:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 18:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 18:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 18:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 18:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 18:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 18:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 18:08	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 18:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 18:08	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 18:08	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 18:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 18:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 18:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 18:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 18:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 18:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 18:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*07/03/24 18:08*	*1*

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-18
Lab Sample ID: 310-284799-6

Date Collected: 07/01/24 15:30
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*07/03/24 18:08*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*07/03/24 18:08*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 12:58	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:38	1
Barium	**60.5**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:38	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:38	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 12:58	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:38	1
Cobalt	<0.170		0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:38	1
Copper	**2.72**	**J**	5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:38	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:38	1
Nickel	<2.10		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:38	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:38	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 12:58	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:38	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:38	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.40**				NTU			07/01/24 15:30	1

Client: AECOM
Project/Site: Winneshiek Groundwater Monitoring

Job ID: 310-284799-1

Client Sample ID: MW-2R
Date Collected: 07/01/24 14:00
Date Received: 07/02/24 09:50

Lab Sample ID: 310-284799-7
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 18:31	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 18:31	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 18:31	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 18:31	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 18:31	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 18:31	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 18:31	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 18:31	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 18:31	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 18:31	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 18:31	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 18:31	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 18:31	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 18:31	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 18:31	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 18:31	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 18:31	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 18:31	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 18:31	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 18:31	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 18:31	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 18:31	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 18:31	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 18:31	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 18:31	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 18:31	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 18:31	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 18:31	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 18:31	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 18:31	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 18:31	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 18:31	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 18:31	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 18:31	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 18:31	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 18:31	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 18:31	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 18:31	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 18:31	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 18:31	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 18:31	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 18:31	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 18:31	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 18:31	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 18:31	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 18:31	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 18:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*07/03/24 18:31*	*1*

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-2R
Lab Sample ID: 310-284799-7

Date Collected: 07/01/24 14:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*07/03/24 18:31*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*07/03/24 18:31*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 13:00	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:42	1
Barium	**91.0**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:42	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:42	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 13:00	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:42	1
Cobalt	<0.170		0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:42	1
Copper	<1.80		5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:42	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:42	1
Nickel	<2.10		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:42	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:42	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 13:00	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:42	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:42	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.37**				NTU			07/01/24 14:00	1

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-3
Lab Sample ID: 310-284799-8
Date Collected: 07/01/24 14:45
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 18:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 18:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 18:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 18:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 18:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 18:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 18:53	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 18:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 18:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 18:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 18:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 18:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 18:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 18:53	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 18:53	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 18:53	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 18:53	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 18:53	1
Benzene	<0.220		0.500	0.220	ug/L			07/03/24 18:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 18:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 18:53	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 18:53	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 18:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 18:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 18:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 18:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 18:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 18:53	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 18:53	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 18:53	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 18:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 18:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 18:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 18:53	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 18:53	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 18:53	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 18:53	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 18:53	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 18:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 18:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 18:53	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 18:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 18:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 18:53	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 18:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 18:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*73 - 130*		*07/03/24 18:53*	*1*

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-3
Lab Sample ID: 310-284799-8

Date Collected: 07/01/24 14:45
Matrix: Ground Water
Date Received: 07/02/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*07/03/24 18:53*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*07/03/24 18:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 13:11	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/05/24 22:45	1
Barium	**146**		2.00	0.660	ug/L		07/03/24 09:00	07/05/24 22:45	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/05/24 22:45	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 13:11	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/05/24 22:45	1
Cobalt	<0.170		0.500	0.170	ug/L		07/03/24 09:00	07/05/24 22:45	1
Copper	<1.80		5.00	1.80	ug/L		07/03/24 09:00	07/05/24 22:45	1
Lead	<0.260		0.500	0.260	ug/L		07/03/24 09:00	07/05/24 22:45	1
Nickel	<2.10		5.00	2.10	ug/L		07/03/24 09:00	07/05/24 22:45	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/05/24 22:45	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 13:11	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/05/24 22:45	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/05/24 22:45	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/05/24 22:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.38**		1.88	1.39	mg/L			07/02/24 11:24	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.19**				NTU			07/01/24 14:45	1

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

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

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-284799-1	MW-31A	102	96	103
310-284799-1	MW-31A	104	95	104
310-284799-2	MW-41A	101	98	99
310-284799-4	MW-45A	101	97	103
310-284799-5	MW-11	100	97	102
310-284799-5 MS	MW-11	102	98	102
310-284799-5 MSD	MW-11	103	96	102
310-284799-6	MW-18	100	96	101
310-284799-7	MW-2R	100	98	102
310-284799-8	MW-3	100	95	105

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-284799-3	Trip Blank	101	98	101
310-284799-3	Trip Blank	102	97	103
LCS 310-426359/6	Lab Control Sample	101	98	99
LCS 310-426359/7	Lab Control Sample	102	97	101
LCS 310-426575/6	Lab Control Sample	104	96	100
LCS 310-426575/7	Lab Control Sample	104	95	104
MB 310-426359/5	Method Blank	99	96	99
MB 310-426575/5	Method Blank	105	92	106

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
310-284799-5	MW-11	92	37	104	66	120	42

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCS 310-426626/2-A	Lab Control Sample	67	63	80	61	90	95
LCSD 310-426626/3-A	Lab Control Sample Dup	62	63	79	62	90	93
MB 310-426626/1-A	Method Blank	75	65	92	65	108	98

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-284799-1	MW-31A	69	69
310-284799-5	MW-11	103	100

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-284799-5	MW-11	103	100
310-284799-5 MS	MW-11	84	78
310-284799-5 MSD	MW-11	86	79

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
LCS 310-426354/12-A	Lab Control Sample	48	50

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Method: 8151A - Herbicides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
310-284799-5	MW-11	89	91								

Surrogate Legend

DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
LCS 410-525243/2-A	Lab Control Sample	95	91								
MB 410-525243/1-A	Method Blank	88	75								

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-426359/5
Matrix: Water
Analysis Batch: 426359

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	<3.60		10.0	3.60	ug/L			07/03/24 13:54	1
Allyl chloride	<0.700		2.00	0.700	ug/L			07/03/24 13:54	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/03/24 13:54	1
Acetone	<3.10		10.0	3.10	ug/L			07/03/24 13:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/03/24 13:54	1
Benzene	0.2235	J	0.500	0.220	ug/L			07/03/24 13:54	1
Chloroprene	<0.230		1.00	0.230	ug/L			07/03/24 13:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/03/24 13:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/03/24 13:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/03/24 13:54	1
Bromoform	<0.780		5.00	0.780	ug/L			07/03/24 13:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/03/24 13:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/03/24 13:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/03/24 13:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/03/24 13:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/03/24 13:54	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/03/24 13:54	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			07/03/24 13:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/03/24 13:54	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/03/24 13:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/03/24 13:54	1
Chloroform	<1.30		3.00	1.30	ug/L			07/03/24 13:54	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			07/03/24 13:54	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/03/24 13:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/03/24 13:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/03/24 13:54	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/03/24 13:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/03/24 13:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/03/24 13:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/03/24 13:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/03/24 13:54	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			07/03/24 13:54	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			07/03/24 13:54	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			07/03/24 13:54	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/03/24 13:54	1
Ethyl methacrylate	<0.680		2.00	0.680	ug/L			07/03/24 13:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/03/24 13:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/03/24 13:54	1
Methacrylonitrile	<3.30		10.0	3.30	ug/L			07/03/24 13:54	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/03/24 13:54	1
Methyl methacrylate	<0.760		2.00	0.760	ug/L			07/03/24 13:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/03/24 13:54	1
m,p-Xylene	<0.380		2.00	0.380	ug/L			07/03/24 13:54	1
Naphthalene	<3.00		5.00	3.00	ug/L			07/03/24 13:54	1
o-Xylene	<0.400		1.00	0.400	ug/L			07/03/24 13:54	1
Propionitrile	<3.40		10.0	3.40	ug/L			07/03/24 13:54	1
Styrene	<0.370		1.00	0.370	ug/L			07/03/24 13:54	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/03/24 13:54	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-426359/5
Matrix: Water
Analysis Batch: 426359

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/03/24 13:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/03/24 13:54	1
Toluene	<0.430		1.00	0.430	ug/L			07/03/24 13:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/03/24 13:54	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/03/24 13:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/03/24 13:54	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			07/03/24 13:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/03/24 13:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/03/24 13:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/03/24 13:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/03/24 13:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/03/24 13:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/03/24 13:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/03/24 13:54	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/03/24 13:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*73 - 130*		*07/03/24 13:54*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*07/03/24 13:54*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*07/03/24 13:54*	*1*

Lab Sample ID: LCS 310-426359/6
Matrix: Water
Analysis Batch: 426359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrolein	94.8	97.91		ug/L		103	49 - 150
Allyl chloride	20.0	18.22		ug/L		91	49 - 150
2-Butanone (MEK)	40.0	34.10		ug/L		85	50 - 150
Acetone	40.0	34.58		ug/L		86	50 - 150
Acrylonitrile	200	182.8		ug/L		91	50 - 150
Benzene	20.0	18.10		ug/L		90	72 - 124
Chloroprene	20.0	18.56		ug/L		93	69 - 133
Bromochloromethane	20.0	19.99		ug/L		100	73 - 130
Bromodichloromethane	20.0	19.16		ug/L		96	74 - 122
1,2-Dibromo-3-Chloropropane	20.0	16.45		ug/L		82	50 - 150
Bromoform	20.0	16.55		ug/L		83	61 - 122
1,2-Dibromoethane (EDB)	20.0	19.84		ug/L		99	75 - 125
Carbon disulfide	20.0	15.94		ug/L		80	59 - 135
Carbon tetrachloride	20.0	17.41		ug/L		87	67 - 132
1,2-Dichlorobenzene	20.0	19.14		ug/L		96	74 - 120
Chlorobenzene	20.0	18.44		ug/L		92	76 - 120
1,3-Dichlorobenzene	20.0	19.18		ug/L		96	72 - 120
Chlorodibromomethane	20.0	19.54		ug/L		98	71 - 121
1,4-Dichlorobenzene	20.0	18.27		ug/L		91	72 - 120
Chloroform	20.0	17.84		ug/L		89	72 - 125
1,1-Dichloroethane	20.0	18.42		ug/L		92	70 - 127
1,2-Dichloroethane	20.0	18.03		ug/L		90	71 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-426359/6
Matrix: Water
Analysis Batch: 426359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	17.00		ug/L		85	74 - 123
1,1-Dichloroethene	20.0	18.05		ug/L		90	63 - 132
cis-1,3-Dichloropropene	20.0	19.58		ug/L		98	71 - 125
1,2-Dichloropropane	20.0	19.36		ug/L		97	73 - 124
Dibromomethane	20.0	17.77		ug/L		89	74 - 125
1,3-Dichloropropane	20.0	19.18		ug/L		96	72 - 125
2,2-Dichloropropane	20.0	20.39		ug/L		102	50 - 150
1,1-Dichloropropene	20.0	18.25		ug/L		91	69 - 132
Ethylbenzene	20.0	18.66		ug/L		93	74 - 122
Ethyl methacrylate	20.0	20.38		ug/L		102	70 - 129
2-Hexanone	40.0	41.93		ug/L		105	60 - 140
Iodomethane	20.0	15.98		ug/L		80	10 - 150
Methacrylonitrile	200	182.7		ug/L		91	69 - 129
Methylene Chloride	20.0	18.54		ug/L		93	50 - 150
Methyl methacrylate	40.0	37.42		ug/L		94	68 - 131
4-Methyl-2-pentanone (MIBK)	40.0	38.87		ug/L		97	60 - 139
Naphthalene	20.0	18.97		ug/L		95	50 - 150
Propionitrile	200	180.2		ug/L		90	63 - 135
Styrene	20.0	19.75		ug/L		99	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.61		ug/L		98	71 - 120
1,1,2,2-Tetrachloroethane	20.0	20.25		ug/L		101	68 - 124
Tetrachloroethene	20.0	19.70		ug/L		98	71 - 130
Toluene	20.0	18.22		ug/L		91	74 - 123
trans-1,4-Dichloro-2-butene	20.0	17.61		ug/L		88	50 - 150
trans-1,2-Dichloroethene	20.0	17.79		ug/L		89	70 - 126
trans-1,3-Dichloropropene	20.0	19.16		ug/L		96	69 - 123
1,2,4-Trichlorobenzene	20.0	19.50		ug/L		98	68 - 124
1,1,1-Trichloroethane	20.0	17.95		ug/L		90	73 - 129
1,1,2-Trichloroethane	20.0	19.55		ug/L		98	73 - 123
Trichloroethene	20.0	18.67		ug/L		93	72 - 126
1,2,3-Trichloropropane	20.0	19.42		ug/L		97	65 - 127
Vinyl acetate	40.0	38.12		ug/L		95	50 - 150
Xylenes, Total	40.0	38.40		ug/L		96	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-426359/7
Matrix: Water
Analysis Batch: 426359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.36		ug/L		87	23 - 150
Chloroethane	20.0	16.82		ug/L		84	54 - 136
Dichlorodifluoromethane	20.0	16.79		ug/L		84	39 - 150
Chloromethane	20.0	17.89		ug/L		89	38 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-426359/7
Matrix: Water
Analysis Batch: 426359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichlorofluoromethane			20.0	17.44		ug/L		87	54 - 149		
Vinyl chloride			20.0	17.48		ug/L		87	56 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 426359

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Acrolein	<3.60		119	105.4		ug/L		89	25 - 150		
Allyl chloride	<0.700		25.0	24.10		ug/L		96	28 - 150		
2-Butanone (MEK)	2.49	J	50.0	43.18		ug/L		81	38 - 150		
Acetone	<3.10		50.0	39.06		ug/L		78	31 - 150		
Acrylonitrile	<2.20		250	213.9		ug/L		86	40 - 150		
Benzene	<0.220		25.0	22.32		ug/L		89	46 - 130		
Chloroprene	<0.230		25.0	23.97		ug/L		96	43 - 133		
Bromochloromethane	<0.540		25.0	23.88		ug/L		96	57 - 130		
Bromodichloromethane	<0.390		25.0	22.35		ug/L		89	57 - 130		
1,2-Dibromo-3-Chloropropane	<1.20		25.0	18.83		ug/L		75	38 - 150		
Bromoform	<0.780		25.0	19.26		ug/L		77	44 - 130		
1,2-Dibromoethane (EDB)	<0.340		25.0	23.94		ug/L		96	60 - 130		
Carbon disulfide	<0.450		25.0	23.56		ug/L		94	38 - 135		
Carbon tetrachloride	<0.650		25.0	22.93		ug/L		92	45 - 132		
1,2-Dichlorobenzene	<0.370		25.0	22.48		ug/L		90	59 - 130		
Chlorobenzene	<0.400		25.0	22.01		ug/L		88	59 - 130		
1,3-Dichlorobenzene	<0.300		25.0	22.62		ug/L		90	57 - 130		
Chlorodibromomethane	<0.750		25.0	22.20		ug/L		89	54 - 130		
1,4-Dichlorobenzene	<0.230		25.0	21.71		ug/L		87	57 - 130		
Chloroform	<1.30		25.0	22.12		ug/L		88	51 - 130		
1,1-Dichloroethane	<0.220		25.0	22.95		ug/L		92	49 - 130		
1,2-Dichloroethane	<0.390		25.0	22.14		ug/L		89	51 - 130		
cis-1,2-Dichloroethene	<0.210		25.0	20.88		ug/L		84	45 - 130		
1,1-Dichloroethene	<0.560		25.0	24.38		ug/L		98	37 - 132		
cis-1,3-Dichloropropene	<0.250		25.0	22.74		ug/L		91	53 - 130		
1,2-Dichloropropane	<0.270		25.0	23.36		ug/L		93	57 - 130		
Dibromomethane	<0.330		25.0	21.47		ug/L		86	59 - 130		
1,3-Dichloropropane	<0.400		25.0	22.54		ug/L		90	56 - 130		
2,2-Dichloropropane	<0.690		25.0	23.18		ug/L		93	25 - 150		
1,1-Dichloropropene	<0.430		25.0	23.43		ug/L		94	50 - 132		
Ethylbenzene	<0.310		25.0	22.10		ug/L		88	45 - 130		
Ethyl methacrylate	<0.680		25.0	22.32		ug/L		89	54 - 130		
2-Hexanone	<2.00		50.0	45.26		ug/L		91	46 - 140		
Iodomethane	<7.00		25.0	20.67		ug/L		83	10 - 150		
Methacrylonitrile	<3.30		250	208.4		ug/L		83	55 - 130		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 426359

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	<1.70		25.0	21.82		ug/L		87	37 - 150
Methyl methacrylate	<0.760		50.0	43.34		ug/L		87	44 - 139
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	44.35		ug/L		89	47 - 139
Naphthalene	<3.00		25.0	21.43		ug/L		86	40 - 150
Propionitrile	<3.40		250	211.7		ug/L		85	49 - 135
Styrene	<0.370		25.0	22.75		ug/L		91	47 - 130
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.93		ug/L		88	55 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.20		ug/L		89	54 - 130
Tetrachloroethene	<0.480		25.0	24.22		ug/L		97	47 - 130
Toluene	<0.430		25.0	22.33		ug/L		89	51 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	17.94		ug/L		72	26 - 150
trans-1,2-Dichloroethene	<0.270		25.0	23.59		ug/L		94	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	22.24		ug/L		89	50 - 130
1,2,4-Trichlorobenzene	<0.750		25.0	23.14		ug/L		93	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	22.64		ug/L		91	52 - 130
1,1,2-Trichloroethane	<0.450		25.0	22.18		ug/L		89	58 - 130
Trichloroethene	<0.430		25.0	22.99		ug/L		92	51 - 130
1,2,3-Trichloropropane	<0.590		25.0	21.72		ug/L		87	49 - 130
Vinyl acetate	<2.50		50.0	40.81		ug/L		82	29 - 150
Xylenes, Total	<0.400		50.0	45.81		ug/L		92	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: 310-284799-5 MSD
Matrix: Ground Water
Analysis Batch: 426359

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acrolein	<3.60		119	111.7		ug/L		94	25 - 150	6	31
Allyl chloride	<0.700		25.0	20.70		ug/L		83	28 - 150	15	35
2-Butanone (MEK)	2.49	J	50.0	43.10		ug/L		81	38 - 150	0	20
Acetone	<3.10		50.0	42.85		ug/L		86	31 - 150	9	29
Acrylonitrile	<2.20		250	226.2		ug/L		90	40 - 150	6	20
Benzene	<0.220		25.0	21.94		ug/L		88	46 - 130	2	20
Chloroprene	<0.230		25.0	23.69		ug/L		95	43 - 133	1	20
Bromochloromethane	<0.540		25.0	23.69		ug/L		95	57 - 130	1	20
Bromodichloromethane	<0.390		25.0	22.65		ug/L		91	57 - 130	1	20
1,2-Dibromo-3-Chloropropane	<1.20		25.0	20.06		ug/L		80	38 - 150	6	20
Bromoform	<0.780		25.0	20.14		ug/L		81	44 - 130	4	20
1,2-Dibromoethane (EDB)	<0.340		25.0	24.16		ug/L		97	60 - 130	1	20
Carbon disulfide	<0.450		25.0	20.70		ug/L		83	38 - 135	13	30
Carbon tetrachloride	<0.650		25.0	23.37		ug/L		93	45 - 132	2	20
1,2-Dichlorobenzene	<0.370		25.0	22.37		ug/L		89	59 - 130	0	20
Chlorobenzene	<0.400		25.0	21.27		ug/L		85	59 - 130	3	20
1,3-Dichlorobenzene	<0.300		25.0	22.12		ug/L		88	57 - 130	2	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-284799-5 MSD
Matrix: Ground Water
Analysis Batch: 426359

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorodibromomethane	<0.750		25.0	23.85		ug/L		95	54 - 130	7	20
1,4-Dichlorobenzene	<0.230		25.0	21.98		ug/L		88	57 - 130	1	20
Chloroform	<1.30		25.0	21.68		ug/L		87	51 - 130	2	20
1,1-Dichloroethane	<0.220		25.0	21.79		ug/L		87	49 - 130	5	20
1,2-Dichloroethane	<0.390		25.0	21.99		ug/L		88	51 - 130	1	20
cis-1,2-Dichloroethene	<0.210		25.0	21.02		ug/L		84	45 - 130	1	20
1,1-Dichloroethene	<0.560		25.0	23.04		ug/L		92	37 - 132	6	26
cis-1,3-Dichloropropene	<0.250		25.0	22.91		ug/L		92	53 - 130	1	20
1,2-Dichloropropane	<0.270		25.0	23.72		ug/L		95	57 - 130	2	20
Dibromomethane	<0.330		25.0	21.91		ug/L		88	59 - 130	2	20
1,3-Dichloropropane	<0.400		25.0	22.20		ug/L		89	56 - 130	1	20
2,2-Dichloropropane	<0.690		25.0	23.36		ug/L		93	25 - 150	1	25
1,1-Dichloropropene	<0.430		25.0	23.35		ug/L		93	50 - 132	0	20
Ethylbenzene	<0.310		25.0	21.60		ug/L		86	45 - 130	2	20
Ethyl methacrylate	<0.680		25.0	23.47		ug/L		94	54 - 130	5	20
2-Hexanone	<2.00		50.0	47.33		ug/L		95	46 - 140	4	20
Iodomethane	<7.00		25.0	21.49		ug/L		86	10 - 150	4	35
Methacrylonitrile	<3.30		250	215.5		ug/L		86	55 - 130	3	20
Methylene Chloride	<1.70		25.0	22.05		ug/L		88	37 - 150	1	24
Methyl methacrylate	<0.760		50.0	44.13		ug/L		88	44 - 139	2	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	45.89		ug/L		92	47 - 139	3	20
Naphthalene	<3.00		25.0	22.50		ug/L		90	40 - 150	5	30
Propionitrile	<3.40		250	212.9		ug/L		85	49 - 135	1	20
Styrene	<0.370		25.0	22.76		ug/L		91	47 - 130	0	20
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.78		ug/L		87	55 - 130	1	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.98		ug/L		92	54 - 130	3	20
Tetrachloroethene	<0.480		25.0	23.92		ug/L		96	47 - 130	1	20
Toluene	<0.430		25.0	21.47		ug/L		86	51 - 130	4	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	18.96		ug/L		76	26 - 150	6	23
trans-1,2-Dichloroethene	<0.270		25.0	23.12		ug/L		92	48 - 130	2	22
trans-1,3-Dichloropropene	<0.560		25.0	22.88		ug/L		92	50 - 130	3	20
1,2,4-Trichlorobenzene	<0.750		25.0	23.89		ug/L		96	55 - 130	3	20
1,1,1-Trichloroethane	<0.190		25.0	22.79		ug/L		91	52 - 130	1	20
1,1,2-Trichloroethane	<0.450		25.0	23.46		ug/L		94	58 - 130	6	20
Trichloroethene	<0.430		25.0	22.01		ug/L		88	51 - 130	4	20
1,2,3-Trichloropropane	<0.590		25.0	21.17		ug/L		85	49 - 130	3	26
Vinyl acetate	<2.50		50.0	43.68		ug/L		87	29 - 150	7	23
Xylenes, Total	<0.400		50.0	44.38		ug/L		89	43 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-426575/5
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 09:44	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 09:44	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 09:44	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 09:44	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 09:44	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 09:44	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 09:44	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 09:44	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 09:44	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 09:44	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 09:44	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 09:44	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 09:44	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 09:44	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 09:44	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 09:44	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 09:44	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 09:44	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 09:44	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 09:44	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 09:44	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 09:44	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 09:44	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 09:44	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 09:44	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 09:44	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 09:44	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 09:44	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 09:44	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 09:44	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 09:44	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 09:44	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 09:44	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 09:44	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 09:44	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 09:44	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 09:44	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 09:44	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 09:44	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 09:44	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 09:44	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 09:44	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 09:44	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 09:44	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 09:44	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 09:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 09:44	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-426575/5
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*07/08/24 09:44*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*07/08/24 09:44*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*07/08/24 09:44*	*1*

Lab Sample ID: LCS 310-426575/6
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	40.0	34.31		ug/L		86	50 - 150
Acetone	40.0	35.63		ug/L		89	50 - 150
Acrylonitrile	200	179.7		ug/L		90	50 - 150
Benzene	20.0	18.01		ug/L		90	72 - 124
Bromochloromethane	20.0	20.31		ug/L		102	73 - 130
Bromodichloromethane	20.0	18.81		ug/L		94	74 - 122
1,2-Dibromo-3-Chloropropane	20.0	15.60		ug/L		78	50 - 150
Bromoform	20.0	17.23		ug/L		86	61 - 122
1,2-Dibromoethane (EDB)	20.0	19.71		ug/L		99	75 - 125
Carbon disulfide	20.0	16.95		ug/L		85	59 - 135
Carbon tetrachloride	20.0	19.99		ug/L		100	67 - 132
1,2-Dichlorobenzene	20.0	17.39		ug/L		87	74 - 120
Chlorobenzene	20.0	17.49		ug/L		87	76 - 120
Chlorodibromomethane	20.0	20.60		ug/L		103	71 - 121
1,4-Dichlorobenzene	20.0	16.58		ug/L		83	72 - 120
Chloroform	20.0	17.93		ug/L		90	72 - 125
1,1-Dichloroethane	20.0	18.03		ug/L		90	70 - 127
1,2-Dichloroethane	20.0	18.40		ug/L		92	71 - 125
cis-1,2-Dichloroethene	20.0	17.65		ug/L		88	74 - 123
1,1-Dichloroethene	20.0	20.16		ug/L		101	63 - 132
cis-1,3-Dichloropropene	20.0	19.04		ug/L		95	71 - 125
1,2-Dichloropropane	20.0	18.43		ug/L		92	73 - 124
Dibromomethane	20.0	17.94		ug/L		90	74 - 125
Ethylbenzene	20.0	17.54		ug/L		88	74 - 122
2-Hexanone	40.0	36.59		ug/L		91	60 - 140
Iodomethane	20.0	18.68		ug/L		93	10 - 150
Methylene Chloride	20.0	17.72		ug/L		89	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	35.07		ug/L		88	60 - 139
Styrene	20.0	17.97		ug/L		90	74 - 121
1,1,1,2-Tetrachloroethane	20.0	18.52		ug/L		93	71 - 120
1,1,2,2-Tetrachloroethane	20.0	17.88		ug/L		89	68 - 124
Tetrachloroethene	20.0	20.31		ug/L		102	71 - 130
Toluene	20.0	17.77		ug/L		89	74 - 123
trans-1,4-Dichloro-2-butene	20.0	16.76		ug/L		84	50 - 150
trans-1,2-Dichloroethene	20.0	19.32		ug/L		97	70 - 126
trans-1,3-Dichloropropene	20.0	18.32		ug/L		92	69 - 123
1,1,1-Trichloroethane	20.0	19.35		ug/L		97	73 - 129
1,1,2-Trichloroethane	20.0	18.35		ug/L		92	73 - 123
Trichloroethene	20.0	19.12		ug/L		96	72 - 126

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-426575/6
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	17.29		ug/L		86	65 - 127
Vinyl acetate	40.0	36.85		ug/L		92	50 - 150
Xylenes, Total	40.0	36.27		ug/L		91	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCS 310-426575/7
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.85		ug/L		89	23 - 150
Chloroethane	20.0	16.34		ug/L		82	54 - 136
Chloromethane	20.0	17.50		ug/L		87	38 - 150
Trichlorofluoromethane	20.0	16.02		ug/L		80	54 - 149
Vinyl chloride	20.0	16.11		ug/L		81	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-426626/1-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426626

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.640		10.0	0.640	ug/L		07/08/24 12:37	07/09/24 13:01	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		07/08/24 12:37	07/09/24 13:01	1
Acetophenone	<0.690		10.0	0.690	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
Anthracene	<0.870		10.0	0.870	ug/L		07/08/24 12:37	07/09/24 13:01	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		07/08/24 12:37	07/09/24 13:01	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		07/08/24 12:37	07/09/24 13:01	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		07/08/24 12:37	07/09/24 13:01	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		07/08/24 12:37	07/09/24 13:01	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		07/08/24 12:37	07/09/24 13:01	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		07/08/24 12:37	07/09/24 13:01	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426626/1-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426626

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		07/08/24 12:37	07/09/24 13:01	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		07/08/24 12:37	07/09/24 13:01	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		07/08/24 12:37	07/09/24 13:01	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		07/08/24 12:37	07/09/24 13:01	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		07/08/24 12:37	07/09/24 13:01	1
Chrysene	<0.870		10.0	0.870	ug/L		07/08/24 12:37	07/09/24 13:01	1
Diallate	<4.00		10.0	4.00	ug/L		07/08/24 12:37	07/09/24 13:01	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		07/08/24 12:37	07/09/24 13:01	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		07/08/24 12:37	07/09/24 13:01	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
Dimethoate	<3.60		10.0	3.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		07/08/24 12:37	07/09/24 13:01	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		07/08/24 12:37	07/09/24 13:01	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		07/08/24 12:37	07/09/24 13:01	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		07/08/24 12:37	07/09/24 13:01	1
Dinoseb	<2.40		10.0	2.40	ug/L		07/08/24 12:37	07/09/24 13:01	1
Diphenylamine	<6.00		10.0	6.00	ug/L		07/08/24 12:37	07/09/24 13:01	1
Disulfoton	<2.40		10.0	2.40	ug/L		07/08/24 12:37	07/09/24 13:01	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
Famphur	<3.80		10.0	3.80	ug/L		07/08/24 12:37	07/09/24 13:01	1
Fluoranthene	<1.70		10.0	1.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
Fluorene	<0.790		10.0	0.790	ug/L		07/08/24 12:37	07/09/24 13:01	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		07/08/24 12:37	07/09/24 13:01	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		07/08/24 12:37	07/09/24 13:01	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		07/08/24 12:37	07/09/24 13:01	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		07/08/24 12:37	07/09/24 13:01	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
Isodrin	<4.70		10.0	4.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
Isophorone	<0.930		10.0	0.930	ug/L		07/08/24 12:37	07/09/24 13:01	1
Isosafrole	<2.30		10.0	2.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
Kepone	<1.00		10.0	1.00	ug/L		07/08/24 12:37	07/09/24 13:01	1
Methapyrilene	<0.760		10.0	0.760	ug/L		07/08/24 12:37	07/09/24 13:01	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		07/08/24 12:37	07/09/24 13:01	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		07/08/24 12:37	07/09/24 13:01	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426626/1-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426626

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		07/08/24 12:37	07/09/24 13:01	1
Methyl parathion	<2.30		10.0	2.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		07/08/24 12:37	07/09/24 13:01	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		07/08/24 12:37	07/09/24 13:01	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		07/08/24 12:37	07/09/24 13:01	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		07/08/24 12:37	07/09/24 13:01	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		07/08/24 12:37	07/09/24 13:01	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
o-Toluidine	<2.90		10.0	2.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		07/08/24 12:37	07/09/24 13:01	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		07/08/24 12:37	07/09/24 13:01	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		07/08/24 12:37	07/09/24 13:01	1
Phenacetin	<1.90		10.0	1.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
Phenanthrene	<0.790		10.0	0.790	ug/L		07/08/24 12:37	07/09/24 13:01	1
Phenol	<1.10		10.0	1.10	ug/L		07/08/24 12:37	07/09/24 13:01	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		07/08/24 12:37	07/09/24 13:01	1
Phorate	<3.20		10.0	3.20	ug/L		07/08/24 12:37	07/09/24 13:01	1
Pronamide	<2.70		10.0	2.70	ug/L		07/08/24 12:37	07/09/24 13:01	1
Pyrene	<0.790		10.0	0.790	ug/L		07/08/24 12:37	07/09/24 13:01	1
Safrole	<2.80		10.0	2.80	ug/L		07/08/24 12:37	07/09/24 13:01	1
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
Thionazin	<3.50		10.0	3.50	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		07/08/24 12:37	07/09/24 13:01	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		07/08/24 12:37	07/09/24 13:01	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		07/08/24 12:37	07/09/24 13:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*39 - 118*	*07/08/24 12:37*	*07/09/24 13:01*	*1*
2-Fluorophenol (Surr)	*65*		*25 - 110*	*07/08/24 12:37*	*07/09/24 13:01*	*1*
Nitrobenzene-d5 (Surr)	*92*		*45 - 129*	*07/08/24 12:37*	*07/09/24 13:01*	*1*
Phenol-d5 (Surr)	*65*		*21 - 110*	*07/08/24 12:37*	*07/09/24 13:01*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426626/1-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426626

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	*108*		*12 - 144*	*07/08/24 12:37*	*07/09/24 13:01*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*27 - 136*	*07/08/24 12:37*	*07/09/24 13:01*	*1*

Lab Sample ID: LCS 310-426626/2-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426626

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	73.50		ug/L		73	43 - 110
Acenaphthylene	100	71.51		ug/L		72	40 - 110
Acetophenone	100	73.84		ug/L		74	48 - 119
2-Acetylaminofluorene	64.0	48.54		ug/L		76	35 - 150
4-Aminobiphenyl	64.0	42.74		ug/L		67	24 - 138
Anthracene	100	79.75		ug/L		80	51 - 120
Benzo[a]anthracene	100	76.18		ug/L		76	51 - 123
Benzo[a]pyrene	100	84.59		ug/L		85	48 - 125
Benzo[b]fluoranthene	100	80.17		ug/L		80	49 - 129
Benzo[g,h,i]perylene	100	93.66		ug/L		94	43 - 139
Benzo[k]fluoranthene	100	81.16		ug/L		81	47 - 130
Benzyl alcohol	100	80.13		ug/L		80	39 - 128
Bis(2-chloroethoxy)methane	100	75.46		ug/L		75	48 - 121
Bis(2-chloroethyl)ether	100	74.95		ug/L		75	43 - 123
bis (2-chloroisopropyl) ether	100	65.26		ug/L		65	34 - 123
Bis(2-ethylhexyl) phthalate	100	85.35		ug/L		85	43 - 143
4-Bromophenyl phenyl ether	100	80.67		ug/L		81	45 - 119
Butyl benzyl phthalate	100	76.13		ug/L		76	46 - 135
4-Chloroaniline	100	75.49		ug/L		75	21 - 139
Chlorobenzilate	64.0	46.81		ug/L		73	52 - 138
4-Chloro-3-methylphenol	100	77.53		ug/L		78	49 - 130
2-Chloronaphthalene	100	69.42		ug/L		69	37 - 110
2-Chlorophenol	100	84.17		ug/L		84	44 - 117
4-Chlorophenyl phenyl ether	100	72.37		ug/L		72	44 - 116
Chrysene	100	78.22		ug/L		78	51 - 125
Diallate	64.0	48.06		ug/L		75	42 - 141
Dibenzo(a,h)anthracene	100	87.20		ug/L		87	38 - 149
Dibenzofuran	100	74.61		ug/L		75	45 - 112
2,4-Dichlorophenol	100	82.70		ug/L		83	41 - 124
2,6-Dichlorophenol	100	81.78		ug/L		82	30 - 130
Diethyl phthalate	100	87.69		ug/L		88	43 - 135
Dimethoate	64.0	59.35		ug/L		93	51 - 150
7,12-Dimethylbenz(a)anthracene	64.0	46.65		ug/L		73	51 - 129
3,3'-Dimethylbenzidine	64.0	42.49		ug/L		66	10 - 150
2,4-Dimethylphenol	100	77.83		ug/L		78	31 - 142
Dimethyl phthalate	100	87.00		ug/L		87	43 - 129
Di-n-butyl phthalate	100	90.28		ug/L		90	50 - 133
1,3-Dinitrobenzene	100	85.82		ug/L		86	45 - 138
4,6-Dinitro-2-methylphenol	200	163.0		ug/L		81	22 - 143
2,4-Dinitrophenol	200	130.5		ug/L		65	10 - 138

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426626/2-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426626

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	100	77.17		ug/L		77	47 - 137
2,6-Dinitrotoluene	100	74.83		ug/L		75	51 - 130
Di-n-octyl phthalate	100	85.47		ug/L		85	34 - 150
Dinoseb	64.0	53.84		ug/L		84	25 - 146
Diphenylamine	85.0	66.12		ug/L		78	48 - 122
Disulfoton	64.0	39.46		ug/L		62	54 - 131
Ethyl methanesulfonate	64.0	40.91		ug/L		64	48 - 120
Ethyl Parathion	64.0	50.27		ug/L		79	52 - 149
Famphur	64.0	100.9	E *+	ug/L		158	44 - 150
Fluoranthene	100	82.09		ug/L		82	47 - 128
Fluorene	100	76.30		ug/L		76	45 - 119
Hexachlorobenzene	100	83.11		ug/L		83	48 - 119
Hexachlorobutadiene	100	63.02		ug/L		63	32 - 110
Hexachlorocyclopentadiene	100	44.21		ug/L		44	10 - 110
Hexachloroethane	100	43.98		ug/L		44	31 - 110
Hexachloropropene	64.0	10.48		ug/L		16	10 - 110
Indeno[1,2,3-cd]pyrene	100	93.71		ug/L		94	37 - 150
Isodrin	64.0	46.97		ug/L		73	52 - 125
Isophorone	100	72.35		ug/L		72	50 - 125
Isosafrole	64.0	38.42		ug/L		60	31 - 123
Kepone	64.0	79.18		ug/L		124	10 - 150
Methapyrilene	64.0	6.644	J	ug/L		10	10 - 110
3-Methylcholanthrene	64.0	50.12		ug/L		78	43 - 150
Methyl methanesulfonate	64.0	26.14		ug/L		41	36 - 110
2-Methylnaphthalene	100	63.98		ug/L		64	33 - 110
Methyl parathion	64.0	58.38		ug/L		91	50 - 150
2-Methylphenol	100	74.11		ug/L		74	47 - 118
Methylphenol, 3 & 4	100	74.59		ug/L		75	46 - 117
1,4-Naphthoquinone	64.0	41.01		ug/L		64	37 - 149
1-Naphthylamine	64.0	27.20		ug/L		43	19 - 110
2-Naphthylamine	64.0	35.42		ug/L		55	18 - 127
2-Nitroaniline	100	79.66		ug/L		80	50 - 135
3-Nitroaniline	100	85.03		ug/L		85	42 - 139
4-Nitroaniline	100	74.63		ug/L		75	31 - 145
Nitrobenzene	100	67.52		ug/L		68	47 - 116
5-Nitro-o-toluidine	64.0	49.04		ug/L		77	47 - 145
2-Nitrophenol	100	76.92		ug/L		77	41 - 129
4-Nitrophenol	200	94.22		ug/L		47	18 - 110
N-Nitrosodiethylamine	64.0	45.96		ug/L		72	47 - 138
N-Nitrosodimethylamine	100	58.18		ug/L		58	37 - 110
N-Nitrosodi-n-butylamine	64.0	48.36		ug/L		76	52 - 142
N-Nitrosodi-n-propylamine	100	75.35		ug/L		75	45 - 130
N-Nitrosodiphenylamine	100	78.37		ug/L		78	49 - 121
N-Nitrosomethylethylamine	64.0	45.42		ug/L		71	54 - 123
N-Nitrosopiperidine	64.0	47.91		ug/L		75	60 - 127
N-Nitrosopyrrolidine	64.0	43.66		ug/L		68	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	44.60		ug/L		70	45 - 113
o-Toluidine	64.0	43.22		ug/L		68	24 - 142
p-Dimethylamino azobenzene	64.0	48.34		ug/L		76	42 - 138

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426626/2-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426626

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorobenzene			64.0	32.60		ug/L		51	33 - 110		
Pentachloronitrobenzene			64.0	53.01		ug/L		83	65 - 127		
Pentachlorophenol			200	172.4		ug/L		86	26 - 133		
Phenacetin			64.0	52.73		ug/L		82	56 - 146		
Phenanthrene			100	79.75		ug/L		80	51 - 117		
Phenol			100	54.03		ug/L		54	29 - 110		
1,4-phenylenediamine			64.0	<1.90	*-	ug/L		-1	20 - 120		
Phorate			64.0	43.57		ug/L		68	57 - 135		
Pronamide			64.0	49.04		ug/L		77	61 - 144		
Pyrene			100	72.55		ug/L		73	48 - 127		
Safrole			64.0	33.58		ug/L		52	34 - 110		
1,2,4,5-Tetrachlorobenzene			100	67.52		ug/L		68	36 - 110		
2,3,4,6-Tetrachlorophenol			100	56.96		ug/L		57	33 - 134		
Thionazin			64.0	45.79		ug/L		72	52 - 147		
2,4,5-Trichlorophenol			100	82.51		ug/L		83	35 - 133		
2,4,6-Trichlorophenol			100	87.48		ug/L		87	28 - 139		
1,3,5-Trinitrobenzene			64.0	44.49		ug/L		70	39 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*67*		*39 - 118*
2-Fluorophenol (Surr)	*63*		*25 - 110*
Nitrobenzene-d5 (Surr)	*80*		*45 - 129*
Phenol-d5 (Surr)	*61*		*21 - 110*
Terphenyl-d14 (Surr)	*90*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*95*		*27 - 136*

Lab Sample ID: LCSD 310-426626/3-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426626

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene			100	75.62		ug/L		76	43 - 110	3	35
Acenaphthylene			100	71.12		ug/L		71	40 - 110	1	35
Acetophenone			100	73.81		ug/L		74	48 - 119	0	35
2-Acetylaminofluorene			64.0	45.07		ug/L		70	35 - 150	7	28
4-Aminobiphenyl			64.0	39.98		ug/L		62	24 - 138	7	35
Anthracene			100	77.29		ug/L		77	51 - 120	3	35
Benzo[a]anthracene			100	74.02		ug/L		74	51 - 123	3	35
Benzo[a]pyrene			100	77.10		ug/L		77	48 - 125	9	35
Benzo[b]fluoranthene			100	75.37		ug/L		75	49 - 129	6	35
Benzo[g,h,i]perylene			100	83.94		ug/L		84	43 - 139	11	35
Benzo[k]fluoranthene			100	74.24		ug/L		74	47 - 130	9	35
Benzyl alcohol			100	77.78		ug/L		78	39 - 128	3	35
Bis(2-chloroethoxy)methane			100	72.81		ug/L		73	48 - 121	4	35
Bis(2-chloroethyl)ether			100	74.26		ug/L		74	43 - 123	1	35
bis (2-chloroisopropyl) ether			100	64.46		ug/L		64	34 - 123	1	35
Bis(2-ethylhexyl) phthalate			100	83.33		ug/L		83	43 - 143	2	35
4-Bromophenyl phenyl ether			100	75.42		ug/L		75	45 - 119	7	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-426626/3-A
Matrix: Water
Analysis Batch: 426735

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426626

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Butyl benzyl phthalate	100	75.70		ug/L		76	46 - 135	1	35
4-Chloroaniline	100	68.95		ug/L		69	21 - 139	9	35
Chlorobenzilate	64.0	46.12		ug/L		72	52 - 138	1	28
4-Chloro-3-methylphenol	100	73.69		ug/L		74	49 - 130	5	35
2-Chloronaphthalene	100	73.54		ug/L		74	37 - 110	6	35
2-Chlorophenol	100	80.31		ug/L		80	44 - 117	5	35
4-Chlorophenyl phenyl ether	100	71.89		ug/L		72	44 - 116	1	35
Chrysene	100	74.70		ug/L		75	51 - 125	5	35
Diallate	64.0	47.16		ug/L		74	42 - 141	2	35
Dibenzo(a,h)anthracene	100	81.31		ug/L		81	38 - 149	7	35
Dibenzofuran	100	74.71		ug/L		75	45 - 112	0	35
2,4-Dichlorophenol	100	78.51		ug/L		79	41 - 124	5	35
2,6-Dichlorophenol	100	74.72		ug/L		75	30 - 130	9	35
Diethyl phthalate	100	87.95		ug/L		88	43 - 135	0	35
Dimethoate	64.0	56.94		ug/L		89	51 - 150	4	26
7,12-Dimethylbenz(a)anthracene	64.0	46.16		ug/L		72	51 - 129	1	28
3,3'-Dimethylbenzidine	64.0	19.15	*1	ug/L		30	10 - 150	76	35
2,4-Dimethylphenol	100	72.73		ug/L		73	31 - 142	7	35
Dimethyl phthalate	100	85.23		ug/L		85	43 - 129	2	35
Di-n-butyl phthalate	100	86.15		ug/L		86	50 - 133	5	35
1,3-Dinitrobenzene	100	84.62		ug/L		85	45 - 138	1	35
4,6-Dinitro-2-methylphenol	200	165.6		ug/L		83	22 - 143	2	35
2,4-Dinitrophenol	200	145.3		ug/L		73	10 - 138	11	35
2,4-Dinitrotoluene	100	73.97		ug/L		74	47 - 137	4	35
2,6-Dinitrotoluene	100	76.96		ug/L		77	51 - 130	3	35
Di-n-octyl phthalate	100	80.73		ug/L		81	34 - 150	6	35
Dinoseb	64.0	55.29		ug/L		86	25 - 146	3	35
Diphenylamine	85.0	65.10		ug/L		77	48 - 122	2	35
Disulfoton	64.0	38.68		ug/L		60	54 - 131	2	24
Ethyl methanesulfonate	64.0	41.43		ug/L		65	48 - 120	1	27
Ethyl Parathion	64.0	52.16		ug/L		82	52 - 149	4	26
Famphur	64.0	102.8	E *+	ug/L		161	44 - 150	2	35
Fluoranthene	100	79.28		ug/L		79	47 - 128	3	35
Fluorene	100	76.99		ug/L		77	45 - 119	1	35
Hexachlorobenzene	100	79.80		ug/L		80	48 - 119	4	35
Hexachlorobutadiene	100	66.52		ug/L		67	32 - 110	5	35
Hexachlorocyclopentadiene	100	43.00		ug/L		43	10 - 110	3	35
Hexachloroethane	100	50.38		ug/L		50	31 - 110	14	35
Hexachloropropene	64.0	16.30	*1	ug/L		25	10 - 110	43	35
Indeno[1,2,3-cd]pyrene	100	85.31		ug/L		85	37 - 150	9	35
Isodrin	64.0	47.23		ug/L		74	52 - 125	1	26
Isophorone	100	69.83		ug/L		70	50 - 125	4	35
Isosafrole	64.0	41.88		ug/L		65	31 - 123	9	35
Kepone	64.0	76.33		ug/L		119	10 - 150	4	35
Methapyrilene	64.0	10.60	*1	ug/L		17	10 - 110	46	35
3-Methylcholanthrene	64.0	48.79		ug/L		76	43 - 150	3	32
Methyl methanesulfonate	64.0	25.47		ug/L		40	36 - 110	3	26
2-Methylnaphthalene	100	64.23		ug/L		64	33 - 110	0	35
Methyl parathion	64.0	58.53		ug/L		91	50 - 150	0	25

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-426626/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426735
Prep Batch: 426626

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Methylphenol			100	71.60		ug/L		72	47 - 118	3	35
Methylphenol, 3 & 4			100	74.85		ug/L		75	46 - 117	0	35
1,4-Naphthoquinone			64.0	42.34		ug/L		66	37 - 149	3	29
1-Naphthylamine			64.0	19.49		ug/L		30	19 - 110	33	35
2-Naphthylamine			64.0	33.78		ug/L		53	18 - 127	5	35
2-Nitroaniline			100	80.50		ug/L		80	50 - 135	1	35
3-Nitroaniline			100	81.04		ug/L		81	42 - 139	5	35
4-Nitroaniline			100	72.06		ug/L		72	31 - 145	3	35
Nitrobenzene			100	66.21		ug/L		66	47 - 116	2	35
5-Nitro-o-toluidine			64.0	48.84		ug/L		76	47 - 145	0	31
2-Nitrophenol			100	73.62		ug/L		74	41 - 129	4	35
4-Nitrophenol			200	92.52		ug/L		46	18 - 110	2	35
N-Nitrosodiethylamine			64.0	45.69		ug/L		71	47 - 138	1	26
N-Nitrosodimethylamine			100	58.16		ug/L		58	37 - 110	0	35
N-Nitrosodi-n-butylamine			64.0	46.01		ug/L		72	52 - 142	5	27
N-Nitrosodi-n-propylamine			100	73.87		ug/L		74	45 - 130	2	35
N-Nitrosodiphenylamine			100	77.82		ug/L		78	49 - 121	1	35
N-Nitrosomethylethylamine			64.0	46.45		ug/L		73	54 - 123	2	26
N-Nitrosopiperidine			64.0	46.24		ug/L		72	60 - 127	4	26
N-Nitrosopyrrolidine			64.0	44.68		ug/L		70	56 - 143	2	25
o,o',o''-Triethylphosphorothioate			64.0	41.45		ug/L		65	45 - 113	7	33
o-Toluidine			64.0	40.73		ug/L		64	24 - 142	6	35
p-Dimethylamino azobenzene			64.0	48.62		ug/L		76	42 - 138	1	29
Pentachlorobenzene			64.0	36.01		ug/L		56	33 - 110	10	35
Pentachloronitrobenzene			64.0	49.52		ug/L		77	65 - 127	7	29
Pentachlorophenol			200	164.3		ug/L		82	26 - 133	5	35
Phenacetin			64.0	50.88		ug/L		79	56 - 146	4	25
Phenanthrene			100	79.13		ug/L		79	51 - 117	1	35
Phenol			100	53.70		ug/L		54	29 - 110	1	35
1,4-phenylenediamine			64.0	<1.90	*-	ug/L		-1	20 - 120	11	35
Phorate			64.0	42.88		ug/L		67	57 - 135	2	26
Pronamide			64.0	48.93		ug/L		76	61 - 144	0	27
Pyrene			100	74.27		ug/L		74	48 - 127	2	35
Safrole			64.0	34.86		ug/L		54	34 - 110	4	35
1,2,4,5-Tetrachlorobenzene			100	71.64		ug/L		72	36 - 110	6	35
2,3,4,6-Tetrachlorophenol			100	58.49		ug/L		58	33 - 134	3	35
Thionazin			64.0	46.99		ug/L		73	52 - 147	3	28
2,4,5-Trichlorophenol			100	81.28		ug/L		81	35 - 133	1	35
2,4,6-Trichlorophenol			100	87.40		ug/L		87	28 - 139	0	35
1,3,5-Trinitrobenzene			64.0	41.72		ug/L		65	39 - 144	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*62*		*39 - 118*
2-Fluorophenol (Surr)	*63*		*25 - 110*
Nitrobenzene-d5 (Surr)	*79*		*45 - 129*
Phenol-d5 (Surr)	*62*		*21 - 110*
Terphenyl-d14 (Surr)	*90*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*93*		*27 - 136*

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-426817/28
Matrix: Water
Analysis Batch: 426817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			07/10/24 17:32	1
Isobutanol	<2400		10000	2400	ug/L			07/10/24 17:32	1

Lab Sample ID: LCS 310-426817/29
Matrix: Water
Analysis Batch: 426817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetonitrile			113000	125600		ug/L		111	67 - 132		
Isobutanol			104000	110000		ug/L		105	80 - 121		

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 426817

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetonitrile	<2600		113000	118700		ug/L		105	60 - 138		
Isobutanol	<2400		104000	112500		ug/L		108	72 - 131		

Lab Sample ID: 310-284799-5 MSD
Matrix: Ground Water
Analysis Batch: 426817

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetonitrile	<2600		113000	131100		ug/L		116	60 - 138	10	30
Isobutanol	<2400		104000	108600		ug/L		104	72 - 131	4	30

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: LCS 310-426354/12-A
Matrix: Water
Analysis Batch: 426826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426354

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			26.5	15.82		ug/L		60	30 - 133		
PCB-1260			26.5	12.35		ug/L		47	31 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*48*		*10 - 136*
Tetrachloro-m-xylene	*50*		*10 - 130*

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 426826

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 426354

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016	<0.767		26.2	24.30		ug/L		93	30 - 133		
PCB-1260	<0.646		26.2	21.76		ug/L		83	31 - 133		

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 426826

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 426354

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	84		10 - 136
Tetrachloro-m-xylene	78		10 - 130

Lab Sample ID: 310-284799-5 MSD
Matrix: Ground Water
Analysis Batch: 426826

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 426354

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	<0.767		26.0	22.82		ug/L		88	30 - 133	6	35
PCB-1260	<0.646		26.0	18.71		ug/L		72	31 - 133	15	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	86		10 - 136
Tetrachloro-m-xylene	79		10 - 130

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-525243/1-A
Matrix: Water
Analysis Batch: 525367

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 525243

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		07/06/24 04:53	07/08/24 07:09	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		07/06/24 04:53	07/08/24 07:09	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		07/06/24 04:53	07/08/24 07:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	88		34 - 142	07/06/24 04:53	07/08/24 07:09	1
DCAA	75		34 - 142	07/06/24 04:53	07/08/24 07:09	1

Lab Sample ID: LCS 410-525243/2-A
Matrix: Water
Analysis Batch: 525367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 525243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-D	2.51	2.458		ug/L		98	53 - 159
Silvex (2,4,5-TP)	0.250	0.2794		ug/L		112	62 - 170
2,4,5-T	0.250	0.2976		ug/L		119	57 - 171

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCAA	95		34 - 142
DCAA	91		34 - 142

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-426286/1-A
Matrix: Water
Analysis Batch: 426645

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426286

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/03/24 09:00	07/08/24 12:26	1
Arsenic	<0.530		2.00	0.530	ug/L		07/03/24 09:00	07/08/24 12:26	1
Barium	<0.660		2.00	0.660	ug/L		07/03/24 09:00	07/08/24 12:26	1
Beryllium	<0.330		1.00	0.330	ug/L		07/03/24 09:00	07/08/24 12:26	1
Cadmium	<0.100		0.200	0.100	ug/L		07/03/24 09:00	07/08/24 12:26	1
Chromium	<1.20		5.00	1.20	ug/L		07/03/24 09:00	07/08/24 12:26	1
Cobalt	<0.170		0.500	0.170	ug/L		07/03/24 09:00	07/08/24 12:26	1
Copper	<1.80		5.00	1.80	ug/L		07/03/24 09:00	07/08/24 12:26	1
Lead	0.3660	J	0.500	0.260	ug/L		07/03/24 09:00	07/08/24 12:26	1
Nickel	<2.10		5.00	2.10	ug/L		07/03/24 09:00	07/08/24 12:26	1
Selenium	<1.40		5.00	1.40	ug/L		07/03/24 09:00	07/08/24 12:26	1
Silver	<0.500		1.00	0.500	ug/L		07/03/24 09:00	07/08/24 12:26	1
Thallium	<0.570		1.00	0.570	ug/L		07/03/24 09:00	07/08/24 12:26	1
Vanadium	<1.10		5.00	1.10	ug/L		07/03/24 09:00	07/08/24 12:26	1
Zinc	<9.70		20.0	9.70	ug/L		07/03/24 09:00	07/08/24 12:26	1
Tin	<2.30		5.00	2.30	ug/L		07/03/24 09:00	07/08/24 12:26	1

Lab Sample ID: LCS 310-426286/2-A
Matrix: Water
Analysis Batch: 426645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426286

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	211.8		ug/L		106	80 - 120
Arsenic	200	205.7		ug/L		103	80 - 120
Barium	100	105.1		ug/L		105	80 - 120
Beryllium	100	94.36		ug/L		94	80 - 120
Cadmium	100	97.38		ug/L		97	80 - 120
Chromium	100	98.66		ug/L		99	80 - 120
Cobalt	100	100.3		ug/L		100	80 - 120
Copper	200	199.6		ug/L		100	80 - 120
Lead	200	204.1		ug/L		102	80 - 120
Nickel	200	198.7		ug/L		99	80 - 120
Selenium	400	388.6		ug/L		97	80 - 120
Silver	100	103.3		ug/L		103	80 - 120
Thallium	100	93.95		ug/L		94	80 - 120
Vanadium	100	96.00		ug/L		96	80 - 120
Zinc	200	185.3		ug/L		93	80 - 120
Tin	200	188.7		ug/L		94	80 - 120

Lab Sample ID: 310-284799-1 DU
Matrix: Ground Water
Analysis Batch: 426542

Client Sample ID: MW-31A
Prep Type: Total/NA
Prep Batch: 426286

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.530		<0.530		ug/L		NC	20
Barium	243		251.8		ug/L		4	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	3.48		3.516		ug/L		1	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-284799-1 DU
Matrix: Ground Water
Analysis Batch: 426542

Client Sample ID: MW-31A
Prep Type: Total/NA
Prep Batch: 426286

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Copper	1.91	J	<1.80		ug/L		NC	20
Lead	<0.260		<0.260		ug/L		NC	20
Nickel	30.3		30.23		ug/L		0.2	20
Selenium	<1.40		<1.40		ug/L		NC	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	<1.10		<1.10		ug/L		NC	20
Zinc	<9.70		<9.70		ug/L		NC	20

Lab Sample ID: 310-284799-1 DU
Matrix: Ground Water
Analysis Batch: 426645

Client Sample ID: MW-31A
Prep Type: Total/NA
Prep Batch: 426286

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Cadmium	0.160	J	0.1610	J	ug/L		0.6	20
Silver	<0.500		<0.500		ug/L		NC	20
Tin	<2.30		<2.30		ug/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-427810/1-A
Matrix: Water
Analysis Batch: 427900

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 427810

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.110		0.200	0.110	ug/L		07/19/24 09:50	07/19/24 13:39	1

Lab Sample ID: LCS 310-427810/2-A
Matrix: Water
Analysis Batch: 427900

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 427810

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.565		ug/L		94	80 - 120

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 427900

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 427810

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.110		1.67	2.003		ug/L		120	80 - 120

Lab Sample ID: 310-284799-5 MSD
Matrix: Ground Water
Analysis Batch: 427900

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 427810

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.110		1.67	1.977		ug/L		119	80 - 120	1	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-426366/1-A
Matrix: Water
Analysis Batch: 426438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	4.427	J	10.0	3.50	ug/L		07/03/24 09:55	07/03/24 16:37	1

Lab Sample ID: LCS 310-426366/2-A
Matrix: Water
Analysis Batch: 426438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	182.8		ug/L		91	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-619024/1-A
Matrix: Water
Analysis Batch: 619066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 619024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1410		3000	1410	ug/L		07/08/24 07:34	07/08/24 09:49	1

Lab Sample ID: LCS 240-619024/2-A
Matrix: Water
Analysis Batch: 619066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 619024

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8130	8267		ug/L		102	70 - 120

Lab Sample ID: 310-284799-5 MS
Matrix: Ground Water
Analysis Batch: 619066

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 619024

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	<1410		8130	8667		ug/L		107	32 - 130

Lab Sample ID: 310-284799-5 MSD
Matrix: Ground Water
Analysis Batch: 619066

Client Sample ID: MW-11
Prep Type: Total/NA
Prep Batch: 619024

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	<1410		8130	8667		ug/L		107	32 - 130	0	30

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-426223/1
Matrix: Water
Analysis Batch: 426223

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			07/02/24 09:55	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-426223/2
Matrix: Water
Analysis Batch: 426223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	105.0		mg/L		105	81 - 116

GC/MS VOA

Analysis Batch: 426359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	8260D	
310-284799-2	MW-41A	Total/NA	Ground Water	8260D	
310-284799-3	Trip Blank	Total/NA	Water	8260D	
310-284799-4	MW-45A	Total/NA	Ground Water	8260D	
310-284799-5	MW-11	Total/NA	Ground Water	8260D	
310-284799-6	MW-18	Total/NA	Ground Water	8260D	
310-284799-7	MW-2R	Total/NA	Ground Water	8260D	
310-284799-8	MW-3	Total/NA	Ground Water	8260D	
MB 310-426359/5	Method Blank	Total/NA	Water	8260D	
LCS 310-426359/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-426359/7	Lab Control Sample	Total/NA	Water	8260D	
310-284799-5 MS	MW-11	Total/NA	Ground Water	8260D	
310-284799-5 MSD	MW-11	Total/NA	Ground Water	8260D	

Analysis Batch: 426575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	8260D	
310-284799-3	Trip Blank	Total/NA	Water	8260D	
MB 310-426575/5	Method Blank	Total/NA	Water	8260D	
LCS 310-426575/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-426575/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 426626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	3510C	
MB 310-426626/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-426626/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-426626/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 426735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	8270E	426626
MB 310-426626/1-A	Method Blank	Total/NA	Water	8270E	426626
LCS 310-426626/2-A	Lab Control Sample	Total/NA	Water	8270E	426626
LCSD 310-426626/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	426626

GC Semi VOA

Prep Batch: 426354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	3511	
310-284799-5	MW-11	Total/NA	Ground Water	3511	
LCS 310-426354/12-A	Lab Control Sample	Total/NA	Water	3511	
310-284799-5 MS	MW-11	Total/NA	Ground Water	3511	
310-284799-5 MSD	MW-11	Total/NA	Ground Water	3511	

Analysis Batch: 426817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	8015C	
MB 310-426817/28	Method Blank	Total/NA	Water	8015C	

GC Semi VOA (Continued)

Analysis Batch: 426817 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-426817/29	Lab Control Sample	Total/NA	Water	8015C	
310-284799-5 MS	MW-11	Total/NA	Ground Water	8015C	
310-284799-5 MSD	MW-11	Total/NA	Ground Water	8015C	

Analysis Batch: 426825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	8081B	426354
310-284799-5	MW-11	Total/NA	Ground Water	8081B	426354

Analysis Batch: 426826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	8082A	426354
LCS 310-426354/12-A	Lab Control Sample	Total/NA	Water	8082A	426354
310-284799-5 MS	MW-11	Total/NA	Ground Water	8082A	426354
310-284799-5 MSD	MW-11	Total/NA	Ground Water	8082A	426354

Prep Batch: 525243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	8151A	
MB 410-525243/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-525243/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 525367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	8151A	525243
MB 410-525243/1-A	Method Blank	Total/NA	Water	8151A	525243
LCS 410-525243/2-A	Lab Control Sample	Total/NA	Water	8151A	525243

Metals

Prep Batch: 426286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	3005A	
310-284799-2	MW-41A	Total/NA	Ground Water	3005A	
310-284799-4	MW-45A	Total/NA	Ground Water	3005A	
310-284799-5	MW-11	Total/NA	Ground Water	3005A	
310-284799-6	MW-18	Total/NA	Ground Water	3005A	
310-284799-7	MW-2R	Total/NA	Ground Water	3005A	
310-284799-8	MW-3	Total/NA	Ground Water	3005A	
MB 310-426286/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-426286/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-284799-1 DU	MW-31A	Total/NA	Ground Water	3005A	

Analysis Batch: 426542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	6020B	426286
310-284799-2	MW-41A	Total/NA	Ground Water	6020B	426286
310-284799-4	MW-45A	Total/NA	Ground Water	6020B	426286
310-284799-5	MW-11	Total/NA	Ground Water	6020B	426286
310-284799-6	MW-18	Total/NA	Ground Water	6020B	426286
310-284799-7	MW-2R	Total/NA	Ground Water	6020B	426286

Metals (Continued)

Analysis Batch: 426542 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-8	MW-3	Total/NA	Ground Water	6020B	426286
310-284799-1 DU	MW-31A	Total/NA	Ground Water	6020B	426286

Analysis Batch: 426645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	6020B	426286
310-284799-2	MW-41A	Total/NA	Ground Water	6020B	426286
310-284799-4	MW-45A	Total/NA	Ground Water	6020B	426286
310-284799-5	MW-11	Total/NA	Ground Water	6020B	426286
310-284799-6	MW-18	Total/NA	Ground Water	6020B	426286
310-284799-7	MW-2R	Total/NA	Ground Water	6020B	426286
310-284799-8	MW-3	Total/NA	Ground Water	6020B	426286
MB 310-426286/1-A	Method Blank	Total/NA	Water	6020B	426286
LCS 310-426286/2-A	Lab Control Sample	Total/NA	Water	6020B	426286
310-284799-1 DU	MW-31A	Total/NA	Ground Water	6020B	426286

Prep Batch: 427810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	7470A	
MB 310-427810/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-427810/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-284799-5 MS	MW-11	Total/NA	Ground Water	7470A	
310-284799-5 MSD	MW-11	Total/NA	Ground Water	7470A	

Analysis Batch: 427900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	7470A	427810
MB 310-427810/1-A	Method Blank	Total/NA	Water	7470A	427810
LCS 310-427810/2-A	Lab Control Sample	Total/NA	Water	7470A	427810
310-284799-5 MS	MW-11	Total/NA	Ground Water	7470A	427810
310-284799-5 MSD	MW-11	Total/NA	Ground Water	7470A	427810

General Chemistry

Analysis Batch: 426223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	I-3765-85	
310-284799-2	MW-41A	Total/NA	Ground Water	I-3765-85	
310-284799-4	MW-45A	Total/NA	Ground Water	I-3765-85	
310-284799-5	MW-11	Total/NA	Ground Water	I-3765-85	
310-284799-6	MW-18	Total/NA	Ground Water	I-3765-85	
310-284799-7	MW-2R	Total/NA	Ground Water	I-3765-85	
310-284799-8	MW-3	Total/NA	Ground Water	I-3765-85	
MB 310-426223/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-426223/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 426366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	9012B	
MB 310-426366/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-426366/2-A	Lab Control Sample	Total/NA	Water	9012B	

QC Association Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

General Chemistry

Analysis Batch: 426438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	9012B	426366
MB 310-426366/1-A	Method Blank	Total/NA	Water	9012B	426366
LCS 310-426366/2-A	Lab Control Sample	Total/NA	Water	9012B	426366

Prep Batch: 619024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	9030B	
MB 240-619024/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-619024/2-A	Lab Control Sample	Total/NA	Water	9030B	
310-284799-5 MS	MW-11	Total/NA	Ground Water	9030B	
310-284799-5 MSD	MW-11	Total/NA	Ground Water	9030B	

Analysis Batch: 619066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-5	MW-11	Total/NA	Ground Water	9034	619024
MB 240-619024/1-A	Method Blank	Total/NA	Water	9034	619024
LCS 240-619024/2-A	Lab Control Sample	Total/NA	Water	9034	619024
310-284799-5 MS	MW-11	Total/NA	Ground Water	9034	619024
310-284799-5 MSD	MW-11	Total/NA	Ground Water	9034	619024

Field Service / Mobile Lab

Analysis Batch: 426726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284799-1	MW-31A	Total/NA	Ground Water	Field Sampling	
310-284799-2	MW-41A	Total/NA	Ground Water	Field Sampling	
310-284799-4	MW-45A	Total/NA	Ground Water	Field Sampling	
310-284799-5	MW-11	Total/NA	Ground Water	Field Sampling	
310-284799-6	MW-18	Total/NA	Ground Water	Field Sampling	
310-284799-7	MW-2R	Total/NA	Ground Water	Field Sampling	
310-284799-8	MW-3	Total/NA	Ground Water	Field Sampling	

Client Sample ID: MW-31A
Lab Sample ID: 310-284799-1

Date Collected: 07/01/24 10:45
Matrix: Ground Water
Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 16:38
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 13:42
Total/NA	Prep	3511			426354	D2YP	EET CF	07/03/24 08:55
Total/NA	Analysis	8081B		1	426825	BW2O	EET CF	07/10/24 14:49
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:05
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 12:46
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 10:45

Client Sample ID: MW-41A
Lab Sample ID: 310-284799-2

Date Collected: 07/01/24 17:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 17:00
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:27
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 12:51
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 17:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-284799-3

Date Collected: 07/01/24 05:00
Matrix: Water
Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 15:08
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 11:04

Client Sample ID: MW-45A
Lab Sample ID: 310-284799-4

Date Collected: 07/01/24 10:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 17:23
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:31
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 12:53
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 10:00

Client Sample ID: MW-11

Lab Sample ID: 310-284799-5

Date Collected: 07/01/24 12:30

Matrix: Ground Water

Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 17:45
Total/NA	Prep	3510C			426626	C3AA	EET CF	07/08/24 12:37
Total/NA	Analysis	8270E		1	426735	L0FS	EET CF	07/09/24 14:16
Total/NA	Analysis	8015C		1	426817	V7YZ	EET CF	07/10/24 18:49
Total/NA	Prep	3511			426354	D2YP	EET CF	07/03/24 08:55
Total/NA	Analysis	8081B		1	426825	BW2O	EET CF	07/10/24 14:30
Total/NA	Prep	3511			426354	D2YP	EET CF	07/03/24 08:55
Total/NA	Analysis	8082A		1	426826	BW2O	EET CF	07/10/24 14:30
Total/NA	Prep	8151A			525243	UKL2	ELLE	07/06/24 04:53
Total/NA	Analysis	8151A		1	525367	UAMZ	ELLE	07/08/24 13:16
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:34
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 12:56
Total/NA	Prep	7470A			427810	A6US	EET CF	07/19/24 09:50
Total/NA	Analysis	7470A		1	427900	A6US	EET CF	07/19/24 13:43
Total/NA	Prep	9012B			426366	WZC8	EET CF	07/03/24 09:55
Total/NA	Analysis	9012B		1	426438	ZJX4	EET CF	07/03/24 17:40
Total/NA	Prep	9030B			619024	BLW	EET CLE	07/08/24 07:34
Total/NA	Analysis	9034		1	619066	BLW	EET CLE	07/08/24 09:49
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 12:30

Client Sample ID: MW-18

Lab Sample ID: 310-284799-6

Date Collected: 07/01/24 15:30

Matrix: Ground Water

Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 18:08
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:38
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 12:58
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 15:30

Client Sample ID: MW-2R

Lab Sample ID: 310-284799-7

Date Collected: 07/01/24 14:00

Matrix: Ground Water

Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 18:31
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:42

Lab Chronicle

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-2R
Lab Sample ID: 310-284799-7
Date Collected: 07/01/24 14:00
Matrix: Ground Water
Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 13:00
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 14:00

Client Sample ID: MW-3
Lab Sample ID: 310-284799-8
Date Collected: 07/01/24 14:45
Matrix: Ground Water
Date Received: 07/02/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426359	WSE8	EET CF	07/03/24 18:53
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426542	NFT2	EET CF	07/05/24 22:45
Total/NA	Prep	3005A			426286	QTZ5	EET CF	07/03/24 09:00
Total/NA	Analysis	6020B		1	426645	ZRI4	EET CF	07/08/24 13:11
Total/NA	Analysis	I-3765-85		1	426223	DGU1	EET CF	07/02/24 11:24
Total/NA	Analysis	Field Sampling		1	426726	BJ0R	EET CF	07/01/24 14:45

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,2,4-Trichlorobenzene
8260D		Ground Water	Allyl chloride
8260D		Ground Water	Ethyl methacrylate
8260D		Ground Water	m,p-Xylene
8260D		Ground Water	o-Xylene
Field Sampling		Ground Water	Field Turbidity

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-28-25
Pennsylvania	NELAP	68-00340	07-16-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-25
Alaska	State	PA00009	06-30-25
Alaska (UST)	State	17-027	02-28-25
Arizona	State	AZ0780	03-12-25
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-24
Colorado	State	PA00009	06-30-25
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-25
Delaware (DW)	State	N/A	01-31-25
Florida	NELAP	E87997	06-30-25
Georgia (DW)	State	C048	01-31-25

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	N/A	01-31-25
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-26
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-24
Louisiana (All)	NELAP	02055	06-30-25
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-25
Massachusetts	State	M-PA009	06-30-25
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-25
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-25
New York	NELAP	10670	04-01-25
North Carolina (DW)	State	42705	07-31-25
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24 *
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-25
Tennessee	State	02838	01-31-25
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	07-09-24
Washington	State	C457	04-11-24 *
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-25
Wyoming (UST)	A2LA	0001.01	11-30-24

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

Method Summary

Client: AECOM
Job ID: 310-284799-1
Project/Site: Winneshiek Groundwater Monitoring

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-284799 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Aelorm

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 7/12/24 | TIME 0950 | Received By: JJ

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All VOAs in cooler

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): +0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 10.9 | Corrected Temp (°C): 10.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	pl250nitric	pl250nitric
Uncorrected Temp (°C):	12.1	9.9
Corrected Temp (°C):	12.1	9.9

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) *If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised?* (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Received 2 extra HCl vials

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 7-2-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only
(319)232-6531 Phone	CALENDAR DAYS WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	2 weeks			
Site: Winneshiek County Landfill	1 week			Job / SDG No:
P O #	2 days			
	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	All Appendix II Analytes	Sample Specific Notes
MW-31A	7-1-24	1045	G	GW	7	N		X	X	X		Turbidity - 2.38 NTU
MW-33A			G	GW		N		X	X			
MW-34A			G	GW		N		X	X			
MW-34A-FD			G	GW		N		X	X			
MW-37A			G	GW		N		X	X			
MW-38A			G	GW		N		X	X			
MW-38A-FD			G	GW		N		X	X			
MW-39A			G	GW		N		X	X			
MW-40A			G	GW		N		X			X	
MW-41A	7-1-24	1700	G	GW	5	N		X	X			Turbidity - 1.72 NTU
Trip Blank	7-1-24	0500	G	W	2	N			X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: Yes No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ | Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	7-2-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time 7/2/24 0450

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 7-2-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	CALENDAR DAYS / WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	2 weeks			
Site: Winneshiek County Landfill	1 week			Job / SDG No:
P O #	2 days			
	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
MW-42A			G	GW		N		X			X	
MW-43A			G	GW		N		X			X	
MW-44A			G	GW		N		X			X	
MW-45A	7-1-24	1000	G	GW	5	N		X	X			Turbidity - 0.67 NTU
MW-46A			G	GW		N		X	X			
MW-101			G	GW		N		X	X			
MW-11	7-1-24	1230	G	GW	17	N		X			X	* - Turbidity - 1.01 NTU
MW-19R			G	GW		N		X	X			
MW-22			G	GW		N		X	X			
MW-22-FD			G	GW		N		X	X			
MW-35			G	GW		N		X	X			
MW-18	7-1-24	1530	G	GW	5	N		X	X			Turbidity - 6.40 NTU

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for ____ Months

Special Instructions/QC Requirements & Comments
* - Well sampled dry - One - 1-liter amber was not collected

Custody Seals Intact: Yes No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd ____ | Therm ID No ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	7-2-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time 7/2/24 0950

Form No. CA-C-WI-002, Rev 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW ☐ NPDES ☐ RCRA ☐ Other: **Iowa DNR**

TestAmerica Laboratories, Inc d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 7-2-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	3 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only
(319)232-6531 Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No
Site: Winneshiek County Landfill				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
MW-1			G	GW		N		X	X			
MW-2R	7-1-24	1400	G	GW	5	N		X	X			Turbidity - 1.37 NTU
MW-3	7-1-24	1445	G	GW	5	N		X	X			Turbidity - 4.19 NTU
MW-4			G	GW		N		X	X			
MW-4B			G	GW		N		X	X			
~~MW-7A~~			G	GW		N		X			X	
~~MW-24A~~			G	GW		N		X			X	
MW-25A			G	GW		N		X	X			
MW-29A			G	GW		N		X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: ☐ Yes No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd ____ | Therm ID No ____

Relinquished by:	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time 7/2/24 0950

Form No. CA-C-WI-002, Rev 4.23, dated 4/16/2019

7/19/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

5.1/5.1

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-74011.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-284799-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 7/22/2024	Analysis Requested		Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Winneshiek Groundwater Monitoring	Project #: 31017151			Other:
Site: 310 - AECOM - Winneshiek County	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-11 (310-284799-5)	7/1/24	12:30 Central		Water			X	1	

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

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

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	7.2.24 1413		JESSICA RIGDON	7.3.24 0930	ETNC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Eurofins - CF Site Name _____ Cooler unpacked by: dwe

Cooler Received on 7-3-24 Opened on 7-3-24

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC (Foam Box) Client Cooler Box Other _____

Packing material used. Bubble Wrap Foam Plastic Bag (None) Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 18 (CF 0.0 °C) Observed Cooler Temp. 5.1 °C Corrected Cooler Temp. 5.1 °C

2	Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes) No
	-Were the seals on the outside of the cooler(s) signed & dated?	(Yes) No NA
	-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)
	-Were tamper/custody seals intact and uncompromised?	(Yes) No NA
3	Shippers' packing slip attached to the cooler(s)?	(Yes) No
4.	Did custody papers accompany the sample(s)?	(Yes) No
5	Were the custody papers relinquished & signed in the appropriate place?	(Yes) No
6.	Was/were the person(s) who collected the samples clearly identified on the COC?	Yes (No)
7	Did all bottles arrive in good condition (Unbroken)?	(Yes) No
8	Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes) No
9	For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?	(Yes) No
10	Were correct bottle(s) used for the test(s) indicated?	(Yes) No
11	Sufficient quantity received to perform indicated analyses?	(Yes) No
12.	Are these work share samples and all listed on the COC?	(Yes) No
	If yes, Questions 13-17 have been checked at the originating laboratory	
13	Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC442471
14.	Were VOAs on the COC?	Yes No
15	Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA
16.	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes No
17	*Was a LL Hg or Me Hg trip blank present?* _____	Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page | Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container

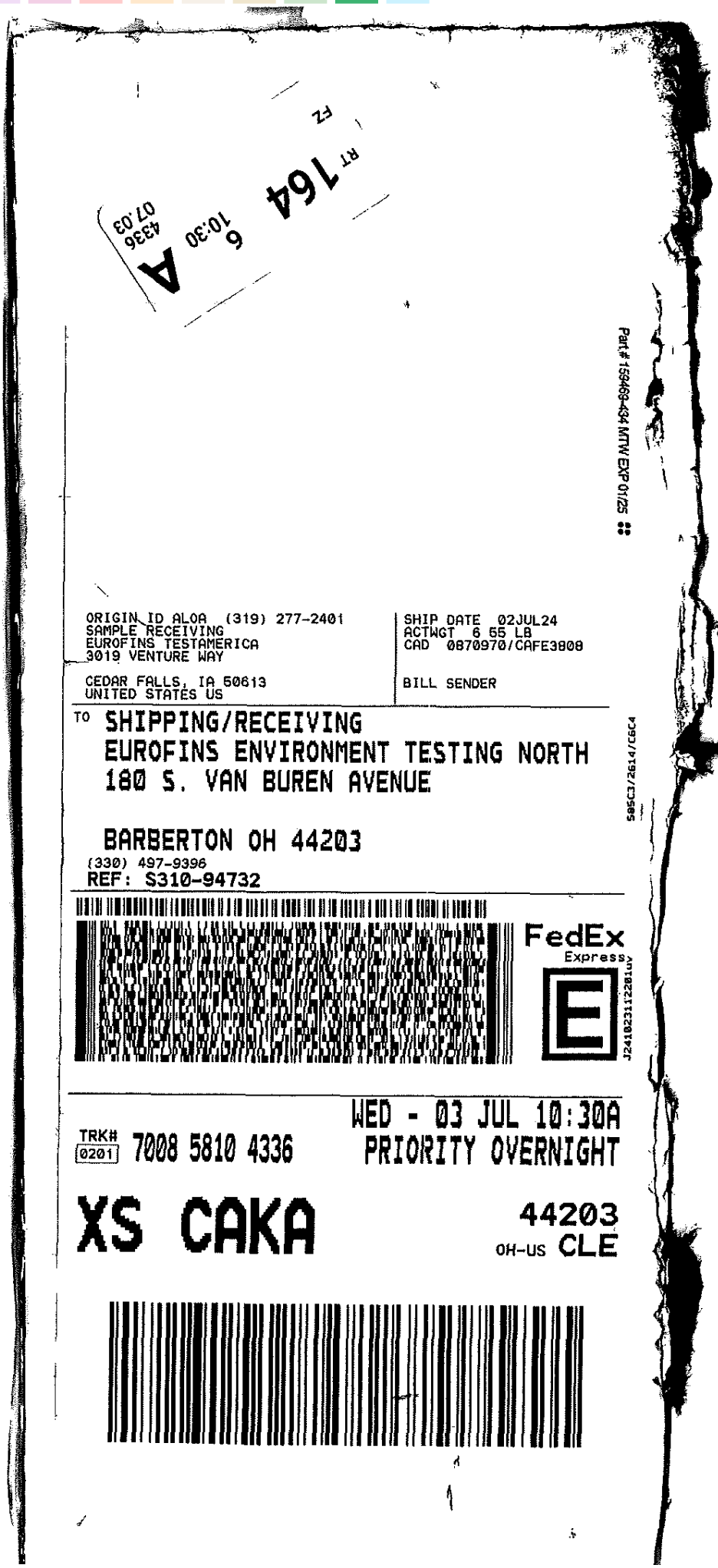
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved. _____ Preservative(s) added/Lot number(s). _____

VOA Sample Preservation - Date/Time VOAs Frozen. _____



RT 164 6 10:30 A 4336 07.03

FZ

Part # 159469-494 MTW EXP 01/25

ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 02JUL24
ACTWGT 6.55 LB
CAD 0870970/CAFE3808

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: S310-94732

585C3/2614/C6C4

FedEx Express

J241023112201uv

TRK# 0201 7008 5810 4336

WED - 03 JUL 10:30A
PRIORITY OVERNIGHT

XS CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-74016.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State Program - Iowa		Job #: 310-284799-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 7/22/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Winneshiek Groundwater Monitoring	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-11 (310-284799-5)	7/1/24	12:30 Central		Water			X	1	

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	7224 1445				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 7/3/24 1000	Company ECLNST

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.0 C: 5.9

HA

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-284799-1
SDG Number:

Login Number: 284799
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-284799-1
SDG Number:

Login Number: 284799
List Number: 2
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 07/03/24 02:34 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 7/23/2024 2:54:23 PM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater

JOB NUMBER

310-285077-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
7/23/2024 2:54:23 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-285077-1 Eurofins Cedar Falls

Job Narrative
310-285077-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 7/5/2024 3:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 9.8°C.

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): MW-43A (310-285077-1), MW-35 (310-285077-2), GU-1 (310-285077-3), MH-1AA (310-285077-4), MH-4-2 (310-285077-5), Equipment Blank #2 Deep (310-285077-6), Trip Blank (310-285077-7), MW-34A (310-285077-8) and MW-34A-FD (310-285077-9). The container labels list <SAMPLE_ID>, while the COC lists <SAMPLEID>. The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

GC/MS VOA
Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: MH-4-2 (310-285077-5).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-426575 recovered outside of the control limits for Chloroethane (-21.7%D). The LCS associated with this CCV passed CCV criteria for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-426575/4).

Method 8260D: The following volatiles sample was diluted due to foaming at the time of sample preparation during the original sample analysis: MH-4-2 (310-285077-5). Elevated reporting limits (RLs) are provided.

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

GC/MS Semi VOA
Method 8270E: The laboratory control sample (LCS) for preparation batch 310-426835 and analytical batch 310-426887 recovered outside control limits for the following analytes: Famphur and Kepone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-426835 and analytical batch 310-426887 recovered outside control limits for the following analyte(s): p-Phenylene diamine. p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-426835 and analytical batch 310-426887 recovered outside control limits for multiple analytes.

Method 8270E: The laboratory control sample (LCS) for preparation batch 310-426835 and analytical batch 310-426887 recovered outside acceptance limits for 2,4-Dinitrophenol, 4-Nitrophenol, 2,3,4,6-Tetrachlorophenol, 4,6-Dinitro-2-methylphenol and Pentachlorophenol. There was insufficient holding time to perform a re-extraction or re-analysis; therefore, the data have been reported

Method 8270E: The laboratory control sample duplicate (LCSD) for preparation batch 310-426835 and analytical batch 310-426887 recovered outside control limits for the following analytes: Famphur and Kepone. These analytes were biased high in

the LCSD and were not detected in the associated samples; therefore, the data have been reported.

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

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

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

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

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

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: MH-1AA (310-285077-4) and MH-4-2 (310-285077-5). The sample(s) was preserved to the appropriate pH in the laboratory.

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-285077-1	MW-43A	Ground Water	07/03/24 13:30	07/05/24 15:30
310-285077-2	MW-35	Ground Water	07/03/24 13:30	07/05/24 15:30
310-285077-3	GU-1	Ground Water	07/03/24 09:30	07/05/24 15:30
310-285077-4	MH-1AA	Ground Water	07/03/24 10:30	07/05/24 15:30
310-285077-5	MH-4-2	Ground Water	07/03/24 11:30	07/05/24 15:30
310-285077-6	Equipment Blank #2 Deep	Ground Water	07/03/24 12:45	07/05/24 15:30
310-285077-7	Trip Blank	Water	07/03/24 05:00	07/05/24 15:30
310-285077-8	MW-34A	Ground Water	07/03/24 08:45	07/05/24 15:30
310-285077-9	MW-34A-FD	Ground Water	07/03/24 08:45	07/05/24 15:30

Detection Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-285077-1

No Detections.

Client Sample ID: MW-35
Lab Sample ID: 310-285077-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.365	J	1.00	0.220	ug/L	1		8260D	Total/NA
Arsenic	0.767	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	280		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	4.96		0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	17.6		5.00	2.10	ug/L	1		6020B	Total/NA
Thallium	1.14		1.00	0.570	ug/L	1		6020B	Total/NA
Total Suspended Solids	5.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.25				NTU	1		Field Sampling	Total/NA

Client Sample ID: GU-1
Lab Sample ID: 310-285077-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	228		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.325	J	0.500	0.170	ug/L	1		6020B	Total/NA
Nickel	16.6		5.00	2.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.50	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	6.49				NTU	1		Field Sampling	Total/NA

Client Sample ID: MH-1AA
Lab Sample ID: 310-285077-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.570	J	1.00	0.230	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	109		10.0	2.10	ug/L	1		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	5.04	J	10.0	2.10	ug/L	1		8260D	Total/NA
Acetone	77.4		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	3.24		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.682	J	1.00	0.400	ug/L	1		8260D	Total/NA
Ethylbenzene	1.83		1.00	0.310	ug/L	1		8260D	Total/NA
Toluene	25.9		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	0.345	J	1.00	0.180	ug/L	1		8260D	Total/NA
Xylenes, Total	6.54		3.00	0.400	ug/L	1		8260D	Total/NA
Antimony	2.50		2.00	1.00	ug/L	1		6020B	Total/NA
Arsenic	4.85		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	192		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	7.68		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	3.39		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.27		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	1.60		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	17.1		5.00	2.10	ug/L	1		6020B	Total/NA
Zinc	53.7		20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	31.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MH-4-2
Lab Sample ID: 310-285077-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	45.1	J	100	21.0	ug/L	10		8260D	Total/NA
Acetone	67.3	J	100	31.0	ug/L	10		8260D	Total/NA
Xylenes, Total	4.36	J	30.0	4.00	ug/L	10		8260D	Total/NA
Antimony	4.75		2.00	1.00	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MH-4-2 (Continued) — Lab Sample ID: 310-285077-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.06		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	174		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	26.4		5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	7.77		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	5.93		5.00	1.80	ug/L	1		6020B	Total/NA
Lead	2.04		0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	57.0		5.00	2.10	ug/L	1		6020B	Total/NA
Selenium	1.51	J	5.00	1.40	ug/L	1		6020B	Total/NA
Vanadium	3.04	J	5.00	1.10	ug/L	1		6020B	Total/NA
Zinc	68.4		20.0	9.70	ug/L	1		6020B	Total/NA
Total Suspended Solids	97.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Equipment Blank #2 Deep — Lab Sample ID: 310-285077-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromoform	1.46	J	5.00	0.780	ug/L	1		8260D	Total/NA
Barium	76.2		2.00	0.660	ug/L	1		6020B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-285077-7

No Detections.

Client Sample ID: MW-34A — Lab Sample ID: 310-285077-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	70.1		2.00	0.660	ug/L	1		6020B	Total/NA
Chromium	1.31	J	5.00	1.20	ug/L	1		6020B	Total/NA
Field Turbidity	5.88				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-34A-FD — Lab Sample ID: 310-285077-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	70.2		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.50	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-285077-1
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.800		12.5	0.800	ug/L		07/10/24 09:03	07/10/24 20:28	1
Acenaphthylene	<0.900		12.5	0.900	ug/L		07/10/24 09:03	07/10/24 20:28	1
Acetophenone	<0.863		12.5	0.863	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Acetylaminofluorene	<3.38		12.5	3.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Aminobiphenyl	<2.75		12.5	2.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
Anthracene	<1.09		12.5	1.09	ug/L		07/10/24 09:03	07/10/24 20:28	1
Benzo[a]anthracene	<1.06		12.5	1.06	ug/L		07/10/24 09:03	07/10/24 20:28	1
Benzo[a]pyrene	<10.1		12.5	10.1	ug/L		07/10/24 09:03	07/10/24 20:28	1
Benzo[b]fluoranthene	<6.13		12.5	6.13	ug/L		07/10/24 09:03	07/10/24 20:28	1
Benzo[g,h,i]perylene	<7.88		12.5	7.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
Benzo[k]fluoranthene	<2.75		12.5	2.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
Benzyl alcohol	<1.63		12.5	1.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
Bis(2-chloroethoxy)methane	<0.950		12.5	0.950	ug/L		07/10/24 09:03	07/10/24 20:28	1
Bis(2-chloroethyl)ether	<1.03		12.5	1.03	ug/L		07/10/24 09:03	07/10/24 20:28	1
bis (2-chloroisopropyl) ether	<0.675		12.5	0.675	ug/L		07/10/24 09:03	07/10/24 20:28	1
Bis(2-ethylhexyl) phthalate	<6.88		12.5	6.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Bromophenyl phenyl ether	<0.875		12.5	0.875	ug/L		07/10/24 09:03	07/10/24 20:28	1
Butyl benzyl phthalate	<6.75		12.5	6.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Chloroaniline	<0.775		12.5	0.775	ug/L		07/10/24 09:03	07/10/24 20:28	1
Chlorobenzilate	<4.50		12.5	4.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Chloro-3-methylphenol	<1.05		12.5	1.05	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Chloronaphthalene	<0.800		12.5	0.800	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Chlorophenol	<0.675		12.5	0.675	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Chlorophenyl phenyl ether	<0.863		12.5	0.863	ug/L		07/10/24 09:03	07/10/24 20:28	1
Chrysene	<1.09		12.5	1.09	ug/L		07/10/24 09:03	07/10/24 20:28	1
Diallate	<5.00		12.5	5.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
Dibenzo(a,h)anthracene	<4.88		12.5	4.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
Dibenzofuran	<0.925		12.5	0.925	ug/L		07/10/24 09:03	07/10/24 20:28	1
3,3'-Dichlorobenzidine	<1.75		12.5	1.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,4-Dichlorophenol	<1.06		12.5	1.06	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,6-Dichlorophenol	<0.863	*1	12.5	0.863	ug/L		07/10/24 09:03	07/10/24 20:28	1
Diethyl phthalate	<2.13		12.5	2.13	ug/L		07/10/24 09:03	07/10/24 20:28	1
Dimethoate	<4.50		12.5	4.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
7,12-Dimethylbenz(a)anthracene	<2.38		12.5	2.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
3,3'-Dimethylbenzidine	<1.88		12.5	1.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,4-Dimethylphenol	<0.725		12.5	0.725	ug/L		07/10/24 09:03	07/10/24 20:28	1
Dimethyl phthalate	<1.25		12.5	1.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
Di-n-butyl phthalate	<7.00		12.5	7.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
1,3-Dinitrobenzene	<4.00		12.5	4.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
4,6-Dinitro-2-methylphenol	<8.63	*- *1	12.5	8.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,4-Dinitrophenol	<16.3	*- *1	25.0	16.3	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,4-Dinitrotoluene	<8.00		12.5	8.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,6-Dinitrotoluene	<0.650		12.5	0.650	ug/L		07/10/24 09:03	07/10/24 20:28	1
Di-n-octyl phthalate	<8.75		25.0	8.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
Dinoseb	<3.00	*1	12.5	3.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
Diphenylamine	<7.50		12.5	7.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
Disulfoton	<3.00		12.5	3.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
Ethyl methanesulfonate	<4.50		12.5	4.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
Ethyl Parathion	<2.75		12.5	2.75	ug/L		07/10/24 09:03	07/10/24 20:28	1

Client Sample ID: MW-43A
Lab Sample ID: 310-285077-1
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Famphur	<4.75	*+	12.5	4.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
Fluoranthene	<2.13		12.5	2.13	ug/L		07/10/24 09:03	07/10/24 20:28	1
Fluorene	<0.988		12.5	0.988	ug/L		07/10/24 09:03	07/10/24 20:28	1
Hexachlorobenzene	<0.875		12.5	0.875	ug/L		07/10/24 09:03	07/10/24 20:28	1
Hexachlorobutadiene	<1.08		12.5	1.08	ug/L		07/10/24 09:03	07/10/24 20:28	1
Hexachlorocyclopentadiene	<6.38		12.5	6.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
Hexachloroethane	<1.21		12.5	1.21	ug/L		07/10/24 09:03	07/10/24 20:28	1
Hexachloropropene	<3.25		12.5	3.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
Indeno[1,2,3-cd]pyrene	<5.25		12.5	5.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
Isodrin	<5.88		12.5	5.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
Isophorone	<1.16		12.5	1.16	ug/L		07/10/24 09:03	07/10/24 20:28	1
Isosafrole	<2.88		12.5	2.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
Kepone	<1.25	*1 *+	12.5	1.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
Methapyrilene	<0.950	*1	12.5	0.950	ug/L		07/10/24 09:03	07/10/24 20:28	1
3-Methylcholanthrene	<0.400		12.5	0.400	ug/L		07/10/24 09:03	07/10/24 20:28	1
Methyl methanesulfonate	<4.13		12.5	4.13	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Methylnaphthalene	<0.738		12.5	0.738	ug/L		07/10/24 09:03	07/10/24 20:28	1
Methyl parathion	<2.88		12.5	2.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Methylphenol	<0.813		12.5	0.813	ug/L		07/10/24 09:03	07/10/24 20:28	1
Methylphenol, 3 & 4	<0.875		12.5	0.875	ug/L		07/10/24 09:03	07/10/24 20:28	1
1,4-Naphthoquinone	<4.50		12.5	4.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
1-Naphthylamine	<3.13		12.5	3.13	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Naphthylamine	<2.63		12.5	2.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Nitroaniline	<7.38		12.5	7.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
3-Nitroaniline	<3.38		12.5	3.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Nitroaniline	<1.63		12.5	1.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
Nitrobenzene	<1.00		12.5	1.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
5-Nitro-o-toluidine	<3.50		12.5	3.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
2-Nitrophenol	<8.50	*1	12.5	8.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
4-Nitrophenol	<9.50	*- *1	12.5	9.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosodiethylamine	<4.25		12.5	4.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosodimethylamine	<0.900		12.5	0.900	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosodi-n-butylamine	<4.88		12.5	4.88	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosodi-n-propylamine	<1.15		12.5	1.15	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosodiphenylamine	<0.938		12.5	0.938	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosomethylethylamine	<6.13		12.5	6.13	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosopiperidine	<3.38		12.5	3.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
N-Nitrosopyrrolidine	<4.50		12.5	4.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
o,o',o''-Triethylphosphorothioate	<4.00		12.5	4.00	ug/L		07/10/24 09:03	07/10/24 20:28	1
o-Toluidine	<3.63		12.5	3.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
p-Dimethylamino azobenzene	<2.75		12.5	2.75	ug/L		07/10/24 09:03	07/10/24 20:28	1
Pentachlorobenzene	<3.50		12.5	3.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
Pentachloronitrobenzene	<7.25		12.5	7.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
Pentachlorophenol	<12.0	*- *1	12.5	12.0	ug/L		07/10/24 09:03	07/10/24 20:28	1
Phenacetin	<2.38		12.5	2.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
Phenanthrene	<0.988		12.5	0.988	ug/L		07/10/24 09:03	07/10/24 20:28	1
Phenol	<1.38		12.5	1.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
1,4-phenylenediamine	<2.38	*- *1	12.5	2.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
Phorate	<4.00		12.5	4.00	ug/L		07/10/24 09:03	07/10/24 20:28	1

Client Sample ID: MW-43A
Lab Sample ID: 310-285077-1
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pronamide	<3.38		12.5	3.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
Pyrene	<0.988		12.5	0.988	ug/L		07/10/24 09:03	07/10/24 20:28	1
Safrole	<3.50		12.5	3.50	ug/L		07/10/24 09:03	07/10/24 20:28	1
1,2,4,5-Tetrachlorobenzene	<0.675		12.5	0.675	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,3,4,6-Tetrachlorophenol	<6.63	*- *1	12.5	6.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
Thionazin	<4.38		12.5	4.38	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,4,5-Trichlorophenol	<6.63	*1	12.5	6.63	ug/L		07/10/24 09:03	07/10/24 20:28	1
2,4,6-Trichlorophenol	<6.25	*1	12.5	6.25	ug/L		07/10/24 09:03	07/10/24 20:28	1
1,3,5-Trinitrobenzene	<2.88		12.5	2.88	ug/L		07/10/24 09:03	07/10/24 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*91*		*39 - 118*	*07/10/24 09:03*	*07/10/24 20:28*	*1*
2-Fluorophenol (Surr)	*55*		*25 - 110*	*07/10/24 09:03*	*07/10/24 20:28*	*1*
Nitrobenzene-d5 (Surr)	*95*		*45 - 129*	*07/10/24 09:03*	*07/10/24 20:28*	*1*
Phenol-d5 (Surr)	*61*		*21 - 110*	*07/10/24 09:03*	*07/10/24 20:28*	*1*
Terphenyl-d14 (Surr)	*111*		*12 - 144*	*07/10/24 09:03*	*07/10/24 20:28*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*27 - 136*	*07/10/24 09:03*	*07/10/24 20:28*	*1*

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			07/10/24 19:08	1
Isobutanol	<2400		10000	2400	ug/L			07/10/24 19:08	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0192		0.0873	0.0192	ug/L		07/10/24 12:29	07/11/24 15:47	1
alpha-BHC	<0.00873		0.0873	0.00873	ug/L		07/10/24 12:29	07/11/24 15:47	1
beta-BHC	<0.0367		0.0873	0.0367	ug/L		07/10/24 12:29	07/11/24 15:47	1
Chlordane (technical)	<0.340		1.75	0.340	ug/L		07/10/24 12:29	07/11/24 15:47	1
4,4'-DDD	<0.0218		0.0873	0.0218	ug/L		07/10/24 12:29	07/11/24 15:47	1
4,4'-DDE	<0.0262		0.0873	0.0262	ug/L		07/10/24 12:29	07/11/24 15:47	1
4,4'-DDT	<0.0175		0.0873	0.0175	ug/L		07/10/24 12:29	07/11/24 15:47	1
delta-BHC	<0.0279		0.0873	0.0279	ug/L		07/10/24 12:29	07/11/24 15:47	1
Dieldrin	<0.0183		0.0873	0.0183	ug/L		07/10/24 12:29	07/11/24 15:47	1
Endosulfan I	<0.0244		0.0873	0.0244	ug/L		07/10/24 12:29	07/11/24 15:47	1
Endosulfan II	<0.0227		0.0873	0.0227	ug/L		07/10/24 12:29	07/11/24 15:47	1
Endosulfan sulfate	<0.0157		0.0873	0.0157	ug/L		07/10/24 12:29	07/11/24 15:47	1
Endrin	<0.0244		0.0873	0.0244	ug/L		07/10/24 12:29	07/11/24 15:47	1
Endrin aldehyde	<0.0236		0.0873	0.0236	ug/L		07/10/24 12:29	07/11/24 15:47	1
gamma-BHC (Lindane)	<0.00873		0.0873	0.00873	ug/L		07/10/24 12:29	07/11/24 15:47	1
Heptachlor	<0.0201		0.0873	0.0201	ug/L		07/10/24 12:29	07/11/24 15:47	1
Heptachlor epoxide	<0.0279		0.0873	0.0279	ug/L		07/10/24 12:29	07/11/24 15:47	1
Methoxychlor	<0.0279		0.0873	0.0279	ug/L		07/10/24 12:29	07/11/24 15:47	1
Toxaphene	<0.873		1.75	0.873	ug/L		07/10/24 12:29	07/11/24 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*15*		*10 - 136*	*07/10/24 12:29*	*07/11/24 15:47*	*1*
Tetrachloro-m-xylene	*59*		*10 - 130*	*07/10/24 12:29*	*07/11/24 15:47*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-285077-1

Date Collected: 07/03/24 13:30
Matrix: Ground Water

Date Received: 07/05/24 15:30

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.716		1.75	0.716	ug/L		07/10/24 12:29	07/11/24 15:47	1
PCB-1221	<0.716		1.75	0.716	ug/L		07/10/24 12:29	07/11/24 15:47	1
PCB-1232	<0.716		1.75	0.716	ug/L		07/10/24 12:29	07/11/24 15:47	1
PCB-1242	<0.716		1.75	0.716	ug/L		07/10/24 12:29	07/11/24 15:47	1
PCB-1248	<0.602		1.75	0.602	ug/L		07/10/24 12:29	07/11/24 15:47	1
PCB-1254	<0.602		1.75	0.602	ug/L		07/10/24 12:29	07/11/24 15:47	1
PCB-1260	<0.602		1.75	0.602	ug/L		07/10/24 12:29	07/11/24 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*15*		*10 - 136*	*07/10/24 12:29*	*07/11/24 15:47*	*1*
Tetrachloro-m-xylene	*59*		*10 - 130*	*07/10/24 12:29*	*07/11/24 15:47*	*1*

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.282		0.677	0.282	ug/L		07/08/24 19:00	07/11/24 09:25	1
Silvex (2,4,5-TP)	<0.0248		0.0564	0.0248	ug/L		07/08/24 19:00	07/11/24 09:25	1
2,4,5-T	<0.0734		0.169	0.0734	ug/L		07/08/24 19:00	07/11/24 09:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*94*		*34 - 142*	*07/08/24 19:00*	*07/11/24 09:25*	*1*
DCAA	*98*		*34 - 142*	*07/08/24 19:00*	*07/11/24 09:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<3.50		10.0	3.50	ug/L		07/09/24 10:12	07/09/24 17:54	1
Sulfide (SW846 9034)	<1410		3000	1410	ug/L		07/08/24 07:34	07/08/24 09:49	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-35
Lab Sample ID: 310-285077-2
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 15:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 15:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 15:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 15:12	1
1,1-Dichloroethane	**0.365**	**J**	1.00	0.220	ug/L			07/08/24 15:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 15:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 15:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 15:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 15:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 15:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 15:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 15:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 15:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 15:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 15:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 15:12	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 15:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 15:12	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 15:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 15:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 15:12	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 15:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 15:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 15:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 15:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 15:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 15:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 15:12	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 15:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 15:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 15:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 15:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 15:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 15:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 15:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 15:12	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 15:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 15:12	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 15:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 15:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 15:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 15:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 15:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 15:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 15:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 15:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 15:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*07/08/24 15:12*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-35
Lab Sample ID: 310-285077-2
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*07/08/24 15:12*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*07/08/24 15:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 12:54	1
Arsenic	**0.767**	**J**	2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:08	1
Barium	**280**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 12:54	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:08	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:08	1
Chromium	<1.20		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:08	1
Cobalt	**4.96**		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:08	1
Copper	<1.80		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:08	1
Lead	<0.260		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:08	1
Nickel	**17.6**		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:08	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:08	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:08	1
Thallium	**1.14**		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 12:54	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:08	1
Zinc	<9.70		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.25**		1.88	1.39	mg/L			07/09/24 11:26	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.25**				NTU			07/03/24 13:30	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: GU-1
Lab Sample ID: 310-285077-3
Date Collected: 07/03/24 09:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 15:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 15:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 15:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 15:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 15:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 15:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 15:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 15:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 15:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 15:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 15:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 15:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 15:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 15:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 15:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 15:35	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 15:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 15:35	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 15:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 15:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 15:35	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 15:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 15:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 15:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 15:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 15:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 15:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 15:35	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 15:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 15:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 15:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 15:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 15:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 15:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 15:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 15:35	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 15:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 15:35	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 15:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 15:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 15:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 15:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 15:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 15:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 15:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 15:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*07/08/24 15:35*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: GU-1
Lab Sample ID: 310-285077-3
Date Collected: 07/03/24 09:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*07/08/24 15:35*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*07/08/24 15:35*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 12:57	1
Arsenic	<0.530		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:11	1
Barium	**228**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 12:57	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:11	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:11	1
Chromium	<1.20		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:11	1
Cobalt	**0.325**	**J**	0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:11	1
Copper	<1.80		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:11	1
Lead	<0.260		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:11	1
Nickel	**16.6**		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:11	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:11	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:11	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 12:57	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:11	1
Zinc	<9.70		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.50**	**J**	1.88	1.39	mg/L			07/09/24 11:26	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.49**				NTU			07/03/24 09:30	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MH-1AA
Lab Sample ID: 310-285077-4
Date Collected: 07/03/24 10:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 17:50	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 17:50	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 17:50	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 17:50	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 17:50	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 17:50	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 17:50	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 17:50	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 17:50	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 17:50	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 17:50	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 17:50	1
1,4-Dichlorobenzene	**0.570**	**J**	1.00	0.230	ug/L			07/08/24 17:50	1
2-Butanone (MEK)	**109**		10.0	2.10	ug/L			07/08/24 17:50	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 17:50	1
4-Methyl-2-pentanone (MIBK)	**5.04**	**J**	10.0	2.10	ug/L			07/08/24 17:50	1
Acetone	**77.4**		10.0	3.10	ug/L			07/08/24 17:50	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 17:50	1
Benzene	**3.24**		0.500	0.220	ug/L			07/08/24 17:50	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 17:50	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 17:50	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 17:50	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 17:50	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 17:50	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 17:50	1
Chlorobenzene	**0.682**	**J**	1.00	0.400	ug/L			07/08/24 17:50	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 17:50	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 17:50	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 17:50	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 17:50	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 17:50	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 17:50	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 17:50	1
Ethylbenzene	**1.83**		1.00	0.310	ug/L			07/08/24 17:50	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 17:50	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 17:50	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 17:50	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 17:50	1
Toluene	**25.9**		1.00	0.430	ug/L			07/08/24 17:50	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 17:50	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 17:50	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 17:50	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 17:50	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 17:50	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 17:50	1
Vinyl chloride	**0.345**	**J**	1.00	0.180	ug/L			07/08/24 17:50	1
Xylenes, Total	**6.54**		3.00	0.400	ug/L			07/08/24 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*07/08/24 17:50*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MH-1AA
Lab Sample ID: 310-285077-4
Date Collected: 07/03/24 10:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*07/08/24 17:50*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*07/08/24 17:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**2.50**		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 13:08	1
Arsenic	**4.85**		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:15	1
Barium	**192**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 13:08	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:15	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:15	1
Chromium	**7.68**		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:15	1
Cobalt	**3.39**		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:15	1
Copper	**5.27**		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:15	1
Lead	**1.60**		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:15	1
Nickel	**17.1**		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:15	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:15	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:15	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 13:08	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:15	1
Zinc	**53.7**		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**31.0**		7.50	5.55	mg/L			07/09/24 11:26	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MH-4-2
Lab Sample ID: 310-285077-5
Date Collected: 07/03/24 11:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<3.80		10.0	3.80	ug/L			07/08/24 18:12	10
1,1,1-Trichloroethane	<1.90		10.0	1.90	ug/L			07/08/24 18:12	10
1,1,2,2-Tetrachloroethane	<4.70		10.0	4.70	ug/L			07/08/24 18:12	10
1,1,2-Trichloroethane	<4.50		10.0	4.50	ug/L			07/08/24 18:12	10
1,1-Dichloroethane	<2.20		10.0	2.20	ug/L			07/08/24 18:12	10
1,1-Dichloroethene	<5.60		20.0	5.60	ug/L			07/08/24 18:12	10
1,2,3-Trichloropropane	<5.90		10.0	5.90	ug/L			07/08/24 18:12	10
1,2-Dibromo-3-Chloropropane	<12.0		50.0	12.0	ug/L			07/08/24 18:12	10
1,2-Dibromoethane (EDB)	<3.40		10.0	3.40	ug/L			07/08/24 18:12	10
1,2-Dichlorobenzene	<3.70		10.0	3.70	ug/L			07/08/24 18:12	10
1,2-Dichloroethane	<3.90		10.0	3.90	ug/L			07/08/24 18:12	10
1,2-Dichloropropane	<2.70		10.0	2.70	ug/L			07/08/24 18:12	10
1,4-Dichlorobenzene	<2.30		10.0	2.30	ug/L			07/08/24 18:12	10
2-Butanone (MEK)	**45.1**	**J**	100	21.0	ug/L			07/08/24 18:12	10
2-Hexanone	<20.0		100	20.0	ug/L			07/08/24 18:12	10
4-Methyl-2-pentanone (MIBK)	<21.0		100	21.0	ug/L			07/08/24 18:12	10
Acetone	**67.3**	**J**	100	31.0	ug/L			07/08/24 18:12	10
Acrylonitrile	<22.0		50.0	22.0	ug/L			07/08/24 18:12	10
Benzene	<2.20		5.00	2.20	ug/L			07/08/24 18:12	10
Bromochloromethane	<5.40		50.0	5.40	ug/L			07/08/24 18:12	10
Bromodichloromethane	<3.90		10.0	3.90	ug/L			07/08/24 18:12	10
Bromoform	<7.80		50.0	7.80	ug/L			07/08/24 18:12	10
Bromomethane	<11.0		40.0	11.0	ug/L			07/08/24 18:12	10
Carbon disulfide	<4.50		10.0	4.50	ug/L			07/08/24 18:12	10
Carbon tetrachloride	<6.50		20.0	6.50	ug/L			07/08/24 18:12	10
Chlorobenzene	<4.00		10.0	4.00	ug/L			07/08/24 18:12	10
Chlorodibromomethane	<7.50		50.0	7.50	ug/L			07/08/24 18:12	10
Chloroethane	<7.90		40.0	7.90	ug/L			07/08/24 18:12	10
Chloroform	<13.0		30.0	13.0	ug/L			07/08/24 18:12	10
Chloromethane	<6.10		30.0	6.10	ug/L			07/08/24 18:12	10
cis-1,2-Dichloroethene	<2.10		10.0	2.10	ug/L			07/08/24 18:12	10
cis-1,3-Dichloropropene	<2.50		50.0	2.50	ug/L			07/08/24 18:12	10
Dibromomethane	<3.30		10.0	3.30	ug/L			07/08/24 18:12	10
Ethylbenzene	<3.10		10.0	3.10	ug/L			07/08/24 18:12	10
Iodomethane	<70.0		100	70.0	ug/L			07/08/24 18:12	10
Methylene Chloride	<17.0		50.0	17.0	ug/L			07/08/24 18:12	10
Styrene	<3.70		10.0	3.70	ug/L			07/08/24 18:12	10
Tetrachloroethene	<4.80		10.0	4.80	ug/L			07/08/24 18:12	10
Toluene	<4.30		10.0	4.30	ug/L			07/08/24 18:12	10
trans-1,2-Dichloroethene	<2.70		10.0	2.70	ug/L			07/08/24 18:12	10
trans-1,3-Dichloropropene	<5.60		50.0	5.60	ug/L			07/08/24 18:12	10
trans-1,4-Dichloro-2-butene	<11.0		100	11.0	ug/L			07/08/24 18:12	10
Trichloroethene	<4.30		10.0	4.30	ug/L			07/08/24 18:12	10
Trichlorofluoromethane	<3.80		40.0	3.80	ug/L			07/08/24 18:12	10
Vinyl acetate	<25.0		100	25.0	ug/L			07/08/24 18:12	10
Vinyl chloride	<1.80		10.0	1.80	ug/L			07/08/24 18:12	10
Xylenes, Total	**4.36**	**J**	30.0	4.00	ug/L			07/08/24 18:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*07/08/24 18:12*	*10*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MH-4-2
Lab Sample ID: 310-285077-5
Date Collected: 07/03/24 11:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*07/08/24 18:12*	*10*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*07/08/24 18:12*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**4.75**		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 13:10	1
Arsenic	**3.06**		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:18	1
Barium	**174**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 13:10	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:18	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:18	1
Chromium	**26.4**		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:18	1
Cobalt	**7.77**		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:18	1
Copper	**5.93**		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:18	1
Lead	**2.04**		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:18	1
Nickel	**57.0**		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:18	1
Selenium	**1.51**	J	5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:18	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:18	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 13:10	1
Vanadium	**3.04**	J	5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:18	1
Zinc	**68.4**		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**97.0**		15.0	11.1	mg/L			07/09/24 11:26	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep

Lab Sample ID: 310-285077-6

Date Collected: 07/03/24 12:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 13:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 13:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 13:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 13:19	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 13:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 13:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 13:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 13:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 13:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 13:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 13:19	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 13:19	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 13:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 13:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 13:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 13:19	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 13:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 13:19	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 13:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 13:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 13:19	1
Bromoform	**1.46**	**J**	5.00	0.780	ug/L			07/08/24 13:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 13:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 13:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 13:19	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 13:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 13:19	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 13:19	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 13:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 13:19	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 13:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 13:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 13:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 13:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 13:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 13:19	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 13:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 13:19	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 13:19	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 13:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 13:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 13:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 13:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 13:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 13:19	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 13:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*07/08/24 13:19*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-285077-6

Date Collected: 07/03/24 12:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*07/08/24 13:19*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*07/08/24 13:19*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 13:13	1
Arsenic	<0.530		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:22	1
Barium	**76.2**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 13:13	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:22	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:22	1
Chromium	<1.20		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:22	1
Cobalt	<0.170		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:22	1
Copper	<1.80		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:22	1
Lead	<0.260		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:22	1
Nickel	<2.10		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:22	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:22	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:22	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 13:13	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:22	1
Zinc	<9.70		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/05/24 15:29	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-285077-7
Date Collected: 07/03/24 05:00
Matrix: Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 12:12	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 12:12	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 12:12	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 12:12	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 12:12	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 12:12	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 12:12	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 12:12	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 12:12	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 12:12	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 12:12	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 12:12	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 12:12	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 12:12	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 12:12	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 12:12	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 12:12	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 12:12	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 12:12	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 12:12	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 12:12	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 12:12	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 12:12	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 12:12	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 12:12	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 12:12	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 12:12	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 12:12	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 12:12	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 12:12	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 12:12	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 12:12	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 12:12	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 12:12	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 12:12	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 12:12	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 12:12	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 12:12	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 12:12	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 12:12	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 12:12	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 12:12	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 12:12	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 12:12	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 12:12	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 12:12	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 12:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*07/08/24 12:12*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-285077-7
Date Collected: 07/03/24 05:00
Matrix: Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		07/08/24 12:12	1
4-Bromofluorobenzene (Surr)	102		80 - 120		07/08/24 12:12	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A
Lab Sample ID: 310-285077-8
Date Collected: 07/03/24 08:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 15:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 15:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 15:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 15:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 15:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 15:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 15:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 15:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 15:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 15:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 15:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 15:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 15:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 15:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 15:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 15:57	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 15:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 15:57	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 15:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 15:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 15:57	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 15:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 15:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 15:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 15:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 15:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 15:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 15:57	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 15:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 15:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 15:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 15:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 15:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 15:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 15:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 15:57	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 15:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 15:57	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 15:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 15:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 15:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 15:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 15:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 15:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 15:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 15:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*07/08/24 15:57*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A
Lab Sample ID: 310-285077-8

Date Collected: 07/03/24 08:45
Matrix: Ground Water

Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*07/08/24 15:57*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*07/08/24 15:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 13:15	1
Arsenic	<0.530		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:26	1
Barium	**70.1**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 13:15	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:26	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:26	1
Chromium	**1.31**	**J**	5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:26	1
Cobalt	<0.170		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:26	1
Copper	<1.80		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:26	1
Lead	<0.260		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:26	1
Nickel	<2.10		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:26	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:26	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:26	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 13:15	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:26	1
Zinc	<9.70		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			07/05/24 15:29	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.88**				NTU			07/03/24 08:45	1

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A-FD
Lab Sample ID: 310-285077-9
Date Collected: 07/03/24 08:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 16:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 16:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 16:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 16:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 16:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 16:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 16:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 16:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 16:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 16:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 16:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 16:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 16:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 16:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 16:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 16:20	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 16:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 16:20	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 16:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 16:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 16:20	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 16:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 16:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 16:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 16:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 16:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 16:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 16:20	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 16:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 16:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 16:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 16:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 16:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 16:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 16:20	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 16:20	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 16:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 16:20	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 16:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 16:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 16:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 16:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 16:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 16:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 16:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 16:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*07/08/24 16:20*	*1*

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A-FD
Lab Sample ID: 310-285077-9
Date Collected: 07/03/24 08:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*07/08/24 16:20*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*07/08/24 16:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 13:17	1
Arsenic	<0.530		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 19:44	1
Barium	**70.2**		2.00	0.660	ug/L		07/09/24 09:00	07/16/24 13:17	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 19:44	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 19:44	1
Chromium	<1.20		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 19:44	1
Cobalt	<0.170		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 19:44	1
Copper	<1.80		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 19:44	1
Lead	<0.260		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 19:44	1
Nickel	<2.10		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 19:44	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 19:44	1
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 19:44	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/16/24 13:17	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 19:44	1
Zinc	<9.70		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 19:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.50**	**J**	1.88	1.39	mg/L			07/05/24 15:29	1

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

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

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-285077-2	MW-35	103	96	102
310-285077-3	GU-1	104	94	102
310-285077-4	MH-1AA	105	96	101
310-285077-5	MH-4-2	104	93	105
310-285077-6	Equipment Blank #2 Deep	103	95	102
310-285077-8	MW-34A	103	95	99
310-285077-9	MW-34A-FD	105	96	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-285077-7	Trip Blank	102	95	102
LCS 310-426575/6	Lab Control Sample	104	96	100
LCS 310-426575/7	Lab Control Sample	104	95	104
MB 310-426575/5	Method Blank	105	92	106

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
310-285077-1	MW-43A	91	55	95	61	111	82

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCS 310-426835/2-A	Lab Control Sample	87	69	96	67	114	105

Surrogate Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCSD 310-426835/3-A	Lab Control Sample Dup	78	43	93	65	103	52
MB 310-426835/1-A	Method Blank	74	35	88	58	98	28

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-285077-1	MW-43A	15	59
310-285077-1 MS	MW-43A	43	83
310-285077-1 MSD	MW-43A	47	89

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
LCS 310-426870/7-A	Lab Control Sample	54	43
MB 310-426870/1-A	Method Blank	50	49

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-285077-1	MW-43A	15	59

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
LCS 310-426870/8-A	Lab Control Sample	24	76								
MB 310-426870/1-A	Method Blank	50	49								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
310-285077-1	MW-43A	94	98								

Surrogate Legend

DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		DCPAA1	DCPAA2								
Lab Sample ID	Client Sample ID	(34-142)	(34-142)								
LCS 410-525802/2-A	Lab Control Sample	92	96								
MB 410-525802/1-A	Method Blank	84	82								

Surrogate Legend

DCPAA = DCAA

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-426575/5
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			07/08/24 09:44	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			07/08/24 09:44	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			07/08/24 09:44	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			07/08/24 09:44	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			07/08/24 09:44	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			07/08/24 09:44	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			07/08/24 09:44	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			07/08/24 09:44	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			07/08/24 09:44	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			07/08/24 09:44	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			07/08/24 09:44	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			07/08/24 09:44	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			07/08/24 09:44	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			07/08/24 09:44	1
2-Hexanone	<2.00		10.0	2.00	ug/L			07/08/24 09:44	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			07/08/24 09:44	1
Acetone	<3.10		10.0	3.10	ug/L			07/08/24 09:44	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			07/08/24 09:44	1
Benzene	<0.220		0.500	0.220	ug/L			07/08/24 09:44	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			07/08/24 09:44	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			07/08/24 09:44	1
Bromoform	<0.780		5.00	0.780	ug/L			07/08/24 09:44	1
Bromomethane	<1.10		4.00	1.10	ug/L			07/08/24 09:44	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			07/08/24 09:44	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			07/08/24 09:44	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			07/08/24 09:44	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			07/08/24 09:44	1
Chloroethane	<0.790		4.00	0.790	ug/L			07/08/24 09:44	1
Chloroform	<1.30		3.00	1.30	ug/L			07/08/24 09:44	1
Chloromethane	<0.610		3.00	0.610	ug/L			07/08/24 09:44	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			07/08/24 09:44	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			07/08/24 09:44	1
Dibromomethane	<0.330		1.00	0.330	ug/L			07/08/24 09:44	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			07/08/24 09:44	1
Iodomethane	<7.00		10.0	7.00	ug/L			07/08/24 09:44	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			07/08/24 09:44	1
Styrene	<0.370		1.00	0.370	ug/L			07/08/24 09:44	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			07/08/24 09:44	1
Toluene	<0.430		1.00	0.430	ug/L			07/08/24 09:44	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			07/08/24 09:44	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			07/08/24 09:44	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			07/08/24 09:44	1
Trichloroethene	<0.430		1.00	0.430	ug/L			07/08/24 09:44	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			07/08/24 09:44	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			07/08/24 09:44	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			07/08/24 09:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			07/08/24 09:44	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-426575/5
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*07/08/24 09:44*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*07/08/24 09:44*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*07/08/24 09:44*	*1*

Lab Sample ID: LCS 310-426575/6
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.52		ug/L		93	71 - 120
1,1,1-Trichloroethane	20.0	19.35		ug/L		97	73 - 129
1,1,2,2-Tetrachloroethane	20.0	17.88		ug/L		89	68 - 124
1,1,2-Trichloroethane	20.0	18.35		ug/L		92	73 - 123
1,1-Dichloroethane	20.0	18.03		ug/L		90	70 - 127
1,1-Dichloroethene	20.0	20.16		ug/L		101	63 - 132
1,2,3-Trichloropropane	20.0	17.29		ug/L		86	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	15.60		ug/L		78	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.71		ug/L		99	75 - 125
1,2-Dichlorobenzene	20.0	17.39		ug/L		87	74 - 120
1,2-Dichloroethane	20.0	18.40		ug/L		92	71 - 125
1,2-Dichloropropane	20.0	18.43		ug/L		92	73 - 124
1,4-Dichlorobenzene	20.0	16.58		ug/L		83	72 - 120
2-Butanone (MEK)	40.0	34.31		ug/L		86	50 - 150
2-Hexanone	40.0	36.59		ug/L		91	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	35.07		ug/L		88	60 - 139
Acetone	40.0	35.63		ug/L		89	50 - 150
Acrylonitrile	200	179.7		ug/L		90	50 - 150
Benzene	20.0	18.01		ug/L		90	72 - 124
Bromochloromethane	20.0	20.31		ug/L		102	73 - 130
Bromodichloromethane	20.0	18.81		ug/L		94	74 - 122
Bromoform	20.0	17.23		ug/L		86	61 - 122
Carbon disulfide	20.0	16.95		ug/L		85	59 - 135
Carbon tetrachloride	20.0	19.99		ug/L		100	67 - 132
Chlorobenzene	20.0	17.49		ug/L		87	76 - 120
Chlorodibromomethane	20.0	20.60		ug/L		103	71 - 121
Chloroform	20.0	17.93		ug/L		90	72 - 125
cis-1,2-Dichloroethene	20.0	17.65		ug/L		88	74 - 123
cis-1,3-Dichloropropene	20.0	19.04		ug/L		95	71 - 125
Dibromomethane	20.0	17.94		ug/L		90	74 - 125
Ethylbenzene	20.0	17.54		ug/L		88	74 - 122
Iodomethane	20.0	18.68		ug/L		93	10 - 150
Methylene Chloride	20.0	17.72		ug/L		89	50 - 150
Styrene	20.0	17.97		ug/L		90	74 - 121
Tetrachloroethene	20.0	20.31		ug/L		102	71 - 130
Toluene	20.0	17.77		ug/L		89	74 - 123
trans-1,2-Dichloroethene	20.0	19.32		ug/L		97	70 - 126
trans-1,3-Dichloropropene	20.0	18.32		ug/L		92	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.76		ug/L		84	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-426575/6
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	19.12		ug/L		96	72 - 126
Vinyl acetate	40.0	36.85		ug/L		92	50 - 150
Xylenes, Total	40.0	36.27		ug/L		91	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-426575/7
Matrix: Water
Analysis Batch: 426575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.85		ug/L		89	23 - 150
Chloroethane	20.0	16.34		ug/L		82	54 - 136
Chloromethane	20.0	17.50		ug/L		87	38 - 150
Trichlorofluoromethane	20.0	16.02		ug/L		80	54 - 149
Vinyl chloride	20.0	16.11		ug/L		81	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-426835/1-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426835

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.640		10.0	0.640	ug/L		07/10/24 09:03	07/10/24 15:54	1
Acenaphthylene	<0.720		10.0	0.720	ug/L		07/10/24 09:03	07/10/24 15:54	1
Acetophenone	<0.690		10.0	0.690	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Acetylaminofluorene	<2.70		10.0	2.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
4-Aminobiphenyl	<2.20		10.0	2.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
Anthracene	<0.870		10.0	0.870	ug/L		07/10/24 09:03	07/10/24 15:54	1
Benzo[a]anthracene	<0.850		10.0	0.850	ug/L		07/10/24 09:03	07/10/24 15:54	1
Benzo[a]pyrene	<8.10		10.0	8.10	ug/L		07/10/24 09:03	07/10/24 15:54	1
Benzo[b]fluoranthene	<4.90		10.0	4.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
Benzo[g,h,i]perylene	<6.30		10.0	6.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
Benzo[k]fluoranthene	<2.20		10.0	2.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		07/10/24 09:03	07/10/24 15:54	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		07/10/24 09:03	07/10/24 15:54	1
bis (2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		07/10/24 09:03	07/10/24 15:54	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		07/10/24 09:03	07/10/24 15:54	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426835/1-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426835

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		07/10/24 09:03	07/10/24 15:54	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		07/10/24 09:03	07/10/24 15:54	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		07/10/24 09:03	07/10/24 15:54	1
Chlorobenzilate	<3.60		10.0	3.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		07/10/24 09:03	07/10/24 15:54	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		07/10/24 09:03	07/10/24 15:54	1
Chrysene	<0.870		10.0	0.870	ug/L		07/10/24 09:03	07/10/24 15:54	1
Diallate	<4.00		10.0	4.00	ug/L		07/10/24 09:03	07/10/24 15:54	1
Dibenzo(a,h)anthracene	<3.90		10.0	3.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		07/10/24 09:03	07/10/24 15:54	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,6-Dichlorophenol	<0.690		10.0	0.690	ug/L		07/10/24 09:03	07/10/24 15:54	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
Dimethoate	<3.60		10.0	3.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
7,12-Dimethylbenz(a)anthracene	<1.90		10.0	1.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
3,3'-Dimethylbenzidine	<1.50		10.0	1.50	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		07/10/24 09:03	07/10/24 15:54	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		07/10/24 09:03	07/10/24 15:54	1
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
1,3-Dinitrobenzene	<3.20		10.0	3.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		07/10/24 09:03	07/10/24 15:54	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		07/10/24 09:03	07/10/24 15:54	1
Dinoseb	<2.40		10.0	2.40	ug/L		07/10/24 09:03	07/10/24 15:54	1
Diphenylamine	<6.00		10.0	6.00	ug/L		07/10/24 09:03	07/10/24 15:54	1
Disulfoton	<2.40		10.0	2.40	ug/L		07/10/24 09:03	07/10/24 15:54	1
Ethyl methanesulfonate	<3.60		10.0	3.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
Ethyl Parathion	<2.20		10.0	2.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
Famphur	<3.80		10.0	3.80	ug/L		07/10/24 09:03	07/10/24 15:54	1
Fluoranthene	<1.70		10.0	1.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
Fluorene	<0.790		10.0	0.790	ug/L		07/10/24 09:03	07/10/24 15:54	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		07/10/24 09:03	07/10/24 15:54	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		07/10/24 09:03	07/10/24 15:54	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		07/10/24 09:03	07/10/24 15:54	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		07/10/24 09:03	07/10/24 15:54	1
Hexachloropropene	<2.60		10.0	2.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
Indeno[1,2,3-cd]pyrene	<4.20		10.0	4.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
Isodrin	<4.70		10.0	4.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
Isophorone	<0.930		10.0	0.930	ug/L		07/10/24 09:03	07/10/24 15:54	1
Isosafrole	<2.30		10.0	2.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
Kepone	<1.00		10.0	1.00	ug/L		07/10/24 09:03	07/10/24 15:54	1
Methapyrilene	<0.760		10.0	0.760	ug/L		07/10/24 09:03	07/10/24 15:54	1
3-Methylcholanthrene	<0.320		10.0	0.320	ug/L		07/10/24 09:03	07/10/24 15:54	1
Methyl methanesulfonate	<3.30		10.0	3.30	ug/L		07/10/24 09:03	07/10/24 15:54	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426835/1-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426835

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		07/10/24 09:03	07/10/24 15:54	1
Methyl parathion	<2.30		10.0	2.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		07/10/24 09:03	07/10/24 15:54	1
Methylphenol, 3 & 4	<0.700		10.0	0.700	ug/L		07/10/24 09:03	07/10/24 15:54	1
1,4-Naphthoquinone	<3.60		10.0	3.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
1-Naphthylamine	<2.50		10.0	2.50	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Naphthylamine	<2.10		10.0	2.10	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		07/10/24 09:03	07/10/24 15:54	1
5-Nitro-o-toluidine	<2.80		10.0	2.80	ug/L		07/10/24 09:03	07/10/24 15:54	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		07/10/24 09:03	07/10/24 15:54	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosodiethylamine	<3.40		10.0	3.40	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosodi-n-butylamine	<3.90		10.0	3.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosomethylethylamine	<4.90		10.0	4.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosopiperidine	<2.70		10.0	2.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
N-Nitrosopyrrolidine	<3.60		10.0	3.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
o,o',o''-Triethylphosphorothioate	<3.20		10.0	3.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
o-Toluidine	<2.90		10.0	2.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
p-Dimethylamino azobenzene	<2.20		10.0	2.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
Pentachlorobenzene	<2.80		10.0	2.80	ug/L		07/10/24 09:03	07/10/24 15:54	1
Pentachloronitrobenzene	<5.80		10.0	5.80	ug/L		07/10/24 09:03	07/10/24 15:54	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		07/10/24 09:03	07/10/24 15:54	1
Phenacetin	<1.90		10.0	1.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
Phenanthrene	<0.790		10.0	0.790	ug/L		07/10/24 09:03	07/10/24 15:54	1
Phenol	<1.10		10.0	1.10	ug/L		07/10/24 09:03	07/10/24 15:54	1
1,4-phenylenediamine	<1.90		10.0	1.90	ug/L		07/10/24 09:03	07/10/24 15:54	1
Phorate	<3.20		10.0	3.20	ug/L		07/10/24 09:03	07/10/24 15:54	1
Pronamide	<2.70		10.0	2.70	ug/L		07/10/24 09:03	07/10/24 15:54	1
Pyrene	<0.790		10.0	0.790	ug/L		07/10/24 09:03	07/10/24 15:54	1
Safrole	<2.80		10.0	2.80	ug/L		07/10/24 09:03	07/10/24 15:54	1
1,2,4,5-Tetrachlorobenzene	<0.540		10.0	0.540	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,3,4,6-Tetrachlorophenol	<5.30		10.0	5.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
Thionazin	<3.50		10.0	3.50	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		07/10/24 09:03	07/10/24 15:54	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		07/10/24 09:03	07/10/24 15:54	1
1,3,5-Trinitrobenzene	<2.30		10.0	2.30	ug/L		07/10/24 09:03	07/10/24 15:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*39 - 118*	*07/10/24 09:03*	*07/10/24 15:54*	*1*
2-Fluorophenol (Surr)	*35*		*25 - 110*	*07/10/24 09:03*	*07/10/24 15:54*	*1*
Nitrobenzene-d5 (Surr)	*88*		*45 - 129*	*07/10/24 09:03*	*07/10/24 15:54*	*1*
Phenol-d5 (Surr)	*58*		*21 - 110*	*07/10/24 09:03*	*07/10/24 15:54*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-426835/1-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426835

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	*98*		*12 - 144*	*07/10/24 09:03*	*07/10/24 15:54*	*1*
2,4,6-Tribromophenol (Surr)	*28*		*27 - 136*	*07/10/24 09:03*	*07/10/24 15:54*	*1*

Lab Sample ID: LCS 310-426835/2-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426835

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	91.84		ug/L		92	43 - 110
Acenaphthylene	100	84.60		ug/L		85	40 - 110
Acetophenone	100	84.96		ug/L		85	48 - 119
2-Acetylaminofluorene	64.0	51.28		ug/L		80	35 - 150
4-Aminobiphenyl	64.0	51.49		ug/L		80	24 - 138
Anthracene	100	90.50		ug/L		90	51 - 120
Benzo[a]anthracene	100	85.47		ug/L		85	51 - 123
Benzo[a]pyrene	100	92.50		ug/L		92	48 - 125
Benzo[b]fluoranthene	100	91.15		ug/L		91	49 - 129
Benzo[g,h,i]perylene	100	95.31		ug/L		95	43 - 139
Benzo[k]fluoranthene	100	102.2		ug/L		102	47 - 130
Benzyl alcohol	100	85.33		ug/L		85	39 - 128
Bis(2-chloroethoxy)methane	100	81.97		ug/L		82	48 - 121
Bis(2-chloroethyl)ether	100	83.88		ug/L		84	43 - 123
bis (2-chloroisopropyl) ether	100	70.58		ug/L		71	34 - 123
Bis(2-ethylhexyl) phthalate	100	95.13		ug/L		95	43 - 143
4-Bromophenyl phenyl ether	100	89.41		ug/L		89	45 - 119
Butyl benzyl phthalate	100	91.46		ug/L		91	46 - 135
4-Chloroaniline	100	85.62		ug/L		86	21 - 139
Chlorobenzilate	64.0	61.96		ug/L		97	52 - 138
4-Chloro-3-methylphenol	100	88.95		ug/L		89	49 - 130
2-Chloronaphthalene	100	80.99		ug/L		81	37 - 110
2-Chlorophenol	100	87.73		ug/L		88	44 - 117
4-Chlorophenyl phenyl ether	100	83.13		ug/L		83	44 - 116
Chrysene	100	85.15		ug/L		85	51 - 125
Diallate	64.0	56.74		ug/L		89	42 - 141
Dibenzo(a,h)anthracene	100	88.64		ug/L		89	38 - 149
Dibenzofuran	100	88.44		ug/L		88	45 - 112
2,4-Dichlorophenol	100	88.18		ug/L		88	41 - 124
2,6-Dichlorophenol	100	86.82		ug/L		87	30 - 130
Diethyl phthalate	100	102.7		ug/L		103	43 - 135
Dimethoate	64.0	71.31		ug/L		111	51 - 150
7,12-Dimethylbenz(a)anthracene	64.0	63.36		ug/L		99	51 - 129
3,3'-Dimethylbenzidine	64.0	49.99		ug/L		78	10 - 150
2,4-Dimethylphenol	100	83.37		ug/L		83	31 - 142
Dimethyl phthalate	100	99.47		ug/L		99	43 - 129
Di-n-butyl phthalate	100	96.32		ug/L		96	50 - 133
1,3-Dinitrobenzene	100	95.82		ug/L		96	45 - 138
4,6-Dinitro-2-methylphenol	200	199.3		ug/L		100	22 - 143
2,4-Dinitrophenol	200	161.6		ug/L		81	10 - 138

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426835/2-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426835

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	100	90.21		ug/L		90	47 - 137
2,6-Dinitrotoluene	100	88.05		ug/L		88	51 - 130
Di-n-octyl phthalate	100	78.43		ug/L		78	34 - 150
Dinoseb	64.0	69.41		ug/L		108	25 - 146
Diphenylamine	85.0	74.66		ug/L		88	48 - 122
Disulfoton	64.0	48.00		ug/L		75	54 - 131
Ethyl methanesulfonate	64.0	47.41		ug/L		74	48 - 120
Ethyl Parathion	64.0	64.24		ug/L		100	52 - 149
Famphur	64.0	122.8	E *+	ug/L		192	44 - 150
Fluoranthene	100	89.14		ug/L		89	47 - 128
Fluorene	100	91.48		ug/L		91	45 - 119
Hexachlorobenzene	100	92.04		ug/L		92	48 - 119
Hexachlorobutadiene	100	75.89		ug/L		76	32 - 110
Hexachlorocyclopentadiene	100	46.51		ug/L		47	10 - 110
Hexachloroethane	100	56.10		ug/L		56	31 - 110
Hexachloropropene	64.0	27.80		ug/L		43	10 - 110
Indeno[1,2,3-cd]pyrene	100	90.60		ug/L		91	37 - 150
Isodrin	64.0	58.57		ug/L		92	52 - 125
Isophorone	100	78.06		ug/L		78	50 - 125
Isosafrole	64.0	54.52		ug/L		85	31 - 123
Kepone	64.0	144.7	*+	ug/L		226	10 - 150
Methapyrilene	64.0	14.40		ug/L		23	10 - 110
3-Methylcholanthrene	64.0	52.17		ug/L		82	43 - 150
Methyl methanesulfonate	64.0	29.25		ug/L		46	36 - 110
2-Methylnaphthalene	100	79.40		ug/L		79	33 - 110
Methyl parathion	64.0	69.58		ug/L		109	50 - 150
2-Methylphenol	100	78.87		ug/L		79	47 - 118
Methylphenol, 3 & 4	100	83.84		ug/L		84	46 - 117
1,4-Naphthoquinone	64.0	51.84		ug/L		81	37 - 149
1-Naphthylamine	64.0	35.12		ug/L		55	19 - 110
2-Naphthylamine	64.0	45.12		ug/L		71	18 - 127
2-Nitroaniline	100	95.71		ug/L		96	50 - 135
3-Nitroaniline	100	98.19		ug/L		98	42 - 139
4-Nitroaniline	100	89.04		ug/L		89	31 - 145
Nitrobenzene	100	80.40		ug/L		80	47 - 116
5-Nitro-o-toluidine	64.0	63.44		ug/L		99	47 - 145
2-Nitrophenol	100	82.42		ug/L		82	41 - 129
4-Nitrophenol	200	115.6		ug/L		58	18 - 110
N-Nitrosodiethylamine	64.0	51.04		ug/L		80	47 - 138
N-Nitrosodimethylamine	100	64.13		ug/L		64	37 - 110
N-Nitrosodi-n-butylamine	64.0	60.00		ug/L		94	52 - 142
N-Nitrosodi-n-propylamine	100	86.02		ug/L		86	45 - 130
N-Nitrosodiphenylamine	100	91.63		ug/L		92	49 - 121
N-Nitrosomethylethylamine	64.0	52.81		ug/L		83	54 - 123
N-Nitrosopiperidine	64.0	56.52		ug/L		88	60 - 127
N-Nitrosopyrrolidine	64.0	57.70		ug/L		90	56 - 143
o,o',o''-Triethylphosphorothioate	64.0	56.38		ug/L		88	45 - 113
o-Toluidine	64.0	50.26		ug/L		79	24 - 142
p-Dimethylamino azobenzene	64.0	61.84		ug/L		97	42 - 138

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-426835/2-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426835

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Pentachlorobenzene			64.0	54.46		ug/L		85	33 - 110		
Pentachloronitrobenzene			64.0	63.25		ug/L		99	65 - 127		
Pentachlorophenol			200	187.9		ug/L		94	26 - 133		
Phenacetin			64.0	61.41		ug/L		96	56 - 146		
Phenanthrene			100	92.25		ug/L		92	51 - 117		
Phenol			100	57.75		ug/L		58	29 - 110		
1,4-phenylenediamine			64.0	<1.90	*-	ug/L		-1	20 - 120		
Phorate			64.0	53.54		ug/L		84	57 - 135		
Pronamide			64.0	59.65		ug/L		93	61 - 144		
Pyrene			100	94.53		ug/L		95	48 - 127		
Safrole			64.0	51.78		ug/L		81	34 - 110		
1,2,4,5-Tetrachlorobenzene			100	79.71		ug/L		80	36 - 110		
2,3,4,6-Tetrachlorophenol			100	70.07		ug/L		70	33 - 134		
Thionazin			64.0	59.85		ug/L		94	52 - 147		
2,4,5-Trichlorophenol			100	91.10		ug/L		91	35 - 133		
2,4,6-Trichlorophenol			100	96.80		ug/L		97	28 - 139		
1,3,5-Trinitrobenzene			64.0	51.65		ug/L		81	39 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*87*		*39 - 118*
2-Fluorophenol (Surr)	*69*		*25 - 110*
Nitrobenzene-d5 (Surr)	*96*		*45 - 129*
Phenol-d5 (Surr)	*67*		*21 - 110*
Terphenyl-d14 (Surr)	*114*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*105*		*27 - 136*

Lab Sample ID: LCSD 310-426835/3-A
Matrix: Water
Analysis Batch: 426887

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 426835

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene			100	86.94		ug/L		87	43 - 110	5	35
Acenaphthylene			100	77.33		ug/L		77	40 - 110	9	35
Acetophenone			100	79.93		ug/L		80	48 - 119	6	35
2-Acetylaminofluorene			64.0	48.58		ug/L		76	35 - 150	5	28
4-Aminobiphenyl			64.0	49.35		ug/L		77	24 - 138	4	35
Anthracene			100	83.57		ug/L		84	51 - 120	8	35
Benzo[a]anthracene			100	76.92		ug/L		77	51 - 123	11	35
Benzo[a]pyrene			100	83.89		ug/L		84	48 - 125	10	35
Benzo[b]fluoranthene			100	83.42		ug/L		83	49 - 129	9	35
Benzo[g,h,i]perylene			100	84.95		ug/L		85	43 - 139	11	35
Benzo[k]fluoranthene			100	86.24		ug/L		86	47 - 130	17	35
Benzyl alcohol			100	85.00		ug/L		85	39 - 128	0	35
Bis(2-chloroethoxy)methane			100	76.00		ug/L		76	48 - 121	8	35
Bis(2-chloroethyl)ether			100	80.20		ug/L		80	43 - 123	4	35
bis (2-chloroisopropyl) ether			100	67.78		ug/L		68	34 - 123	4	35
Bis(2-ethylhexyl) phthalate			100	88.96		ug/L		89	43 - 143	7	35
4-Bromophenyl phenyl ether			100	82.50		ug/L		83	45 - 119	8	35

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-426835/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426887
Prep Batch: 426835

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Butyl benzyl phthalate	100	82.23		ug/L		82	46 - 135	11	35
4-Chloroaniline	100	70.89		ug/L		71	21 - 139	19	35
Chlorobenzilate	64.0	57.56		ug/L		90	52 - 138	7	28
4-Chloro-3-methylphenol	100	80.91		ug/L		81	49 - 130	9	35
2-Chloronaphthalene	100	71.72		ug/L		72	37 - 110	12	35
2-Chlorophenol	100	68.93		ug/L		69	44 - 117	24	35
4-Chlorophenyl phenyl ether	100	74.01		ug/L		74	44 - 116	12	35
Chrysene	100	81.26		ug/L		81	51 - 125	5	35
Diallate	64.0	54.83		ug/L		86	42 - 141	3	35
Dibenzo(a,h)anthracene	100	77.99		ug/L		78	38 - 149	13	35
Dibenzofuran	100	81.33		ug/L		81	45 - 112	8	35
2,4-Dichlorophenol	100	65.81		ug/L		66	41 - 124	29	35
2,6-Dichlorophenol	100	39.66	*1	ug/L		40	30 - 130	75	35
Diethyl phthalate	100	90.52		ug/L		91	43 - 135	13	35
Dimethoate	64.0	65.63		ug/L		103	51 - 150	8	26
7,12-Dimethylbenz(a)anthracene	64.0	57.88		ug/L		90	51 - 129	9	28
3,3'-Dimethylbenzidine	64.0	51.79		ug/L		81	10 - 150	4	35
2,4-Dimethylphenol	100	76.37		ug/L		76	31 - 142	9	35
Dimethyl phthalate	100	90.31		ug/L		90	43 - 129	10	35
Di-n-butyl phthalate	100	87.86		ug/L		88	50 - 133	9	35
1,3-Dinitrobenzene	100	94.93		ug/L		95	45 - 138	1	35
4,6-Dinitro-2-methylphenol	200	12.25	*- *1	ug/L		6	22 - 143	177	35
2,4-Dinitrophenol	200	<13.0	*- *1	ug/L		2	10 - 138	189	35
2,4-Dinitrotoluene	100	78.85		ug/L		79	47 - 137	13	35
2,6-Dinitrotoluene	100	81.16		ug/L		81	51 - 130	8	35
Di-n-octyl phthalate	100	76.88		ug/L		77	34 - 150	2	35
Dinoseb	64.0	21.54	*1	ug/L		34	25 - 146	105	35
Diphenylamine	85.0	67.63		ug/L		80	48 - 122	10	35
Disulfoton	64.0	45.11		ug/L		70	54 - 131	6	24
Ethyl methanesulfonate	64.0	46.82		ug/L		73	48 - 120	1	27
Ethyl Parathion	64.0	56.84		ug/L		89	52 - 149	12	26
Famphur	64.0	97.60	E *+	ug/L		153	44 - 150	23	35
Fluoranthene	100	80.88		ug/L		81	47 - 128	10	35
Fluorene	100	86.16		ug/L		86	45 - 119	6	35
Hexachlorobenzene	100	84.08		ug/L		84	48 - 119	9	35
Hexachlorobutadiene	100	71.34		ug/L		71	32 - 110	6	35
Hexachlorocyclopentadiene	100	42.22		ug/L		42	10 - 110	10	35
Hexachloroethane	100	56.99		ug/L		57	31 - 110	2	35
Hexachloropropene	64.0	22.08		ug/L		35	10 - 110	23	35
Indeno[1,2,3-cd]pyrene	100	79.69		ug/L		80	37 - 150	13	35
Isodrin	64.0	55.33		ug/L		86	52 - 125	6	26
Isophorone	100	73.49		ug/L		73	50 - 125	6	35
Isosafrole	64.0	48.40		ug/L		76	31 - 123	12	35
Kepone	64.0	62.42	*1	ug/L		98	10 - 150	79	35
Methapyrilene	64.0	43.29	*1	ug/L		68	10 - 110	100	35
3-Methylcholanthrene	64.0	48.33		ug/L		76	43 - 150	8	32
Methyl methanesulfonate	64.0	28.84		ug/L		45	36 - 110	1	26
2-Methylnaphthalene	100	75.49		ug/L		75	33 - 110	5	35
Methyl parathion	64.0	61.72		ug/L		96	50 - 150	12	25

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-426835/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 426887
Prep Batch: 426835

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Methylphenol			100	78.25		ug/L		78	47 - 118	1	35
Methylphenol, 3 & 4			100	79.37		ug/L		79	46 - 117	5	35
1,4-Naphthoquinone			64.0	47.55		ug/L		74	37 - 149	9	29
1-Naphthylamine			64.0	34.69		ug/L		54	19 - 110	1	35
2-Naphthylamine			64.0	42.03		ug/L		66	18 - 127	7	35
2-Nitroaniline			100	86.44		ug/L		86	50 - 135	10	35
3-Nitroaniline			100	93.03		ug/L		93	42 - 139	5	35
4-Nitroaniline			100	81.83		ug/L		82	31 - 145	8	35
Nitrobenzene			100	75.85		ug/L		76	47 - 116	6	35
5-Nitro-o-toluidine			64.0	56.63		ug/L		88	47 - 145	11	31
2-Nitrophenol			100	54.92	*1	ug/L		55	41 - 129	40	35
4-Nitrophenol			200	10.70	*- *1	ug/L		5	18 - 110	166	35
N-Nitrosodiethylamine			64.0	51.48		ug/L		80	47 - 138	1	26
N-Nitrosodimethylamine			100	63.76		ug/L		64	37 - 110	1	35
N-Nitrosodi-n-butylamine			64.0	53.67		ug/L		84	52 - 142	11	27
N-Nitrosodi-n-propylamine			100	81.08		ug/L		81	45 - 130	6	35
N-Nitrosodiphenylamine			100	81.63		ug/L		82	49 - 121	12	35
N-Nitrosomethylethylamine			64.0	49.48		ug/L		77	54 - 123	7	26
N-Nitrosopiperidine			64.0	54.33		ug/L		85	60 - 127	4	26
N-Nitrosopyrrolidine			64.0	57.24		ug/L		89	56 - 143	1	25
o,o',o''-Triethylphosphorothioate			64.0	51.26		ug/L		80	45 - 113	10	33
o-Toluidine			64.0	49.67		ug/L		78	24 - 142	1	35
p-Dimethylamino azobenzene			64.0	57.79		ug/L		90	42 - 138	7	29
Pentachlorobenzene			64.0	51.23		ug/L		80	33 - 110	6	35
Pentachloronitrobenzene			64.0	60.21		ug/L		94	65 - 127	5	29
Pentachlorophenol			200	<9.60	*- *1	ug/L		4	26 - 133	183	35
Phenacetin			64.0	58.43		ug/L		91	56 - 146	5	25
Phenanthrene			100	83.14		ug/L		83	51 - 117	10	35
Phenol			100	54.78		ug/L		55	29 - 110	5	35
1,4-phenylenediamine			64.0	<1.90	*- *1	ug/L		-0.5	20 - 120	78	35
Phorate			64.0	49.27		ug/L		77	57 - 135	8	26
Pronamide			64.0	61.59		ug/L		96	61 - 144	3	27
Pyrene			100	86.17		ug/L		86	48 - 127	9	35
Safrole			64.0	48.39		ug/L		76	34 - 110	7	35
1,2,4,5-Tetrachlorobenzene			100	73.92		ug/L		74	36 - 110	8	35
2,3,4,6-Tetrachlorophenol			100	6.232	J *- *1	ug/L		6	33 - 134	167	35
Thionazin			64.0	52.58		ug/L		82	52 - 147	13	28
2,4,5-Trichlorophenol			100	49.68	*1	ug/L		50	35 - 133	59	35
2,4,6-Trichlorophenol			100	31.03	*1	ug/L		31	28 - 139	103	35
1,3,5-Trinitrobenzene			64.0	44.04		ug/L		69	39 - 144	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*78*		*39 - 118*
2-Fluorophenol (Surr)	*43*		*25 - 110*
Nitrobenzene-d5 (Surr)	*93*		*45 - 129*
Phenol-d5 (Surr)	*65*		*21 - 110*
Terphenyl-d14 (Surr)	*103*		*12 - 144*
2,4,6-Tribromophenol (Surr)	*52*		*27 - 136*

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-426817/28
Matrix: Water
Analysis Batch: 426817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<2600		10000	2600	ug/L			07/10/24 17:32	1
Isobutanol	<2400		10000	2400	ug/L			07/10/24 17:32	1

Lab Sample ID: LCS 310-426817/29
Matrix: Water
Analysis Batch: 426817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113000	125600		ug/L		111	67 - 132
Isobutanol	104000	110000		ug/L		105	80 - 121

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-426870/1-A
Matrix: Water
Analysis Batch: 426967

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0196		0.0893	0.0196	ug/L		07/10/24 12:29	07/11/24 13:30	1
alpha-BHC	<0.00893		0.0893	0.00893	ug/L		07/10/24 12:29	07/11/24 13:30	1
beta-BHC	<0.0375		0.0893	0.0375	ug/L		07/10/24 12:29	07/11/24 13:30	1
Chlordane (technical)	<0.348		1.79	0.348	ug/L		07/10/24 12:29	07/11/24 13:30	1
4,4'-DDD	<0.0223		0.0893	0.0223	ug/L		07/10/24 12:29	07/11/24 13:30	1
4,4'-DDE	<0.0268		0.0893	0.0268	ug/L		07/10/24 12:29	07/11/24 13:30	1
4,4'-DDT	<0.0179		0.0893	0.0179	ug/L		07/10/24 12:29	07/11/24 13:30	1
delta-BHC	<0.0286		0.0893	0.0286	ug/L		07/10/24 12:29	07/11/24 13:30	1
Dieldrin	<0.0188		0.0893	0.0188	ug/L		07/10/24 12:29	07/11/24 13:30	1
Endosulfan I	<0.0250		0.0893	0.0250	ug/L		07/10/24 12:29	07/11/24 13:30	1
Endosulfan II	<0.0232		0.0893	0.0232	ug/L		07/10/24 12:29	07/11/24 13:30	1
Endosulfan sulfate	<0.0161		0.0893	0.0161	ug/L		07/10/24 12:29	07/11/24 13:30	1
Endrin	<0.0250		0.0893	0.0250	ug/L		07/10/24 12:29	07/11/24 13:30	1
Endrin aldehyde	<0.0241		0.0893	0.0241	ug/L		07/10/24 12:29	07/11/24 13:30	1
gamma-BHC (Lindane)	<0.00893		0.0893	0.00893	ug/L		07/10/24 12:29	07/11/24 13:30	1
Heptachlor	<0.0205		0.0893	0.0205	ug/L		07/10/24 12:29	07/11/24 13:30	1
Heptachlor epoxide	<0.0286		0.0893	0.0286	ug/L		07/10/24 12:29	07/11/24 13:30	1
Methoxychlor	<0.0286		0.0893	0.0286	ug/L		07/10/24 12:29	07/11/24 13:30	1
Toxaphene	<0.893		1.79	0.893	ug/L		07/10/24 12:29	07/11/24 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*50*		*10 - 136*	*07/10/24 12:29*	*07/11/24 13:30*	*1*
Tetrachloro-m-xylene	*49*		*10 - 130*	*07/10/24 12:29*	*07/11/24 13:30*	*1*

Lab Sample ID: LCS 310-426870/7-A
Matrix: Water
Analysis Batch: 426967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	2.62	1.391		ug/L		53	13 - 120
alpha-BHC	2.62	2.567		ug/L		98	36 - 127

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 310-426870/7-A
Matrix: Water
Analysis Batch: 426967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
beta-BHC	2.62	2.489		ug/L		95	37 - 136
4,4'-DDD	2.62	1.946		ug/L		74	36 - 149
4,4'-DDE	2.62	1.757		ug/L		67	34 - 130
4,4'-DDT	2.62	1.731		ug/L		66	23 - 150
delta-BHC	2.62	2.443		ug/L		93	33 - 134
Dieldrin	2.62	2.230		ug/L		85	39 - 130
Endosulfan I	2.62	2.006		ug/L		77	10 - 120
Endosulfan II	2.62	2.365		ug/L		90	14 - 120
Endosulfan sulfate	2.62	2.740		ug/L		105	36 - 147
Endrin	2.62	2.275		ug/L		87	39 - 140
Endrin aldehyde	2.62	2.471		ug/L		94	32 - 137
gamma-BHC (Lindane)	2.62	2.551		ug/L		97	36 - 132
Heptachlor	2.62	1.476		ug/L		56	27 - 120
Heptachlor epoxide	2.62	2.251		ug/L		86	38 - 133
Methoxychlor	2.62	2.084		ug/L		80	10 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*54*		*10 - 136*
Tetrachloro-m-xylene	*43*		*10 - 130*

Lab Sample ID: 310-285077-1 MS
Matrix: Ground Water
Analysis Batch: 426967

Client Sample ID: MW-43A
Prep Type: Total/NA
Prep Batch: 426870

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	<0.0192		2.58	2.405		ug/L		93	13 - 120
alpha-BHC	<0.00873		2.58	2.848		ug/L		110	36 - 127
beta-BHC	<0.0367		2.58	2.727		ug/L		106	37 - 136
4,4'-DDD	<0.0218		2.58	2.876		ug/L		111	36 - 149
4,4'-DDE	<0.0262		2.58	2.784		ug/L		108	34 - 130
4,4'-DDT	<0.0175		2.58	2.706		ug/L		105	23 - 150
delta-BHC	<0.0279		2.58	2.714		ug/L		105	33 - 134
Dieldrin	<0.0183		2.58	2.844		ug/L		110	39 - 130
Endosulfan I	<0.0244		2.58	2.710		ug/L		105	10 - 120
Endosulfan II	<0.0227		2.58	2.706		ug/L		105	14 - 120
Endosulfan sulfate	<0.0157		2.58	3.103		ug/L		120	36 - 147
Endrin	<0.0244		2.58	2.940		ug/L		114	39 - 140
Endrin aldehyde	<0.0236		2.58	2.772		ug/L		107	32 - 137
gamma-BHC (Lindane)	<0.00873		2.58	2.830		ug/L		110	36 - 132
Heptachlor	<0.0201		2.58	2.517		ug/L		97	27 - 120
Heptachlor epoxide	<0.0279		2.58	2.914		ug/L		113	38 - 133
Methoxychlor	<0.0279		2.58	2.811		ug/L		109	10 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*43*		*10 - 136*
Tetrachloro-m-xylene	*83*		*10 - 130*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 310-285077-1 MSD
Matrix: Ground Water
Analysis Batch: 426967

Client Sample ID: MW-43A
Prep Type: Total/NA
Prep Batch: 426870

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aldrin	<0.0192		2.62	2.717		ug/L		104	13 - 120	12	35
alpha-BHC	<0.00873		2.62	3.030		ug/L		116	36 - 127	6	35
beta-BHC	<0.0367		2.62	2.914		ug/L		111	37 - 136	7	35
4,4'-DDD	<0.0218		2.62	3.226		ug/L		123	36 - 149	11	35
4,4'-DDE	<0.0262		2.62	3.027		ug/L		116	34 - 130	8	35
4,4'-DDT	<0.0175		2.62	2.848		ug/L		109	23 - 150	5	35
delta-BHC	<0.0279		2.62	2.882		ug/L		110	33 - 134	6	35
Dieldrin	<0.0183		2.62	2.992		ug/L		114	39 - 130	5	35
Endosulfan I	<0.0244		2.62	2.874		ug/L		110	10 - 120	6	35
Endosulfan II	<0.0227		2.62	2.904		ug/L		111	14 - 120	9	35
Endosulfan sulfate	<0.0157		2.62	3.271		ug/L		125	36 - 147	5	35
Endrin	<0.0244		2.62	3.218		ug/L		123	39 - 140	9	35
Endrin aldehyde	<0.0236		2.62	2.970		ug/L		113	32 - 137	7	35
gamma-BHC (Lindane)	<0.00873		2.62	3.019		ug/L		115	36 - 132	6	35
Heptachlor	<0.0201		2.62	2.786		ug/L		106	27 - 120	10	35
Heptachlor epoxide	<0.0279		2.62	3.124		ug/L		119	38 - 133	7	35
Methoxychlor	<0.0279		2.62	2.933		ug/L		112	10 - 150	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*47*		*10 - 136*
Tetrachloro-m-xylene	*89*		*10 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-426870/1-A
Matrix: Water
Analysis Batch: 426968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.732		1.79	0.732	ug/L		07/10/24 12:29	07/11/24 13:30	1
PCB-1221	<0.732		1.79	0.732	ug/L		07/10/24 12:29	07/11/24 13:30	1
PCB-1232	<0.732		1.79	0.732	ug/L		07/10/24 12:29	07/11/24 13:30	1
PCB-1242	<0.732		1.79	0.732	ug/L		07/10/24 12:29	07/11/24 13:30	1
PCB-1248	<0.616		1.79	0.616	ug/L		07/10/24 12:29	07/11/24 13:30	1
PCB-1254	<0.616		1.79	0.616	ug/L		07/10/24 12:29	07/11/24 13:30	1
PCB-1260	<0.616		1.79	0.616	ug/L		07/10/24 12:29	07/11/24 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*50*		*10 - 136*	*07/10/24 12:29*	*07/11/24 13:30*	*1*
Tetrachloro-m-xylene	*49*		*10 - 130*	*07/10/24 12:29*	*07/11/24 13:30*	*1*

Lab Sample ID: LCS 310-426870/8-A
Matrix: Water
Analysis Batch: 426968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	26.1	22.45		ug/L		86	30 - 133
PCB-1260	26.1	23.37		ug/L		90	31 - 133

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 310-426870/8-A
Matrix: Water
Analysis Batch: 426968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426870

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*24*		*10 - 136*
Tetrachloro-m-xylene	*76*		*10 - 130*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-525802/1-A
Matrix: Water
Analysis Batch: 526913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 525802

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.250		0.600	0.250	ug/L		07/08/24 19:00	07/11/24 06:07	1
Silvex (2,4,5-TP)	<0.0220		0.0500	0.0220	ug/L		07/08/24 19:00	07/11/24 06:07	1
2,4,5-T	<0.0650		0.150	0.0650	ug/L		07/08/24 19:00	07/11/24 06:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*84*		*34 - 142*	*07/08/24 19:00*	*07/11/24 06:07*	*1*
DCAA	*82*		*34 - 142*	*07/08/24 19:00*	*07/11/24 06:07*	*1*

Lab Sample ID: LCS 410-525802/2-A
Matrix: Water
Analysis Batch: 526913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 525802

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-D	2.50	2.512		ug/L		100	53 - 159
Silvex (2,4,5-TP)	0.250	0.2876		ug/L		115	62 - 170
2,4,5-T	0.250	0.2726		ug/L		109	57 - 171

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*92*		*34 - 142*
DCAA	*96*		*34 - 142*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-426650/1-A
Matrix: Water
Analysis Batch: 427349

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		07/09/24 09:00	07/15/24 17:33	1
Barium	<0.660		2.00	0.660	ug/L		07/09/24 09:00	07/15/24 17:33	1
Beryllium	<0.330		1.00	0.330	ug/L		07/09/24 09:00	07/15/24 17:33	1
Cadmium	<0.100		0.200	0.100	ug/L		07/09/24 09:00	07/15/24 17:33	1
Chromium	<1.20		5.00	1.20	ug/L		07/09/24 09:00	07/15/24 17:33	1
Cobalt	<0.170		0.500	0.170	ug/L		07/09/24 09:00	07/15/24 17:33	1
Copper	<1.80		5.00	1.80	ug/L		07/09/24 09:00	07/15/24 17:33	1
Lead	<0.260		0.500	0.260	ug/L		07/09/24 09:00	07/15/24 17:33	1
Nickel	<2.10		5.00	2.10	ug/L		07/09/24 09:00	07/15/24 17:33	1
Selenium	<1.40		5.00	1.40	ug/L		07/09/24 09:00	07/15/24 17:33	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-426650/1-A
Matrix: Water
Analysis Batch: 427349

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		07/09/24 09:00	07/15/24 17:33	1
Thallium	<0.570		1.00	0.570	ug/L		07/09/24 09:00	07/15/24 17:33	1
Vanadium	<1.10		5.00	1.10	ug/L		07/09/24 09:00	07/15/24 17:33	1
Zinc	<9.70		20.0	9.70	ug/L		07/09/24 09:00	07/15/24 17:33	1

Lab Sample ID: MB 310-426650/1-A
Matrix: Water
Analysis Batch: 427449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		07/09/24 09:00	07/16/24 12:43	1

Lab Sample ID: LCS 310-426650/2-A
Matrix: Water
Analysis Batch: 427349

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	209.8		ug/L		105	80 - 120
Barium	100	98.04		ug/L		98	80 - 120
Beryllium	100	98.00		ug/L		98	80 - 120
Cadmium	100	93.56		ug/L		94	80 - 120
Chromium	100	94.03		ug/L		94	80 - 120
Cobalt	100	99.82		ug/L		100	80 - 120
Copper	200	193.9		ug/L		97	80 - 120
Lead	200	205.2		ug/L		103	80 - 120
Nickel	200	198.7		ug/L		99	80 - 120
Selenium	400	376.0		ug/L		94	80 - 120
Silver	100	100.4		ug/L		100	80 - 120
Vanadium	100	89.78		ug/L		90	80 - 120
Zinc	200	185.1		ug/L		93	80 - 120

Lab Sample ID: LCS 310-426650/2-A
Matrix: Water
Analysis Batch: 427449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	220.6		ug/L		110	80 - 120
Thallium	100	105.1		ug/L		105	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 310-426710/1-A
Matrix: Water
Analysis Batch: 426782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426710

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<3.50		10.0	3.50	ug/L		07/09/24 10:12	07/09/24 17:46	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 310-426710/2-A
Matrix: Water
Analysis Batch: 426782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426710

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	200	201.0		ug/L		100	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-619024/1-A
Matrix: Water
Analysis Batch: 619066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 619024

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1410		3000	1410	ug/L		07/08/24 07:34	07/08/24 09:49	1

Lab Sample ID: LCS 240-619024/2-A
Matrix: Water
Analysis Batch: 619066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 619024

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8130	8267		ug/L		102	70 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-426516/1
Matrix: Water
Analysis Batch: 426516

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			07/05/24 15:29	1

Lab Sample ID: LCS 310-426516/2
Matrix: Water
Analysis Batch: 426516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	81 - 116

Lab Sample ID: MB 310-426729/1
Matrix: Water
Analysis Batch: 426729

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			07/09/24 11:26	1

Lab Sample ID: 310-285077-4 DU
Matrix: Ground Water
Analysis Batch: 426729

Client Sample ID: MH-1AA
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	31.0		40.00		mg/L		25	35

GC/MS VOA

Analysis Batch: 426575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-2	MW-35	Total/NA	Ground Water	8260D	
310-285077-3	GU-1	Total/NA	Ground Water	8260D	
310-285077-4	MH-1AA	Total/NA	Ground Water	8260D	
310-285077-5	MH-4-2	Total/NA	Ground Water	8260D	
310-285077-6	Equipment Blank #2 Deep	Total/NA	Ground Water	8260D	
310-285077-7	Trip Blank	Total/NA	Water	8260D	
310-285077-8	MW-34A	Total/NA	Ground Water	8260D	
310-285077-9	MW-34A-FD	Total/NA	Ground Water	8260D	
MB 310-426575/5	Method Blank	Total/NA	Water	8260D	
LCS 310-426575/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-426575/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 426835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	3510C	
MB 310-426835/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-426835/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-426835/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 426887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	8270E	426835
MB 310-426835/1-A	Method Blank	Total/NA	Water	8270E	426835
LCS 310-426835/2-A	Lab Control Sample	Total/NA	Water	8270E	426835
LCSD 310-426835/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	426835

GC Semi VOA

Analysis Batch: 426817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	8015C	
MB 310-426817/28	Method Blank	Total/NA	Water	8015C	
LCS 310-426817/29	Lab Control Sample	Total/NA	Water	8015C	

Prep Batch: 426870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	3511	
MB 310-426870/1-A	Method Blank	Total/NA	Water	3511	
LCS 310-426870/7-A	Lab Control Sample	Total/NA	Water	3511	
LCS 310-426870/8-A	Lab Control Sample	Total/NA	Water	3511	
310-285077-1 MS	MW-43A	Total/NA	Ground Water	3511	
310-285077-1 MSD	MW-43A	Total/NA	Ground Water	3511	

Analysis Batch: 426967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	8081B	426870
MB 310-426870/1-A	Method Blank	Total/NA	Water	8081B	426870
LCS 310-426870/7-A	Lab Control Sample	Total/NA	Water	8081B	426870
310-285077-1 MS	MW-43A	Total/NA	Ground Water	8081B	426870
310-285077-1 MSD	MW-43A	Total/NA	Ground Water	8081B	426870

GC Semi VOA

Analysis Batch: 426968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	8082A	426870
MB 310-426870/1-A	Method Blank	Total/NA	Water	8082A	426870
LCS 310-426870/8-A	Lab Control Sample	Total/NA	Water	8082A	426870

Prep Batch: 525802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	8151A	
MB 410-525802/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-525802/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 526913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	8151A	525802
MB 410-525802/1-A	Method Blank	Total/NA	Water	8151A	525802
LCS 410-525802/2-A	Lab Control Sample	Total/NA	Water	8151A	525802

Metals

Prep Batch: 426650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-2	MW-35	Total/NA	Ground Water	3005A	
310-285077-3	GU-1	Total/NA	Ground Water	3005A	
310-285077-4	MH-1AA	Total/NA	Ground Water	3005A	
310-285077-5	MH-4-2	Total/NA	Ground Water	3005A	
310-285077-6	Equipment Blank #2 Deep	Total/NA	Ground Water	3005A	
310-285077-8	MW-34A	Total/NA	Ground Water	3005A	
310-285077-9	MW-34A-FD	Total/NA	Ground Water	3005A	
MB 310-426650/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-426650/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 427349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-2	MW-35	Total/NA	Ground Water	6020B	426650
310-285077-3	GU-1	Total/NA	Ground Water	6020B	426650
310-285077-4	MH-1AA	Total/NA	Ground Water	6020B	426650
310-285077-5	MH-4-2	Total/NA	Ground Water	6020B	426650
310-285077-6	Equipment Blank #2 Deep	Total/NA	Ground Water	6020B	426650
310-285077-8	MW-34A	Total/NA	Ground Water	6020B	426650
310-285077-9	MW-34A-FD	Total/NA	Ground Water	6020B	426650
MB 310-426650/1-A	Method Blank	Total/NA	Water	6020B	426650
LCS 310-426650/2-A	Lab Control Sample	Total/NA	Water	6020B	426650

Analysis Batch: 427449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-2	MW-35	Total/NA	Ground Water	6020B	426650
310-285077-3	GU-1	Total/NA	Ground Water	6020B	426650
310-285077-4	MH-1AA	Total/NA	Ground Water	6020B	426650
310-285077-5	MH-4-2	Total/NA	Ground Water	6020B	426650
310-285077-6	Equipment Blank #2 Deep	Total/NA	Ground Water	6020B	426650
310-285077-8	MW-34A	Total/NA	Ground Water	6020B	426650
310-285077-9	MW-34A-FD	Total/NA	Ground Water	6020B	426650

Metals (Continued)

Analysis Batch: 427449 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-426650/1-A	Method Blank	Total/NA	Water	6020B	426650
LCS 310-426650/2-A	Lab Control Sample	Total/NA	Water	6020B	426650

General Chemistry

Analysis Batch: 426516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-6	Equipment Blank #2 Deep	Total/NA	Ground Water	I-3765-85	
310-285077-8	MW-34A	Total/NA	Ground Water	I-3765-85	
310-285077-9	MW-34A-FD	Total/NA	Ground Water	I-3765-85	
MB 310-426516/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-426516/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 426710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	9012B	
MB 310-426710/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-426710/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 426729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-2	MW-35	Total/NA	Ground Water	I-3765-85	
310-285077-3	GU-1	Total/NA	Ground Water	I-3765-85	
310-285077-4	MH-1AA	Total/NA	Ground Water	I-3765-85	
310-285077-5	MH-4-2	Total/NA	Ground Water	I-3765-85	
MB 310-426729/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-426729/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-285077-4 DU	MH-1AA	Total/NA	Ground Water	I-3765-85	

Analysis Batch: 426782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	9012B	426710
MB 310-426710/1-A	Method Blank	Total/NA	Water	9012B	426710
LCS 310-426710/2-A	Lab Control Sample	Total/NA	Water	9012B	426710

Prep Batch: 619024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	9030B	
MB 240-619024/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-619024/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 619066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-1	MW-43A	Total/NA	Ground Water	9034	619024
MB 240-619024/1-A	Method Blank	Total/NA	Water	9034	619024
LCS 240-619024/2-A	Lab Control Sample	Total/NA	Water	9034	619024

Field Service / Mobile Lab

Analysis Batch: 426764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-2	MW-35	Total/NA	Ground Water	Field Sampling	

Field Service / Mobile Lab (Continued)

Analysis Batch: 426764 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-285077-3	GU-1	Total/NA	Ground Water	Field Sampling	
310-285077-8	MW-34A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-285077-1
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			426835	D2YP	EET CF	07/10/24 09:03
Total/NA	Analysis	8270E		1	426887	L0FS	EET CF	07/10/24 20:28
Total/NA	Analysis	8015C		1	426817	V7YZ	EET CF	07/10/24 19:08
Total/NA	Prep	3511			426870	D2YP	EET CF	07/10/24 12:29
Total/NA	Analysis	8081B		1	426967	BW2O	EET CF	07/11/24 15:47
Total/NA	Prep	3511			426870	D2YP	EET CF	07/10/24 12:29
Total/NA	Analysis	8082A		1	426968	BW2O	EET CF	07/11/24 15:47
Total/NA	Prep	8151A			525802	K2IL	ELLE	07/08/24 19:00
Total/NA	Analysis	8151A		1	526913	UAMZ	ELLE	07/11/24 09:25
Total/NA	Prep	9012B			426710	WZC8	EET CF	07/09/24 10:12
Total/NA	Analysis	9012B		1	426782	ZJX4	EET CF	07/09/24 17:54
Total/NA	Prep	9030B			619024	BLW	EET CLE	07/08/24 07:34
Total/NA	Analysis	9034		1	619066	BLW	EET CLE	07/08/24 09:49

Client Sample ID: MW-35
Lab Sample ID: 310-285077-2
Date Collected: 07/03/24 13:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 15:12
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:08
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 12:54
Total/NA	Analysis	I-3765-85		1	426729	DGU1	EET CF	07/09/24 11:26
Total/NA	Analysis	Field Sampling		1	426764	BJ0R	EET CF	07/03/24 13:30

Client Sample ID: GU-1
Lab Sample ID: 310-285077-3
Date Collected: 07/03/24 09:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 15:35
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:11
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 12:57
Total/NA	Analysis	I-3765-85		1	426729	DGU1	EET CF	07/09/24 11:26
Total/NA	Analysis	Field Sampling		1	426764	BJ0R	EET CF	07/03/24 09:30

Lab Chronicle

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MH-1AA
Lab Sample ID: 310-285077-4
Date Collected: 07/03/24 10:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 17:50
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:15
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 13:08
Total/NA	Analysis	I-3765-85		1	426729	DGU1	EET CF	07/09/24 11:26

Client Sample ID: MH-4-2
Lab Sample ID: 310-285077-5
Date Collected: 07/03/24 11:30
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	426575	WSE8	EET CF	07/08/24 18:12
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:18
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 13:10
Total/NA	Analysis	I-3765-85		1	426729	DGU1	EET CF	07/09/24 11:26

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-285077-6
Date Collected: 07/03/24 12:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 13:19
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:22
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 13:13
Total/NA	Analysis	I-3765-85		1	426516	WZC8	EET CF	07/05/24 15:29

Client Sample ID: Trip Blank
Lab Sample ID: 310-285077-7
Date Collected: 07/03/24 05:00
Matrix: Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 12:12

Client Sample ID: MW-34A
Lab Sample ID: 310-285077-8
Date Collected: 07/03/24 08:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 15:57

Lab Chronicle

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A
Lab Sample ID: 310-285077-8

Date Collected: 07/03/24 08:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:26
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 13:15
Total/NA	Analysis	I-3765-85		1	426516	WZC8	EET CF	07/05/24 15:29
Total/NA	Analysis	Field Sampling		1	426764	BJ0R	EET CF	07/03/24 08:45

Client Sample ID: MW-34A-FD
Lab Sample ID: 310-285077-9

Date Collected: 07/03/24 08:45
Matrix: Ground Water
Date Received: 07/05/24 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	426575	WSE8	EET CF	07/08/24 16:20
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427349	NFT2	EET CF	07/15/24 19:44
Total/NA	Prep	3005A			426650	QTZ5	EET CF	07/09/24 09:00
Total/NA	Analysis	6020B		1	427449	NFT2	EET CF	07/16/24 13:17
Total/NA	Analysis	I-3765-85		1	426516	WZC8	EET CF	07/05/24 15:29

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-28-25
Pennsylvania	NELAP	68-00340	07-16-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	07-17-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-25
Alaska	State	PA00009	06-30-25
Alaska (UST)	State	17-027	02-28-25
Arizona	State	AZ0780	03-12-25
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-24
Colorado	State	PA00009	06-30-25
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-25
Delaware (DW)	State	N/A	01-31-25
Florida	NELAP	E87997	06-30-25
Georgia (DW)	State	C048	01-31-25
Hawaii	State	N/A	01-31-25
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-26
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-24
Louisiana (All)	NELAP	02055	06-30-25
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-25
Massachusetts	State	M-PA009	06-30-25
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-25
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-25
New York	NELAP	10670	04-01-25
North Carolina (DW)	State	42705	07-31-25
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24 *
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-25
Tennessee	State	02838	01-31-25
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24 *
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-25
Wyoming (UST)	A2LA	0001.01	11-30-24

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

Method Summary

Client: AECOM
Job ID: 310-285077-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	EET CF
9012B	Cyanide, Total andor Amenable	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

eurofins | Environment Testing America

310-285077 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Ventura STATE CA Project: 91499

Receipt Information

Date/Time Received: 7 DATE 3 24 TIME 1530 Received By: JO

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: X Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 9.8 Corrected Temp (°C): 9.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☑ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☑ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 7-3-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	CALENDAR DAYS WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	2 weeks			
Site: Winneshiek County Landfill	1 week			Job / SDG No
P O #	2 days			
	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	All Appendix II Analytes	Sample Specific Notes
~~MW-42A~~			G	GW		N		X			X	
~~MW-43A~~	7-3-21	1330	G	GW	13	N		X			X	
~~MW-44A~~			G	GW		N		X			X	
MW-45A			G	GW		N		X	X			
MW-46A			G	GW		N		X	X			
MW-101			G	GW		N		X	X			
MW-11			G	GW		N		X			X	
MW-19R			G	GW		N		X	X			
MW-22			G	GW		N		X	X			
MW-22-FD			G	GW		N		X	X			
MW-35	7-3-24	1230	G	GW	5	N		X	X			Turbidity - 2.25 NTU
~~MW-18~~			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: Yes No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 7-3-24	Received by:	Company:	Date/Time: 1324 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: CGC	Company: Eurofins	Date/Time: ~~7-3-24~~ 7-3-24 1530

Form No CA-C-WI-002, Rev 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 7-3-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	**Analysis Turnaround Time**			For Lab Use Only:
(319)232-6531 Phone	CALENDAR DAYS WORKING DAYS			Walk-in Client
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	2 weeks			
Site: Winneshiek County Landfill	1 week			Job / SDG No
P O #	2 days			
	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sample Specific Notes
GU-1	7-3-24	0930	G	GW	5	N		X	X	Turbidity - 6.49 NTU
GU-2			G	GW		N		X	X	
SW-1			G	GW		N		X	X	
SW-2			G	GW		N		X	X	
SW-2-FD			G	GW		N		X	X	
SW-5			G	GW		N		X	X	
MH-1AA	7-3-24	1030	G	GW	5	N		X	X	
MH-4-2	7-3-24	1130	G	GW	5	N		X	X	
Equipment Blank #1 Shallow			G	GW		N		X	X	
Equipment Blank #2 Deep	7-3-24	1245	G	GW	5	N		X	X	Turbidity - 2.25 NTU
Trip Blank	7-3-24	0500	G	W	2				X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact. Yes No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by:	Company	Date/Time	Received by:	Company:	Date/Time
Ben Porter	Aecom	7-3-24			7/3/24 1530
Relinquished by:	Company	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company	Date/Time.	Received in Laboratory by	Company	Date/Time

Form No CA-C-WI-002, Rev 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 7-3-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	3 of 3 COCs
501 Sycamore St. Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	CALENDAR DAYS WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	2 weeks			
Site: Winneshiek County Landfill	1 week			Job / SDG No
P O #	2 days			
	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	All Appendix II Analytes	Sample Specific Notes
MW-31A			G	GW		N		X	X	X		
MW-33A			G	GW		N		X	X			
MW-34A	7-3-24	0845	G	GW	5	N		X	X			Turbidity - 5.88 NTU
MW-34A-FD	7-3-24	0845	G	GW	5	N		X	X			
MW-37A			G	GW		N		X	X			
MW-38A			G	GW		N		X	X			
MW-38A-FD			G	GW		N		X	X			
MW-39A			G	GW		N		X	X			
MW-40A			G	GW		N		X			X	
MW-41A			G	GW		N		X	X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact. Yes No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	7-3-24			7/3/24 1530
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No CA-C-WI-002, Rev 4.23, dated 4/16/2019

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-74074.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-285077-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 7/23/2024			Preservation Codes: -
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of Containers	Special Instructions/Note:
			Preservation Code:						G87
MW-43A (310-285077-1)	7/3/24	13:30 Central		Water			X		

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

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

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

Relinquished by: [signature]	Date/Time: 7/5/24 1523	Company	Received by: J. Marosko	Date/Time: 07/06/24 0920	Company [signature]
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 04/02/2024 7/23/2024

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :**
Barberton Facility

Client Eurofins Cedar Fall Site Name

Cooler Received on 07/19/24 Opened on 07/19/24

Cooler unpacked by: J MOROSKO

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used. Bubble Wrap Foam Plastic Bag None Other

COOLANT Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 22 (CF -0.1 °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 1.9 °C

2	Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes No
	-Were the seals on the outside of the cooler(s) signed & dated?	Yes No NA
	-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No
	-Were tamper/custody seals intact and uncompromised?	Yes No NA
3	Shippers' packing slip attached to the cooler(s)?	Yes No
4.	Did custody papers accompany the sample(s)?	Yes No
5	Were the custody papers relinquished & signed in the appropriate place?	Yes No
6.	Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No
7	Did all bottles arrive in good condition (Unbroken)?	Yes No
8	Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes No
9	For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?	
10	Were correct bottle(s) used for the test(s) indicated?	Yes No
11	Sufficient quantity received to perform indicated analyses?	Yes No
12.	Are these work share samples and all listed on the COC?	Yes No
	If yes, Questions 13-17 have been checked at the originating laboratory	
13	Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC442471
14	Were VOAs on the COC?	Yes No
15	Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA
16.	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes No
17	Was a LL Hg or Me Hg trip blank present?	Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired

Sample(s) were received in a broken container

Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s).

VOA Sample Preservation - Date/Time VOAs Frozen.



Part # 159469-494 MTW EXP 01/25

ORIGIN ID:ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE: 05JUL24
ACTWGT: 27.60 LB
CAD: 0070970/CAFE3000

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF: *S310-04781

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7708 5810 4965

XO CAKA

44203
OH-US CLE

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-74077.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State Program - Iowa		Job #: 310-285077-1
Address: 2425 New Holland Pike,	Due Date Requested: 7/23/2024			Preservation Codes: -
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP Default List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-43A (310-285077-1)	7/3/24	13:30 Central		Water			X	2	

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

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

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

Relinquished by: Matt Hal	Date/Time: 7/5/24 1547	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 7/6/24 0930	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R: 3.1 C: 2.8

Ver: 04/02/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-285077-1

Login Number: 285077

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Collins, Charlotte

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

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-285077-1

Login Number: 285077
List Number: 3
Creator: Santiago, Nathaniel

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 07/06/24 11:58 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 9/3/2024 4:08:46 PM

JOB DESCRIPTION

Winneshiek Groundwater Monitoring
2024 Summer Resample

JOB NUMBER

310-289067-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-289067-1 — Eurofins Cedar Falls

Job Narrative
310-289067-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 8/27/2024 4:30 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.9°C.

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-289067-1	MW-4B	Ground Water	08/27/24 13:55	08/27/24 16:30

Detection Summary

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-4B
Lab Sample ID: 310-289067-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	2.37				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-4B
Lab Sample ID: 310-289067-1
Date Collected: 08/27/24 13:55
Matrix: Ground Water
Date Received: 08/27/24 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		08/29/24 09:00	08/30/24 19:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.39		1.88	1.39	mg/L			08/28/24 14:52	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	2.37				NTU			08/27/24 13:55	1

Glossary

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-431695/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431999
Prep Batch: 431695

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		08/29/24 09:00	08/30/24 18:27	1

Lab Sample ID: LCS 310-431695/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431999
Prep Batch: 431695

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	100	113.1		ug/L		113	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-431687/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431687

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			08/28/24 14:52	1

Lab Sample ID: LCS 310-431687/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	81 - 116

Lab Sample ID: LCS 310-431687/25
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	81 - 116

Lab Sample ID: LCS 310-431687/26
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	81 - 116

Lab Sample ID: LCS 310-431687/27
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 431687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	105.0		mg/L		105	81 - 116

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-431687/28
Matrix: Water
Analysis Batch: 431687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Metals

Prep Batch: 431695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289067-1	MW-4B	Total/NA	Ground Water	3005A	
MB 310-431695/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-431695/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 431999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289067-1	MW-4B	Total/NA	Ground Water	6020B	431695
MB 310-431695/1-A	Method Blank	Total/NA	Water	6020B	431695
LCS 310-431695/2-A	Lab Control Sample	Total/NA	Water	6020B	431695

General Chemistry

Analysis Batch: 431687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289067-1	MW-4B	Total/NA	Ground Water	I-3765-85	
MB 310-431687/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-431687/2	Lab Control Sample	Total/NA	Water	I-3765-85	
LCS 310-431687/25	Lab Control Sample	Total/NA	Water	I-3765-85	
LCS 310-431687/26	Lab Control Sample	Total/NA	Water	I-3765-85	
LCS 310-431687/27	Lab Control Sample	Total/NA	Water	I-3765-85	
LCS 310-431687/28	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 431953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289067-1	MW-4B	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-4B
Lab Sample ID: 310-289067-1

Date Collected: 08/27/24 13:55
Matrix: Ground Water

Date Received: 08/27/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			431695	QTZ5	EET CF	08/29/24 09:00
Total/NA	Analysis	6020B		1	431999	NFT2	EET CF	08/30/24 19:50
Total/NA	Analysis	I-3765-85		1	431687	WZC8	EET CF	08/28/24 14:52
Total/NA	Analysis	Field Sampling		1	431953	BJ0R	EET CF	08/27/24 13:55

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-289067-1
Project/Site: Winneshiek Groundwater Monitoring

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-289067 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project: Winneshiek GWM

Receipt Information

Date/Time Received: DATE 8/27/24 TIME 1630 Received By. [illegible]

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	1LT NT	
Uncorrected Temp (°C):	8.9	
Corrected Temp (°C):	8.9	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☑ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☑ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 8-27-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Acetone	Arsenic	Silver	Thallium	Zinc	Appendix I VOCs	Sample Specific Notes
MW-33A			G	GW		N		X	X	X					
MW-43A			G	GW		N		X			X				
MW-46A			G	GW		N		X			X				
MW-4B	8-27-24	1355	G	GW	2	N		X			X				Turbidity - 2.37 NTU
MW-35			G	GW		N		X				X			
MW-39A			G	GW		N		X					X		
Trip Blank (for work order containing MW-33A only)														X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp. (°C) Obs'd _____ Corr'd _____ Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	8-27-24			8/27/24 1630
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

9/3/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-289067-1

Login Number: 289067

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Bunker, Xavier M

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

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 9/17/2024 4:15:16 PM

JOB DESCRIPTION

Winneshiek Groundwater Monitoring

JOB NUMBER

310-289429-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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9/17/2024 4:15:16 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-289429-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 8/30/2024 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-289429-6).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-432301 recovered above the upper control limit for Bromoform (22.8%D). The CCV associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-432301/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-432306 recovered above the upper control limit for Bromoform (20.6%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-432306/3).

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-289429-1	MW-33A	Ground Water	08/29/24 13:20	08/30/24 11:00
310-289429-2	MW-43A	Ground Water	08/29/24 11:15	08/30/24 11:00
310-289429-3	MW-39A	Ground Water	08/29/24 10:30	08/30/24 11:00
310-289429-4	MW-18	Ground Water	08/29/24 14:30	08/30/24 11:00
310-289429-6	Trip Blank	Water	08/29/24 06:00	08/30/24 11:00

Detection Summary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-33A — Lab Sample ID: 310-289429-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	51.8		2.00	0.530	ug/L	1		6020B	Total/NA
Total Suspended Solids	52.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	6.21				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-43A — Lab Sample ID: 310-289429-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	28.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Field Turbidity	11.63				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-39A — Lab Sample ID: 310-289429-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	34.6		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	66.58				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-18 — Lab Sample ID: 310-289429-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	69.2		2.00	0.660	ug/L	1		6020B	Total/NA
Total Suspended Solids	5.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.65				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-289429-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-33A
Lab Sample ID: 310-289429-1
Date Collected: 08/29/24 13:20
Matrix: Ground Water
Date Received: 08/30/24 11:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			09/06/24 07:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*96*		*73 - 130*		*09/06/24 07:30*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/06/24 07:30*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*09/06/24 07:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**51.8**		2.00	0.530	ug/L		09/04/24 09:00	09/05/24 18:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**52.0**		7.50	5.55	mg/L			09/03/24 11:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.21**				NTU			08/29/24 13:20	1

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-43A
Lab Sample ID: 310-289429-2
Date Collected: 08/29/24 11:15
Matrix: Ground Water
Date Received: 08/30/24 11:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		09/04/24 09:00	09/05/24 18:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	28.5		7.50	5.55	mg/L			09/03/24 11:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	11.63				NTU			08/29/24 11:15	1

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-39A
Lab Sample ID: 310-289429-3
Date Collected: 08/29/24 10:30
Matrix: Ground Water
Date Received: 08/30/24 11:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		09/04/24 09:00	09/05/24 18:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	34.6		1.88	1.39	mg/L			09/03/24 11:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	66.58				NTU			08/29/24 10:30	1

Client: AECOM
Project/Site: Winneshiek Groundwater Monitoring

Job ID: 310-289429-1

Client Sample ID: MW-18
Date Collected: 08/29/24 14:30
Date Received: 08/30/24 11:00

Lab Sample ID: 310-289429-4
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/06/24 00:01	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/06/24 00:01	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/06/24 00:01	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/06/24 00:01	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/06/24 00:01	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/06/24 00:01	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/06/24 00:01	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/06/24 00:01	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/06/24 00:01	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/06/24 00:01	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/06/24 00:01	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/06/24 00:01	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/06/24 00:01	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/06/24 00:01	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/06/24 00:01	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/06/24 00:01	1
Acetone	<3.10		10.0	3.10	ug/L			09/06/24 00:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/06/24 00:01	1
Benzene	<0.220		0.500	0.220	ug/L			09/06/24 00:01	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/06/24 00:01	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/06/24 00:01	1
Bromoform	<0.780		5.00	0.780	ug/L			09/06/24 00:01	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/06/24 00:01	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/06/24 00:01	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/06/24 00:01	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/06/24 00:01	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/06/24 00:01	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/06/24 00:01	1
Chloroform	<1.30		3.00	1.30	ug/L			09/06/24 00:01	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/06/24 00:01	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/06/24 00:01	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/06/24 00:01	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/06/24 00:01	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/06/24 00:01	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/06/24 00:01	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/06/24 00:01	1
Styrene	<0.370		1.00	0.370	ug/L			09/06/24 00:01	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/06/24 00:01	1
Toluene	<0.430		1.00	0.430	ug/L			09/06/24 00:01	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/06/24 00:01	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/06/24 00:01	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/06/24 00:01	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/06/24 00:01	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/06/24 00:01	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/06/24 00:01	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/06/24 00:01	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/06/24 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*107*		*73 - 130*		*09/06/24 00:01*	*1*

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-18
Lab Sample ID: 310-289429-4
Date Collected: 08/29/24 14:30
Matrix: Ground Water
Date Received: 08/30/24 11:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/06/24 00:01*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/06/24 00:01*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/04/24 09:00	09/10/24 18:33	1
Arsenic	<0.530		2.00	0.530	ug/L		09/04/24 09:00	09/05/24 18:41	1
Barium	**69.2**		2.00	0.660	ug/L		09/04/24 09:00	09/05/24 18:41	1
Beryllium	<0.330		1.00	0.330	ug/L		09/04/24 09:00	09/05/24 18:41	1
Cadmium	<0.100		0.200	0.100	ug/L		09/04/24 09:00	09/05/24 18:41	1
Chromium	<1.20		5.00	1.20	ug/L		09/04/24 09:00	09/05/24 18:41	1
Cobalt	<0.170		0.500	0.170	ug/L		09/04/24 09:00	09/05/24 18:41	1
Copper	<1.80		5.00	1.80	ug/L		09/04/24 09:00	09/05/24 18:41	1
Lead	<0.260		0.500	0.260	ug/L		09/04/24 09:00	09/05/24 18:41	1
Nickel	<2.10		5.00	2.10	ug/L		09/04/24 09:00	09/16/24 19:32	1
Selenium	<1.40		5.00	1.40	ug/L		09/04/24 09:00	09/05/24 18:41	1
Silver	<0.500		1.00	0.500	ug/L		09/04/24 09:00	09/05/24 18:41	1
Thallium	<0.570		1.00	0.570	ug/L		09/04/24 09:00	09/05/24 18:41	1
Vanadium	<1.10		5.00	1.10	ug/L		09/04/24 09:00	09/05/24 18:41	1
Zinc	<9.70		20.0	9.70	ug/L		09/04/24 09:00	09/05/24 18:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.88**		1.88	1.39	mg/L			09/03/24 11:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.65**				NTU			08/29/24 14:30	1

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: Trip Blank
Lab Sample ID: 310-289429-6
Date Collected: 08/29/24 06:00
Matrix: Water
Date Received: 08/30/24 11:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/05/24 12:01	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/05/24 12:01	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/05/24 12:01	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/05/24 12:01	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/05/24 12:01	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/05/24 12:01	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/05/24 12:01	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/05/24 12:01	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/05/24 12:01	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/05/24 12:01	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/05/24 12:01	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/05/24 12:01	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/05/24 12:01	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/05/24 12:01	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/05/24 12:01	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/05/24 12:01	1
Acetone	<3.10		10.0	3.10	ug/L			09/05/24 12:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/05/24 12:01	1
Benzene	<0.220		0.500	0.220	ug/L			09/05/24 12:01	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/05/24 12:01	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/05/24 12:01	1
Bromoform	<0.780		5.00	0.780	ug/L			09/05/24 12:01	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/05/24 12:01	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/05/24 12:01	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/05/24 12:01	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/05/24 12:01	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/05/24 12:01	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/05/24 12:01	1
Chloroform	<1.30		3.00	1.30	ug/L			09/05/24 12:01	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/05/24 12:01	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/05/24 12:01	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/05/24 12:01	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/05/24 12:01	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/05/24 12:01	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/05/24 12:01	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/05/24 12:01	1
Styrene	<0.370		1.00	0.370	ug/L			09/05/24 12:01	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/05/24 12:01	1
Toluene	<0.430		1.00	0.430	ug/L			09/05/24 12:01	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/05/24 12:01	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/05/24 12:01	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/05/24 12:01	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/05/24 12:01	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/05/24 12:01	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/05/24 12:01	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/05/24 12:01	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/05/24 12:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*09/05/24 12:01*	*1*

Client Sample ID: Trip Blank
Lab Sample ID: 310-289429-6
Date Collected: 08/29/24 06:00
Matrix: Water
Date Received: 08/30/24 11:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/05/24 12:01*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/05/24 12:01*	*1*

Definitions/Glossary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Qualifiers

Metals

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-289429-1	MW-33A	96	98	95
310-289429-4	MW-18	107	99	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-289429-6	Trip Blank	103	98	99
LCS 310-432301/6	Lab Control Sample	104	96	102
LCS 310-432301/7	Lab Control Sample	107	98	102
LCS 310-432306/6	Lab Control Sample	103	99	101
LCS 310-432306/7	Lab Control Sample	105	100	101
LCS 310-432361/6	Lab Control Sample	94	99	99
MB 310-432301/5	Method Blank	105	99	101
MB 310-432306/5	Method Blank	105	98	105
MB 310-432361/5	Method Blank	102	97	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-432301/5
Matrix: Water
Analysis Batch: 432301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/05/24 10:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/05/24 10:54	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/05/24 10:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/05/24 10:54	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/05/24 10:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/05/24 10:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/05/24 10:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/05/24 10:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/05/24 10:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/05/24 10:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/05/24 10:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/05/24 10:54	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/05/24 10:54	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/05/24 10:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/05/24 10:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/05/24 10:54	1
Acetone	<3.10		10.0	3.10	ug/L			09/05/24 10:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/05/24 10:54	1
Benzene	<0.220		0.500	0.220	ug/L			09/05/24 10:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/05/24 10:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/05/24 10:54	1
Bromoform	<0.780		5.00	0.780	ug/L			09/05/24 10:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/05/24 10:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/05/24 10:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/05/24 10:54	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/05/24 10:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/05/24 10:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/05/24 10:54	1
Chloroform	<1.30		3.00	1.30	ug/L			09/05/24 10:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/05/24 10:54	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/05/24 10:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/05/24 10:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/05/24 10:54	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/05/24 10:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/05/24 10:54	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/05/24 10:54	1
Styrene	<0.370		1.00	0.370	ug/L			09/05/24 10:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/05/24 10:54	1
Toluene	<0.430		1.00	0.430	ug/L			09/05/24 10:54	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/05/24 10:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/05/24 10:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/05/24 10:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/05/24 10:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/05/24 10:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/05/24 10:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/05/24 10:54	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/05/24 10:54	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-432301/5
Matrix: Water
Analysis Batch: 432301

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*09/05/24 10:54*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/05/24 10:54*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/05/24 10:54*	*1*

Lab Sample ID: LCS 310-432301/6
Matrix: Water
Analysis Batch: 432301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.33		ug/L		102	71 - 120
1,1,1-Trichloroethane	20.0	21.75		ug/L		109	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.15		ug/L		96	68 - 124
1,1,2-Trichloroethane	20.0	19.53		ug/L		98	73 - 123
1,1-Dichloroethane	20.0	19.76		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	20.45		ug/L		102	63 - 132
1,2,3-Trichloropropane	20.0	20.10		ug/L		101	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	18.16		ug/L		91	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.46		ug/L		97	75 - 125
1,2-Dichlorobenzene	20.0	19.66		ug/L		98	74 - 120
1,2-Dichloroethane	20.0	19.77		ug/L		99	71 - 125
1,2-Dichloropropane	20.0	19.57		ug/L		98	73 - 124
1,4-Dichlorobenzene	20.0	19.81		ug/L		99	72 - 120
2-Butanone (MEK)	40.0	34.82		ug/L		87	50 - 150
2-Hexanone	40.0	38.22		ug/L		96	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	35.67		ug/L		89	60 - 139
Acetone	40.0	36.95		ug/L		92	50 - 150
Acrylonitrile	200	185.6		ug/L		93	50 - 150
Benzene	20.0	19.41		ug/L		97	72 - 124
Bromochloromethane	20.0	20.72		ug/L		104	73 - 130
Bromodichloromethane	20.0	19.91		ug/L		100	74 - 122
Bromoform	20.0	21.31		ug/L		107	61 - 122
Carbon disulfide	20.0	19.19		ug/L		96	59 - 135
Carbon tetrachloride	20.0	21.24		ug/L		106	67 - 132
Chlorobenzene	20.0	19.35		ug/L		97	76 - 120
Chlorodibromomethane	20.0	20.70		ug/L		103	71 - 121
Chloroform	20.0	20.41		ug/L		102	72 - 125
cis-1,2-Dichloroethene	20.0	19.93		ug/L		100	74 - 123
cis-1,3-Dichloropropene	20.0	19.87		ug/L		99	71 - 125
Dibromomethane	20.0	20.15		ug/L		101	74 - 125
Ethylbenzene	20.0	19.12		ug/L		96	74 - 122
Iodomethane	20.0	20.33		ug/L		102	10 - 150
Methylene Chloride	20.0	20.03		ug/L		100	50 - 150
Styrene	20.0	20.11		ug/L		101	74 - 121
Tetrachloroethene	20.0	20.89		ug/L		104	71 - 130
Toluene	20.0	19.83		ug/L		99	74 - 123
trans-1,2-Dichloroethene	20.0	20.67		ug/L		103	70 - 126
trans-1,3-Dichloropropene	20.0	19.57		ug/L		98	69 - 123
trans-1,4-Dichloro-2-butene	20.0	17.31		ug/L		87	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-432301/6
Matrix: Water
Analysis Batch: 432301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	21.16		ug/L		106	72 - 126
Vinyl acetate	40.0	38.27		ug/L		96	50 - 150
Xylenes, Total	40.0	38.34		ug/L		96	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*104*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-432301/7
Matrix: Water
Analysis Batch: 432301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	22.70		ug/L		114	23 - 150
Chloroethane	20.0	20.97		ug/L		105	54 - 136
Chloromethane	20.0	21.22		ug/L		106	38 - 150
Trichlorofluoromethane	20.0	23.84		ug/L		119	54 - 149
Vinyl chloride	20.0	21.54		ug/L		108	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*107*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 310-432306/5
Matrix: Water
Analysis Batch: 432306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/05/24 21:46	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/05/24 21:46	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/05/24 21:46	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/05/24 21:46	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/05/24 21:46	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/05/24 21:46	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/05/24 21:46	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/05/24 21:46	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/05/24 21:46	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/05/24 21:46	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/05/24 21:46	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/05/24 21:46	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/05/24 21:46	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/05/24 21:46	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/05/24 21:46	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/05/24 21:46	1
Acetone	<3.10		10.0	3.10	ug/L			09/05/24 21:46	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/05/24 21:46	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-432306/5
Matrix: Water
Analysis Batch: 432306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.220		0.500	0.220	ug/L			09/05/24 21:46	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/05/24 21:46	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/05/24 21:46	1
Bromoform	<0.780		5.00	0.780	ug/L			09/05/24 21:46	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/05/24 21:46	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/05/24 21:46	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/05/24 21:46	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/05/24 21:46	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/05/24 21:46	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/05/24 21:46	1
Chloroform	<1.30		3.00	1.30	ug/L			09/05/24 21:46	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/05/24 21:46	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/05/24 21:46	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/05/24 21:46	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/05/24 21:46	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/05/24 21:46	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/05/24 21:46	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/05/24 21:46	1
Styrene	<0.370		1.00	0.370	ug/L			09/05/24 21:46	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/05/24 21:46	1
Toluene	<0.430		1.00	0.430	ug/L			09/05/24 21:46	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/05/24 21:46	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/05/24 21:46	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/05/24 21:46	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/05/24 21:46	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/05/24 21:46	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/05/24 21:46	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/05/24 21:46	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/05/24 21:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*09/05/24 21:46*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/05/24 21:46*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*09/05/24 21:46*	*1*

Lab Sample ID: LCS 310-432306/6
Matrix: Water
Analysis Batch: 432306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.98		ug/L		100	71 - 120
1,1,1-Trichloroethane	20.0	21.75		ug/L		109	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.08		ug/L		95	68 - 124
1,1,2-Trichloroethane	20.0	19.98		ug/L		100	73 - 123
1,1-Dichloroethane	20.0	19.61		ug/L		98	70 - 127
1,1-Dichloroethene	20.0	19.58		ug/L		98	63 - 132
1,2,3-Trichloropropane	20.0	19.83		ug/L		99	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	17.92		ug/L		90	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-432306/6
Matrix: Water
Analysis Batch: 432306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	20.0	20.15		ug/L		101	75 - 125
1,2-Dichlorobenzene	20.0	18.76		ug/L		94	74 - 120
1,2-Dichloroethane	20.0	19.95		ug/L		100	71 - 125
1,2-Dichloropropane	20.0	19.48		ug/L		97	73 - 124
1,4-Dichlorobenzene	20.0	18.07		ug/L		90	72 - 120
2-Butanone (MEK)	40.0	37.55		ug/L		94	50 - 150
2-Hexanone	40.0	40.79		ug/L		102	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	38.01		ug/L		95	60 - 139
Acetone	40.0	36.19		ug/L		90	50 - 150
Acrylonitrile	200	192.0		ug/L		96	50 - 150
Benzene	20.0	19.33		ug/L		97	72 - 124
Bromochloromethane	20.0	21.58		ug/L		108	73 - 130
Bromodichloromethane	20.0	19.76		ug/L		99	74 - 122
Bromoform	20.0	21.34		ug/L		107	61 - 122
Carbon disulfide	20.0	18.29		ug/L		91	59 - 135
Carbon tetrachloride	20.0	20.43		ug/L		102	67 - 132
Chlorobenzene	20.0	18.66		ug/L		93	76 - 120
Chlorodibromomethane	20.0	20.15		ug/L		101	71 - 121
Chloroform	20.0	19.56		ug/L		98	72 - 125
cis-1,2-Dichloroethene	20.0	19.41		ug/L		97	74 - 123
cis-1,3-Dichloropropene	20.0	20.19		ug/L		101	71 - 125
Dibromomethane	20.0	20.95		ug/L		105	74 - 125
Ethylbenzene	20.0	18.63		ug/L		93	74 - 122
Iodomethane	20.0	20.04		ug/L		100	10 - 150
Methylene Chloride	20.0	19.98		ug/L		100	50 - 150
Styrene	20.0	19.36		ug/L		97	74 - 121
Tetrachloroethene	20.0	20.46		ug/L		102	71 - 130
Toluene	20.0	19.25		ug/L		96	74 - 123
trans-1,2-Dichloroethene	20.0	18.75		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	19.66		ug/L		98	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.06		ug/L		80	50 - 150
Trichloroethene	20.0	20.81		ug/L		104	72 - 126
Vinyl acetate	40.0	38.45		ug/L		96	50 - 150
Xylenes, Total	40.0	36.64		ug/L		92	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-432306/7
Matrix: Water
Analysis Batch: 432306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	22.45		ug/L		112	23 - 150
Chloroethane	20.0	18.82		ug/L		94	54 - 136
Chloromethane	20.0	19.61		ug/L		98	38 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-432306/7
Matrix: Water
Analysis Batch: 432306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	20.44		ug/L		102	54 - 149
Vinyl chloride	20.0	18.99		ug/L		95	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 310-432361/5
Matrix: Water
Analysis Batch: 432361

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			09/06/24 03:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*09/06/24 03:07*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/06/24 03:07*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/06/24 03:07*	*1*

Lab Sample ID: LCS 310-432361/6
Matrix: Water
Analysis Batch: 432361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	42.81		ug/L		107	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-432117/1-A
Matrix: Water
Analysis Batch: 432421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432117

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.530		2.00	0.530	ug/L		09/04/24 09:00	09/05/24 17:06	1
Barium	<0.660		2.00	0.660	ug/L		09/04/24 09:00	09/05/24 17:06	1
Beryllium	<0.330		1.00	0.330	ug/L		09/04/24 09:00	09/05/24 17:06	1
Cadmium	<0.100		0.200	0.100	ug/L		09/04/24 09:00	09/05/24 17:06	1
Chromium	<1.20		5.00	1.20	ug/L		09/04/24 09:00	09/05/24 17:06	1
Cobalt	<0.170		0.500	0.170	ug/L		09/04/24 09:00	09/05/24 17:06	1
Copper	<1.80		5.00	1.80	ug/L		09/04/24 09:00	09/05/24 17:06	1
Lead	<0.260		0.500	0.260	ug/L		09/04/24 09:00	09/05/24 17:06	1
Selenium	<1.40		5.00	1.40	ug/L		09/04/24 09:00	09/05/24 17:06	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-432117/1-A
Matrix: Water
Analysis Batch: 432421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432117

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		09/04/24 09:00	09/05/24 17:06	1
Thallium	<0.570		1.00	0.570	ug/L		09/04/24 09:00	09/05/24 17:06	1
Vanadium	<1.10		5.00	1.10	ug/L		09/04/24 09:00	09/05/24 17:06	1
Zinc	<9.70		20.0	9.70	ug/L		09/04/24 09:00	09/05/24 17:06	1

Lab Sample ID: MB 310-432117/1-A
Matrix: Water
Analysis Batch: 433354

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432117

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		09/04/24 09:00	09/16/24 18:27	1

Lab Sample ID: LCS 310-432117/2-A
Matrix: Water
Analysis Batch: 432421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	202.9		ug/L		101	80 - 120
Barium	100	97.95		ug/L		98	80 - 120
Beryllium	100	95.23		ug/L		95	80 - 120
Cadmium	100	96.83		ug/L		97	80 - 120
Chromium	100	97.65		ug/L		98	80 - 120
Cobalt	100	99.89		ug/L		100	80 - 120
Copper	200	197.4		ug/L		99	80 - 120
Lead	200	202.3		ug/L		101	80 - 120
Selenium	400	373.1		ug/L		93	80 - 120
Silver	100	109.2		ug/L		109	80 - 120
Thallium	100	98.64		ug/L		99	80 - 120
Vanadium	100	93.20		ug/L		93	80 - 120
Zinc	200	187.2		ug/L		94	80 - 120

Lab Sample ID: LCS 310-432117/2-A
Matrix: Water
Analysis Batch: 433354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	198.2		ug/L		99	80 - 120

Lab Sample ID: 310-289429-3 DU
Matrix: Ground Water
Analysis Batch: 432421

Client Sample ID: MW-39A
Prep Type: Total/NA
Prep Batch: 432117

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.530		<0.530		ug/L		NC	20
Barium	135		132.8		ug/L		2	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Chromium	<1.20		1.582	J	ug/L		NC	20
Cobalt	0.260	J	0.2670	J	ug/L		3	20
Copper	<1.80		<1.80		ug/L		NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-289429-3 DU
Matrix: Ground Water
Analysis Batch: 432421

Client Sample ID: MW-39A
Prep Type: Total/NA
Prep Batch: 432117

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	<0.260		<0.260		ug/L		NC	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	<1.10		<1.10		ug/L		NC	20
Zinc	<9.70		<9.70		ug/L		NC	20

Lab Sample ID: 310-289429-3 DU
Matrix: Ground Water
Analysis Batch: 433354

Client Sample ID: MW-39A
Prep Type: Total/NA
Prep Batch: 432117

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nickel	<2.10		<2.10		ug/L		NC	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-432059/1
Matrix: Water
Analysis Batch: 432059

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			09/03/24 11:34	1

Lab Sample ID: LCS 310-432059/2
Matrix: Water
Analysis Batch: 432059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	100.0		mg/L		100	81 - 116

GC/MS VOA

Analysis Batch: 432301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-6	Trip Blank	Total/NA	Water	8260D	
MB 310-432301/5	Method Blank	Total/NA	Water	8260D	
LCS 310-432301/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-432301/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 432306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-4	MW-18	Total/NA	Ground Water	8260D	
MB 310-432306/5	Method Blank	Total/NA	Water	8260D	
LCS 310-432306/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-432306/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 432361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-1	MW-33A	Total/NA	Ground Water	8260D	
MB 310-432361/5	Method Blank	Total/NA	Water	8260D	
LCS 310-432361/6	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 432117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-1	MW-33A	Total/NA	Ground Water	3005A	
310-289429-2	MW-43A	Total/NA	Ground Water	3005A	
310-289429-3	MW-39A	Total/NA	Ground Water	3005A	
310-289429-4	MW-18	Total/NA	Ground Water	3005A	
MB 310-432117/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-432117/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-289429-3 DU	MW-39A	Total/NA	Ground Water	3005A	

Analysis Batch: 432421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-1	MW-33A	Total/NA	Ground Water	6020B	432117
310-289429-2	MW-43A	Total/NA	Ground Water	6020B	432117
310-289429-3	MW-39A	Total/NA	Ground Water	6020B	432117
310-289429-4	MW-18	Total/NA	Ground Water	6020B	432117
MB 310-432117/1-A	Method Blank	Total/NA	Water	6020B	432117
LCS 310-432117/2-A	Lab Control Sample	Total/NA	Water	6020B	432117
310-289429-3 DU	MW-39A	Total/NA	Ground Water	6020B	432117

Analysis Batch: 432787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-4	MW-18	Total/NA	Ground Water	6020B	432117

Analysis Batch: 433354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-4	MW-18	Total/NA	Ground Water	6020B	432117
MB 310-432117/1-A	Method Blank	Total/NA	Water	6020B	432117
LCS 310-432117/2-A	Lab Control Sample	Total/NA	Water	6020B	432117
310-289429-3 DU	MW-39A	Total/NA	Ground Water	6020B	432117

QC Association Summary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

General Chemistry

Analysis Batch: 432059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-1	MW-33A	Total/NA	Ground Water	I-3765-85	
310-289429-2	MW-43A	Total/NA	Ground Water	I-3765-85	
310-289429-3	MW-39A	Total/NA	Ground Water	I-3765-85	
310-289429-4	MW-18	Total/NA	Ground Water	I-3765-85	
MB 310-432059/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-432059/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Field Service / Mobile Lab

Analysis Batch: 432188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289429-1	MW-33A	Total/NA	Ground Water	Field Sampling	
310-289429-2	MW-43A	Total/NA	Ground Water	Field Sampling	
310-289429-3	MW-39A	Total/NA	Ground Water	Field Sampling	
310-289429-4	MW-18	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-33A
Lab Sample ID: 310-289429-1
Date Collected: 08/29/24 13:20
Matrix: Ground Water
Date Received: 08/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432361	WSE8	EET CF	09/06/24 07:30
Total/NA	Prep	3005A			432117	QTZ5	EET CF	09/04/24 09:00
Total/NA	Analysis	6020B		1	432421	NFT2	EET CF	09/05/24 18:26
Total/NA	Analysis	I-3765-85		1	432059	HE7K	EET CF	09/03/24 11:34
Total/NA	Analysis	Field Sampling		1	432188	BJ0R	EET CF	08/29/24 13:20

Client Sample ID: MW-43A
Lab Sample ID: 310-289429-2
Date Collected: 08/29/24 11:15
Matrix: Ground Water
Date Received: 08/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			432117	QTZ5	EET CF	09/04/24 09:00
Total/NA	Analysis	6020B		1	432421	NFT2	EET CF	09/05/24 18:30
Total/NA	Analysis	I-3765-85		1	432059	HE7K	EET CF	09/03/24 11:34
Total/NA	Analysis	Field Sampling		1	432188	BJ0R	EET CF	08/29/24 11:15

Client Sample ID: MW-39A
Lab Sample ID: 310-289429-3
Date Collected: 08/29/24 10:30
Matrix: Ground Water
Date Received: 08/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			432117	QTZ5	EET CF	09/04/24 09:00
Total/NA	Analysis	6020B		1	432421	NFT2	EET CF	09/05/24 18:33
Total/NA	Analysis	I-3765-85		1	432059	HE7K	EET CF	09/03/24 11:34
Total/NA	Analysis	Field Sampling		1	432188	BJ0R	EET CF	08/29/24 10:30

Client Sample ID: MW-18
Lab Sample ID: 310-289429-4
Date Collected: 08/29/24 14:30
Matrix: Ground Water
Date Received: 08/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432306	WSE8	EET CF	09/06/24 00:01
Total/NA	Prep	3005A			432117	QTZ5	EET CF	09/04/24 09:00
Total/NA	Analysis	6020B		1	432421	NFT2	EET CF	09/05/24 18:41
Total/NA	Prep	3005A			432117	QTZ5	EET CF	09/04/24 09:00
Total/NA	Analysis	6020B		1	433354	NFT2	EET CF	09/16/24 19:32
Total/NA	Prep	3005A			432117	QTZ5	EET CF	09/04/24 09:00
Total/NA	Analysis	6020B		1	432787	NFT2	EET CF	09/10/24 18:33
Total/NA	Analysis	I-3765-85		1	432059	HE7K	EET CF	09/03/24 11:34
Total/NA	Analysis	Field Sampling		1	432188	BJ0R	EET CF	08/29/24 14:30

Lab Chronicle

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: Trip Blank
Lab Sample ID: 310-289429-6
Date Collected: 08/29/24 06:00
Matrix: Water
Date Received: 08/30/24 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432301	WSE8	EET CF	09/05/24 12:01

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-289429-1
Project/Site: Winneshiek Groundwater Monitoring

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-289429 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA | Project: Winneshiek Co LF

Receipt Information

Date/Time Received: DATE 8/30/24 TIME 1100 | Received By: JD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.6 | Corrected Temp (°C): 1.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 8-30-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Acetone	Arsenic	Silver	Thallium	Zinc	Appendix I VOCs / Metals	Sample Specific Notes
MW-33A	8-29-24	1320	G	GW	5	N		X	X	X					Turbidity – 6.21 NTU
MW-43A	8-29-24	1115	G	GW	2	N		X			X				Turbidity – 11.63 NTU
MW-46A			G	GW		N		X			X				
MW-4B			G	GW		N		X			X				
MW-35			G	GW		N		X				X			
MW-39A	8-29-24	1030	G	GW	2	N		X					X		Turbidity – 66.58 NTU
Trip Blank (for work order containing MW-33A only)														X	
MW-18	8-29-24	1430	G	GW	5	N		X						X	Turbidity – 2.65 NTU
MW-1	8-29-24	1200	G	GW	5	N		X						X	Turbidity – 1.14 NTU
Trip Blank	8-29-24	0600	G	W	2	N								X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ Therm ID No.____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	8-30-24			8/30/24 1100
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Zachary Bindert

From: Henning, Russ <Russ.Henning@aecom.com>
Sent: Sunday, September 1, 2024 10:48 AM
To: Zachary Bindert; Porter, Ben; Oelkers, Chris; Chumbley, Craig; Kilburg, Nate
Subject: RE: 310-289429 Winneshiek Groundwater Monitoring Sample Confirmation files from Eurofins North Central

Importance: High

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Zach,

Please note, we do not need to analyze samples for MW-1. I sent a corrected COC on 8/14 to correct an error. The bottles were left in cooler and I didn't communicate it strong enough that we did not need MW-1.

Kind regards,

Russ

Russ Henning PG (KY, MO, WI, WY)

Geologist V, AECOM, Environment
M +1.920.819.1902
russ.henning@aecom.com

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aecom.com

Delivering a better world
LinkedIn | Twitter | Facebook | Instagram



From: Zach Bindert <TALS@reports.et.eurofinsus.com>
Sent: Friday, August 30, 2024 3:46 PM
To: Porter, Ben <Ben.Porter@aecom.com>; Oelkers, Chris <Christopher.Oelkers@aecom.com>; Chumbley, Craig <CRAIG.CHUMBLEY@aecom.com>; Kilburg, Nate <nate.kilburg@aecom.com>; Henning, Russ <Russ.Henning@aecom.com>
Subject: 310-289429 Winneshiek Groundwater Monitoring Sample Confirmation files from Eurofins North Central

Hello,

Attached, please find the Sample Confirmation files for job 310-289429; Winneshiek Groundwater Monitoring

Please review the attachments for accuracy and notify your Project Manager of any discrepancies as quickly as possible.

Any discrepancies not communicated in a timely fashion could result in missed holding times, TAT delays and may potentially incur additional charges.

Please feel free to contact me if you have any questions.

Thank you.

Zach T Bindert
Project Manager

Eurofins Cedar Falls
Phone: 319-595-2016
Mobile: 319-340-0514

E-mail: Zach.Bindert@et.eurofinsus.com
www.eurofinsus.com/env



Reference: [310-737371]
Attachments: 3

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-289429-1

Login Number: 289429

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Collins, Charlotte

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 9/18/2024 12:55:48 PM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Summer Resample

JOB NUMBER

310-289921-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
9/18/2024 12:55:48 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-289921-1 — Eurofins Cedar Falls

Job Narrative
310-289921-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/6/2024 11:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

GC/MS VOA
Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-289921-5).

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-289921-1	MW-45A	Ground Water	09/05/24 13:00	09/06/24 11:15
310-289921-2	MW-46A	Ground Water	09/05/24 11:00	09/06/24 11:15
310-289921-3	MW-45A-FD	Groundwater	09/05/24 00:00	09/06/24 11:15
310-289921-4	Equipment Blank #1 Shallow	Ground Water	09/05/24 13:30	09/06/24 11:15
310-289921-5	Trip Blank	Water	09/05/24 06:00	09/06/24 11:15
310-289921-6	MW-35	Ground Water	09/05/24 10:45	09/06/24 11:15

Detection Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-45A — Lab Sample ID: 310-289921-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	118		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.194	J	0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	0.389	J	0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.265	J	0.500	0.260	ug/L	1		6020B	Total/NA
Total Suspended Solids	2.63		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.16				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-46A — Lab Sample ID: 310-289921-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.770	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	236		2.00	0.660	ug/L	1		6020B	Total/NA
Cobalt	0.241	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	1.99	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.386	J	0.500	0.260	ug/L	1		6020B	Total/NA
Nickel	26.6		5.00	2.10	ug/L	1		6020B	Total/NA
Vanadium	1.17	J	5.00	1.10	ug/L	1		6020B	Total/NA
Total Suspended Solids	26.3		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	68.05				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-45A-FD — Lab Sample ID: 310-289921-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	120		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.213		0.200	0.100	ug/L	1		6020B	Total/NA
Cobalt	0.389	J	0.500	0.170	ug/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	2.16				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank #1 Shallow — Lab Sample ID: 310-289921-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	2.68		1.00	0.390	ug/L	1		8260D	Total/NA
Chlorodibromomethane	2.52	J	5.00	0.750	ug/L	1		8260D	Total/NA
Chloroform	1.88	J	3.00	1.30	ug/L	1		8260D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-289921-5

No Detections.

Client Sample ID: MW-35 — Lab Sample ID: 310-289921-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Field Turbidity	3.58				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-45A
Date Collected: 09/05/24 13:00
Date Received: 09/06/24 11:15

Lab Sample ID: 310-289921-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/10/24 03:25	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/10/24 03:25	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/10/24 03:25	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/10/24 03:25	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/10/24 03:25	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/10/24 03:25	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/10/24 03:25	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/10/24 03:25	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/10/24 03:25	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/10/24 03:25	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/10/24 03:25	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/10/24 03:25	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/10/24 03:25	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/10/24 03:25	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/10/24 03:25	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/10/24 03:25	1
Acetone	<3.10		10.0	3.10	ug/L			09/10/24 03:25	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/10/24 03:25	1
Benzene	<0.220		0.500	0.220	ug/L			09/10/24 03:25	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/10/24 03:25	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/10/24 03:25	1
Bromoform	<0.780		5.00	0.780	ug/L			09/10/24 03:25	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/10/24 03:25	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/10/24 03:25	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/10/24 03:25	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/10/24 03:25	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/10/24 03:25	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/10/24 03:25	1
Chloroform	<1.30		3.00	1.30	ug/L			09/10/24 03:25	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/10/24 03:25	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/10/24 03:25	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/10/24 03:25	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/10/24 03:25	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/10/24 03:25	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/10/24 03:25	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/10/24 03:25	1
Styrene	<0.370		1.00	0.370	ug/L			09/10/24 03:25	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/10/24 03:25	1
Toluene	<0.430		1.00	0.430	ug/L			09/10/24 03:25	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/10/24 03:25	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/10/24 03:25	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/10/24 03:25	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/10/24 03:25	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/10/24 03:25	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/10/24 03:25	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/10/24 03:25	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/10/24 03:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*09/10/24 03:25*	*1*

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-45A
Date Collected: 09/05/24 13:00
Date Received: 09/06/24 11:15

Lab Sample ID: 310-289921-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/10/24 03:25*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*09/10/24 03:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/10/24 09:00	09/11/24 19:22	1
Arsenic	<0.530		2.00	0.530	ug/L		09/10/24 09:00	09/11/24 19:22	1
Barium	**118**		2.00	0.660	ug/L		09/10/24 09:00	09/11/24 19:22	1
Beryllium	<0.330		1.00	0.330	ug/L		09/10/24 09:00	09/11/24 19:22	1
Cadmium	**0.194**	**J**	0.200	0.100	ug/L		09/10/24 09:00	09/12/24 21:47	1
Chromium	<1.20		5.00	1.20	ug/L		09/10/24 09:00	09/11/24 19:22	1
Cobalt	**0.389**	**J**	0.500	0.170	ug/L		09/10/24 09:00	09/11/24 19:22	1
Copper	<1.80		5.00	1.80	ug/L		09/10/24 09:00	09/11/24 19:22	1
Lead	**0.265**	**J**	0.500	0.260	ug/L		09/10/24 09:00	09/11/24 19:22	1
Nickel	<2.10		5.00	2.10	ug/L		09/10/24 09:00	09/12/24 21:47	1
Selenium	<1.40		5.00	1.40	ug/L		09/10/24 09:00	09/11/24 19:22	1
Silver	<0.500		1.00	0.500	ug/L		09/10/24 09:00	09/11/24 19:22	1
Thallium	<0.570		1.00	0.570	ug/L		09/10/24 09:00	09/11/24 19:22	1
Vanadium	<1.10		5.00	1.10	ug/L		09/10/24 09:00	09/11/24 19:22	1
Zinc	<9.70		20.0	9.70	ug/L		09/10/24 09:00	09/11/24 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.63**		1.88	1.39	mg/L			09/06/24 19:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.16**				NTU			09/05/24 13:00	1

Client Sample ID: MW-46A
Date Collected: 09/05/24 11:00
Date Received: 09/06/24 11:15

Lab Sample ID: 310-289921-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/10/24 03:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/10/24 03:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/10/24 03:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/10/24 03:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/10/24 03:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/10/24 03:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/10/24 03:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/10/24 03:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/10/24 03:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/10/24 03:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/10/24 03:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/10/24 03:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/10/24 03:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/10/24 03:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/10/24 03:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/10/24 03:48	1
Acetone	<3.10		10.0	3.10	ug/L			09/10/24 03:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/10/24 03:48	1
Benzene	<0.220		0.500	0.220	ug/L			09/10/24 03:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/10/24 03:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/10/24 03:48	1
Bromoform	<0.780		5.00	0.780	ug/L			09/10/24 03:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/10/24 03:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/10/24 03:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/10/24 03:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/10/24 03:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/10/24 03:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/10/24 03:48	1
Chloroform	<1.30		3.00	1.30	ug/L			09/10/24 03:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/10/24 03:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/10/24 03:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/10/24 03:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/10/24 03:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/10/24 03:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/10/24 03:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/10/24 03:48	1
Styrene	<0.370		1.00	0.370	ug/L			09/10/24 03:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/10/24 03:48	1
Toluene	<0.430		1.00	0.430	ug/L			09/10/24 03:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/10/24 03:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/10/24 03:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/10/24 03:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/10/24 03:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/10/24 03:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/10/24 03:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/10/24 03:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/10/24 03:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*09/10/24 03:48*	*1*

Client Sample ID: MW-46A
Date Collected: 09/05/24 11:00
Date Received: 09/06/24 11:15

Lab Sample ID: 310-289921-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/10/24 03:48*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*09/10/24 03:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/10/24 09:00	09/11/24 19:24	1
Arsenic	**0.770**	**J**	2.00	0.530	ug/L		09/10/24 09:00	09/11/24 19:24	1
Barium	**236**		2.00	0.660	ug/L		09/10/24 09:00	09/11/24 19:24	1
Beryllium	<0.330		1.00	0.330	ug/L		09/10/24 09:00	09/11/24 19:24	1
Cadmium	<0.100		0.200	0.100	ug/L		09/10/24 09:00	09/12/24 21:49	1
Chromium	<1.20		5.00	1.20	ug/L		09/10/24 09:00	09/11/24 19:24	1
Cobalt	**0.241**	**J**	0.500	0.170	ug/L		09/10/24 09:00	09/11/24 19:24	1
Copper	**1.99**	**J**	5.00	1.80	ug/L		09/10/24 09:00	09/11/24 19:24	1
Lead	**0.386**	**J**	0.500	0.260	ug/L		09/10/24 09:00	09/11/24 19:24	1
Nickel	**26.6**		5.00	2.10	ug/L		09/10/24 09:00	09/12/24 21:49	1
Selenium	<1.40		5.00	1.40	ug/L		09/10/24 09:00	09/11/24 19:24	1
Silver	<0.500		1.00	0.500	ug/L		09/10/24 09:00	09/11/24 19:24	1
Thallium	<0.570		1.00	0.570	ug/L		09/10/24 09:00	09/11/24 19:24	1
Vanadium	**1.17**	**J**	5.00	1.10	ug/L		09/10/24 09:00	09/11/24 19:24	1
Zinc	<9.70		20.0	9.70	ug/L		09/10/24 09:00	09/11/24 19:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**26.3**		1.88	1.39	mg/L			09/06/24 19:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**68.05**				NTU			09/05/24 11:00	1

Client Sample ID: MW-45A-FD
Lab Sample ID: 310-289921-3

Date Collected: 09/05/24 00:00
Matrix: Groundwater
Date Received: 09/06/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/10/24 04:11	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/10/24 04:11	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/10/24 04:11	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/10/24 04:11	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/10/24 04:11	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/10/24 04:11	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/10/24 04:11	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/10/24 04:11	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/10/24 04:11	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/10/24 04:11	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/10/24 04:11	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/10/24 04:11	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/10/24 04:11	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/10/24 04:11	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/10/24 04:11	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/10/24 04:11	1
Acetone	<3.10		10.0	3.10	ug/L			09/10/24 04:11	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/10/24 04:11	1
Benzene	<0.220		0.500	0.220	ug/L			09/10/24 04:11	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/10/24 04:11	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/10/24 04:11	1
Bromoform	<0.780		5.00	0.780	ug/L			09/10/24 04:11	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/10/24 04:11	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/10/24 04:11	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/10/24 04:11	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/10/24 04:11	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/10/24 04:11	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/10/24 04:11	1
Chloroform	<1.30		3.00	1.30	ug/L			09/10/24 04:11	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/10/24 04:11	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/10/24 04:11	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/10/24 04:11	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/10/24 04:11	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/10/24 04:11	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/10/24 04:11	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/10/24 04:11	1
Styrene	<0.370		1.00	0.370	ug/L			09/10/24 04:11	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/10/24 04:11	1
Toluene	<0.430		1.00	0.430	ug/L			09/10/24 04:11	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/10/24 04:11	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/10/24 04:11	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/10/24 04:11	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/10/24 04:11	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/10/24 04:11	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/10/24 04:11	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/10/24 04:11	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/10/24 04:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*09/10/24 04:11*	*1*

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-45A-FD
Lab Sample ID: 310-289921-3
Date Collected: 09/05/24 00:00
Matrix: Groundwater
Date Received: 09/06/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*09/10/24 04:11*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/10/24 04:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/10/24 09:00	09/11/24 19:27	1
Arsenic	<0.530		2.00	0.530	ug/L		09/10/24 09:00	09/11/24 19:27	1
Barium	**120**		2.00	0.660	ug/L		09/10/24 09:00	09/11/24 19:27	1
Beryllium	<0.330		1.00	0.330	ug/L		09/10/24 09:00	09/11/24 19:27	1
Cadmium	**0.213**		0.200	0.100	ug/L		09/10/24 09:00	09/12/24 21:51	1
Chromium	<1.20		5.00	1.20	ug/L		09/10/24 09:00	09/11/24 19:27	1
Cobalt	**0.389**	**J**	0.500	0.170	ug/L		09/10/24 09:00	09/11/24 19:27	1
Copper	<1.80		5.00	1.80	ug/L		09/10/24 09:00	09/11/24 19:27	1
Lead	<0.260		0.500	0.260	ug/L		09/10/24 09:00	09/11/24 19:27	1
Nickel	<2.10		5.00	2.10	ug/L		09/10/24 09:00	09/12/24 21:51	1
Selenium	<1.40		5.00	1.40	ug/L		09/10/24 09:00	09/11/24 19:27	1
Silver	<0.500		1.00	0.500	ug/L		09/10/24 09:00	09/11/24 19:27	1
Thallium	<0.570		1.00	0.570	ug/L		09/10/24 09:00	09/11/24 19:27	1
Vanadium	<1.10		5.00	1.10	ug/L		09/10/24 09:00	09/11/24 19:27	1
Zinc	<9.70		20.0	9.70	ug/L		09/10/24 09:00	09/11/24 19:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.39	mg/L			09/06/24 19:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**2.16**				NTU			09/05/24 00:00	1

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-289921-4
Date Collected: 09/05/24 13:30
Matrix: Ground Water
Date Received: 09/06/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/10/24 01:33	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/10/24 01:33	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/10/24 01:33	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/10/24 01:33	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/10/24 01:33	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/10/24 01:33	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/10/24 01:33	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/10/24 01:33	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/10/24 01:33	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/10/24 01:33	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/10/24 01:33	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/10/24 01:33	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/10/24 01:33	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/10/24 01:33	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/10/24 01:33	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/10/24 01:33	1
Acetone	<3.10		10.0	3.10	ug/L			09/10/24 01:33	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/10/24 01:33	1
Benzene	<0.220		0.500	0.220	ug/L			09/10/24 01:33	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/10/24 01:33	1
Bromodichloromethane	**2.68**		1.00	0.390	ug/L			09/10/24 01:33	1
Bromoform	<0.780		5.00	0.780	ug/L			09/10/24 01:33	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/10/24 01:33	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/10/24 01:33	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/10/24 01:33	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/10/24 01:33	1
Chlorodibromomethane	**2.52**	**J**	5.00	0.750	ug/L			09/10/24 01:33	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/10/24 01:33	1
Chloroform	**1.88**	**J**	3.00	1.30	ug/L			09/10/24 01:33	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/10/24 01:33	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/10/24 01:33	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/10/24 01:33	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/10/24 01:33	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/10/24 01:33	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/10/24 01:33	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/10/24 01:33	1
Styrene	<0.370		1.00	0.370	ug/L			09/10/24 01:33	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/10/24 01:33	1
Toluene	<0.430		1.00	0.430	ug/L			09/10/24 01:33	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/10/24 01:33	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/10/24 01:33	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/10/24 01:33	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/10/24 01:33	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/10/24 01:33	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/10/24 01:33	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/10/24 01:33	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/10/24 01:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*106*		*73 - 130*		*09/10/24 01:33*	*1*

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-289921-4
Date Collected: 09/05/24 13:30
Matrix: Ground Water
Date Received: 09/06/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*09/10/24 01:33*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*09/10/24 01:33*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/10/24 09:00	09/11/24 19:29	1
Arsenic	<0.530		2.00	0.530	ug/L		09/10/24 09:00	09/11/24 19:29	1
Barium	<0.660		2.00	0.660	ug/L		09/10/24 09:00	09/11/24 19:29	1
Beryllium	<0.330		1.00	0.330	ug/L		09/10/24 09:00	09/11/24 19:29	1
Cadmium	<0.100		0.200	0.100	ug/L		09/10/24 09:00	09/12/24 21:54	1
Chromium	<1.20		5.00	1.20	ug/L		09/10/24 09:00	09/11/24 19:29	1
Cobalt	<0.170		0.500	0.170	ug/L		09/10/24 09:00	09/11/24 19:29	1
Copper	<1.80		5.00	1.80	ug/L		09/10/24 09:00	09/11/24 19:29	1
Lead	<0.260		0.500	0.260	ug/L		09/10/24 09:00	09/11/24 19:29	1
Nickel	<2.10		5.00	2.10	ug/L		09/10/24 09:00	09/12/24 21:54	1
Selenium	<1.40		5.00	1.40	ug/L		09/10/24 09:00	09/11/24 19:29	1
Silver	<0.500		1.00	0.500	ug/L		09/10/24 09:00	09/11/24 19:29	1
Thallium	<0.570		1.00	0.570	ug/L		09/10/24 09:00	09/11/24 19:29	1
Vanadium	<1.10		5.00	1.10	ug/L		09/10/24 09:00	09/11/24 19:29	1
Zinc	<9.70		20.0	9.70	ug/L		09/10/24 09:00	09/11/24 19:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			09/06/24 19:19	1

Client Sample ID: Trip Blank
Lab Sample ID: 310-289921-5

Date Collected: 09/05/24 06:00
Matrix: Water

Date Received: 09/06/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/10/24 00:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/10/24 00:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/10/24 00:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/10/24 00:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/10/24 00:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/10/24 00:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/10/24 00:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/10/24 00:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/10/24 00:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/10/24 00:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/10/24 00:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/10/24 00:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/10/24 00:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/10/24 00:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/10/24 00:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/10/24 00:48	1
Acetone	<3.10		10.0	3.10	ug/L			09/10/24 00:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/10/24 00:48	1
Benzene	<0.220		0.500	0.220	ug/L			09/10/24 00:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/10/24 00:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/10/24 00:48	1
Bromoform	<0.780		5.00	0.780	ug/L			09/10/24 00:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/10/24 00:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/10/24 00:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/10/24 00:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/10/24 00:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/10/24 00:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/10/24 00:48	1
Chloroform	<1.30		3.00	1.30	ug/L			09/10/24 00:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/10/24 00:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/10/24 00:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/10/24 00:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/10/24 00:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/10/24 00:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/10/24 00:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/10/24 00:48	1
Styrene	<0.370		1.00	0.370	ug/L			09/10/24 00:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/10/24 00:48	1
Toluene	<0.430		1.00	0.430	ug/L			09/10/24 00:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/10/24 00:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/10/24 00:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/10/24 00:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/10/24 00:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/10/24 00:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/10/24 00:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/10/24 00:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/10/24 00:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*09/10/24 00:48*	*1*

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-289921-5
Date Collected: 09/05/24 06:00
Matrix: Water
Date Received: 09/06/24 11:15

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		09/10/24 00:48	1
4-Bromofluorobenzene (Surr)	103		80 - 120		09/10/24 00:48	1

Client Sample Results

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-35
Date Collected: 09/05/24 10:45
Date Received: 09/06/24 11:15

Lab Sample ID: 310-289921-6
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.570		1.00	0.570	ug/L		09/10/24 09:00	09/11/24 19:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.25		1.88	1.39	mg/L			09/06/24 19:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	3.58				NTU			09/05/24 10:45	1

Definitions/Glossary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-289921-1	MW-45A	108	97	105
310-289921-2	MW-46A	108	97	102
310-289921-4	Equipment Blank #1 Shallow	106	100	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-289921-3	MW-45A-FD	104	95	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-289921-5	Trip Blank	109	96	103
LCS 310-432598/6	Lab Control Sample	105	100	101
LCS 310-432598/7	Lab Control Sample	105	98	103
MB 310-432598/5	Method Blank	103	95	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-432598/5
Matrix: Water
Analysis Batch: 432598

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			09/09/24 23:17	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			09/09/24 23:17	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			09/09/24 23:17	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			09/09/24 23:17	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			09/09/24 23:17	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			09/09/24 23:17	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			09/09/24 23:17	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			09/09/24 23:17	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			09/09/24 23:17	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			09/09/24 23:17	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			09/09/24 23:17	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			09/09/24 23:17	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			09/09/24 23:17	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			09/09/24 23:17	1
2-Hexanone	<2.00		10.0	2.00	ug/L			09/09/24 23:17	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			09/09/24 23:17	1
Acetone	<3.10		10.0	3.10	ug/L			09/09/24 23:17	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			09/09/24 23:17	1
Benzene	<0.220		0.500	0.220	ug/L			09/09/24 23:17	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			09/09/24 23:17	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			09/09/24 23:17	1
Bromoform	<0.780		5.00	0.780	ug/L			09/09/24 23:17	1
Bromomethane	<1.10		4.00	1.10	ug/L			09/09/24 23:17	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			09/09/24 23:17	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			09/09/24 23:17	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			09/09/24 23:17	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			09/09/24 23:17	1
Chloroethane	<0.790		4.00	0.790	ug/L			09/09/24 23:17	1
Chloroform	<1.30		3.00	1.30	ug/L			09/09/24 23:17	1
Chloromethane	<0.610		3.00	0.610	ug/L			09/09/24 23:17	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			09/09/24 23:17	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			09/09/24 23:17	1
Dibromomethane	<0.330		1.00	0.330	ug/L			09/09/24 23:17	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			09/09/24 23:17	1
Iodomethane	<7.00		10.0	7.00	ug/L			09/09/24 23:17	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			09/09/24 23:17	1
Styrene	<0.370		1.00	0.370	ug/L			09/09/24 23:17	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			09/09/24 23:17	1
Toluene	<0.430		1.00	0.430	ug/L			09/09/24 23:17	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			09/09/24 23:17	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			09/09/24 23:17	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			09/09/24 23:17	1
Trichloroethene	<0.430		1.00	0.430	ug/L			09/09/24 23:17	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			09/09/24 23:17	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			09/09/24 23:17	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			09/09/24 23:17	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			09/09/24 23:17	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-432598/5
Matrix: Water
Analysis Batch: 432598

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		09/09/24 23:17	1
Toluene-d8 (Surr)	95		80 - 120		09/09/24 23:17	1
4-Bromofluorobenzene (Surr)	102		80 - 120		09/09/24 23:17	1

Lab Sample ID: LCS 310-432598/6
Matrix: Water
Analysis Batch: 432598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.20		ug/L		101	71 - 120
1,1,1-Trichloroethane	20.0	22.03		ug/L		110	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.84		ug/L		94	68 - 124
1,1,2-Trichloroethane	20.0	19.20		ug/L		96	73 - 123
1,1-Dichloroethane	20.0	19.86		ug/L		99	70 - 127
1,1-Dichloroethene	20.0	20.62		ug/L		103	63 - 132
1,2,3-Trichloropropane	20.0	20.62		ug/L		103	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.12		ug/L		101	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.50		ug/L		103	75 - 125
1,2-Dichlorobenzene	20.0	19.49		ug/L		97	74 - 120
1,2-Dichloroethane	20.0	19.51		ug/L		98	71 - 125
1,2-Dichloropropane	20.0	19.81		ug/L		99	73 - 124
1,4-Dichlorobenzene	20.0	18.92		ug/L		95	72 - 120
2-Butanone (MEK)	40.0	35.39		ug/L		88	50 - 150
2-Hexanone	40.0	39.29		ug/L		98	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.53		ug/L		94	60 - 139
Acetone	40.0	38.37		ug/L		96	50 - 150
Acrylonitrile	200	193.7		ug/L		97	50 - 150
Benzene	20.0	19.05		ug/L		95	72 - 124
Bromochloromethane	20.0	21.21		ug/L		106	73 - 130
Bromodichloromethane	20.0	19.69		ug/L		98	74 - 122
Bromoform	20.0	22.19		ug/L		111	61 - 122
Carbon disulfide	20.0	18.93		ug/L		95	59 - 135
Carbon tetrachloride	20.0	21.54		ug/L		108	67 - 132
Chlorobenzene	20.0	19.09		ug/L		95	76 - 120
Chlorodibromomethane	20.0	20.49		ug/L		102	71 - 121
Chloroform	20.0	20.28		ug/L		101	72 - 125
cis-1,2-Dichloroethene	20.0	20.51		ug/L		103	74 - 123
cis-1,3-Dichloropropene	20.0	19.98		ug/L		100	71 - 125
Dibromomethane	20.0	20.20		ug/L		101	74 - 125
Ethylbenzene	20.0	19.66		ug/L		98	74 - 122
Iodomethane	20.0	20.63		ug/L		103	10 - 150
Methylene Chloride	20.0	19.88		ug/L		99	50 - 150
Styrene	20.0	19.57		ug/L		98	74 - 121
Tetrachloroethene	20.0	21.92		ug/L		110	71 - 130
Toluene	20.0	19.87		ug/L		99	74 - 123
trans-1,2-Dichloroethene	20.0	19.76		ug/L		99	70 - 126
trans-1,3-Dichloropropene	20.0	19.58		ug/L		98	69 - 123
trans-1,4-Dichloro-2-butene	20.0	14.70		ug/L		74	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-432598/6
Matrix: Water
Analysis Batch: 432598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.65		ug/L		103	72 - 126
Vinyl acetate	40.0	36.97		ug/L		92	50 - 150
Xylenes, Total	40.0	38.29		ug/L		96	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-432598/7
Matrix: Water
Analysis Batch: 432598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	21.71		ug/L		109	23 - 150
Chloroethane	20.0	20.63		ug/L		103	54 - 136
Chloromethane	20.0	19.71		ug/L		99	38 - 150
Trichlorofluoromethane	20.0	22.14		ug/L		111	54 - 149
Vinyl chloride	20.0	18.99		ug/L		95	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-432654/1-A
Matrix: Water
Analysis Batch: 432910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		09/10/24 09:00	09/11/24 18:54	1
Arsenic	<0.530		2.00	0.530	ug/L		09/10/24 09:00	09/11/24 18:54	1
Barium	<0.660		2.00	0.660	ug/L		09/10/24 09:00	09/11/24 18:54	1
Beryllium	<0.330		1.00	0.330	ug/L		09/10/24 09:00	09/11/24 18:54	1
Chromium	<1.20		5.00	1.20	ug/L		09/10/24 09:00	09/11/24 18:54	1
Cobalt	<0.170		0.500	0.170	ug/L		09/10/24 09:00	09/11/24 18:54	1
Copper	<1.80		5.00	1.80	ug/L		09/10/24 09:00	09/11/24 18:54	1
Lead	<0.260		0.500	0.260	ug/L		09/10/24 09:00	09/11/24 18:54	1
Selenium	<1.40		5.00	1.40	ug/L		09/10/24 09:00	09/11/24 18:54	1
Silver	<0.500		1.00	0.500	ug/L		09/10/24 09:00	09/11/24 18:54	1
Thallium	<0.570		1.00	0.570	ug/L		09/10/24 09:00	09/11/24 18:54	1
Vanadium	<1.10		5.00	1.10	ug/L		09/10/24 09:00	09/11/24 18:54	1
Zinc	<9.70		20.0	9.70	ug/L		09/10/24 09:00	09/11/24 18:54	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-432654/1-A
Matrix: Water
Analysis Batch: 433063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		09/10/24 09:00	09/12/24 21:23	1
Nickel	<2.10		5.00	2.10	ug/L		09/10/24 09:00	09/12/24 21:23	1

Lab Sample ID: LCS 310-432654/2-A
Matrix: Water
Analysis Batch: 432910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	213.2		ug/L		107	80 - 120
Arsenic	200	217.8		ug/L		109	80 - 120
Barium	100	104.1		ug/L		104	80 - 120
Beryllium	100	96.56		ug/L		97	80 - 120
Chromium	100	96.36		ug/L		96	80 - 120
Cobalt	100	98.64		ug/L		99	80 - 120
Copper	200	193.8		ug/L		97	80 - 120
Lead	200	215.1		ug/L		108	80 - 120
Selenium	400	401.8		ug/L		100	80 - 120
Silver	100	103.5		ug/L		103	80 - 120
Thallium	100	105.0		ug/L		105	80 - 120
Vanadium	100	103.6		ug/L		104	80 - 120
Zinc	200	180.4		ug/L		90	80 - 120

Lab Sample ID: LCS 310-432654/2-A
Matrix: Water
Analysis Batch: 433063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 432654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	100	104.4		ug/L		104	80 - 120
Nickel	200	217.0		ug/L		108	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-432522/1
Matrix: Water
Analysis Batch: 432522

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			09/06/24 19:19	1

Lab Sample ID: LCS 310-432522/2
Matrix: Water
Analysis Batch: 432522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	81 - 116

QC Association Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

GC/MS VOA

Analysis Batch: 432598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-1	MW-45A	Total/NA	Ground Water	8260D	
310-289921-2	MW-46A	Total/NA	Ground Water	8260D	
310-289921-3	MW-45A-FD	Total/NA	Groundwater	8260D	
310-289921-4	Equipment Blank #1 Shallow	Total/NA	Ground Water	8260D	
310-289921-5	Trip Blank	Total/NA	Water	8260D	
MB 310-432598/5	Method Blank	Total/NA	Water	8260D	
LCS 310-432598/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-432598/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 432654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-1	MW-45A	Total/NA	Ground Water	3005A	
310-289921-2	MW-46A	Total/NA	Ground Water	3005A	
310-289921-3	MW-45A-FD	Total/NA	Groundwater	3005A	
310-289921-4	Equipment Blank #1 Shallow	Total/NA	Ground Water	3005A	
310-289921-6	MW-35	Total/NA	Ground Water	3005A	
MB 310-432654/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-432654/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 432910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-1	MW-45A	Total/NA	Ground Water	6020B	432654
310-289921-2	MW-46A	Total/NA	Ground Water	6020B	432654
310-289921-3	MW-45A-FD	Total/NA	Groundwater	6020B	432654
310-289921-4	Equipment Blank #1 Shallow	Total/NA	Ground Water	6020B	432654
310-289921-6	MW-35	Total/NA	Ground Water	6020B	432654
MB 310-432654/1-A	Method Blank	Total/NA	Water	6020B	432654
LCS 310-432654/2-A	Lab Control Sample	Total/NA	Water	6020B	432654

Analysis Batch: 433063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-1	MW-45A	Total/NA	Ground Water	6020B	432654
310-289921-2	MW-46A	Total/NA	Ground Water	6020B	432654
310-289921-3	MW-45A-FD	Total/NA	Groundwater	6020B	432654
310-289921-4	Equipment Blank #1 Shallow	Total/NA	Ground Water	6020B	432654
MB 310-432654/1-A	Method Blank	Total/NA	Water	6020B	432654
LCS 310-432654/2-A	Lab Control Sample	Total/NA	Water	6020B	432654

General Chemistry

Analysis Batch: 432522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-1	MW-45A	Total/NA	Ground Water	I-3765-85	
310-289921-2	MW-46A	Total/NA	Ground Water	I-3765-85	
310-289921-3	MW-45A-FD	Total/NA	Groundwater	I-3765-85	
310-289921-4	Equipment Blank #1 Shallow	Total/NA	Ground Water	I-3765-85	
310-289921-6	MW-35	Total/NA	Ground Water	I-3765-85	
MB 310-432522/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-432522/2	Lab Control Sample	Total/NA	Water	I-3765-85	

QC Association Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Field Service / Mobile Lab

Analysis Batch: 432614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-1	MW-45A	Total/NA	Ground Water	Field Sampling	
310-289921-3	MW-45A-FD	Total/NA	Groundwater	Field Sampling	
310-289921-6	MW-35	Total/NA	Ground Water	Field Sampling	

Analysis Batch: 433560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-289921-2	MW-46A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-45A
Lab Sample ID: 310-289921-1
Date Collected: 09/05/24 13:00
Matrix: Ground Water
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432598	WSE8	EET CF	09/10/24 03:25
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	432910	NFT2	EET CF	09/11/24 19:22
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	433063	ZRI4	EET CF	09/12/24 21:47
Total/NA	Analysis	I-3765-85		1	432522	MDU9	EET CF	09/06/24 19:19
Total/NA	Analysis	Field Sampling		1	432614	BJ0R	EET CF	09/05/24 13:00

Client Sample ID: MW-46A
Lab Sample ID: 310-289921-2
Date Collected: 09/05/24 11:00
Matrix: Ground Water
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432598	WSE8	EET CF	09/10/24 03:48
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	432910	NFT2	EET CF	09/11/24 19:24
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	433063	ZRI4	EET CF	09/12/24 21:49
Total/NA	Analysis	I-3765-85		1	432522	MDU9	EET CF	09/06/24 19:19
Total/NA	Analysis	Field Sampling		1	433560	PDE6	EET CF	09/05/24 11:00

Client Sample ID: MW-45A-FD
Lab Sample ID: 310-289921-3
Date Collected: 09/05/24 00:00
Matrix: Groundwater
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432598	WSE8	EET CF	09/10/24 04:11
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	432910	NFT2	EET CF	09/11/24 19:27
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	433063	ZRI4	EET CF	09/12/24 21:51
Total/NA	Analysis	I-3765-85		1	432522	MDU9	EET CF	09/06/24 19:19
Total/NA	Analysis	Field Sampling		1	432614	BJ0R	EET CF	09/05/24 00:00

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-289921-4
Date Collected: 09/05/24 13:30
Matrix: Ground Water
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432598	WSE8	EET CF	09/10/24 01:33
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	432910	NFT2	EET CF	09/11/24 19:29
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	433063	ZRI4	EET CF	09/12/24 21:54

Lab Chronicle

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-289921-4
Date Collected: 09/05/24 13:30
Matrix: Ground Water
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	432522	MDU9	EET CF	09/06/24 19:19

Client Sample ID: Trip Blank
Lab Sample ID: 310-289921-5
Date Collected: 09/05/24 06:00
Matrix: Water
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	432598	WSE8	EET CF	09/10/24 00:48

Client Sample ID: MW-35
Lab Sample ID: 310-289921-6
Date Collected: 09/05/24 10:45
Matrix: Ground Water
Date Received: 09/06/24 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			432654	F5MW	EET CF	09/10/24 09:00
Total/NA	Analysis	6020B		1	432910	NFT2	EET CF	09/11/24 19:31
Total/NA	Analysis	I-3765-85		1	432522	MDU9	EET CF	09/06/24 19:19
Total/NA	Analysis	Field Sampling		1	432614	BJ0R	EET CF	09/05/24 10:45

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
Field Sampling		Groundwater	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-289921-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-289921 Chain of Custody

Cooler/Sample Receipt and Temperature

Client Information			
Client: AECOM			
City/State: CITY	STATE TA	Project:	
Receipt Information			
Date/Time Received:	DATE 9/6/24 TIME 1115	Received By: R	
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☐ Yes ☒ No	*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present? No	☐ Yes ☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐	
Sample Custody Seals Present? No	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐	
Trip Blank Present?	☒ Yes ☐ No	*If yes:* Which VOA samples are in cooler? ↓	
	DM		
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: R		*Correction Factor (°C):* +0.0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1: PL 250 NitHC	CONTAINER 2	
Uncorrected Temp (°C):	1.8		
Corrected Temp (°C):	1.8		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277 2401 fax 319 277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 9-6-24	COC No
AECOM	Email Christopher Oelkers@aecom com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Appendix I Metals and VOCs	Appendix I VOCs Only	Sample Specific Notes
MW-18			G	GW		N		X	X		
MW-45A	9-5-24	1300	G	GW	5	N		X	X		Turbidity – 2.16 NTU
MW-46A			G	GW		N		X	X		
MW-45A-FD	9-5-24	—	G	GW	5	N		X	X		Turbidity – 2.16 NTU
Equipment Blank #1	9-5-24	1330	G	GW	5	N		X	X		
Trip Blank (1 per cooler with VOCs)	9-5-24	0600	G	GW	2	N				X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No. _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 9-6-24	Received by:	Company:	Date/Time: 9-6-24 1115
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 9-6-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No:
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Acetone	Arsenic	Silver	Thallium	Zinc	Appendix I VOCs	cobalt	Sample Specific Notes
MW-33A			G	GW		N		X	X	X					X	
MW-43A			G	GW		N		X			X					
MW-4B			G	GW		N		X			X					
MW-35	9-5-24	1045	G	GW	2	N		X				X				Turbidity – 3.58 NTU
MW-39A			G	GW		N		X					X			
Trip Blank (for work order containing MW-33A only)														X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____ Therm ID No. ____		
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 9-6-24	Received by:	Company:	Date/Time: 9/6/24 1115
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

9/18/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-289921-1

Login Number: 289921
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

Appendix B3 – 2024 Fall Laboratory Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 12/6/2024 8:29:00 AM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-295649-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
12/6/2024 8:29:00 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-295649-1 — Eurofins Cedar Falls

Job Narrative
310-295649-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/20/2024 2:55 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C.

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

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

General Chemistry
Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-440357. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

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

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

Sample Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-295649-1	MW-4	Ground Water	11/19/24 10:30	11/20/24 14:55
310-295649-2	MW-4B	Ground Water	11/19/24 11:30	11/20/24 14:55
310-295649-3	MW-7A	Ground Water	11/19/24 12:30	11/20/24 14:55
310-295649-4	Trip Blank	Water	11/19/24 06:00	11/20/24 14:55

Detection Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Lab Sample ID: 310-295649-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.05	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	518		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.254		0.200	0.100	ug/L	1		6020B	Total/NA
Calcium	207000		500	190	ug/L	1		6020B	Total/NA
Cobalt	2.04		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	72800		500	150	ug/L	1		6020B	Total/NA
Nickel	6.17		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	8950		1000	480	ug/L	1		6020B	Total/NA
Fluoride	0.0871	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	14.5		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	2.45		2.04	1.51	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	5.47				%	1		SM 1030E	Total/NA
Total Alkalinity	729		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	729		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	714		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	3.64		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	25.8		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	1.17				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-4B
Lab Sample ID: 310-295649-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	225		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	87900		500	190	ug/L	1		6020B	Total/NA
Magnesium	31900		500	150	ug/L	1		6020B	Total/NA
Sodium	11900		1000	480	ug/L	1		6020B	Total/NA
Nitrate as N	0.333		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.0897	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	8.11		5.00	2.40	mg/L	1		D516-16	Total/NA
Anion/Cation Balance	3.54				%	1		SM 1030E	Total/NA
Total Alkalinity	331		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	331		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	352		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	7.20		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	1.14				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-7A
Lab Sample ID: 310-295649-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	425		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	161000		500	190	ug/L	1		6020B	Total/NA
Magnesium	52900		500	150	ug/L	1		6020B	Total/NA
Nickel	8.81		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	18800		1000	480	ug/L	1		6020B	Total/NA
Fluoride	0.136		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	32.4		5.00	2.40	mg/L	1		D516-16	Total/NA
Anion/Cation Balance	3.13				%	1		SM 1030E	Total/NA
Total Alkalinity	462		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	462		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	622		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	88.3		4.00	2.80	mg/L	2		SM 4500 Cl- E	Total/NA
Field Turbidity	0.22				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-295649-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4
Date Collected: 11/19/24 10:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/22/24 03:56	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/22/24 03:56	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/22/24 03:56	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/22/24 03:56	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/22/24 03:56	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/22/24 03:56	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/22/24 03:56	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/22/24 03:56	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/22/24 03:56	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/22/24 03:56	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/22/24 03:56	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/22/24 03:56	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/22/24 03:56	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/22/24 03:56	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/22/24 03:56	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/22/24 03:56	1
Acetone	<3.10		10.0	3.10	ug/L			11/22/24 03:56	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/22/24 03:56	1
Benzene	<0.220		0.500	0.220	ug/L			11/22/24 03:56	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/22/24 03:56	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/22/24 03:56	1
Bromoform	<0.780		5.00	0.780	ug/L			11/22/24 03:56	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/22/24 03:56	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/22/24 03:56	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/22/24 03:56	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/22/24 03:56	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/22/24 03:56	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/22/24 03:56	1
Chloroform	<1.30		3.00	1.30	ug/L			11/22/24 03:56	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/22/24 03:56	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/22/24 03:56	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/22/24 03:56	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/22/24 03:56	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/22/24 03:56	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/22/24 03:56	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/22/24 03:56	1
Styrene	<0.370		1.00	0.370	ug/L			11/22/24 03:56	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/22/24 03:56	1
Toluene	<0.430		1.00	0.430	ug/L			11/22/24 03:56	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/22/24 03:56	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/22/24 03:56	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/22/24 03:56	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/22/24 03:56	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/22/24 03:56	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/22/24 03:56	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/22/24 03:56	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/22/24 03:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*11/22/24 03:56*	*1*

Client Sample ID: MW-4
Date Collected: 11/19/24 10:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/22/24 03:56*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/22/24 03:56*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/22/24 09:30	11/25/24 16:43	1
Arsenic	**1.05**	**J**	2.00	0.530	ug/L		11/22/24 09:30	11/25/24 16:43	1
Barium	**518**		2.00	0.660	ug/L		11/22/24 09:30	11/25/24 16:43	1
Beryllium	<0.330		1.00	0.330	ug/L		11/22/24 09:30	11/25/24 16:43	1
Cadmium	**0.254**		0.200	0.100	ug/L		11/22/24 09:30	11/25/24 16:43	1
Calcium	**207000**		500	190	ug/L		11/22/24 09:30	11/25/24 16:43	1
Chromium	<1.20		5.00	1.20	ug/L		11/22/24 09:30	11/25/24 16:43	1
Cobalt	**2.04**		0.500	0.170	ug/L		11/22/24 09:30	11/25/24 16:43	1
Copper	<1.80		5.00	1.80	ug/L		11/22/24 09:30	11/25/24 16:43	1
Lead	<0.260		0.500	0.260	ug/L		11/22/24 09:30	11/25/24 16:43	1
Magnesium	**72800**		500	150	ug/L		11/22/24 09:30	11/25/24 16:43	1
Nickel	**6.17**		5.00	2.10	ug/L		11/22/24 09:30	11/25/24 16:43	1
Selenium	<1.40		5.00	1.40	ug/L		11/22/24 09:30	11/25/24 16:43	1
Silver	<0.500		1.00	0.500	ug/L		11/22/24 09:30	11/25/24 16:43	1
Sodium	**8950**		1000	480	ug/L		11/22/24 09:30	11/25/24 16:43	1
Thallium	<0.570		1.00	0.570	ug/L		11/22/24 09:30	11/25/24 16:43	1
Vanadium	<1.10		5.00	1.10	ug/L		11/22/24 09:30	11/25/24 16:43	1
Zinc	<9.70		20.0	9.70	ug/L		11/22/24 09:30	11/25/24 16:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/04/24 19:28	1
Fluoride (SM 4500 F C-2011)	**0.0871**	**J**	0.100	0.0540	mg/L			12/04/24 11:36	1
Sulfate (ASTM D516-16)	**14.5**		5.00	2.40	mg/L			12/04/24 12:50	1
Total Suspended Solids (USGS I-3765-85)	**2.45**		2.04	1.51	mg/L			11/22/24 13:37	1
Anion/Cation Balance (SM 1030E)	**5.47**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**729**		5.00	2.50	mg/L			11/22/24 17:55	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**729**		5.00	2.50	mg/L			11/22/24 17:55	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 17:55	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 17:55	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 17:55	1
Total Dissolved Solids (SM 2540C)	**714**		50.0	42.0	mg/L			11/21/24 15:18	1
Chloride (SM 4500 Cl- E)	**3.64**		2.00	1.40	mg/L			11/26/24 15:49	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			11/20/24 17:23	1
Chemical Oxygen Demand (SM 5220D)	**25.8**		25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.17**				NTU			11/19/24 10:30	1

Client Sample ID: MW-4B
Date Collected: 11/19/24 11:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/22/24 04:18	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/22/24 04:18	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/22/24 04:18	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/22/24 04:18	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/22/24 04:18	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/22/24 04:18	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/22/24 04:18	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/22/24 04:18	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/22/24 04:18	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/22/24 04:18	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/22/24 04:18	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/22/24 04:18	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/22/24 04:18	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/22/24 04:18	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/22/24 04:18	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/22/24 04:18	1
Acetone	<3.10		10.0	3.10	ug/L			11/22/24 04:18	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/22/24 04:18	1
Benzene	<0.220		0.500	0.220	ug/L			11/22/24 04:18	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/22/24 04:18	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/22/24 04:18	1
Bromoform	<0.780		5.00	0.780	ug/L			11/22/24 04:18	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/22/24 04:18	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/22/24 04:18	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/22/24 04:18	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/22/24 04:18	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/22/24 04:18	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/22/24 04:18	1
Chloroform	<1.30		3.00	1.30	ug/L			11/22/24 04:18	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/22/24 04:18	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/22/24 04:18	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/22/24 04:18	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/22/24 04:18	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/22/24 04:18	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/22/24 04:18	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/22/24 04:18	1
Styrene	<0.370		1.00	0.370	ug/L			11/22/24 04:18	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/22/24 04:18	1
Toluene	<0.430		1.00	0.430	ug/L			11/22/24 04:18	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/22/24 04:18	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/22/24 04:18	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/22/24 04:18	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/22/24 04:18	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/22/24 04:18	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/22/24 04:18	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/22/24 04:18	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/22/24 04:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*11/22/24 04:18*	*1*

Client Sample ID: MW-4B
Date Collected: 11/19/24 11:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*11/22/24 04:18*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/22/24 04:18*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/22/24 09:30	11/25/24 16:45	1
Arsenic	<0.530		2.00	0.530	ug/L		11/22/24 09:30	11/25/24 16:45	1
Barium	**225**		2.00	0.660	ug/L		11/22/24 09:30	11/25/24 16:45	1
Beryllium	<0.330		1.00	0.330	ug/L		11/22/24 09:30	11/25/24 16:45	1
Cadmium	<0.100		0.200	0.100	ug/L		11/22/24 09:30	11/25/24 16:45	1
Calcium	**87900**		500	190	ug/L		11/22/24 09:30	11/25/24 16:45	1
Chromium	<1.20		5.00	1.20	ug/L		11/22/24 09:30	11/25/24 16:45	1
Cobalt	<0.170		0.500	0.170	ug/L		11/22/24 09:30	11/25/24 16:45	1
Copper	<1.80		5.00	1.80	ug/L		11/22/24 09:30	11/25/24 16:45	1
Lead	<0.260		0.500	0.260	ug/L		11/22/24 09:30	11/25/24 16:45	1
Magnesium	**31900**		500	150	ug/L		11/22/24 09:30	11/25/24 16:45	1
Nickel	<2.10		5.00	2.10	ug/L		11/22/24 09:30	11/25/24 16:45	1
Selenium	<1.40		5.00	1.40	ug/L		11/22/24 09:30	11/25/24 16:45	1
Silver	<0.500		1.00	0.500	ug/L		11/22/24 09:30	11/25/24 16:45	1
Sodium	**11900**		1000	480	ug/L		11/22/24 09:30	11/25/24 16:45	1
Thallium	<0.570		1.00	0.570	ug/L		11/22/24 09:30	11/25/24 16:45	1
Vanadium	<1.10		5.00	1.10	ug/L		11/22/24 09:30	11/25/24 16:45	1
Zinc	<9.70		20.0	9.70	ug/L		11/22/24 09:30	11/25/24 16:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**0.333**		0.100	0.0800	mg/L			12/04/24 02:54	1
Fluoride (SM 4500 F C-2011)	**0.0897**	**J**	0.100	0.0540	mg/L			12/04/24 11:45	1
Sulfate (ASTM D516-16)	**8.11**		5.00	2.40	mg/L			12/04/24 12:50	1
Total Suspended Solids (USGS I-3765-85)	<1.43		1.94	1.43	mg/L			11/22/24 13:37	1
Anion/Cation Balance (SM 1030E)	**3.54**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**331**		5.00	2.50	mg/L			11/22/24 18:08	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**331**		5.00	2.50	mg/L			11/22/24 18:08	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 18:08	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 18:08	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 18:08	1
Total Dissolved Solids (SM 2540C)	**352**		50.0	42.0	mg/L			11/21/24 16:34	1
Chloride (SM 4500 Cl- E)	**7.20**		2.00	1.40	mg/L			11/26/24 15:51	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			11/20/24 17:26	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.14**				NTU			11/19/24 11:30	1

Client Sample ID: MW-7A
Date Collected: 11/19/24 12:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-3
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/22/24 04:40	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/22/24 04:40	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/22/24 04:40	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/22/24 04:40	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/22/24 04:40	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/22/24 04:40	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/22/24 04:40	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/22/24 04:40	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/22/24 04:40	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/22/24 04:40	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/22/24 04:40	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/22/24 04:40	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/22/24 04:40	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/22/24 04:40	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/22/24 04:40	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/22/24 04:40	1
Acetone	<3.10		10.0	3.10	ug/L			11/22/24 04:40	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/22/24 04:40	1
Benzene	<0.220		0.500	0.220	ug/L			11/22/24 04:40	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/22/24 04:40	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/22/24 04:40	1
Bromoform	<0.780		5.00	0.780	ug/L			11/22/24 04:40	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/22/24 04:40	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/22/24 04:40	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/22/24 04:40	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/22/24 04:40	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/22/24 04:40	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/22/24 04:40	1
Chloroform	<1.30		3.00	1.30	ug/L			11/22/24 04:40	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/22/24 04:40	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/22/24 04:40	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/22/24 04:40	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/22/24 04:40	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/22/24 04:40	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/22/24 04:40	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/22/24 04:40	1
Styrene	<0.370		1.00	0.370	ug/L			11/22/24 04:40	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/22/24 04:40	1
Toluene	<0.430		1.00	0.430	ug/L			11/22/24 04:40	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/22/24 04:40	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/22/24 04:40	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/22/24 04:40	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/22/24 04:40	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/22/24 04:40	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/22/24 04:40	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/22/24 04:40	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/22/24 04:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*11/22/24 04:40*	*1*

Client Sample ID: MW-7A
Date Collected: 11/19/24 12:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-3
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/22/24 04:40*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/22/24 04:40*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/22/24 09:30	11/25/24 16:48	1
Arsenic	<0.530		2.00	0.530	ug/L		11/22/24 09:30	11/25/24 16:48	1
Barium	**425**		2.00	0.660	ug/L		11/22/24 09:30	11/25/24 16:48	1
Beryllium	<0.330		1.00	0.330	ug/L		11/22/24 09:30	11/25/24 16:48	1
Cadmium	<0.100		0.200	0.100	ug/L		11/22/24 09:30	11/25/24 16:48	1
Calcium	**161000**		500	190	ug/L		11/22/24 09:30	11/25/24 16:48	1
Chromium	<1.20		5.00	1.20	ug/L		11/22/24 09:30	11/25/24 16:48	1
Cobalt	<0.170		0.500	0.170	ug/L		11/22/24 09:30	11/25/24 16:48	1
Copper	<1.80		5.00	1.80	ug/L		11/22/24 09:30	11/25/24 16:48	1
Lead	<0.260		0.500	0.260	ug/L		11/22/24 09:30	11/25/24 16:48	1
Magnesium	**52900**		500	150	ug/L		11/22/24 09:30	11/25/24 16:48	1
Nickel	**8.81**		5.00	2.10	ug/L		11/22/24 09:30	11/25/24 16:48	1
Selenium	<1.40		5.00	1.40	ug/L		11/22/24 09:30	11/25/24 16:48	1
Silver	<0.500		1.00	0.500	ug/L		11/22/24 09:30	11/25/24 16:48	1
Sodium	**18800**		1000	480	ug/L		11/22/24 09:30	11/25/24 16:48	1
Thallium	<0.570		1.00	0.570	ug/L		11/22/24 09:30	11/25/24 16:48	1
Vanadium	<1.10		5.00	1.10	ug/L		11/22/24 09:30	11/25/24 16:48	1
Zinc	<9.70		20.0	9.70	ug/L		11/22/24 09:30	11/25/24 16:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/04/24 02:56	1
Fluoride (SM 4500 F C-2011)	**0.136**		0.100	0.0540	mg/L			12/04/24 11:47	1
Sulfate (ASTM D516-16)	**32.4**		5.00	2.40	mg/L			12/04/24 12:52	1
Total Suspended Solids (USGS I-3765-85)	<1.54		2.08	1.54	mg/L			11/22/24 13:37	1
Anion/Cation Balance (SM 1030E)	**3.13**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**462**		5.00	2.50	mg/L			11/22/24 18:17	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**462**		5.00	2.50	mg/L			11/22/24 18:17	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 18:17	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 18:17	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/22/24 18:17	1
Total Dissolved Solids (SM 2540C)	**622**		50.0	42.0	mg/L			11/21/24 16:34	1
Chloride (SM 4500 Cl- E)	**88.3**		4.00	2.80	mg/L			11/26/24 15:51	2
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			11/20/24 17:30	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.22**				NTU			11/19/24 12:30	1

Client Sample ID: Trip Blank
Lab Sample ID: 310-295649-4

Date Collected: 11/19/24 06:00
Matrix: Water

Date Received: 11/20/24 14:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/21/24 23:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/21/24 23:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/21/24 23:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/21/24 23:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/21/24 23:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/21/24 23:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/21/24 23:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/21/24 23:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/21/24 23:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/21/24 23:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/21/24 23:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/21/24 23:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/21/24 23:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/21/24 23:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/21/24 23:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/21/24 23:13	1
Acetone	<3.10		10.0	3.10	ug/L			11/21/24 23:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/21/24 23:13	1
Benzene	<0.220		0.500	0.220	ug/L			11/21/24 23:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/21/24 23:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/21/24 23:13	1
Bromoform	<0.780		5.00	0.780	ug/L			11/21/24 23:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/21/24 23:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/21/24 23:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/21/24 23:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/21/24 23:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/21/24 23:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/21/24 23:13	1
Chloroform	<1.30		3.00	1.30	ug/L			11/21/24 23:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/21/24 23:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/21/24 23:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/21/24 23:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/21/24 23:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/21/24 23:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/21/24 23:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/21/24 23:13	1
Styrene	<0.370		1.00	0.370	ug/L			11/21/24 23:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/21/24 23:13	1
Toluene	<0.430		1.00	0.430	ug/L			11/21/24 23:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/21/24 23:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/21/24 23:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/21/24 23:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/21/24 23:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/21/24 23:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/21/24 23:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/21/24 23:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/21/24 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*11/21/24 23:13*	*1*

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-295649-4
Date Collected: 11/19/24 06:00
Matrix: Water
Date Received: 11/20/24 14:55

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		11/21/24 23:13	1
4-Bromofluorobenzene (Surr)	99		80 - 120		11/21/24 23:13	1

Definitions/Glossary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

Metals

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

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-295649-1	MW-4	104	100	101
310-295649-2	MW-4B	103	98	102
310-295649-3	MW-7A	101	101	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-295649-4	Trip Blank	102	99	99
LCS 310-440505/6	Lab Control Sample	92	103	100
LCS 310-440505/7	Lab Control Sample	101	98	102
MB 310-440505/5	Method Blank	101	99	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-440505/5
Matrix: Water
Analysis Batch: 440505

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/21/24 21:24	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/21/24 21:24	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/21/24 21:24	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/21/24 21:24	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/21/24 21:24	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/21/24 21:24	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/21/24 21:24	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/21/24 21:24	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/21/24 21:24	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/21/24 21:24	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/21/24 21:24	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/21/24 21:24	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/21/24 21:24	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/21/24 21:24	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/21/24 21:24	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/21/24 21:24	1
Acetone	<3.10		10.0	3.10	ug/L			11/21/24 21:24	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/21/24 21:24	1
Benzene	<0.220		0.500	0.220	ug/L			11/21/24 21:24	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/21/24 21:24	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/21/24 21:24	1
Bromoform	<0.780		5.00	0.780	ug/L			11/21/24 21:24	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/21/24 21:24	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/21/24 21:24	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/21/24 21:24	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/21/24 21:24	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/21/24 21:24	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/21/24 21:24	1
Chloroform	<1.30		3.00	1.30	ug/L			11/21/24 21:24	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/21/24 21:24	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/21/24 21:24	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/21/24 21:24	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/21/24 21:24	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/21/24 21:24	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/21/24 21:24	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/21/24 21:24	1
Styrene	<0.370		1.00	0.370	ug/L			11/21/24 21:24	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/21/24 21:24	1
Toluene	<0.430		1.00	0.430	ug/L			11/21/24 21:24	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/21/24 21:24	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/21/24 21:24	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/21/24 21:24	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/21/24 21:24	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/21/24 21:24	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/21/24 21:24	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/21/24 21:24	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/21/24 21:24	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-440505/5
Matrix: Water
Analysis Batch: 440505

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*101*		*73 - 130*		*11/21/24 21:24*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/21/24 21:24*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/21/24 21:24*	*1*

Lab Sample ID: LCS 310-440505/6
Matrix: Water
Analysis Batch: 440505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.27		ug/L		96	71 - 120
1,1,1-Trichloroethane	20.0	18.85		ug/L		94	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.39		ug/L		102	68 - 124
1,1,2-Trichloroethane	20.0	20.62		ug/L		103	73 - 123
1,1-Dichloroethane	20.0	20.18		ug/L		101	70 - 127
1,1-Dichloroethene	20.0	19.36		ug/L		97	63 - 132
1,2,3-Trichloropropane	20.0	20.30		ug/L		102	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	23.18		ug/L		116	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.48		ug/L		97	75 - 125
1,2-Dichlorobenzene	20.0	20.34		ug/L		102	74 - 120
1,2-Dichloroethane	20.0	18.57		ug/L		93	71 - 125
1,2-Dichloropropane	20.0	21.68		ug/L		108	73 - 124
1,4-Dichlorobenzene	20.0	20.12		ug/L		101	72 - 120
2-Butanone (MEK)	40.0	44.52		ug/L		111	50 - 150
2-Hexanone	40.0	49.27		ug/L		123	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	45.27		ug/L		113	60 - 139
Acetone	40.0	39.70		ug/L		99	50 - 150
Acrylonitrile	200	224.7		ug/L		112	50 - 150
Benzene	20.0	20.07		ug/L		100	72 - 124
Bromochloromethane	20.0	17.78		ug/L		89	73 - 130
Bromodichloromethane	20.0	17.73		ug/L		89	74 - 122
Bromoform	20.0	16.48		ug/L		82	61 - 122
Carbon disulfide	20.0	19.69		ug/L		98	59 - 135
Carbon tetrachloride	20.0	17.31		ug/L		87	67 - 132
Chlorobenzene	20.0	19.04		ug/L		95	76 - 120
Chlorodibromomethane	20.0	17.09		ug/L		85	71 - 121
Chloroform	20.0	19.08		ug/L		95	72 - 125
cis-1,2-Dichloroethene	20.0	18.63		ug/L		93	74 - 123
cis-1,3-Dichloropropene	20.0	20.61		ug/L		103	71 - 125
Dibromomethane	20.0	18.49		ug/L		92	74 - 125
Ethylbenzene	20.0	20.24		ug/L		101	74 - 122
Iodomethane	20.0	13.41		ug/L		67	10 - 150
Methylene Chloride	20.0	19.18		ug/L		96	50 - 150
Styrene	20.0	20.57		ug/L		103	74 - 121
Tetrachloroethene	20.0	17.96		ug/L		90	71 - 130
Toluene	20.0	18.88		ug/L		94	74 - 123
trans-1,2-Dichloroethene	20.0	18.93		ug/L		95	70 - 126
trans-1,3-Dichloropropene	20.0	19.11		ug/L		96	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.50		ug/L		97	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-440505/6
Matrix: Water
Analysis Batch: 440505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	19.84		ug/L		99	72 - 126
Vinyl acetate	40.0	37.33		ug/L		93	50 - 150
Xylenes, Total	40.0	40.80		ug/L		102	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*92*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-440505/7
Matrix: Water
Analysis Batch: 440505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	14.78		ug/L		74	23 - 150
Chloroethane	20.0	19.10		ug/L		95	54 - 136
Chloromethane	20.0	21.42		ug/L		107	38 - 150
Trichlorofluoromethane	20.0	16.14		ug/L		81	54 - 149
Vinyl chloride	20.0	20.93		ug/L		105	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-440572/1-A
Matrix: Water
Analysis Batch: 440930

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440572

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/22/24 09:30	11/25/24 15:13	1
Arsenic	<0.530		2.00	0.530	ug/L		11/22/24 09:30	11/25/24 15:13	1
Barium	<0.660		2.00	0.660	ug/L		11/22/24 09:30	11/25/24 15:13	1
Beryllium	<0.330		1.00	0.330	ug/L		11/22/24 09:30	11/25/24 15:13	1
Cadmium	<0.100		0.200	0.100	ug/L		11/22/24 09:30	11/25/24 15:13	1
Chromium	<1.20		5.00	1.20	ug/L		11/22/24 09:30	11/25/24 15:13	1
Cobalt	<0.170		0.500	0.170	ug/L		11/22/24 09:30	11/25/24 15:13	1
Copper	<1.80		5.00	1.80	ug/L		11/22/24 09:30	11/25/24 15:13	1
Lead	<0.260		0.500	0.260	ug/L		11/22/24 09:30	11/25/24 15:13	1
Nickel	<2.10		5.00	2.10	ug/L		11/22/24 09:30	11/25/24 15:13	1
Selenium	<1.40		5.00	1.40	ug/L		11/22/24 09:30	11/25/24 15:13	1
Silver	<0.500		1.00	0.500	ug/L		11/22/24 09:30	11/25/24 15:13	1
Thallium	<0.570		1.00	0.570	ug/L		11/22/24 09:30	11/25/24 15:13	1
Vanadium	<1.10		5.00	1.10	ug/L		11/22/24 09:30	11/25/24 15:13	1
Zinc	<9.70		20.0	9.70	ug/L		11/22/24 09:30	11/25/24 15:13	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-440572/2-A
Matrix: Water
Analysis Batch: 440930

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440572

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	202.3		ug/L		101	80 - 120
Arsenic	200	202.5		ug/L		101	80 - 120
Barium	100	101.8		ug/L		102	80 - 120
Beryllium	100	100.4		ug/L		100	80 - 120
Cadmium	100	98.95		ug/L		99	80 - 120
Chromium	100	101.3		ug/L		101	80 - 120
Cobalt	100	102.0		ug/L		102	80 - 120
Copper	200	200.3		ug/L		100	80 - 120
Lead	200	199.1		ug/L		100	80 - 120
Nickel	200	203.2		ug/L		102	80 - 120
Selenium	400	390.1		ug/L		98	80 - 120
Silver	100	114.4		ug/L		114	80 - 120
Thallium	100	108.0		ug/L		108	80 - 120
Vanadium	100	101.3		ug/L		101	80 - 120
Zinc	200	193.0		ug/L		97	80 - 120

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-441621/5
Matrix: Water
Analysis Batch: 441621

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/04/24 11:29	1

Lab Sample ID: LCS 310-441621/6
Matrix: Water
Analysis Batch: 441621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.999		mg/L		100	90 - 110

Lab Sample ID: 310-295649-1 MS
Matrix: Ground Water
Analysis Batch: 441621

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.0871	J	1.00	0.9429		mg/L		86	75 - 125

Lab Sample ID: 310-295649-1 MSD
Matrix: Ground Water
Analysis Batch: 441621

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.0871	J	1.00	0.9541		mg/L		87	75 - 125	1	20

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-441551/16
Matrix: Water
Analysis Batch: 441551

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/04/24 12:47	1

Lab Sample ID: LCS 310-441551/14
Matrix: Water
Analysis Batch: 441551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.866		mg/L		99	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-440697/1
Matrix: Water
Analysis Batch: 440697

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			11/22/24 13:37	1

Lab Sample ID: LCS 310-440697/2
Matrix: Water
Analysis Batch: 440697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	1000	1020		mg/L		102	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-440741/25
Matrix: Water
Analysis Batch: 440741

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	939.8		mg/L		94	86 - 111

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-440570/1
Matrix: Water
Analysis Batch: 440570

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			11/21/24 15:18	1

Lab Sample ID: LCS 310-440570/2
Matrix: Water
Analysis Batch: 440570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	982.0		mg/L		98	88 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 310-440577/1
Matrix: Water
Analysis Batch: 440577

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			11/21/24 16:34	1

Lab Sample ID: LCS 310-440577/2
Matrix: Water
Analysis Batch: 440577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	992.0		mg/L		99	88 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-441041/16
Matrix: Water
Analysis Batch: 441041

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			11/26/24 15:46	1

Lab Sample ID: LCS 310-441041/17
Matrix: Water
Analysis Batch: 441041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.15		mg/L		101	90 - 110

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-440357/1
Matrix: Water
Analysis Batch: 440357

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			11/20/24 10:08	1

Lab Sample ID: LCS 310-440357/2
Matrix: Water
Analysis Batch: 440357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	144.9	*-	mg/L		73	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-441101/32
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			11/27/24 09:11	1

Method: SM 5220D - COD (Continued)

Lab Sample ID: MB 310-441101/60
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			11/27/24 09:11	1

Lab Sample ID: LCS 310-441101/33
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	130.1		mg/L		104	85 - 110

Lab Sample ID: LCS 310-441101/63
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	131.1		mg/L		105	85 - 110

GC/MS VOA

Analysis Batch: 440505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	8260D	
310-295649-2	MW-4B	Total/NA	Ground Water	8260D	
310-295649-3	MW-7A	Total/NA	Ground Water	8260D	
310-295649-4	Trip Blank	Total/NA	Water	8260D	
MB 310-440505/5	Method Blank	Total/NA	Water	8260D	
LCS 310-440505/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-440505/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 440572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	3005A	
310-295649-2	MW-4B	Total/NA	Ground Water	3005A	
310-295649-3	MW-7A	Total/NA	Ground Water	3005A	
MB 310-440572/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-440572/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 440930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	6020B	440572
310-295649-2	MW-4B	Total/NA	Ground Water	6020B	440572
310-295649-3	MW-7A	Total/NA	Ground Water	6020B	440572
MB 310-440572/1-A	Method Blank	Total/NA	Water	6020B	440572
LCS 310-440572/2-A	Lab Control Sample	Total/NA	Water	6020B	440572

General Chemistry

Analysis Batch: 440357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	SM 5210B	
310-295649-2	MW-4B	Total/NA	Ground Water	SM 5210B	
310-295649-3	MW-7A	Total/NA	Ground Water	SM 5210B	
USB 310-440357/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-440357/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 440570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	SM 2540C	
MB 310-440570/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-440570/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 440577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-2	MW-4B	Total/NA	Ground Water	SM 2540C	
310-295649-3	MW-7A	Total/NA	Ground Water	SM 2540C	
MB 310-440577/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-440577/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 440697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 440697 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-2	MW-4B	Total/NA	Ground Water	I-3765-85	
310-295649-3	MW-7A	Total/NA	Ground Water	I-3765-85	
MB 310-440697/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-440697/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 440741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	SM 2320B	
310-295649-2	MW-4B	Total/NA	Ground Water	SM 2320B	
310-295649-3	MW-7A	Total/NA	Ground Water	SM 2320B	
LCS 310-440741/25	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 440854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	353.2	
310-295649-2	MW-4B	Total/NA	Ground Water	353.2	
310-295649-3	MW-7A	Total/NA	Ground Water	353.2	

Analysis Batch: 440856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	SM 1030E	
310-295649-2	MW-4B	Total/NA	Ground Water	SM 1030E	
310-295649-3	MW-7A	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 441041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	SM 4500 Cl- E	
310-295649-2	MW-4B	Total/NA	Ground Water	SM 4500 Cl- E	
310-295649-3	MW-7A	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-441041/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-441041/17	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 441101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	SM 5220D	
310-295649-2	MW-4B	Total/NA	Ground Water	SM 5220D	
310-295649-3	MW-7A	Total/NA	Ground Water	SM 5220D	
MB 310-441101/32	Method Blank	Total/NA	Water	SM 5220D	
MB 310-441101/60	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-441101/33	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-441101/63	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 441551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	D516-16	
310-295649-2	MW-4B	Total/NA	Ground Water	D516-16	
310-295649-3	MW-7A	Total/NA	Ground Water	D516-16	
MB 310-441551/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-441551/14	Lab Control Sample	Total/NA	Water	D516-16	

QC Association Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

General Chemistry

Analysis Batch: 441621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	4500 F C-2011	
310-295649-2	MW-4B	Total/NA	Ground Water	4500 F C-2011	
310-295649-3	MW-7A	Total/NA	Ground Water	4500 F C-2011	
MB 310-441621/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-441621/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-295649-1 MS	MW-4	Total/NA	Ground Water	4500 F C-2011	
310-295649-1 MSD	MW-4	Total/NA	Ground Water	4500 F C-2011	

Field Service / Mobile Lab

Analysis Batch: 440476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295649-1	MW-4	Total/NA	Ground Water	Field Sampling	
310-295649-2	MW-4B	Total/NA	Ground Water	Field Sampling	
310-295649-3	MW-7A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-4
Date Collected: 11/19/24 10:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	440505	WSE8	EET CF	11/22/24 03:56
Total/NA	Prep	3005A			440572	F5MW	EET CF	11/22/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 16:43
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/04/24 19:28
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 11:36
Total/NA	Analysis	D516-16		1	441551	ENB7	EET CF	12/04/24 12:50
Total/NA	Analysis	I-3765-85		1	440697	HE7K	EET CF	11/22/24 13:37
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	440741	MDU9	EET CF	11/22/24 17:55
Total/NA	Analysis	SM 2540C		1	440570	XJ7V	EET CF	11/21/24 15:18
Total/NA	Analysis	SM 4500 Cl- E		1	441041	ENB7	EET CF	11/26/24 15:49
Total/NA	Analysis	SM 5210B		1	440357	W9YR	EET CF	11/20/24 17:23
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440476	BJ0R	EET CF	11/19/24 10:30

Client Sample ID: MW-4B
Date Collected: 11/19/24 11:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	440505	WSE8	EET CF	11/22/24 04:18
Total/NA	Prep	3005A			440572	F5MW	EET CF	11/22/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 16:45
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/04/24 02:54
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 11:45
Total/NA	Analysis	D516-16		1	441551	ENB7	EET CF	12/04/24 12:50
Total/NA	Analysis	I-3765-85		1	440697	HE7K	EET CF	11/22/24 13:37
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	440741	MDU9	EET CF	11/22/24 18:08
Total/NA	Analysis	SM 2540C		1	440577	XJ7V	EET CF	11/21/24 16:34
Total/NA	Analysis	SM 4500 Cl- E		1	441041	ENB7	EET CF	11/26/24 15:51
Total/NA	Analysis	SM 5210B		1	440357	W9YR	EET CF	11/20/24 17:26
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440476	BJ0R	EET CF	11/19/24 11:30

Client Sample ID: MW-7A
Date Collected: 11/19/24 12:30
Date Received: 11/20/24 14:55

Lab Sample ID: 310-295649-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	440505	WSE8	EET CF	11/22/24 04:40

Lab Chronicle

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-7A
Lab Sample ID: 310-295649-3
Date Collected: 11/19/24 12:30
Matrix: Ground Water
Date Received: 11/20/24 14:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			440572	F5MW	EET CF	11/22/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 16:48
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/04/24 02:56
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 11:47
Total/NA	Analysis	D516-16		1	441551	ENB7	EET CF	12/04/24 12:52
Total/NA	Analysis	I-3765-85		1	440697	HE7K	EET CF	11/22/24 13:37
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	440741	MDU9	EET CF	11/22/24 18:17
Total/NA	Analysis	SM 2540C		1	440577	XJ7V	EET CF	11/21/24 16:34
Total/NA	Analysis	SM 4500 Cl- E		2	441041	ENB7	EET CF	11/26/24 15:51
Total/NA	Analysis	SM 5210B		1	440357	W9YR	EET CF	11/20/24 17:30
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440476	BJ0R	EET CF	11/19/24 12:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-295649-4
Date Collected: 11/19/24 06:00
Matrix: Water
Date Received: 11/20/24 14:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	440505	WSE8	EET CF	11/21/24 23:13

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-295649-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-295649 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 11-20-24 TIME 1455 Received By: PH

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.5 Corrected Temp (°C): 1.5

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319 277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☑ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 11-20-24	COC No
AECOM	Email Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-1			G	GW		N		X	X		X	X	
MW-2R			G	GW		N		X	X		X	X	
MW-3			G	GW		N		X	X		X	X	
MW-4	11-19-24	1030	G	GW	8	N		X	X		X	X	Turbidity – 1.17 NTU
MW-4B	11-19-24	1130	G	GW	8	N		X	X		X	X	Turbidity – 1.14 NTU
MW-7A	11-19-24	1230	G	GW	8	N		X	X		X	X	Turbidity – 0.22 NTU
MW-24A			G	GW		N		X	X		X	X	
MW-25A			G	GW		N		X	X		X	X	
MW-29A			G	GW		N		X	X	X	X	X	
Trip Blank	11-19-24	0600	G	W	3	N			X				

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd._____ Corr'd._____	Therm ID No._____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	11-20-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by:	Company	Date/Time
					11-20-24 1455

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/6/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-295649-1

Login Number: 295649
List Number: 1
Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-295856-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-295856-1 — Eurofins Cedar Falls

Job Narrative
310-295856-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C.

GC/MS VOA
Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample(s) was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : MW-2R (310-295856-1), MW-24A (310-295856-2), MW-25A (310-295856-3), Trip Blank (310-295856-4) and MW-45A (310-295856-5). The requested target analyte list includes Acrylonitrile, an acid-labile compound that degrades in an acidic medium.

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-295856-1	MW-2R	Ground Water	11/21/24 15:30	11/22/24 10:35
310-295856-2	MW-24A	Ground Water	11/21/24 11:00	11/22/24 10:35
310-295856-3	MW-25A	Ground Water	11/21/24 12:00	11/22/24 10:35
310-295856-4	Trip Blank	Water	11/21/24 06:00	11/22/24 10:35
310-295856-5	MW-45A	Ground Water	11/21/24 13:00	11/22/24 10:35

Detection Summary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-2R
Lab Sample ID: 310-295856-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	129		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	115000		500	190	ug/L	1		6020B	Total/NA
Magnesium	30900		500	150	ug/L	1		6020B	Total/NA
Sodium	11100		1000	480	ug/L	1		6020B	Total/NA
Nitrate as N	0.955		0.100	0.0800	mg/L	1		353.2	Total/NA
Sulfate	33.3		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	2.63		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	0.288				%	1		SM 1030E	Total/NA
Total Alkalinity	387		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	387		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	448		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	7.78		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	24.1	J	25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	1.35				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-24A
Lab Sample ID: 310-295856-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	117		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	118000		500	190	ug/L	1		6020B	Total/NA
Chromium	1.91	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	0.204	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	40200		500	150	ug/L	1		6020B	Total/NA
Nickel	2.95	J	5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	35500		1000	480	ug/L	1		6020B	Total/NA
Nitrate as N	4.45		1.00	0.800	mg/L	1		353.2	Total/NA
Fluoride	0.0633	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	76.5		25.0	12.0	mg/L	5		D516-16	Total/NA
Anion/Cation Balance	-0.492				%	1		SM 1030E	Total/NA
Total Alkalinity	368		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	368		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	584		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	56.0		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	24.1	J	25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	1.34				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-25A
Lab Sample ID: 310-295856-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	229		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	190000		500	190	ug/L	1		6020B	Total/NA
Cobalt	0.276	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	63300		500	150	ug/L	1		6020B	Total/NA
Nickel	9.12		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	13400		1000	480	ug/L	1		6020B	Total/NA
Fluoride	0.0776	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	129		25.0	12.0	mg/L	5		D516-16	Total/NA
Anion/Cation Balance	2.47				%	1		SM 1030E	Total/NA
Total Alkalinity	553		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	553		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	776		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	28.3		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A (Continued)
Lab Sample ID: 310-295856-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	3.38				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-295856-4

No Detections.

Client Sample ID: MW-45A
Lab Sample ID: 310-295856-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	128		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.132	J	0.200	0.100	ug/L	1		6020B	Total/NA
Calcium	90400		500	190	ug/L	1		6020B	Total/NA
Cobalt	0.296	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	31900		500	150	ug/L	1		6020B	Total/NA
Sodium	6720		1000	480	ug/L	1		6020B	Total/NA
Fluoride	0.109		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	28.2		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	3.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	0.593				%	1		SM 1030E	Total/NA
Total Alkalinity	326		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	326		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	396		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	8.29		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	6.59				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-2R
Lab Sample ID: 310-295856-1
Date Collected: 11/21/24 15:30
Matrix: Ground Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/27/24 12:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/27/24 12:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/27/24 12:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/27/24 12:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/27/24 12:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/27/24 12:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/27/24 12:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/27/24 12:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/27/24 12:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/27/24 12:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/27/24 12:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/27/24 12:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/27/24 12:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/27/24 12:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/27/24 12:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/27/24 12:35	1
Acetone	<3.10		10.0	3.10	ug/L			11/27/24 12:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/27/24 12:35	1
Benzene	<0.220		0.500	0.220	ug/L			11/27/24 12:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/27/24 12:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/27/24 12:35	1
Bromoform	<0.780		5.00	0.780	ug/L			11/27/24 12:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/27/24 12:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/27/24 12:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/27/24 12:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/27/24 12:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/27/24 12:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/27/24 12:35	1
Chloroform	<1.30		3.00	1.30	ug/L			11/27/24 12:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/27/24 12:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/27/24 12:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/27/24 12:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/27/24 12:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/27/24 12:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/27/24 12:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/27/24 12:35	1
Styrene	<0.370		1.00	0.370	ug/L			11/27/24 12:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/27/24 12:35	1
Toluene	<0.430		1.00	0.430	ug/L			11/27/24 12:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/27/24 12:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/27/24 12:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/27/24 12:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/27/24 12:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/27/24 12:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/27/24 12:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/27/24 12:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/27/24 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*11/27/24 12:35*	*1*

Client Sample ID: MW-2R
Lab Sample ID: 310-295856-1

Date Collected: 11/21/24 15:30
Matrix: Ground Water

Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*11/27/24 12:35*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/27/24 12:35*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/25/24 09:30	11/25/24 21:44	1
Arsenic	<0.530		2.00	0.530	ug/L		11/25/24 09:30	11/25/24 21:44	1
Barium	**129**		2.00	0.660	ug/L		11/25/24 09:30	11/25/24 21:44	1
Beryllium	<0.330		1.00	0.330	ug/L		11/25/24 09:30	11/25/24 21:44	1
Cadmium	<0.100		0.200	0.100	ug/L		11/25/24 09:30	11/25/24 21:44	1
Calcium	**115000**		500	190	ug/L		11/25/24 09:30	11/25/24 21:44	1
Chromium	<1.20		5.00	1.20	ug/L		11/25/24 09:30	11/25/24 21:44	1
Cobalt	<0.170		0.500	0.170	ug/L		11/25/24 09:30	11/25/24 21:44	1
Copper	<1.80		5.00	1.80	ug/L		11/25/24 09:30	11/25/24 21:44	1
Lead	<0.260		0.500	0.260	ug/L		11/25/24 09:30	11/25/24 21:44	1
Magnesium	**30900**		500	150	ug/L		11/25/24 09:30	11/25/24 21:44	1
Nickel	<2.10		5.00	2.10	ug/L		11/25/24 09:30	11/25/24 21:44	1
Selenium	<1.40		5.00	1.40	ug/L		11/25/24 09:30	11/25/24 21:44	1
Silver	<0.500		1.00	0.500	ug/L		11/25/24 09:30	11/25/24 21:44	1
Sodium	**11100**		1000	480	ug/L		11/25/24 09:30	11/25/24 21:44	1
Thallium	<0.570		1.00	0.570	ug/L		11/25/24 09:30	11/25/24 21:44	1
Vanadium	<1.10		5.00	1.10	ug/L		11/25/24 09:30	11/25/24 21:44	1
Zinc	<9.70		20.0	9.70	ug/L		11/25/24 09:30	11/25/24 21:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**0.955**		0.100	0.0800	mg/L			12/05/24 14:03	1
Fluoride (SM 4500 F C-2011)	<0.0540		0.100	0.0540	mg/L			12/04/24 12:16	1
Sulfate (ASTM D516-16)	**33.3**		5.00	2.40	mg/L			12/04/24 12:53	1
Total Suspended Solids (USGS I-3765-85)	**2.63**		1.88	1.39	mg/L			11/22/24 19:45	1
Anion/Cation Balance (SM 1030E)	**0.288**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**387**		5.00	2.50	mg/L			11/26/24 12:30	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**387**		5.00	2.50	mg/L			11/26/24 12:30	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:30	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:30	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:30	1
Total Dissolved Solids (SM 2540C)	**448**		50.0	42.0	mg/L			11/22/24 18:26	1
Chloride (SM 4500 Cl- E)	**7.78**		2.00	1.40	mg/L			11/26/24 15:53	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			11/22/24 11:59	1
Chemical Oxygen Demand (SM 5220D)	**24.1**	**J**	25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.35**				NTU			11/21/24 15:30	1

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-24A
Lab Sample ID: 310-295856-2
Date Collected: 11/21/24 11:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/27/24 12:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/27/24 12:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/27/24 12:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/27/24 12:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/27/24 12:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/27/24 12:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/27/24 12:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/27/24 12:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/27/24 12:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/27/24 12:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/27/24 12:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/27/24 12:57	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/27/24 12:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/27/24 12:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/27/24 12:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/27/24 12:57	1
Acetone	<3.10		10.0	3.10	ug/L			11/27/24 12:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/27/24 12:57	1
Benzene	<0.220		0.500	0.220	ug/L			11/27/24 12:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/27/24 12:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/27/24 12:57	1
Bromoform	<0.780		5.00	0.780	ug/L			11/27/24 12:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/27/24 12:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/27/24 12:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/27/24 12:57	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/27/24 12:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/27/24 12:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/27/24 12:57	1
Chloroform	<1.30		3.00	1.30	ug/L			11/27/24 12:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/27/24 12:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/27/24 12:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/27/24 12:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/27/24 12:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/27/24 12:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/27/24 12:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/27/24 12:57	1
Styrene	<0.370		1.00	0.370	ug/L			11/27/24 12:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/27/24 12:57	1
Toluene	<0.430		1.00	0.430	ug/L			11/27/24 12:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/27/24 12:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/27/24 12:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/27/24 12:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/27/24 12:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/27/24 12:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/27/24 12:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/27/24 12:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/27/24 12:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*11/27/24 12:57*	*1*

Client Sample ID: MW-24A
Lab Sample ID: 310-295856-2
Date Collected: 11/21/24 11:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*11/27/24 12:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/27/24 12:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/25/24 09:30	11/25/24 21:59	1
Arsenic	<0.530		2.00	0.530	ug/L		11/25/24 09:30	11/25/24 21:59	1
Barium	**117**		2.00	0.660	ug/L		11/25/24 09:30	11/25/24 21:59	1
Beryllium	<0.330		1.00	0.330	ug/L		11/25/24 09:30	11/25/24 21:59	1
Cadmium	<0.100		0.200	0.100	ug/L		11/25/24 09:30	11/25/24 21:59	1
Calcium	**118000**		500	190	ug/L		11/25/24 09:30	11/25/24 21:59	1
Chromium	**1.91**	**J**	5.00	1.20	ug/L		11/25/24 09:30	11/25/24 21:59	1
Cobalt	**0.204**	**J**	0.500	0.170	ug/L		11/25/24 09:30	11/25/24 21:59	1
Copper	<1.80		5.00	1.80	ug/L		11/25/24 09:30	11/25/24 21:59	1
Lead	<0.260		0.500	0.260	ug/L		11/25/24 09:30	11/25/24 21:59	1
Magnesium	**40200**		500	150	ug/L		11/25/24 09:30	11/25/24 21:59	1
Nickel	**2.95**	**J**	5.00	2.10	ug/L		11/25/24 09:30	11/25/24 21:59	1
Selenium	<1.40		5.00	1.40	ug/L		11/25/24 09:30	11/25/24 21:59	1
Silver	<0.500		1.00	0.500	ug/L		11/25/24 09:30	11/25/24 21:59	1
Sodium	**35500**		1000	480	ug/L		11/25/24 09:30	11/25/24 21:59	1
Thallium	<0.570		1.00	0.570	ug/L		11/25/24 09:30	11/25/24 21:59	1
Vanadium	<1.10		5.00	1.10	ug/L		11/25/24 09:30	11/25/24 21:59	1
Zinc	<9.70		20.0	9.70	ug/L		11/25/24 09:30	11/25/24 21:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**4.45**		1.00	0.800	mg/L			12/05/24 14:05	1
Fluoride (SM 4500 F C-2011)	**0.0633**	**J**	0.100	0.0540	mg/L			12/04/24 12:18	1
Sulfate (ASTM D516-16)	**76.5**		25.0	12.0	mg/L			12/04/24 12:53	5
Total Suspended Solids (USGS I-3765-85)	<1.48		2.00	1.48	mg/L			11/22/24 19:45	1
Anion/Cation Balance (SM 1030E)	**-0.492**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**368**		5.00	2.50	mg/L			11/26/24 12:40	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**368**		5.00	2.50	mg/L			11/26/24 12:40	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:40	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:40	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:40	1
Total Dissolved Solids (SM 2540C)	**584**		50.0	42.0	mg/L			11/22/24 18:26	1
Chloride (SM 4500 Cl- E)	**56.0**		2.00	1.40	mg/L			11/26/24 15:53	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			11/22/24 12:02	1
Chemical Oxygen Demand (SM 5220D)	**24.1**	**J**	25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.34**				NTU			11/21/24 11:00	1

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Lab Sample ID: 310-295856-3
Date Collected: 11/21/24 12:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/27/24 13:19	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/27/24 13:19	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/27/24 13:19	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/27/24 13:19	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/27/24 13:19	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/27/24 13:19	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/27/24 13:19	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/27/24 13:19	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/27/24 13:19	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/27/24 13:19	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/27/24 13:19	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/27/24 13:19	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/27/24 13:19	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/27/24 13:19	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/27/24 13:19	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/27/24 13:19	1
Acetone	<3.10		10.0	3.10	ug/L			11/27/24 13:19	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/27/24 13:19	1
Benzene	<0.220		0.500	0.220	ug/L			11/27/24 13:19	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/27/24 13:19	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/27/24 13:19	1
Bromoform	<0.780		5.00	0.780	ug/L			11/27/24 13:19	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/27/24 13:19	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/27/24 13:19	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/27/24 13:19	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/27/24 13:19	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/27/24 13:19	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/27/24 13:19	1
Chloroform	<1.30		3.00	1.30	ug/L			11/27/24 13:19	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/27/24 13:19	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/27/24 13:19	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/27/24 13:19	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/27/24 13:19	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/27/24 13:19	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/27/24 13:19	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/27/24 13:19	1
Styrene	<0.370		1.00	0.370	ug/L			11/27/24 13:19	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/27/24 13:19	1
Toluene	<0.430		1.00	0.430	ug/L			11/27/24 13:19	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/27/24 13:19	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/27/24 13:19	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/27/24 13:19	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/27/24 13:19	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/27/24 13:19	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/27/24 13:19	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/27/24 13:19	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/27/24 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*11/27/24 13:19*	*1*

Client Sample ID: MW-25A
Lab Sample ID: 310-295856-3

Date Collected: 11/21/24 12:00
Matrix: Ground Water

Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*11/27/24 13:19*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*11/27/24 13:19*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/25/24 09:30	11/25/24 22:02	1
Arsenic	<0.530		2.00	0.530	ug/L		11/25/24 09:30	11/25/24 22:02	1
Barium	**229**		2.00	0.660	ug/L		11/25/24 09:30	11/25/24 22:02	1
Beryllium	<0.330		1.00	0.330	ug/L		11/25/24 09:30	11/25/24 22:02	1
Cadmium	<0.100		0.200	0.100	ug/L		11/25/24 09:30	11/25/24 22:02	1
Calcium	**190000**		500	190	ug/L		11/25/24 09:30	11/25/24 22:02	1
Chromium	<1.20		5.00	1.20	ug/L		11/25/24 09:30	11/25/24 22:02	1
Cobalt	**0.276**	**J**	0.500	0.170	ug/L		11/25/24 09:30	11/25/24 22:02	1
Copper	<1.80		5.00	1.80	ug/L		11/25/24 09:30	11/25/24 22:02	1
Lead	<0.260		0.500	0.260	ug/L		11/25/24 09:30	11/25/24 22:02	1
Magnesium	**63300**		500	150	ug/L		11/25/24 09:30	11/25/24 22:02	1
Nickel	**9.12**		5.00	2.10	ug/L		11/25/24 09:30	11/25/24 22:02	1
Selenium	<1.40		5.00	1.40	ug/L		11/25/24 09:30	11/25/24 22:02	1
Silver	<0.500		1.00	0.500	ug/L		11/25/24 09:30	11/25/24 22:02	1
Sodium	**13400**		1000	480	ug/L		11/25/24 09:30	11/25/24 22:02	1
Thallium	<0.570		1.00	0.570	ug/L		11/25/24 09:30	11/25/24 22:02	1
Vanadium	<1.10		5.00	1.10	ug/L		11/25/24 09:30	11/25/24 22:02	1
Zinc	<9.70		20.0	9.70	ug/L		11/25/24 09:30	11/25/24 22:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/05/24 14:10	1
Fluoride (SM 4500 F C-2011)	**0.0776**	**J**	0.100	0.0540	mg/L			12/04/24 12:21	1
Sulfate (ASTM D516-16)	**129**		25.0	12.0	mg/L			12/04/24 12:54	5
Total Suspended Solids (USGS I-3765-85)	<1.48		2.00	1.48	mg/L			11/22/24 19:45	1
Anion/Cation Balance (SM 1030E)	**2.47**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**553**		5.00	2.50	mg/L			11/26/24 12:50	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**553**		5.00	2.50	mg/L			11/26/24 12:50	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:50	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:50	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 12:50	1
Total Dissolved Solids (SM 2540C)	**776**		50.0	42.0	mg/L			11/22/24 18:26	1
Chloride (SM 4500 Cl- E)	**28.3**		2.00	1.40	mg/L			11/26/24 15:53	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			11/22/24 12:05	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.38**				NTU			11/21/24 12:00	1

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-295856-4
Date Collected: 11/21/24 06:00
Matrix: Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/27/24 09:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/27/24 09:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/27/24 09:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/27/24 09:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/27/24 09:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/27/24 09:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/27/24 09:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/27/24 09:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/27/24 09:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/27/24 09:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/27/24 09:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/27/24 09:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/27/24 09:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/27/24 09:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/27/24 09:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/27/24 09:41	1
Acetone	<3.10		10.0	3.10	ug/L			11/27/24 09:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/27/24 09:41	1
Benzene	<0.220		0.500	0.220	ug/L			11/27/24 09:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/27/24 09:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/27/24 09:41	1
Bromoform	<0.780		5.00	0.780	ug/L			11/27/24 09:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/27/24 09:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/27/24 09:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/27/24 09:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/27/24 09:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/27/24 09:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/27/24 09:41	1
Chloroform	<1.30		3.00	1.30	ug/L			11/27/24 09:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/27/24 09:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/27/24 09:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/27/24 09:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/27/24 09:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/27/24 09:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/27/24 09:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/27/24 09:41	1
Styrene	<0.370		1.00	0.370	ug/L			11/27/24 09:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/27/24 09:41	1
Toluene	<0.430		1.00	0.430	ug/L			11/27/24 09:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/27/24 09:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/27/24 09:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/27/24 09:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/27/24 09:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/27/24 09:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/27/24 09:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/27/24 09:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/27/24 09:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*11/27/24 09:41*	*1*

Client Sample ID: Trip Blank
Lab Sample ID: 310-295856-4
Date Collected: 11/21/24 06:00
Matrix: Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		11/27/24 09:41	1
4-Bromofluorobenzene (Surr)	102		80 - 120		11/27/24 09:41	1

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-45A
Lab Sample ID: 310-295856-5
Date Collected: 11/21/24 13:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/27/24 13:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/27/24 13:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/27/24 13:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/27/24 13:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/27/24 13:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/27/24 13:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/27/24 13:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/27/24 13:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/27/24 13:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/27/24 13:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/27/24 13:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/27/24 13:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/27/24 13:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/27/24 13:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/27/24 13:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/27/24 13:41	1
Acetone	<3.10		10.0	3.10	ug/L			11/27/24 13:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/27/24 13:41	1
Benzene	<0.220		0.500	0.220	ug/L			11/27/24 13:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/27/24 13:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/27/24 13:41	1
Bromoform	<0.780		5.00	0.780	ug/L			11/27/24 13:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/27/24 13:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/27/24 13:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/27/24 13:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/27/24 13:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/27/24 13:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/27/24 13:41	1
Chloroform	<1.30		3.00	1.30	ug/L			11/27/24 13:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/27/24 13:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/27/24 13:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/27/24 13:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/27/24 13:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/27/24 13:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/27/24 13:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/27/24 13:41	1
Styrene	<0.370		1.00	0.370	ug/L			11/27/24 13:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/27/24 13:41	1
Toluene	<0.430		1.00	0.430	ug/L			11/27/24 13:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/27/24 13:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/27/24 13:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/27/24 13:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/27/24 13:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/27/24 13:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/27/24 13:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/27/24 13:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/27/24 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*11/27/24 13:41*	*1*

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-45A
Lab Sample ID: 310-295856-5
Date Collected: 11/21/24 13:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*11/27/24 13:41*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/27/24 13:41*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/25/24 09:30	11/25/24 22:05	1
Arsenic	<0.530		2.00	0.530	ug/L		11/25/24 09:30	11/25/24 22:05	1
Barium	**128**		2.00	0.660	ug/L		11/25/24 09:30	11/25/24 22:05	1
Beryllium	<0.330		1.00	0.330	ug/L		11/25/24 09:30	11/25/24 22:05	1
Cadmium	**0.132**	**J**	0.200	0.100	ug/L		11/25/24 09:30	11/25/24 22:05	1
Calcium	**90400**		500	190	ug/L		11/25/24 09:30	11/25/24 22:05	1
Chromium	<1.20		5.00	1.20	ug/L		11/25/24 09:30	11/25/24 22:05	1
Cobalt	**0.296**	**J**	0.500	0.170	ug/L		11/25/24 09:30	11/25/24 22:05	1
Copper	<1.80		5.00	1.80	ug/L		11/25/24 09:30	11/25/24 22:05	1
Lead	<0.260		0.500	0.260	ug/L		11/25/24 09:30	11/25/24 22:05	1
Magnesium	**31900**		500	150	ug/L		11/25/24 09:30	11/25/24 22:05	1
Nickel	<2.10		5.00	2.10	ug/L		11/25/24 09:30	11/25/24 22:05	1
Selenium	<1.40		5.00	1.40	ug/L		11/25/24 09:30	11/25/24 22:05	1
Silver	<0.500		1.00	0.500	ug/L		11/25/24 09:30	11/25/24 22:05	1
Sodium	**6720**		1000	480	ug/L		11/25/24 09:30	11/25/24 22:05	1
Thallium	<0.570		1.00	0.570	ug/L		11/25/24 09:30	11/25/24 22:05	1
Vanadium	<1.10		5.00	1.10	ug/L		11/25/24 09:30	11/25/24 22:05	1
Zinc	<9.70		20.0	9.70	ug/L		11/25/24 09:30	11/25/24 22:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/05/24 14:11	1
Fluoride (SM 4500 F C-2011)	**0.109**		0.100	0.0540	mg/L			12/04/24 12:24	1
Sulfate (ASTM D516-16)	**28.2**		5.00	2.40	mg/L			12/04/24 12:54	1
Total Suspended Solids (USGS I-3765-85)	**3.25**		1.88	1.39	mg/L			11/22/24 19:45	1
Anion/Cation Balance (SM 1030E)	**0.593**				%			11/25/24 13:13	1
Total Alkalinity (SM 2320B)	**326**		5.00	2.50	mg/L			11/26/24 13:08	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**326**		5.00	2.50	mg/L			11/26/24 13:08	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 13:08	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 13:08	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			11/26/24 13:08	1
Total Dissolved Solids (SM 2540C)	**396**		50.0	42.0	mg/L			11/22/24 18:26	1
Chloride (SM 4500 Cl- E)	**8.29**		2.00	1.40	mg/L			11/26/24 15:54	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			11/22/24 12:09	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			11/27/24 09:11	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**6.59**				NTU			11/21/24 13:00	1

Definitions/Glossary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

Metals

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

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-295856-1	MW-2R	112	94	101
310-295856-2	MW-24A	113	95	98
310-295856-3	MW-25A	114	94	103
310-295856-5	MW-45A	111	94	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-295856-4	Trip Blank	112	97	102
LCS 310-441010/6	Lab Control Sample	101	101	101
LCS 310-441010/7	Lab Control Sample	111	96	101
MB 310-441010/5	Method Blank	114	97	100

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-441010/5
Matrix: Water
Analysis Batch: 441010

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			11/27/24 08:35	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			11/27/24 08:35	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			11/27/24 08:35	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			11/27/24 08:35	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			11/27/24 08:35	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			11/27/24 08:35	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			11/27/24 08:35	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			11/27/24 08:35	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			11/27/24 08:35	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			11/27/24 08:35	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			11/27/24 08:35	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			11/27/24 08:35	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			11/27/24 08:35	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			11/27/24 08:35	1
2-Hexanone	<2.00		10.0	2.00	ug/L			11/27/24 08:35	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			11/27/24 08:35	1
Acetone	<3.10		10.0	3.10	ug/L			11/27/24 08:35	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			11/27/24 08:35	1
Benzene	<0.220		0.500	0.220	ug/L			11/27/24 08:35	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			11/27/24 08:35	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			11/27/24 08:35	1
Bromoform	<0.780		5.00	0.780	ug/L			11/27/24 08:35	1
Bromomethane	<1.10		4.00	1.10	ug/L			11/27/24 08:35	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			11/27/24 08:35	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			11/27/24 08:35	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			11/27/24 08:35	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			11/27/24 08:35	1
Chloroethane	<0.790		4.00	0.790	ug/L			11/27/24 08:35	1
Chloroform	<1.30		3.00	1.30	ug/L			11/27/24 08:35	1
Chloromethane	<0.610		3.00	0.610	ug/L			11/27/24 08:35	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			11/27/24 08:35	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			11/27/24 08:35	1
Dibromomethane	<0.330		1.00	0.330	ug/L			11/27/24 08:35	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			11/27/24 08:35	1
Iodomethane	<7.00		10.0	7.00	ug/L			11/27/24 08:35	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			11/27/24 08:35	1
Styrene	<0.370		1.00	0.370	ug/L			11/27/24 08:35	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			11/27/24 08:35	1
Toluene	<0.430		1.00	0.430	ug/L			11/27/24 08:35	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			11/27/24 08:35	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			11/27/24 08:35	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			11/27/24 08:35	1
Trichloroethene	<0.430		1.00	0.430	ug/L			11/27/24 08:35	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			11/27/24 08:35	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			11/27/24 08:35	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			11/27/24 08:35	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			11/27/24 08:35	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-441010/5
Matrix: Water
Analysis Batch: 441010

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*11/27/24 08:35*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*11/27/24 08:35*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/27/24 08:35*	*1*

Lab Sample ID: LCS 310-441010/6
Matrix: Water
Analysis Batch: 441010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.25		ug/L		96	71 - 120
1,1,1-Trichloroethane	20.0	19.37		ug/L		97	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.56		ug/L		98	68 - 124
1,1,2-Trichloroethane	20.0	20.39		ug/L		102	73 - 123
1,1-Dichloroethane	20.0	19.33		ug/L		97	70 - 127
1,1-Dichloroethene	20.0	18.79		ug/L		94	63 - 132
1,2,3-Trichloropropane	20.0	19.94		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.84		ug/L		104	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.95		ug/L		100	75 - 125
1,2-Dichlorobenzene	20.0	19.44		ug/L		97	74 - 120
1,2-Dichloroethane	20.0	19.80		ug/L		99	71 - 125
1,2-Dichloropropane	20.0	20.29		ug/L		101	73 - 124
1,4-Dichlorobenzene	20.0	18.81		ug/L		94	72 - 120
2-Butanone (MEK)	40.0	37.10		ug/L		93	50 - 150
2-Hexanone	40.0	39.65		ug/L		99	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	38.03		ug/L		95	60 - 139
Acetone	40.0	37.94		ug/L		95	50 - 150
Acrylonitrile	200	202.3		ug/L		101	50 - 150
Benzene	20.0	18.63		ug/L		93	72 - 124
Bromochloromethane	20.0	19.30		ug/L		97	73 - 130
Bromodichloromethane	20.0	19.43		ug/L		97	74 - 122
Bromoform	20.0	19.00		ug/L		95	61 - 122
Carbon disulfide	20.0	18.51		ug/L		93	59 - 135
Carbon tetrachloride	20.0	19.47		ug/L		97	67 - 132
Chlorobenzene	20.0	18.92		ug/L		95	76 - 120
Chlorodibromomethane	20.0	19.66		ug/L		98	71 - 121
Chloroform	20.0	19.83		ug/L		99	72 - 125
cis-1,2-Dichloroethene	20.0	19.17		ug/L		96	74 - 123
cis-1,3-Dichloropropene	20.0	18.38		ug/L		92	71 - 125
Dibromomethane	20.0	19.82		ug/L		99	74 - 125
Ethylbenzene	20.0	18.87		ug/L		94	74 - 122
Iodomethane	20.0	14.80		ug/L		74	10 - 150
Methylene Chloride	20.0	19.78		ug/L		99	50 - 150
Styrene	20.0	19.06		ug/L		95	74 - 121
Tetrachloroethene	20.0	19.17		ug/L		96	71 - 130
Toluene	20.0	19.46		ug/L		97	74 - 123
trans-1,2-Dichloroethene	20.0	18.98		ug/L		95	70 - 126
trans-1,3-Dichloropropene	20.0	18.39		ug/L		92	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.53		ug/L		83	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-441010/6
Matrix: Water
Analysis Batch: 441010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	19.46		ug/L		97	72 - 126
Vinyl acetate	40.0	32.45		ug/L		81	50 - 150
Xylenes, Total	40.0	37.05		ug/L		93	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-441010/7
Matrix: Water
Analysis Batch: 441010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.93		ug/L		80	23 - 150
Chloroethane	20.0	19.08		ug/L		95	54 - 136
Chloromethane	20.0	18.48		ug/L		92	38 - 150
Trichlorofluoromethane	20.0	19.40		ug/L		97	54 - 149
Vinyl chloride	20.0	19.05		ug/L		95	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*111*		*73 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-440704/1-A
Matrix: Water
Analysis Batch: 440930

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440704

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		11/25/24 09:30	11/25/24 20:41	1
Arsenic	<0.530		2.00	0.530	ug/L		11/25/24 09:30	11/25/24 20:41	1
Barium	<0.660		2.00	0.660	ug/L		11/25/24 09:30	11/25/24 20:41	1
Beryllium	<0.330		1.00	0.330	ug/L		11/25/24 09:30	11/25/24 20:41	1
Cadmium	<0.100		0.200	0.100	ug/L		11/25/24 09:30	11/25/24 20:41	1
Chromium	<1.20		5.00	1.20	ug/L		11/25/24 09:30	11/25/24 20:41	1
Cobalt	<0.170		0.500	0.170	ug/L		11/25/24 09:30	11/25/24 20:41	1
Copper	<1.80		5.00	1.80	ug/L		11/25/24 09:30	11/25/24 20:41	1
Lead	<0.260		0.500	0.260	ug/L		11/25/24 09:30	11/25/24 20:41	1
Nickel	<2.10		5.00	2.10	ug/L		11/25/24 09:30	11/25/24 20:41	1
Selenium	<1.40		5.00	1.40	ug/L		11/25/24 09:30	11/25/24 20:41	1
Silver	<0.500		1.00	0.500	ug/L		11/25/24 09:30	11/25/24 20:41	1
Thallium	<0.570		1.00	0.570	ug/L		11/25/24 09:30	11/25/24 20:41	1
Vanadium	<1.10		5.00	1.10	ug/L		11/25/24 09:30	11/25/24 20:41	1
Zinc	<9.70		20.0	9.70	ug/L		11/25/24 09:30	11/25/24 20:41	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-440704/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 440930
Prep Batch: 440704

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	212.5		ug/L		106	80 - 120
Arsenic	200	198.2		ug/L		99	80 - 120
Barium	100	109.8		ug/L		110	80 - 120
Beryllium	100	93.62		ug/L		94	80 - 120
Cadmium	100	103.1		ug/L		103	80 - 120
Chromium	100	98.63		ug/L		99	80 - 120
Cobalt	100	100.8		ug/L		101	80 - 120
Copper	200	198.7		ug/L		99	80 - 120
Lead	200	195.8		ug/L		98	80 - 120
Nickel	200	206.1		ug/L		103	80 - 120
Selenium	400	381.2		ug/L		95	80 - 120
Silver	100	118.8		ug/L		119	80 - 120
Thallium	100	108.2		ug/L		108	80 - 120
Vanadium	100	101.6		ug/L		102	80 - 120
Zinc	200	191.4		ug/L		96	80 - 120

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-441621/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 441621

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/04/24 11:29	1

Lab Sample ID: LCS 310-441621/6
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 441621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.999		mg/L		100	90 - 110

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-441551/16
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 441551

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/04/24 12:47	1

Lab Sample ID: LCS 310-441551/14
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 441551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.866		mg/L		99	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-440738/1
Matrix: Water
Analysis Batch: 440738

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			11/22/24 19:45	1

Lab Sample ID: LCS 310-440738/2
Matrix: Water
Analysis Batch: 440738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	109.0		mg/L		109	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-441036/2
Matrix: Water
Analysis Batch: 441036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	968.2		mg/L		97	86 - 111

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-440735/1
Matrix: Water
Analysis Batch: 440735

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			11/22/24 18:26	1

Lab Sample ID: LCS 310-440735/2
Matrix: Water
Analysis Batch: 440735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1048		mg/L		105	88 - 110

Lab Sample ID: 310-295856-2 DU
Matrix: Ground Water
Analysis Batch: 440735

Client Sample ID: MW-24A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	584		578.0		mg/L		1	16

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-441041/16
Matrix: Water
Analysis Batch: 441041

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			11/26/24 15:46	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 310-441041/17
Matrix: Water
Analysis Batch: 441041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.15		mg/L		101	90 - 110

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-440634/1
Matrix: Water
Analysis Batch: 440634

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			11/22/24 11:08	1

Lab Sample ID: LCS 310-440634/2
Matrix: Water
Analysis Batch: 440634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	189.9		mg/L		96	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-441101/32
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			11/27/24 09:11	1

Lab Sample ID: MB 310-441101/5
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			11/27/24 09:11	1

Lab Sample ID: MB 310-441101/60
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			11/27/24 09:11	1

Lab Sample ID: LCS 310-441101/3
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	131.1		mg/L		105	85 - 110

Method: SM 5220D - COD (Continued)

Lab Sample ID: LCS 310-441101/33
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	130.1		mg/L		104	85 - 110

Lab Sample ID: LCS 310-441101/63
Matrix: Water
Analysis Batch: 441101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	131.1		mg/L		105	85 - 110

Lab Sample ID: 310-295856-3 MS
Matrix: Ground Water
Analysis Batch: 441101

Client Sample ID: MW-25A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	<24.0		250	320.0		mg/L		128	83 - 145

Lab Sample ID: 310-295856-3 MSD
Matrix: Ground Water
Analysis Batch: 441101

Client Sample ID: MW-25A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	<24.0		250	314.8		mg/L		126	83 - 145	2	16

GC/MS VOA

Analysis Batch: 441010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	8260D	
310-295856-2	MW-24A	Total/NA	Ground Water	8260D	
310-295856-3	MW-25A	Total/NA	Ground Water	8260D	
310-295856-4	Trip Blank	Total/NA	Water	8260D	
310-295856-5	MW-45A	Total/NA	Ground Water	8260D	
MB 310-441010/5	Method Blank	Total/NA	Water	8260D	
LCS 310-441010/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-441010/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 440704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	3005A	
310-295856-2	MW-24A	Total/NA	Ground Water	3005A	
310-295856-3	MW-25A	Total/NA	Ground Water	3005A	
310-295856-5	MW-45A	Total/NA	Ground Water	3005A	
MB 310-440704/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-440704/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 440930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	6020B	440704
310-295856-2	MW-24A	Total/NA	Ground Water	6020B	440704
310-295856-3	MW-25A	Total/NA	Ground Water	6020B	440704
310-295856-5	MW-45A	Total/NA	Ground Water	6020B	440704
MB 310-440704/1-A	Method Blank	Total/NA	Water	6020B	440704
LCS 310-440704/2-A	Lab Control Sample	Total/NA	Water	6020B	440704

General Chemistry

Analysis Batch: 440634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	SM 5210B	
310-295856-2	MW-24A	Total/NA	Ground Water	SM 5210B	
310-295856-3	MW-25A	Total/NA	Ground Water	SM 5210B	
310-295856-5	MW-45A	Total/NA	Ground Water	SM 5210B	
USB 310-440634/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-440634/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 440735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	SM 2540C	
310-295856-2	MW-24A	Total/NA	Ground Water	SM 2540C	
310-295856-3	MW-25A	Total/NA	Ground Water	SM 2540C	
310-295856-5	MW-45A	Total/NA	Ground Water	SM 2540C	
MB 310-440735/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-440735/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-295856-2 DU	MW-24A	Total/NA	Ground Water	SM 2540C	

General Chemistry

Analysis Batch: 440738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	I-3765-85	
310-295856-2	MW-24A	Total/NA	Ground Water	I-3765-85	
310-295856-3	MW-25A	Total/NA	Ground Water	I-3765-85	
310-295856-5	MW-45A	Total/NA	Ground Water	I-3765-85	
MB 310-440738/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-440738/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 440854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	353.2	
310-295856-2	MW-24A	Total/NA	Ground Water	353.2	
310-295856-3	MW-25A	Total/NA	Ground Water	353.2	
310-295856-5	MW-45A	Total/NA	Ground Water	353.2	

Analysis Batch: 440856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	SM 1030E	
310-295856-2	MW-24A	Total/NA	Ground Water	SM 1030E	
310-295856-3	MW-25A	Total/NA	Ground Water	SM 1030E	
310-295856-5	MW-45A	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 441036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	SM 2320B	
310-295856-2	MW-24A	Total/NA	Ground Water	SM 2320B	
310-295856-3	MW-25A	Total/NA	Ground Water	SM 2320B	
310-295856-5	MW-45A	Total/NA	Ground Water	SM 2320B	
LCS 310-441036/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 441041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	SM 4500 Cl- E	
310-295856-2	MW-24A	Total/NA	Ground Water	SM 4500 Cl- E	
310-295856-3	MW-25A	Total/NA	Ground Water	SM 4500 Cl- E	
310-295856-5	MW-45A	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-441041/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-441041/17	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 441101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	SM 5220D	
310-295856-2	MW-24A	Total/NA	Ground Water	SM 5220D	
310-295856-3	MW-25A	Total/NA	Ground Water	SM 5220D	
310-295856-5	MW-45A	Total/NA	Ground Water	SM 5220D	
MB 310-441101/32	Method Blank	Total/NA	Water	SM 5220D	
MB 310-441101/5	Method Blank	Total/NA	Water	SM 5220D	
MB 310-441101/60	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-441101/3	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-441101/33	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-441101/63	Lab Control Sample	Total/NA	Water	SM 5220D	
310-295856-3 MS	MW-25A	Total/NA	Ground Water	SM 5220D	

General Chemistry (Continued)

Analysis Batch: 441101 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-3 MSD	MW-25A	Total/NA	Ground Water	SM 5220D	

Analysis Batch: 441551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	D516-16	
310-295856-2	MW-24A	Total/NA	Ground Water	D516-16	
310-295856-3	MW-25A	Total/NA	Ground Water	D516-16	
310-295856-5	MW-45A	Total/NA	Ground Water	D516-16	
MB 310-441551/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-441551/14	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 441621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	4500 F C-2011	
310-295856-2	MW-24A	Total/NA	Ground Water	4500 F C-2011	
310-295856-3	MW-25A	Total/NA	Ground Water	4500 F C-2011	
310-295856-5	MW-45A	Total/NA	Ground Water	4500 F C-2011	
MB 310-441621/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-441621/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	

Field Service / Mobile Lab

Analysis Batch: 440970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295856-1	MW-2R	Total/NA	Ground Water	Field Sampling	
310-295856-2	MW-24A	Total/NA	Ground Water	Field Sampling	
310-295856-3	MW-25A	Total/NA	Ground Water	Field Sampling	
310-295856-5	MW-45A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-2R
Lab Sample ID: 310-295856-1
Date Collected: 11/21/24 15:30
Matrix: Ground Water
Date Received: 11/22/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441010	WSE8	EET CF	11/27/24 12:35
Total/NA	Prep	3005A			440704	F5MW	EET CF	11/25/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 21:44
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/05/24 14:03
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 12:16
Total/NA	Analysis	D516-16		1	441551	ENB7	EET CF	12/04/24 12:53
Total/NA	Analysis	I-3765-85		1	440738	MDU9	EET CF	11/22/24 19:45
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	441036	HE7K	EET CF	11/26/24 12:30
Total/NA	Analysis	SM 2540C		1	440735	MDU9	EET CF	11/22/24 18:26
Total/NA	Analysis	SM 4500 Cl- E		1	441041	ENB7	EET CF	11/26/24 15:53
Total/NA	Analysis	SM 5210B		1	440634	W9YR	EET CF	11/22/24 11:59
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440970	BJ0R	EET CF	11/21/24 15:30

Client Sample ID: MW-24A
Lab Sample ID: 310-295856-2
Date Collected: 11/21/24 11:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441010	WSE8	EET CF	11/27/24 12:57
Total/NA	Prep	3005A			440704	F5MW	EET CF	11/25/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 21:59
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/05/24 14:05
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 12:18
Total/NA	Analysis	D516-16		5	441551	ENB7	EET CF	12/04/24 12:53
Total/NA	Analysis	I-3765-85		1	440738	MDU9	EET CF	11/22/24 19:45
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	441036	HE7K	EET CF	11/26/24 12:40
Total/NA	Analysis	SM 2540C		1	440735	MDU9	EET CF	11/22/24 18:26
Total/NA	Analysis	SM 4500 Cl- E		1	441041	ENB7	EET CF	11/26/24 15:53
Total/NA	Analysis	SM 5210B		1	440634	W9YR	EET CF	11/22/24 12:02
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440970	BJ0R	EET CF	11/21/24 11:00

Client Sample ID: MW-25A
Lab Sample ID: 310-295856-3
Date Collected: 11/21/24 12:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441010	WSE8	EET CF	11/27/24 13:19

Lab Chronicle

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-25A
Lab Sample ID: 310-295856-3
Date Collected: 11/21/24 12:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			440704	F5MW	EET CF	11/25/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 22:02
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/05/24 14:10
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 12:21
Total/NA	Analysis	D516-16		5	441551	ENB7	EET CF	12/04/24 12:54
Total/NA	Analysis	I-3765-85		1	440738	MDU9	EET CF	11/22/24 19:45
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	441036	HE7K	EET CF	11/26/24 12:50
Total/NA	Analysis	SM 2540C		1	440735	MDU9	EET CF	11/22/24 18:26
Total/NA	Analysis	SM 4500 Cl- E		1	441041	ENB7	EET CF	11/26/24 15:53
Total/NA	Analysis	SM 5210B		1	440634	W9YR	EET CF	11/22/24 12:05
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440970	BJ0R	EET CF	11/21/24 12:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-295856-4
Date Collected: 11/21/24 06:00
Matrix: Water
Date Received: 11/22/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441010	WSE8	EET CF	11/27/24 09:41

Client Sample ID: MW-45A
Lab Sample ID: 310-295856-5
Date Collected: 11/21/24 13:00
Matrix: Ground Water
Date Received: 11/22/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441010	WSE8	EET CF	11/27/24 13:41
Total/NA	Prep	3005A			440704	F5MW	EET CF	11/25/24 09:30
Total/NA	Analysis	6020B		1	440930	A6US	EET CF	11/25/24 22:05
Total/NA	Analysis	353.2		1	440854	HE7K	EET CF	12/05/24 14:11
Total/NA	Analysis	4500 F C-2011		1	441621	WZC8	EET CF	12/04/24 12:24
Total/NA	Analysis	D516-16		1	441551	ENB7	EET CF	12/04/24 12:54
Total/NA	Analysis	I-3765-85		1	440738	MDU9	EET CF	11/22/24 19:45
Total/NA	Analysis	SM 1030E		1	440856	HE7K	EET CF	11/25/24 13:13
Total/NA	Analysis	SM 2320B		1	441036	HE7K	EET CF	11/26/24 13:08
Total/NA	Analysis	SM 2540C		1	440735	MDU9	EET CF	11/22/24 18:26
Total/NA	Analysis	SM 4500 Cl- E		1	441041	ENB7	EET CF	11/26/24 15:54
Total/NA	Analysis	SM 5210B		1	440634	W9YR	EET CF	11/22/24 12:09
Total/NA	Analysis	SM 5220D		5	441101	HE7K	EET CF	11/27/24 09:11
Total/NA	Analysis	Field Sampling		1	440970	BJ0R	EET CF	11/21/24 13:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-295856-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-295856 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Waterloo	STATE IA	Project:	
Receipt Information			
Date/Time Received: DATE 11-22-24	TIME 1035	Received By: PH	
Delivery Type: ☐ UPS ☐ FedEx ☑ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☑ Yes ☐ No		*If yes:* Cooler ID:	
Multiple Coolers? ☐ Yes ☑ No		*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present? ☐ Yes ☑ No		*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present? ☐ Yes ☑ No		*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present? ☑ Yes ☐ No		*If yes.* Which VOA samples are in cooler? ↓	
X11			
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: D		Correction Factor (°C): 0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 1.4		Corrected Temp (°C): 1.4	
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☑ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 11-22-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			Job / SDG No
Site: Winneshiek County Landfill	☐ 1 week			
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-1			G	GW		N		X	X		X	X	
MW-2R	11-21-24	1530	G	GW	8	N		X	X		X	X	Turbidity – 1.35 NTU
MW-3			G	GW		N		X	X		X	X	
MW-4			G	GW		N		X	X		X	X	
MW-4B			G	GW		N		X	X		X	X	
MW-7A			G	GW		N		X	X		X	X	
MW-24A	11-21-24	1100	G	GW	8	N		X	X		X	X	Turbidity – 1.34 NTU
MW-25A	11-21-24	1200	G	GW	8	N		X	X		X	X	Turbidity – 3.38 NTU
MW-29A			G	GW		N		X	X	X	X	X	
Trip Blank	11-21-24	0600	G	W	2	N			X				

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ Therm ID No._____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Ben Porter	Aecom	11-22-24			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: WH	Company:	Date/Time: 11-22-24 1035

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277 2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 11-22-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-42A			G	GW		N		X	X	X	X	
MW-43A			G	GW		N		X	X	X	X	
MW-44A			G	GW		N		X	X	X	X	
MW-45A	11-21-24	1300	G	GW	8	N		X	X	X	X	Turbidity – 6.59 NTU
MW-46A			G	GW		N		X	X	X	X	
MW-101			G	GW		N		X	X	X	X	
MW-11			G	GW		N		X	X	X	X	
MW-19R			G	GW		N		X	X	X	X	
MW-22			G	GW		N		X	X	X	X	
MW-22-FD			G	GW		N		X	X	X	X	
MW-35			G	GW		N		X	X	X	X	
MW-18			G	GW		N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ Therm ID No.____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	11-22-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

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12/6/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-295856-1

Login Number: 295856

List Number: 1

Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 12/13/2024 3:08:25 PM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-296412-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-296412-1 — Eurofins Cedar Falls

Job Narrative
310-296412-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/4/2024 1:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C.

GC/MS VOA
Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : MW-37A-FD (310-296412-1), MW-37A (310-296412-2), MW-39A (310-296412-3), MW-40A (310-296412-4), MW-43A (310-296412-5), MW-44A (310-296412-6) and Trip Blank (310-296412-7). The requested target analyte list includes Acrylonitrile.

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-296412-1	MW-37A-FD	Ground Water	12/03/24 13:00	12/04/24 13:30
310-296412-2	MW-37A	Ground Water	12/03/24 13:00	12/04/24 13:30
310-296412-3	MW-39A	Ground Water	12/03/24 14:30	12/04/24 13:30
310-296412-4	MW-40A	Ground Water	12/03/24 16:00	12/04/24 13:30
310-296412-5	MW-43A	Ground Water	12/03/24 10:45	12/04/24 13:30
310-296412-6	MW-44A	Ground Water	12/03/24 11:30	12/04/24 13:30
310-296412-7	Trip Blank	Water	12/03/24 00:00	12/04/24 13:30

Detection Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A-FD
Lab Sample ID: 310-296412-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.373	J	1.00	0.230	ug/L	1		8260D	Total/NA
Benzene	6.08		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.678	J	1.00	0.400	ug/L	1		8260D	Total/NA
Arsenic	99.3		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	718		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	174000		500	190	ug/L	1		6020B	Total/NA
Chromium	1.31	J	5.00	1.20	ug/L	1		6020B	Total/NA
Cobalt	11.8		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.275	J	0.500	0.260	ug/L	1		6020B	Total/NA
Magnesium	60800		500	150	ug/L	1		6020B	Total/NA
Nickel	5.75		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	11200		1000	480	ug/L	1		6020B	Total/NA
Fluoride	0.111		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	9.60		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	18.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	3.43				%	1		SM 1030E	Total/NA
Total Alkalinity	643		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	643		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	602		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	6.34		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Biochemical Oxygen Demand	5.10		3.00	3.00	mg/L	1		SM 5210B	Total/NA
Chemical Oxygen Demand	26.5		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-37A
Lab Sample ID: 310-296412-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.321	J	1.00	0.230	ug/L	1		8260D	Total/NA
Benzene	6.01		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.710	J	1.00	0.400	ug/L	1		8260D	Total/NA
Arsenic	153		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	849		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	169000		500	190	ug/L	1		6020B	Total/NA
Cobalt	9.58		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	58900		500	150	ug/L	1		6020B	Total/NA
Nickel	4.39	J	5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	9690		1000	480	ug/L	1		6020B	Total/NA
Fluoride	0.110		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	10.3		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	18.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	1.85				%	1		SM 1030E	Total/NA
Total Alkalinity	641		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	641		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	686		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	6.17		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	28.1		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	1.87				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-39A
Lab Sample ID: 310-296412-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	156		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	126000		500	190	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A (Continued)
Lab Sample ID: 310-296412-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.812		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.08	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.589		0.500	0.260	ug/L	1		6020B	Total/NA
Magnesium	39100		500	150	ug/L	1		6020B	Total/NA
Nickel	2.86	J	5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	9960		1000	480	ug/L	1		6020B	Total/NA
Nitrate as N	13.7		1.00	0.800	mg/L	1		353.2	Total/NA
Fluoride	0.166		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	30.9		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	116		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	6.96				%	1		SM 1030E	Total/NA
Total Alkalinity	309		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	309		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	456		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	29.8		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	271.18				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-40A
Lab Sample ID: 310-296412-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	215		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	148000		500	190	ug/L	1		6020B	Total/NA
Cobalt	2.14		0.500	0.170	ug/L	1		6020B	Total/NA
Lead	0.282	J	0.500	0.260	ug/L	1		6020B	Total/NA
Magnesium	57100		500	150	ug/L	1		6020B	Total/NA
Nickel	16.8		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	27900		1000	480	ug/L	1		6020B	Total/NA
Nitrate as N	1.50		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.286		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	46.2		25.0	12.0	mg/L	5		D516-16	Total/NA
Total Suspended Solids	22.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	2.37				%	1		SM 1030E	Total/NA
Total Alkalinity	449		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	449		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	670		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	93.1		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	27.5		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	42.50				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-43A
Lab Sample ID: 310-296412-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.32		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	214		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	165000		500	190	ug/L	1		6020B	Total/NA
Cobalt	3.83		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	37600		500	150	ug/L	1		6020B	Total/NA
Nickel	25.9		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	92400		1000	480	ug/L	1		6020B	Total/NA
Zinc	12.8	J	20.0	9.70	ug/L	1		6020B	Total/NA
Fluoride	0.127		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	77.9		25.0	12.0	mg/L	5		D516-16	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A (Continued)
Lab Sample ID: 310-296412-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	29.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	1.07				%	1		SM 1030E	Total/NA
Total Alkalinity	508		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	508		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	838		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	115		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	42.4		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	12.02				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-44A
Lab Sample ID: 310-296412-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	159		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.181	J	0.200	0.100	ug/L	1		6020B	Total/NA
Calcium	174000		500	190	ug/L	1		6020B	Total/NA
Cobalt	0.435	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	33200		500	150	ug/L	1		6020B	Total/NA
Nickel	34.2		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	78900		1000	480	ug/L	1		6020B	Total/NA
Zinc	19.5	J	20.0	9.70	ug/L	1		6020B	Total/NA
Fluoride	0.0871	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	61.7		25.0	12.0	mg/L	5		D516-16	Total/NA
Total Suspended Solids	7.67		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	2.51				%	1		SM 1030E	Total/NA
Total Alkalinity	506		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	506		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	776		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	96.4		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Field Turbidity	9.13				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-296412-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A-FD
Lab Sample ID: 310-296412-1
Date Collected: 12/03/24 13:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 19:31	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 19:31	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 19:31	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 19:31	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 19:31	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 19:31	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 19:31	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 19:31	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 19:31	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 19:31	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 19:31	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 19:31	1
1,4-Dichlorobenzene	**0.373**	**J**	1.00	0.230	ug/L			12/05/24 19:31	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 19:31	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 19:31	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 19:31	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 19:31	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 19:31	1
Benzene	**6.08**		0.500	0.220	ug/L			12/05/24 19:31	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 19:31	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 19:31	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 19:31	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 19:31	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 19:31	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 19:31	1
Chlorobenzene	**0.678**	**J**	1.00	0.400	ug/L			12/05/24 19:31	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 19:31	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 19:31	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 19:31	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 19:31	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 19:31	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 19:31	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 19:31	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 19:31	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 19:31	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 19:31	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 19:31	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 19:31	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 19:31	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 19:31	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 19:31	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 19:31	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 19:31	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 19:31	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 19:31	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 19:31	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 19:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*12/05/24 19:31*	*1*

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A-FD
Lab Sample ID: 310-296412-1
Date Collected: 12/03/24 13:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/05/24 19:31*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*12/05/24 19:31*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 16:19	1
Arsenic	**99.3**		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 16:19	1
Barium	**718**		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 16:19	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 16:19	1
Cadmium	<0.100		0.200	0.100	ug/L		12/06/24 09:00	12/11/24 16:19	1
Calcium	**174000**		500	190	ug/L		12/06/24 09:00	12/11/24 16:19	1
Chromium	**1.31**	**J**	5.00	1.20	ug/L		12/06/24 09:00	12/11/24 16:19	1
Cobalt	**11.8**		0.500	0.170	ug/L		12/06/24 09:00	12/11/24 16:19	1
Copper	<1.80		5.00	1.80	ug/L		12/06/24 09:00	12/11/24 16:19	1
Lead	**0.275**	**J**	0.500	0.260	ug/L		12/06/24 09:00	12/11/24 16:19	1
Magnesium	**60800**		500	150	ug/L		12/06/24 09:00	12/11/24 16:19	1
Nickel	**5.75**		5.00	2.10	ug/L		12/06/24 09:00	12/11/24 16:19	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 16:19	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 16:19	1
Sodium	**11200**		1000	480	ug/L		12/06/24 09:00	12/11/24 16:19	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 16:19	1
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 16:19	1
Zinc	<9.70		20.0	9.70	ug/L		12/06/24 09:00	12/11/24 16:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/11/24 02:27	1
Fluoride (SM 4500 F C-2011)	**0.111**		0.100	0.0540	mg/L			12/11/24 15:54	1
Sulfate (ASTM D516-16)	**9.60**		5.00	2.40	mg/L			12/07/24 09:00	1
Total Suspended Solids (USGS I-3765-85)	**18.5**		7.50	5.55	mg/L			12/05/24 11:19	1
Anion/Cation Balance (SM 1030E)	**3.43**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**643**		5.00	2.50	mg/L			12/05/24 16:44	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**643**		5.00	2.50	mg/L			12/05/24 16:44	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 16:44	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 16:44	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 16:44	1
Total Dissolved Solids (SM 2540C)	**602**		50.0	42.0	mg/L			12/05/24 17:59	1
Chloride (SM 4500 Cl- E)	**6.34**		2.00	1.40	mg/L			12/09/24 11:44	1
Biochemical Oxygen Demand (SM 5210B)	**5.10**		3.00	3.00	mg/L			12/05/24 05:45	1
Chemical Oxygen Demand (SM 5220D)	**26.5**		25.0	24.0	mg/L			12/12/24 08:55	5

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A
Lab Sample ID: 310-296412-2
Date Collected: 12/03/24 13:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 19:54	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 19:54	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 19:54	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 19:54	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 19:54	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 19:54	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 19:54	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 19:54	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 19:54	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 19:54	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 19:54	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 19:54	1
1,4-Dichlorobenzene	**0.321**	**J**	1.00	0.230	ug/L			12/05/24 19:54	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 19:54	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 19:54	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 19:54	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 19:54	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 19:54	1
Benzene	**6.01**		0.500	0.220	ug/L			12/05/24 19:54	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 19:54	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 19:54	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 19:54	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 19:54	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 19:54	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 19:54	1
Chlorobenzene	**0.710**	**J**	1.00	0.400	ug/L			12/05/24 19:54	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 19:54	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 19:54	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 19:54	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 19:54	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 19:54	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 19:54	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 19:54	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 19:54	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 19:54	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 19:54	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 19:54	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 19:54	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 19:54	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 19:54	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 19:54	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 19:54	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 19:54	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 19:54	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 19:54	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 19:54	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*12/05/24 19:54*	*1*

Client Sample ID: MW-37A
Lab Sample ID: 310-296412-2
Date Collected: 12/03/24 13:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/05/24 19:54*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*12/05/24 19:54*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 16:21	1
Arsenic	**153**		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 16:21	1
Barium	**849**		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 16:21	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 16:21	1
Cadmium	<0.100		0.200	0.100	ug/L		12/06/24 09:00	12/11/24 16:21	1
Calcium	**169000**		500	190	ug/L		12/06/24 09:00	12/11/24 16:21	1
Chromium	<1.20		5.00	1.20	ug/L		12/06/24 09:00	12/11/24 16:21	1
Cobalt	**9.58**		0.500	0.170	ug/L		12/06/24 09:00	12/11/24 16:21	1
Copper	<1.80		5.00	1.80	ug/L		12/06/24 09:00	12/11/24 16:21	1
Lead	<0.260		0.500	0.260	ug/L		12/06/24 09:00	12/11/24 16:21	1
Magnesium	**58900**		500	150	ug/L		12/06/24 09:00	12/11/24 16:21	1
Nickel	**4.39**	**J**	5.00	2.10	ug/L		12/06/24 09:00	12/11/24 16:21	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 16:21	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 16:21	1
Sodium	**9690**		1000	480	ug/L		12/06/24 09:00	12/11/24 16:21	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 16:21	1
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 16:21	1
Zinc	<9.70		20.0	9.70	ug/L		12/06/24 09:00	12/11/24 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/11/24 02:29	1
Fluoride (SM 4500 F C-2011)	**0.110**		0.100	0.0540	mg/L			12/11/24 15:57	1
Sulfate (ASTM D516-16)	**10.3**		5.00	2.40	mg/L			12/10/24 15:27	1
Total Suspended Solids (USGS I-3765-85)	**18.0**		7.50	5.55	mg/L			12/05/24 11:19	1
Anion/Cation Balance (SM 1030E)	**1.85**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**641**		5.00	2.50	mg/L			12/05/24 16:56	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**641**		5.00	2.50	mg/L			12/05/24 16:56	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 16:56	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 16:56	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 16:56	1
Total Dissolved Solids (SM 2540C)	**686**		50.0	42.0	mg/L			12/05/24 17:59	1
Chloride (SM 4500 Cl- E)	**6.17**		2.00	1.40	mg/L			12/09/24 11:45	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/05/24 05:48	1
Chemical Oxygen Demand (SM 5220D)	**28.1**		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.87**				NTU			12/03/24 13:00	1

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Lab Sample ID: 310-296412-3
Date Collected: 12/03/24 14:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 21:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 21:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 21:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 21:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 21:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 21:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 21:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 21:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 21:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 21:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 21:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 21:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/05/24 21:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 21:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 21:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 21:23	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 21:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 21:23	1
Benzene	<0.220		0.500	0.220	ug/L			12/05/24 21:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 21:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 21:23	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 21:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 21:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 21:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 21:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/05/24 21:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 21:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 21:23	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 21:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 21:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 21:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 21:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 21:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 21:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 21:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 21:23	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 21:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 21:23	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 21:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 21:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 21:23	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 21:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 21:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 21:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 21:23	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 21:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*12/05/24 21:23*	*1*

Client Sample ID: MW-39A
Lab Sample ID: 310-296412-3
Date Collected: 12/03/24 14:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/05/24 21:23*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*12/05/24 21:23*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 16:24	1
Arsenic	<0.530		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 16:24	1
Barium	**156**		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 16:24	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 16:24	1
Cadmium	<0.100		0.200	0.100	ug/L		12/06/24 09:00	12/11/24 16:24	1
Calcium	**126000**		500	190	ug/L		12/06/24 09:00	12/11/24 16:24	1
Chromium	<1.20		5.00	1.20	ug/L		12/06/24 09:00	12/11/24 16:24	1
Cobalt	**0.812**		0.500	0.170	ug/L		12/06/24 09:00	12/11/24 16:24	1
Copper	**2.08**	**J**	5.00	1.80	ug/L		12/06/24 09:00	12/11/24 16:24	1
Lead	**0.589**		0.500	0.260	ug/L		12/06/24 09:00	12/11/24 16:24	1
Magnesium	**39100**		500	150	ug/L		12/06/24 09:00	12/11/24 16:24	1
Nickel	**2.86**	**J**	5.00	2.10	ug/L		12/06/24 09:00	12/11/24 16:24	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 16:24	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 16:24	1
Sodium	**9960**		1000	480	ug/L		12/06/24 09:00	12/11/24 16:24	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 16:24	1
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 16:24	1
Zinc	<9.70		20.0	9.70	ug/L		12/06/24 09:00	12/11/24 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**13.7**		1.00	0.800	mg/L			12/12/24 08:02	1
Fluoride (SM 4500 F C-2011)	**0.166**		0.100	0.0540	mg/L			12/11/24 16:01	1
Sulfate (ASTM D516-16)	**30.9**		5.00	2.40	mg/L			12/07/24 09:01	1
Total Suspended Solids (USGS I-3765-85)	**116**		7.50	5.55	mg/L			12/05/24 11:19	1
Anion/Cation Balance (SM 1030E)	**6.96**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**309**		5.00	2.50	mg/L			12/05/24 17:08	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**309**		5.00	2.50	mg/L			12/05/24 17:08	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:08	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:08	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:08	1
Total Dissolved Solids (SM 2540C)	**456**		50.0	42.0	mg/L			12/05/24 17:59	1
Chloride (SM 4500 Cl- E)	**29.8**		2.00	1.40	mg/L			12/09/24 11:46	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/05/24 05:51	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**271.18**				NTU			12/03/24 14:30	1

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-40A
Lab Sample ID: 310-296412-4
Date Collected: 12/03/24 16:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 21:01	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 21:01	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 21:01	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 21:01	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 21:01	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 21:01	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 21:01	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 21:01	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 21:01	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 21:01	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 21:01	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 21:01	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/05/24 21:01	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 21:01	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 21:01	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 21:01	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 21:01	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 21:01	1
Benzene	<0.220		0.500	0.220	ug/L			12/05/24 21:01	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 21:01	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 21:01	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 21:01	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 21:01	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 21:01	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 21:01	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/05/24 21:01	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 21:01	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 21:01	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 21:01	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 21:01	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 21:01	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 21:01	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 21:01	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 21:01	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 21:01	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 21:01	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 21:01	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 21:01	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 21:01	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 21:01	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 21:01	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 21:01	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 21:01	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 21:01	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 21:01	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 21:01	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*73 - 130*		*12/05/24 21:01*	*1*

Client Sample ID: MW-40A
Lab Sample ID: 310-296412-4
Date Collected: 12/03/24 16:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/05/24 21:01*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*12/05/24 21:01*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 16:38	1
Arsenic	<0.530		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 16:38	1
Barium	**215**		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 16:38	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 16:38	1
Cadmium	<0.100		0.200	0.100	ug/L		12/06/24 09:00	12/11/24 16:38	1
Calcium	**148000**		500	190	ug/L		12/06/24 09:00	12/11/24 16:38	1
Chromium	<1.20		5.00	1.20	ug/L		12/06/24 09:00	12/11/24 16:38	1
Cobalt	**2.14**		0.500	0.170	ug/L		12/06/24 09:00	12/11/24 16:38	1
Copper	<1.80		5.00	1.80	ug/L		12/06/24 09:00	12/11/24 16:38	1
Lead	**0.282**	**J**	0.500	0.260	ug/L		12/06/24 09:00	12/11/24 16:38	1
Magnesium	**57100**		500	150	ug/L		12/06/24 09:00	12/11/24 16:38	1
Nickel	**16.8**		5.00	2.10	ug/L		12/06/24 09:00	12/11/24 16:38	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 16:38	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 16:38	1
Sodium	**27900**		1000	480	ug/L		12/06/24 09:00	12/11/24 16:38	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 16:38	1
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 16:38	1
Zinc	<9.70		20.0	9.70	ug/L		12/06/24 09:00	12/11/24 16:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**1.50**		0.100	0.0800	mg/L			12/11/24 02:32	1
Fluoride (SM 4500 F C-2011)	**0.286**		0.100	0.0540	mg/L			12/11/24 16:04	1
Sulfate (ASTM D516-16)	**46.2**		25.0	12.0	mg/L			12/07/24 09:23	5
Total Suspended Solids (USGS I-3765-85)	**22.3**		5.00	3.70	mg/L			12/05/24 11:19	1
Anion/Cation Balance (SM 1030E)	**2.37**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**449**		5.00	2.50	mg/L			12/05/24 17:17	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**449**		5.00	2.50	mg/L			12/05/24 17:17	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:17	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:17	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:17	1
Total Dissolved Solids (SM 2540C)	**670**		50.0	42.0	mg/L			12/05/24 17:59	1
Chloride (SM 4500 Cl- E)	**93.1**		20.0	14.0	mg/L			12/09/24 11:47	10
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/05/24 05:55	1
Chemical Oxygen Demand (SM 5220D)	**27.5**		25.0	24.0	mg/L			12/06/24 09:10	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**42.50**				NTU			12/03/24 16:00	1

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-296412-5
Date Collected: 12/03/24 10:45
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 20:16	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 20:16	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 20:16	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 20:16	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 20:16	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 20:16	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 20:16	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 20:16	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 20:16	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 20:16	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 20:16	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 20:16	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/05/24 20:16	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 20:16	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 20:16	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 20:16	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 20:16	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 20:16	1
Benzene	<0.220		0.500	0.220	ug/L			12/05/24 20:16	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 20:16	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 20:16	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 20:16	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 20:16	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 20:16	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 20:16	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/05/24 20:16	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 20:16	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 20:16	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 20:16	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 20:16	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 20:16	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 20:16	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 20:16	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 20:16	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 20:16	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 20:16	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 20:16	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 20:16	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 20:16	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 20:16	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 20:16	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 20:16	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 20:16	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 20:16	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 20:16	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 20:16	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*12/05/24 20:16*	*1*

Client Sample ID: MW-43A
Lab Sample ID: 310-296412-5
Date Collected: 12/03/24 10:45
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/05/24 20:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*12/05/24 20:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 16:40	1
Arsenic	**6.32**		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 16:40	1
Barium	**214**		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 16:40	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 16:40	1
Cadmium	<0.100		0.200	0.100	ug/L		12/06/24 09:00	12/11/24 16:40	1
Calcium	**165000**		500	190	ug/L		12/06/24 09:00	12/11/24 16:40	1
Chromium	<1.20		5.00	1.20	ug/L		12/06/24 09:00	12/11/24 16:40	1
Cobalt	**3.83**		0.500	0.170	ug/L		12/06/24 09:00	12/11/24 16:40	1
Copper	<1.80		5.00	1.80	ug/L		12/06/24 09:00	12/11/24 16:40	1
Lead	<0.260		0.500	0.260	ug/L		12/06/24 09:00	12/11/24 16:40	1
Magnesium	**37600**		500	150	ug/L		12/06/24 09:00	12/11/24 16:40	1
Nickel	**25.9**		5.00	2.10	ug/L		12/06/24 09:00	12/11/24 16:40	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 16:40	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 16:40	1
Sodium	**92400**		1000	480	ug/L		12/06/24 09:00	12/11/24 16:40	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 16:40	1
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 16:40	1
Zinc	**12.8**	**J**	20.0	9.70	ug/L		12/06/24 09:00	12/11/24 16:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/11/24 02:34	1
Fluoride (SM 4500 F C-2011)	**0.127**		0.100	0.0540	mg/L			12/11/24 16:07	1
Sulfate (ASTM D516-16)	**77.9**		25.0	12.0	mg/L			12/07/24 09:24	5
Total Suspended Solids (USGS I-3765-85)	**29.0**		7.50	5.55	mg/L			12/05/24 11:19	1
Anion/Cation Balance (SM 1030E)	**1.07**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**508**		5.00	2.50	mg/L			12/05/24 17:28	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**508**		5.00	2.50	mg/L			12/05/24 17:28	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:28	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:28	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:28	1
Total Dissolved Solids (SM 2540C)	**838**		50.0	42.0	mg/L			12/05/24 16:35	1
Chloride (SM 4500 Cl- E)	**115**		20.0	14.0	mg/L			12/09/24 11:47	10
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/05/24 06:01	1
Chemical Oxygen Demand (SM 5220D)	**42.4**		25.0	24.0	mg/L			12/06/24 09:10	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.02**				NTU			12/03/24 10:45	1

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-44A
Lab Sample ID: 310-296412-6
Date Collected: 12/03/24 11:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 20:39	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 20:39	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 20:39	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 20:39	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 20:39	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 20:39	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 20:39	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 20:39	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 20:39	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 20:39	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 20:39	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 20:39	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/05/24 20:39	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 20:39	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 20:39	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 20:39	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 20:39	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 20:39	1
Benzene	<0.220		0.500	0.220	ug/L			12/05/24 20:39	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 20:39	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 20:39	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 20:39	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 20:39	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 20:39	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 20:39	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/05/24 20:39	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 20:39	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 20:39	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 20:39	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 20:39	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 20:39	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 20:39	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 20:39	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 20:39	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 20:39	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 20:39	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 20:39	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 20:39	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 20:39	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 20:39	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 20:39	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 20:39	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 20:39	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 20:39	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 20:39	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 20:39	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*12/05/24 20:39*	*1*

Client Sample ID: MW-44A
Lab Sample ID: 310-296412-6
Date Collected: 12/03/24 11:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/05/24 20:39*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*12/05/24 20:39*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 16:43	1
Arsenic	<0.530		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 16:43	1
Barium	**159**		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 16:43	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 16:43	1
Cadmium	**0.181**	**J**	0.200	0.100	ug/L		12/06/24 09:00	12/11/24 16:43	1
Calcium	**174000**		500	190	ug/L		12/06/24 09:00	12/11/24 16:43	1
Chromium	<1.20		5.00	1.20	ug/L		12/06/24 09:00	12/11/24 16:43	1
Cobalt	**0.435**	**J**	0.500	0.170	ug/L		12/06/24 09:00	12/11/24 16:43	1
Copper	<1.80		5.00	1.80	ug/L		12/06/24 09:00	12/11/24 16:43	1
Lead	<0.260		0.500	0.260	ug/L		12/06/24 09:00	12/11/24 16:43	1
Magnesium	**33200**		500	150	ug/L		12/06/24 09:00	12/11/24 16:43	1
Nickel	**34.2**		5.00	2.10	ug/L		12/06/24 09:00	12/11/24 16:43	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 16:43	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 16:43	1
Sodium	**78900**		1000	480	ug/L		12/06/24 09:00	12/11/24 16:43	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 16:43	1
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 16:43	1
Zinc	**19.5**	**J**	20.0	9.70	ug/L		12/06/24 09:00	12/11/24 16:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/11/24 02:35	1
Fluoride (SM 4500 F C-2011)	**0.0871**	**J**	0.100	0.0540	mg/L			12/11/24 16:10	1
Sulfate (ASTM D516-16)	**61.7**		25.0	12.0	mg/L			12/07/24 09:25	5
Total Suspended Solids (USGS I-3765-85)	**7.67**		5.00	3.70	mg/L			12/05/24 11:19	1
Anion/Cation Balance (SM 1030E)	**2.51**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**506**		5.00	2.50	mg/L			12/05/24 17:46	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**506**		5.00	2.50	mg/L			12/05/24 17:46	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:46	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:46	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/05/24 17:46	1
Total Dissolved Solids (SM 2540C)	**776**		50.0	42.0	mg/L			12/05/24 16:35	1
Chloride (SM 4500 Cl- E)	**96.4**		20.0	14.0	mg/L			12/09/24 11:48	10
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/05/24 05:58	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/06/24 09:10	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.13**				NTU			12/03/24 11:30	1

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-296412-7
Date Collected: 12/03/24 00:00
Matrix: Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 16:31	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 16:31	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 16:31	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 16:31	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 16:31	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 16:31	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 16:31	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 16:31	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 16:31	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 16:31	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 16:31	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 16:31	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/05/24 16:31	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 16:31	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 16:31	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 16:31	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 16:31	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 16:31	1
Benzene	<0.220		0.500	0.220	ug/L			12/05/24 16:31	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 16:31	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 16:31	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 16:31	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 16:31	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 16:31	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 16:31	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/05/24 16:31	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 16:31	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 16:31	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 16:31	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 16:31	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 16:31	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 16:31	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 16:31	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 16:31	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 16:31	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 16:31	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 16:31	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 16:31	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 16:31	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 16:31	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 16:31	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 16:31	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 16:31	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 16:31	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 16:31	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 16:31	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 16:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*12/05/24 16:31*	*1*

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-296412-7
Date Collected: 12/03/24 00:00
Matrix: Water
Date Received: 12/04/24 13:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/05/24 16:31*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*12/05/24 16:31*	*1*

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

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

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-296412-1	MW-37A-FD	112	96	97
310-296412-2	MW-37A	112	97	96
310-296412-3	MW-39A	113	96	100
310-296412-4	MW-40A	117	97	98
310-296412-5	MW-43A	115	97	100
310-296412-6	MW-44A	115	95	97

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-296412-7	Trip Blank	116	97	97
LCS 310-441673/6	Lab Control Sample	98	101	100
LCS 310-441673/7	Lab Control Sample	109	99	100
MB 310-441673/5	Method Blank	109	97	96

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-441673/5
Matrix: Water
Analysis Batch: 441673

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/05/24 14:15	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/05/24 14:15	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/05/24 14:15	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/05/24 14:15	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/05/24 14:15	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/05/24 14:15	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/05/24 14:15	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/05/24 14:15	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/05/24 14:15	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/05/24 14:15	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/05/24 14:15	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/05/24 14:15	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/05/24 14:15	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/05/24 14:15	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/05/24 14:15	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/05/24 14:15	1
Acetone	<3.10		10.0	3.10	ug/L			12/05/24 14:15	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/05/24 14:15	1
Benzene	<0.220		0.500	0.220	ug/L			12/05/24 14:15	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/05/24 14:15	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/05/24 14:15	1
Bromoform	<0.780		5.00	0.780	ug/L			12/05/24 14:15	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/05/24 14:15	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/05/24 14:15	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/05/24 14:15	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/05/24 14:15	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/05/24 14:15	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/05/24 14:15	1
Chloroform	<1.30		3.00	1.30	ug/L			12/05/24 14:15	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/05/24 14:15	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/05/24 14:15	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/05/24 14:15	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/05/24 14:15	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/05/24 14:15	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/05/24 14:15	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/05/24 14:15	1
Styrene	<0.370		1.00	0.370	ug/L			12/05/24 14:15	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/05/24 14:15	1
Toluene	<0.430		1.00	0.430	ug/L			12/05/24 14:15	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/05/24 14:15	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/05/24 14:15	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/05/24 14:15	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/05/24 14:15	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/05/24 14:15	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/05/24 14:15	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/05/24 14:15	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/05/24 14:15	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-441673/5
Matrix: Water
Analysis Batch: 441673

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*12/05/24 14:15*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/05/24 14:15*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*12/05/24 14:15*	*1*

Lab Sample ID: LCS 310-441673/6
Matrix: Water
Analysis Batch: 441673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.83		ug/L		99	71 - 120
1,1,1-Trichloroethane	20.0	19.31		ug/L		97	73 - 129
1,1,2,2-Tetrachloroethane	20.0	19.66		ug/L		98	68 - 124
1,1,2-Trichloroethane	20.0	19.25		ug/L		96	73 - 123
1,1-Dichloroethane	20.0	18.47		ug/L		92	70 - 127
1,1-Dichloroethene	20.0	18.22		ug/L		91	63 - 132
1,2,3-Trichloropropane	20.0	19.95		ug/L		100	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	20.06		ug/L		100	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.53		ug/L		98	75 - 125
1,2-Dichlorobenzene	20.0	18.30		ug/L		92	74 - 120
1,2-Dichloroethane	20.0	20.08		ug/L		100	71 - 125
1,2-Dichloropropane	20.0	19.92		ug/L		100	73 - 124
1,4-Dichlorobenzene	20.0	18.65		ug/L		93	72 - 120
2-Butanone (MEK)	40.0	39.92		ug/L		100	50 - 150
2-Hexanone	40.0	41.85		ug/L		105	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	41.46		ug/L		104	60 - 139
Acetone	40.0	36.16		ug/L		90	50 - 150
Acrylonitrile	200	187.8		ug/L		94	50 - 150
Benzene	20.0	18.42		ug/L		92	72 - 124
Bromochloromethane	20.0	19.15		ug/L		96	73 - 130
Bromodichloromethane	20.0	18.85		ug/L		94	74 - 122
Bromoform	20.0	18.43		ug/L		92	61 - 122
Carbon disulfide	20.0	17.89		ug/L		89	59 - 135
Carbon tetrachloride	20.0	19.21		ug/L		96	67 - 132
Chlorobenzene	20.0	18.40		ug/L		92	76 - 120
Chlorodibromomethane	20.0	19.62		ug/L		98	71 - 121
Chloroform	20.0	19.60		ug/L		98	72 - 125
cis-1,2-Dichloroethene	20.0	18.43		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	19.67		ug/L		98	71 - 125
Dibromomethane	20.0	19.44		ug/L		97	74 - 125
Ethylbenzene	20.0	19.00		ug/L		95	74 - 122
Iodomethane	20.0	17.81		ug/L		89	10 - 150
Methylene Chloride	20.0	19.68		ug/L		98	50 - 150
Styrene	20.0	20.06		ug/L		100	74 - 121
Tetrachloroethene	20.0	18.22		ug/L		91	71 - 130
Toluene	20.0	17.90		ug/L		90	74 - 123
trans-1,2-Dichloroethene	20.0	17.99		ug/L		90	70 - 126
trans-1,3-Dichloropropene	20.0	18.03		ug/L		90	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.35		ug/L		97	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-441673/6
Matrix: Water
Analysis Batch: 441673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	18.86		ug/L		94	72 - 126
Vinyl acetate	40.0	37.16		ug/L		93	50 - 150
Xylenes, Total	40.0	38.45		ug/L		96	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-441673/7
Matrix: Water
Analysis Batch: 441673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.08		ug/L		85	23 - 150
Chloroethane	20.0	19.28		ug/L		96	54 - 136
Chloromethane	20.0	18.55		ug/L		93	38 - 150
Trichlorofluoromethane	20.0	21.71		ug/L		109	54 - 149
Vinyl chloride	20.0	19.48		ug/L		97	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*109*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-441684/1-A
Matrix: Water
Analysis Batch: 442277

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 441684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/06/24 09:00	12/11/24 15:38	1
Arsenic	<0.530		2.00	0.530	ug/L		12/06/24 09:00	12/11/24 15:38	1
Barium	<0.660		2.00	0.660	ug/L		12/06/24 09:00	12/11/24 15:38	1
Beryllium	<0.330		1.00	0.330	ug/L		12/06/24 09:00	12/11/24 15:38	1
Cadmium	<0.100		0.200	0.100	ug/L		12/06/24 09:00	12/11/24 15:38	1
Calcium	<190		500	190	ug/L		12/06/24 09:00	12/11/24 15:38	1
Chromium	<1.20		5.00	1.20	ug/L		12/06/24 09:00	12/11/24 15:38	1
Cobalt	<0.170		0.500	0.170	ug/L		12/06/24 09:00	12/11/24 15:38	1
Copper	<1.80		5.00	1.80	ug/L		12/06/24 09:00	12/11/24 15:38	1
Lead	<0.260		0.500	0.260	ug/L		12/06/24 09:00	12/11/24 15:38	1
Magnesium	<150		500	150	ug/L		12/06/24 09:00	12/11/24 15:38	1
Nickel	<2.10		5.00	2.10	ug/L		12/06/24 09:00	12/11/24 15:38	1
Selenium	<1.40		5.00	1.40	ug/L		12/06/24 09:00	12/11/24 15:38	1
Silver	<0.500		1.00	0.500	ug/L		12/06/24 09:00	12/11/24 15:38	1
Sodium	<480		1000	480	ug/L		12/06/24 09:00	12/11/24 15:38	1
Thallium	<0.570		1.00	0.570	ug/L		12/06/24 09:00	12/11/24 15:38	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-441684/1-A
Matrix: Water
Analysis Batch: 442277

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 441684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<1.10		5.00	1.10	ug/L		12/06/24 09:00	12/11/24 15:38	1
Zinc	<9.70		20.0	9.70	ug/L		12/06/24 09:00	12/11/24 15:38	1

Lab Sample ID: LCS 310-441684/2-A
Matrix: Water
Analysis Batch: 442277

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 441684

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			200	228.6		ug/L		114	80 - 120		
Arsenic			200	212.0		ug/L		106	80 - 120		
Barium			100	103.2		ug/L		103	80 - 120		
Beryllium			100	102.9		ug/L		103	80 - 120		
Cadmium			100	103.7		ug/L		104	80 - 120		
Calcium			2000	1919		ug/L		96	80 - 120		
Chromium			100	103.9		ug/L		104	80 - 120		
Cobalt			100	107.2		ug/L		107	80 - 120		
Copper			200	214.6		ug/L		107	80 - 120		
Lead			200	211.7		ug/L		106	80 - 120		
Magnesium			2000	2173		ug/L		109	80 - 120		
Nickel			200	210.2		ug/L		105	80 - 120		
Selenium			400	398.3		ug/L		100	80 - 120		
Silver			100	107.0		ug/L		107	80 - 120		
Sodium			2000	2284		ug/L		114	80 - 120		
Thallium			100	90.35		ug/L		90	80 - 120		
Vanadium			100	103.0		ug/L		103	80 - 120		
Zinc			200	194.4		ug/L		97	80 - 120		

Lab Sample ID: 310-296412-3 DU
Matrix: Ground Water
Analysis Batch: 442277

Client Sample ID: MW-39A
Prep Type: Total/NA
Prep Batch: 441684

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Antimony	<1.00			<1.00		ug/L				NC	20
Arsenic	<0.530			<0.530		ug/L				NC	20
Barium	156			152.7		ug/L				2	20
Beryllium	<0.330			<0.330		ug/L				NC	20
Cadmium	<0.100			<0.100		ug/L				NC	20
Calcium	126000			120600		ug/L				4	20
Chromium	<1.20			<1.20		ug/L				NC	20
Cobalt	0.812			0.7960		ug/L				2	20
Copper	2.08	J		<1.80		ug/L				NC	20
Lead	0.589			0.5970		ug/L				1	20
Magnesium	39100			37840		ug/L				3	20
Nickel	2.86	J		2.819	J	ug/L				1	20
Selenium	<1.40			<1.40		ug/L				NC	20
Silver	<0.500			<0.500		ug/L				NC	20
Sodium	9960			9805		ug/L				2	20
Thallium	<0.570			<0.570		ug/L				NC	20
Vanadium	<1.10			<1.10		ug/L				NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-296412-3 DU
Matrix: Ground Water
Analysis Batch: 442277

Client Sample ID: MW-39A
Prep Type: Total/NA
Prep Batch: 441684

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Zinc	<9.70		<9.70		ug/L		NC	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-442273/28
Matrix: Water
Analysis Batch: 442273

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/11/24 15:14	1

Lab Sample ID: LCS 310-442273/29
Matrix: Water
Analysis Batch: 442273

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	2.043		mg/L		102	90 - 110

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-441880/6
Matrix: Water
Analysis Batch: 441880

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/07/24 08:25	1

Lab Sample ID: LCS 310-441880/7
Matrix: Water
Analysis Batch: 441880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	10.03		mg/L		100	85 - 115

Lab Sample ID: MB 310-442139/16
Matrix: Water
Analysis Batch: 442139

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/10/24 15:27	1

Lab Sample ID: LCS 310-442139/14
Matrix: Water
Analysis Batch: 442139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.944		mg/L		99	85 - 115

Method: D516-16 - Sulfate (Continued)

Lab Sample ID: 310-296412-2 MS
Matrix: Ground Water
Analysis Batch: 442139

Client Sample ID: MW-37A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.3		10.0	21.09		mg/L		108	70 - 130

Lab Sample ID: 310-296412-2 MSD
Matrix: Ground Water
Analysis Batch: 442139

Client Sample ID: MW-37A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	10.3		10.0	21.25		mg/L		110	70 - 130	1	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-441658/1
Matrix: Water
Analysis Batch: 441658

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/05/24 11:19	1

Lab Sample ID: LCS 310-441658/2
Matrix: Water
Analysis Batch: 441658

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102.0		mg/L		102	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-441735/2
Matrix: Water
Analysis Batch: 441735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	942.2		mg/L		94	86 - 111

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-441708/1
Matrix: Water
Analysis Batch: 441708

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/05/24 16:35	1

Lab Sample ID: LCS 310-441708/2
Matrix: Water
Analysis Batch: 441708

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1008		mg/L		101	88 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 310-441711/1
Matrix: Water
Analysis Batch: 441711

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/05/24 17:59	1

Lab Sample ID: LCS 310-441711/2
Matrix: Water
Analysis Batch: 441711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	968.0		mg/L		97	88 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-441996/16
Matrix: Water
Analysis Batch: 441996

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			12/09/24 11:37	1

Lab Sample ID: LCS 310-441996/14
Matrix: Water
Analysis Batch: 441996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.75		mg/L		108	90 - 110

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-441583/1
Matrix: Water
Analysis Batch: 441583

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			12/05/24 05:25	1

Lab Sample ID: LCS 310-441583/2
Matrix: Water
Analysis Batch: 441583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	193.4		mg/L		98	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-441743/32
Matrix: Water
Analysis Batch: 441743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/06/24 09:10	1

Method: SM 5220D - COD (Continued)

Lab Sample ID: LCS 310-441743/33
Matrix: Water
Analysis Batch: 441743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	126.7		mg/L		101	85 - 110

Lab Sample ID: MB 310-442291/1
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/12/24 08:55	1

Lab Sample ID: MB 310-442291/5
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/12/24 08:55	1

Lab Sample ID: LCS 310-442291/3
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	128.8		mg/L		103	85 - 110

GC/MS VOA

Analysis Batch: 441673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	8260D	
310-296412-2	MW-37A	Total/NA	Ground Water	8260D	
310-296412-3	MW-39A	Total/NA	Ground Water	8260D	
310-296412-4	MW-40A	Total/NA	Ground Water	8260D	
310-296412-5	MW-43A	Total/NA	Ground Water	8260D	
310-296412-6	MW-44A	Total/NA	Ground Water	8260D	
310-296412-7	Trip Blank	Total/NA	Water	8260D	
MB 310-441673/5	Method Blank	Total/NA	Water	8260D	
LCS 310-441673/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-441673/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 441684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	3005A	
310-296412-2	MW-37A	Total/NA	Ground Water	3005A	
310-296412-3	MW-39A	Total/NA	Ground Water	3005A	
310-296412-4	MW-40A	Total/NA	Ground Water	3005A	
310-296412-5	MW-43A	Total/NA	Ground Water	3005A	
310-296412-6	MW-44A	Total/NA	Ground Water	3005A	
MB 310-441684/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-441684/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-296412-3 DU	MW-39A	Total/NA	Ground Water	3005A	

Analysis Batch: 442277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	6020B	441684
310-296412-2	MW-37A	Total/NA	Ground Water	6020B	441684
310-296412-3	MW-39A	Total/NA	Ground Water	6020B	441684
310-296412-4	MW-40A	Total/NA	Ground Water	6020B	441684
310-296412-5	MW-43A	Total/NA	Ground Water	6020B	441684
310-296412-6	MW-44A	Total/NA	Ground Water	6020B	441684
MB 310-441684/1-A	Method Blank	Total/NA	Water	6020B	441684
LCS 310-441684/2-A	Lab Control Sample	Total/NA	Water	6020B	441684
310-296412-3 DU	MW-39A	Total/NA	Ground Water	6020B	441684

General Chemistry

Analysis Batch: 441583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	SM 5210B	
310-296412-2	MW-37A	Total/NA	Ground Water	SM 5210B	
310-296412-3	MW-39A	Total/NA	Ground Water	SM 5210B	
310-296412-4	MW-40A	Total/NA	Ground Water	SM 5210B	
310-296412-5	MW-43A	Total/NA	Ground Water	SM 5210B	
310-296412-6	MW-44A	Total/NA	Ground Water	SM 5210B	
USB 310-441583/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-441583/2	Lab Control Sample	Total/NA	Water	SM 5210B	

General Chemistry

Analysis Batch: 441658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	I-3765-85	
310-296412-2	MW-37A	Total/NA	Ground Water	I-3765-85	
310-296412-3	MW-39A	Total/NA	Ground Water	I-3765-85	
310-296412-4	MW-40A	Total/NA	Ground Water	I-3765-85	
310-296412-5	MW-43A	Total/NA	Ground Water	I-3765-85	
310-296412-6	MW-44A	Total/NA	Ground Water	I-3765-85	
MB 310-441658/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-441658/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 441708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-5	MW-43A	Total/NA	Ground Water	SM 2540C	
310-296412-6	MW-44A	Total/NA	Ground Water	SM 2540C	
MB 310-441708/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-441708/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 441711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	SM 2540C	
310-296412-2	MW-37A	Total/NA	Ground Water	SM 2540C	
310-296412-3	MW-39A	Total/NA	Ground Water	SM 2540C	
310-296412-4	MW-40A	Total/NA	Ground Water	SM 2540C	
MB 310-441711/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-441711/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 441735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	SM 2320B	
310-296412-2	MW-37A	Total/NA	Ground Water	SM 2320B	
310-296412-3	MW-39A	Total/NA	Ground Water	SM 2320B	
310-296412-4	MW-40A	Total/NA	Ground Water	SM 2320B	
310-296412-5	MW-43A	Total/NA	Ground Water	SM 2320B	
310-296412-6	MW-44A	Total/NA	Ground Water	SM 2320B	
LCS 310-441735/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 441743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-4	MW-40A	Total/NA	Ground Water	SM 5220D	
310-296412-5	MW-43A	Total/NA	Ground Water	SM 5220D	
310-296412-6	MW-44A	Total/NA	Ground Water	SM 5220D	
MB 310-441743/32	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-441743/33	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 441880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	D516-16	
310-296412-3	MW-39A	Total/NA	Ground Water	D516-16	
310-296412-4	MW-40A	Total/NA	Ground Water	D516-16	
310-296412-5	MW-43A	Total/NA	Ground Water	D516-16	
310-296412-6	MW-44A	Total/NA	Ground Water	D516-16	
MB 310-441880/6	Method Blank	Total/NA	Water	D516-16	

General Chemistry (Continued)

Analysis Batch: 441880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-441880/7	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 441951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	353.2	
310-296412-2	MW-37A	Total/NA	Ground Water	353.2	
310-296412-3	MW-39A	Total/NA	Ground Water	353.2	
310-296412-4	MW-40A	Total/NA	Ground Water	353.2	
310-296412-5	MW-43A	Total/NA	Ground Water	353.2	
310-296412-6	MW-44A	Total/NA	Ground Water	353.2	

Analysis Batch: 441952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	SM 1030E	
310-296412-2	MW-37A	Total/NA	Ground Water	SM 1030E	
310-296412-3	MW-39A	Total/NA	Ground Water	SM 1030E	
310-296412-4	MW-40A	Total/NA	Ground Water	SM 1030E	
310-296412-5	MW-43A	Total/NA	Ground Water	SM 1030E	
310-296412-6	MW-44A	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 441996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	SM 4500 Cl- E	
310-296412-2	MW-37A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296412-3	MW-39A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296412-4	MW-40A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296412-5	MW-43A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296412-6	MW-44A	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-441996/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-441996/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 442139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-2	MW-37A	Total/NA	Ground Water	D516-16	
MB 310-442139/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-442139/14	Lab Control Sample	Total/NA	Water	D516-16	
310-296412-2 MS	MW-37A	Total/NA	Ground Water	D516-16	
310-296412-2 MSD	MW-37A	Total/NA	Ground Water	D516-16	

Analysis Batch: 442273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	4500 F C-2011	
310-296412-2	MW-37A	Total/NA	Ground Water	4500 F C-2011	
310-296412-3	MW-39A	Total/NA	Ground Water	4500 F C-2011	
310-296412-4	MW-40A	Total/NA	Ground Water	4500 F C-2011	
310-296412-5	MW-43A	Total/NA	Ground Water	4500 F C-2011	
310-296412-6	MW-44A	Total/NA	Ground Water	4500 F C-2011	
MB 310-442273/28	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-442273/29	Lab Control Sample	Total/NA	Water	4500 F C-2011	

QC Association Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

General Chemistry

Analysis Batch: 442291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-1	MW-37A-FD	Total/NA	Ground Water	SM 5220D	
310-296412-2	MW-37A	Total/NA	Ground Water	SM 5220D	
310-296412-3	MW-39A	Total/NA	Ground Water	SM 5220D	
MB 310-442291/1	Method Blank	Total/NA	Water	SM 5220D	
MB 310-442291/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-442291/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Field Service / Mobile Lab

Analysis Batch: 441941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296412-2	MW-37A	Total/NA	Ground Water	Field Sampling	
310-296412-3	MW-39A	Total/NA	Ground Water	Field Sampling	
310-296412-4	MW-40A	Total/NA	Ground Water	Field Sampling	
310-296412-5	MW-43A	Total/NA	Ground Water	Field Sampling	
310-296412-6	MW-44A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-37A-FD
Lab Sample ID: 310-296412-1
Date Collected: 12/03/24 13:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 19:31
Total/NA	Prep	3005A			441684	F5MW	EET CF	12/06/24 09:00
Total/NA	Analysis	6020B		1	442277	NFT2	EET CF	12/11/24 16:19
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/11/24 02:27
Total/NA	Analysis	4500 F C-2011		1	442273	WZC8	EET CF	12/11/24 15:54
Total/NA	Analysis	D516-16		1	441880	WZC8	EET CF	12/07/24 09:00
Total/NA	Analysis	I-3765-85		1	441658	HE7K	EET CF	12/05/24 11:19
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	441735	HE7K	EET CF	12/05/24 16:44
Total/NA	Analysis	SM 2540C		1	441711	XJ7V	EET CF	12/05/24 17:59
Total/NA	Analysis	SM 4500 Cl- E		1	441996	ENB7	EET CF	12/09/24 11:44
Total/NA	Analysis	SM 5210B		1	441583	W9YR	EET CF	12/05/24 05:45
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55

Client Sample ID: MW-37A
Lab Sample ID: 310-296412-2
Date Collected: 12/03/24 13:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 19:54
Total/NA	Prep	3005A			441684	F5MW	EET CF	12/06/24 09:00
Total/NA	Analysis	6020B		1	442277	NFT2	EET CF	12/11/24 16:21
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/11/24 02:29
Total/NA	Analysis	4500 F C-2011		1	442273	WZC8	EET CF	12/11/24 15:57
Total/NA	Analysis	D516-16		1	442139	ENB7	EET CF	12/10/24 15:27
Total/NA	Analysis	I-3765-85		1	441658	HE7K	EET CF	12/05/24 11:19
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	441735	HE7K	EET CF	12/05/24 16:56
Total/NA	Analysis	SM 2540C		1	441711	XJ7V	EET CF	12/05/24 17:59
Total/NA	Analysis	SM 4500 Cl- E		1	441996	ENB7	EET CF	12/09/24 11:45
Total/NA	Analysis	SM 5210B		1	441583	W9YR	EET CF	12/05/24 05:48
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/03/24 13:00

Client Sample ID: MW-39A
Lab Sample ID: 310-296412-3
Date Collected: 12/03/24 14:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 21:23
Total/NA	Prep	3005A			441684	F5MW	EET CF	12/06/24 09:00
Total/NA	Analysis	6020B		1	442277	NFT2	EET CF	12/11/24 16:24

Lab Chronicle

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-39A
Lab Sample ID: 310-296412-3
Date Collected: 12/03/24 14:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/12/24 08:02
Total/NA	Analysis	4500 F C-2011		1	442273	WZC8	EET CF	12/11/24 16:01
Total/NA	Analysis	D516-16		1	441880	WZC8	EET CF	12/07/24 09:01
Total/NA	Analysis	I-3765-85		1	441658	HE7K	EET CF	12/05/24 11:19
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	441735	HE7K	EET CF	12/05/24 17:08
Total/NA	Analysis	SM 2540C		1	441711	XJ7V	EET CF	12/05/24 17:59
Total/NA	Analysis	SM 4500 Cl- E		1	441996	ENB7	EET CF	12/09/24 11:46
Total/NA	Analysis	SM 5210B		1	441583	W9YR	EET CF	12/05/24 05:51
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/03/24 14:30

Client Sample ID: MW-40A
Lab Sample ID: 310-296412-4
Date Collected: 12/03/24 16:00
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 21:01
Total/NA	Prep	3005A			441684	F5MW	EET CF	12/06/24 09:00
Total/NA	Analysis	6020B		1	442277	NFT2	EET CF	12/11/24 16:38
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/11/24 02:32
Total/NA	Analysis	4500 F C-2011		1	442273	WZC8	EET CF	12/11/24 16:04
Total/NA	Analysis	D516-16		5	441880	WZC8	EET CF	12/07/24 09:23
Total/NA	Analysis	I-3765-85		1	441658	HE7K	EET CF	12/05/24 11:19
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	441735	HE7K	EET CF	12/05/24 17:17
Total/NA	Analysis	SM 2540C		1	441711	XJ7V	EET CF	12/05/24 17:59
Total/NA	Analysis	SM 4500 Cl- E		10	441996	ENB7	EET CF	12/09/24 11:47
Total/NA	Analysis	SM 5210B		1	441583	W9YR	EET CF	12/05/24 05:55
Total/NA	Analysis	SM 5220D		5	441743	HE7K	EET CF	12/06/24 09:10
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/03/24 16:00

Client Sample ID: MW-43A
Lab Sample ID: 310-296412-5
Date Collected: 12/03/24 10:45
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 20:16
Total/NA	Prep	3005A			441684	F5MW	EET CF	12/06/24 09:00
Total/NA	Analysis	6020B		1	442277	NFT2	EET CF	12/11/24 16:40
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/11/24 02:34
Total/NA	Analysis	4500 F C-2011		1	442273	WZC8	EET CF	12/11/24 16:07

Lab Chronicle

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-43A
Lab Sample ID: 310-296412-5
Date Collected: 12/03/24 10:45
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	D516-16		5	441880	WZC8	EET CF	12/07/24 09:24
Total/NA	Analysis	I-3765-85		1	441658	HE7K	EET CF	12/05/24 11:19
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	441735	HE7K	EET CF	12/05/24 17:28
Total/NA	Analysis	SM 2540C		1	441708	XJ7V	EET CF	12/05/24 16:35
Total/NA	Analysis	SM 4500 Cl- E		10	441996	ENB7	EET CF	12/09/24 11:47
Total/NA	Analysis	SM 5210B		1	441583	W9YR	EET CF	12/05/24 06:01
Total/NA	Analysis	SM 5220D		5	441743	HE7K	EET CF	12/06/24 09:10
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/03/24 10:45

Client Sample ID: MW-44A
Lab Sample ID: 310-296412-6
Date Collected: 12/03/24 11:30
Matrix: Ground Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 20:39
Total/NA	Prep	3005A			441684	F5MW	EET CF	12/06/24 09:00
Total/NA	Analysis	6020B		1	442277	NFT2	EET CF	12/11/24 16:43
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/11/24 02:35
Total/NA	Analysis	4500 F C-2011		1	442273	WZC8	EET CF	12/11/24 16:10
Total/NA	Analysis	D516-16		5	441880	WZC8	EET CF	12/07/24 09:25
Total/NA	Analysis	I-3765-85		1	441658	HE7K	EET CF	12/05/24 11:19
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	441735	HE7K	EET CF	12/05/24 17:46
Total/NA	Analysis	SM 2540C		1	441708	XJ7V	EET CF	12/05/24 16:35
Total/NA	Analysis	SM 4500 Cl- E		10	441996	ENB7	EET CF	12/09/24 11:48
Total/NA	Analysis	SM 5210B		1	441583	W9YR	EET CF	12/05/24 05:58
Total/NA	Analysis	SM 5220D		5	441743	HE7K	EET CF	12/06/24 09:10
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/03/24 11:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-296412-7
Date Collected: 12/03/24 00:00
Matrix: Water
Date Received: 12/04/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441673	WSE8	EET CF	12/05/24 16:31

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-296412-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-296412 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Arcom

City/State: CITY | STATE TA | Project:

Receipt Information

Date/Time Received: DATE 12/4/24 | TIME 130 | Received By: N

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

AM

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.0 | Corrected Temp (°C): 1.0

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-4-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			Job / SDG No
Site: Winneshiek County Landfill	☐ 1 week			
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-31A			G	GW		N		X	X	X	X	X	
MW-33A			G	GW		N		X	X		X	X	
MW-34A			G	GW		N		X	X		X	X	
MW-37A-FD	12-3-24	1300	G	GW	8	N		X	X		X	X	
MW-37A	12-3-24	1300	G	GW	8	N		X	X		X	X	Turbidity - 1.87 NTU
MW-38A			G	GW		N		X	X		X	X	
MW-38A-FD			G	GW		N		X	X		X	X	
MW-39A	12-3-24	1430	G	GW	8	N		X	X		X	X	Turbidity - 271.18 NTU
MW-40A	12-3-24	1600	G	GW	8	N		X	X		X	X	Turbidity - 42.50 NTU
MW-41A			G	GW		N		X	X		X	X	
Trip Blank	12-3-24	0600	G	W	2	N			X				

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd. ____ Corr'd ____	Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 12-4-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by: VC	Company:	Date/Time: 12/4/24 1325

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-4-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 2 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			Job / SDG No
Site: Winneshiek County Landfill	☐ 1 week			
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-42A			G	GW		N		X	X	X	X	
MW-43A	12-3-24	1045	G	GW	8	N		X	X	X	X	Turbidity – 12.02 NTU
MW-44A	12-3-24	1130	G	GW	8	N		X	X	X	X	Turbidity – 9.13 NTU
MW-45A			G	GW		N		X	X	X	X	
MW-46A			G	GW		N		X	X	X	X	
MW-101			G	GW		N		X	X	X	X	
MW-11			G	GW		N		X	X	X	X	
MW-19R			G	GW		N		X	X	X	X	
MW-22			G	GW		N		X	X	X	X	
MW-22-FD			G	GW		N		X	X	X	X	
MW-35			G	GW		N		X	X	X	X	
MW-18			G	GW		N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd.____ Corr'd.____	Therm ID No.____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	12-4-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time
					12/4/24 1325

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-296412-1

Login Number: 296412

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

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

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 12/18/2024 7:33:30 AM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-296662-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
12/18/2024 7:33:30 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-296662-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/6/2024 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

GC/MS VOA
Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : MW-33A (310-296662-1), Trip Blank (310-296662-2), MW-1 (310-296662-3), MW-42A (310-296662-4) and MW-19R (310-296662-5). The requested target analyte list includes Acrylonitrile.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-441843 recovered above the upper control limit for Trichlorofluoromethane (83.6%D), Vinyl chloride (62.3%D), and Chloroethane (61.0%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-441843/4).

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

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

General Chemistry
Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-441729. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

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

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

Sample Summary

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-296662-1	MW-33A	Ground Water	12/05/24 14:45	12/06/24 09:05
310-296662-2	Trip Blank	Water	12/05/24 06:00	12/06/24 09:05
310-296662-3	MW-1	Ground Water	12/05/24 13:15	12/06/24 09:05
310-296662-4	MW-42A	Ground Water	12/05/24 11:15	12/06/24 09:05
310-296662-5	MW-19R	Ground Water	12/05/24 12:00	12/06/24 09:05

Detection Summary

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A — Lab Sample ID: 310-296662-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.231	J	1.00	0.230	ug/L	1		8260D	Total/NA
Benzene	2.45		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	2.37		1.00	0.400	ug/L	1		8260D	Total/NA
Arsenic	112		2.00	0.530	ug/L	1		6020B	Total/NA
Barium	199		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	146		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	2.40		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	50.1		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	2.15	J	5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	9.83		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.167		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	28.8		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	43.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	3.31				%	1		SM 1030E	Total/NA
Total Alkalinity	514		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	514		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	578		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	7.03		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Biochemical Oxygen Demand	7.71	*-	3.00	3.00	mg/L	1		SM 5210B	Total/NA
Chemical Oxygen Demand	49.7		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	13.51				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-296662-2

No Detections.

Client Sample ID: MW-1 — Lab Sample ID: 310-296662-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	0.256	J	1.00	0.230	ug/L	1		8260D	Total/NA
Chlorobenzene	0.966	J	1.00	0.400	ug/L	1		8260D	Total/NA
Barium	201		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	142		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.225	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	54.5		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	9.01		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	45.3		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	0.173		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.118		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	13.8		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	3.86		2.07	1.53	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	3.19				%	1		SM 1030E	Total/NA
Total Alkalinity	500		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	500		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	628		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	85.3		4.00	2.80	mg/L	2		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	46.4		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	10.60				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-42A — Lab Sample ID: 310-296662-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.547	J	2.00	0.530	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample ID: MW-42A (Continued)
Lab Sample ID: 310-296662-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	177		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	201		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	2.77		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.00	J	5.00	1.80	ug/L	1		6020B	Total/NA
Magnesium	64.7		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	27.6		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	50.4		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	0.687		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.240		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	135		25.0	12.0	mg/L	5		D516-16	Total/NA
Total Suspended Solids	14.1		2.14	1.59	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	3.67				%	1		SM 1030E	Total/NA
Total Alkalinity	500		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	500		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	888		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	122		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	31.5		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	33.63				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-19R
Lab Sample ID: 310-296662-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.235	J	0.500	0.220	ug/L	1		8260D	Total/NA
Barium	96.3		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	72.4		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.284	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	34.1		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	5.32		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.965		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	9.24		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	12.1		2.14	1.59	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	2.00				%	1		SM 1030E	Total/NA
Total Alkalinity	275		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	275		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	324		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	23.1		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	38.1		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	5.64				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A
Lab Sample ID: 310-296662-1
Date Collected: 12/05/24 14:45
Matrix: Ground Water
Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/07/24 13:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/07/24 13:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/07/24 13:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/07/24 13:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/07/24 13:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/07/24 13:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/07/24 13:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/07/24 13:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/07/24 13:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/07/24 13:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/07/24 13:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/07/24 13:34	1
1,4-Dichlorobenzene	**0.231**	**J**	1.00	0.230	ug/L			12/07/24 13:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/07/24 13:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/07/24 13:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/07/24 13:34	1
Acetone	<3.10		10.0	3.10	ug/L			12/07/24 13:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/07/24 13:34	1
Benzene	**2.45**		0.500	0.220	ug/L			12/07/24 13:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/07/24 13:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/07/24 13:34	1
Bromoform	<0.780		5.00	0.780	ug/L			12/07/24 13:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/07/24 13:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/07/24 13:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/07/24 13:34	1
Chlorobenzene	**2.37**		1.00	0.400	ug/L			12/07/24 13:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/07/24 13:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/07/24 13:34	1
Chloroform	<1.30		3.00	1.30	ug/L			12/07/24 13:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/07/24 13:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/07/24 13:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/07/24 13:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/07/24 13:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/07/24 13:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/07/24 13:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/07/24 13:34	1
Styrene	<0.370		1.00	0.370	ug/L			12/07/24 13:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/07/24 13:34	1
Toluene	<0.430		1.00	0.430	ug/L			12/07/24 13:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/07/24 13:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/07/24 13:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/07/24 13:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/07/24 13:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/07/24 13:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/07/24 13:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/07/24 13:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/07/24 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*105*		*73 - 130*		*12/07/24 13:34*	*1*

Client Sample ID: MW-33A
Lab Sample ID: 310-296662-1

Date Collected: 12/05/24 14:45
Matrix: Ground Water

Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*12/07/24 13:34*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*12/07/24 13:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/10/24 09:30	12/12/24 13:37	1
Arsenic	**112**		2.00	0.530	ug/L		12/10/24 09:30	12/12/24 13:37	1
Barium	**199**		2.00	0.660	ug/L		12/10/24 09:30	12/12/24 13:37	1
Beryllium	<0.330		1.00	0.330	ug/L		12/10/24 09:30	12/12/24 13:37	1
Cadmium	<0.100		0.200	0.100	ug/L		12/10/24 09:30	12/12/24 13:37	1
Calcium	**146**		0.500	0.190	mg/L		12/10/24 09:30	12/12/24 13:37	1
Chromium	<1.20		5.00	1.20	ug/L		12/10/24 09:30	12/12/24 13:37	1
Cobalt	**2.40**		0.500	0.170	ug/L		12/10/24 09:30	12/12/24 13:37	1
Copper	<1.80		5.00	1.80	ug/L		12/10/24 09:30	12/12/24 13:37	1
Lead	<0.260		0.500	0.260	ug/L		12/10/24 09:30	12/12/24 13:37	1
Magnesium	**50.1**		0.500	0.150	mg/L		12/10/24 09:30	12/12/24 13:37	1
Nickel	**2.15**	**J**	5.00	2.10	ug/L		12/10/24 09:30	12/12/24 13:37	1
Selenium	<1.40		5.00	1.40	ug/L		12/10/24 09:30	12/12/24 13:37	1
Silver	<0.500		1.00	0.500	ug/L		12/10/24 09:30	12/12/24 13:37	1
Sodium	**9.83**		1.00	0.480	mg/L		12/10/24 09:30	12/12/24 13:37	1
Thallium	<0.570		1.00	0.570	ug/L		12/10/24 09:30	12/12/24 13:37	1
Vanadium	<1.10		5.00	1.10	ug/L		12/10/24 09:30	12/12/24 13:37	1
Zinc	<9.70		20.0	9.70	ug/L		12/10/24 09:30	12/12/24 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/16/24 23:19	1
Fluoride (SM 4500 F C-2011)	**0.167**		0.100	0.0540	mg/L			12/13/24 11:46	1
Sulfate (ASTM D516-16)	**28.8**		5.00	2.40	mg/L			12/10/24 15:38	1
Total Suspended Solids (USGS I-3765-85)	**43.0**		7.50	5.55	mg/L			12/06/24 18:21	1
Anion/Cation Balance (SM 1030E)	**3.31**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**514**		5.00	2.50	mg/L			12/10/24 16:00	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**514**		5.00	2.50	mg/L			12/10/24 16:00	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Total Dissolved Solids (SM 2540C)	**578**		50.0	42.0	mg/L			12/06/24 17:28	1
Chloride (SM 4500 Cl- E)	**7.03**		2.00	1.40	mg/L			12/11/24 16:28	1
Biochemical Oxygen Demand (SM 5210B)	**7.71**	***-**	3.00	3.00	mg/L			12/06/24 10:33	1
Chemical Oxygen Demand (SM 5220D)	**49.7**		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**13.51**				NTU			12/05/24 14:45	1

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-296662-2
Date Collected: 12/05/24 06:00
Matrix: Water
Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/07/24 10:56	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/07/24 10:56	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/07/24 10:56	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/07/24 10:56	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/07/24 10:56	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/07/24 10:56	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/07/24 10:56	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/07/24 10:56	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/07/24 10:56	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/07/24 10:56	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/07/24 10:56	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/07/24 10:56	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/07/24 10:56	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/07/24 10:56	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/07/24 10:56	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/07/24 10:56	1
Acetone	<3.10		10.0	3.10	ug/L			12/07/24 10:56	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/07/24 10:56	1
Benzene	<0.220		0.500	0.220	ug/L			12/07/24 10:56	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/07/24 10:56	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/07/24 10:56	1
Bromoform	<0.780		5.00	0.780	ug/L			12/07/24 10:56	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/07/24 10:56	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/07/24 10:56	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/07/24 10:56	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/07/24 10:56	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/07/24 10:56	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/07/24 10:56	1
Chloroform	<1.30		3.00	1.30	ug/L			12/07/24 10:56	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/07/24 10:56	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/07/24 10:56	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/07/24 10:56	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/07/24 10:56	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/07/24 10:56	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/07/24 10:56	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/07/24 10:56	1
Styrene	<0.370		1.00	0.370	ug/L			12/07/24 10:56	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/07/24 10:56	1
Toluene	<0.430		1.00	0.430	ug/L			12/07/24 10:56	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/07/24 10:56	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/07/24 10:56	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/07/24 10:56	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/07/24 10:56	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/07/24 10:56	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/07/24 10:56	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/07/24 10:56	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/07/24 10:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*12/07/24 10:56*	*1*

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-296662-2
Date Collected: 12/05/24 06:00
Matrix: Water
Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/07/24 10:56*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*12/07/24 10:56*	*1*

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-1
Lab Sample ID: 310-296662-3
Date Collected: 12/05/24 13:15
Matrix: Ground Water
Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/07/24 13:57	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/07/24 13:57	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/07/24 13:57	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/07/24 13:57	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/07/24 13:57	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/07/24 13:57	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/07/24 13:57	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/07/24 13:57	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/07/24 13:57	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/07/24 13:57	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/07/24 13:57	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/07/24 13:57	1
1,4-Dichlorobenzene	**0.256**	**J**	1.00	0.230	ug/L			12/07/24 13:57	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/07/24 13:57	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/07/24 13:57	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/07/24 13:57	1
Acetone	<3.10		10.0	3.10	ug/L			12/07/24 13:57	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/07/24 13:57	1
Benzene	<0.220		0.500	0.220	ug/L			12/07/24 13:57	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/07/24 13:57	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/07/24 13:57	1
Bromoform	<0.780		5.00	0.780	ug/L			12/07/24 13:57	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/07/24 13:57	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/07/24 13:57	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/07/24 13:57	1
Chlorobenzene	**0.966**	**J**	1.00	0.400	ug/L			12/07/24 13:57	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/07/24 13:57	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/07/24 13:57	1
Chloroform	<1.30		3.00	1.30	ug/L			12/07/24 13:57	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/07/24 13:57	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/07/24 13:57	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/07/24 13:57	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/07/24 13:57	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/07/24 13:57	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/07/24 13:57	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/07/24 13:57	1
Styrene	<0.370		1.00	0.370	ug/L			12/07/24 13:57	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/07/24 13:57	1
Toluene	<0.430		1.00	0.430	ug/L			12/07/24 13:57	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/07/24 13:57	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/07/24 13:57	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/07/24 13:57	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/07/24 13:57	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/07/24 13:57	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/07/24 13:57	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/07/24 13:57	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/07/24 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*12/07/24 13:57*	*1*

Client Sample ID: MW-1
Lab Sample ID: 310-296662-3

Date Collected: 12/05/24 13:15
Matrix: Ground Water

Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/07/24 13:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*12/07/24 13:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/10/24 09:30	12/12/24 13:55	1
Arsenic	<0.530		2.00	0.530	ug/L		12/10/24 09:30	12/12/24 13:55	1
Barium	**201**		2.00	0.660	ug/L		12/10/24 09:30	12/12/24 13:55	1
Beryllium	<0.330		1.00	0.330	ug/L		12/10/24 09:30	12/12/24 13:55	1
Cadmium	<0.100		0.200	0.100	ug/L		12/10/24 09:30	12/12/24 13:55	1
Calcium	**142**		0.500	0.190	mg/L		12/10/24 09:30	12/12/24 13:55	1
Chromium	<1.20		5.00	1.20	ug/L		12/10/24 09:30	12/12/24 13:55	1
Cobalt	**0.225**	**J**	0.500	0.170	ug/L		12/10/24 09:30	12/12/24 13:55	1
Copper	<1.80		5.00	1.80	ug/L		12/10/24 09:30	12/12/24 13:55	1
Lead	<0.260		0.500	0.260	ug/L		12/10/24 09:30	12/12/24 13:55	1
Magnesium	**54.5**		0.500	0.150	mg/L		12/10/24 09:30	12/12/24 13:55	1
Nickel	**9.01**		5.00	2.10	ug/L		12/10/24 09:30	12/12/24 13:55	1
Selenium	<1.40		5.00	1.40	ug/L		12/10/24 09:30	12/12/24 13:55	1
Silver	<0.500		1.00	0.500	ug/L		12/10/24 09:30	12/12/24 13:55	1
Sodium	**45.3**		1.00	0.480	mg/L		12/10/24 09:30	12/12/24 13:55	1
Thallium	<0.570		1.00	0.570	ug/L		12/10/24 09:30	12/12/24 13:55	1
Vanadium	<1.10		5.00	1.10	ug/L		12/10/24 09:30	12/12/24 13:55	1
Zinc	<9.70		20.0	9.70	ug/L		12/10/24 09:30	12/12/24 13:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**0.173**		0.100	0.0800	mg/L			12/16/24 23:21	1
Fluoride (SM 4500 F C-2011)	**0.118**		0.100	0.0540	mg/L			12/13/24 11:49	1
Sulfate (ASTM D516-16)	**13.8**		5.00	2.40	mg/L			12/10/24 15:38	1
Total Suspended Solids (USGS I-3765-85)	**3.86**		2.07	1.53	mg/L			12/06/24 18:21	1
Anion/Cation Balance (SM 1030E)	**3.19**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**500**		5.00	2.50	mg/L			12/10/24 16:00	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**500**		5.00	2.50	mg/L			12/10/24 16:00	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Total Dissolved Solids (SM 2540C)	**628**		50.0	42.0	mg/L			12/06/24 17:28	1
Chloride (SM 4500 Cl- E)	**85.3**		4.00	2.80	mg/L			12/11/24 16:29	2
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			12/06/24 10:30	1
Chemical Oxygen Demand (SM 5220D)	**46.4**		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**10.60**				NTU			12/05/24 13:15	1

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-42A
Lab Sample ID: 310-296662-4
Date Collected: 12/05/24 11:15
Matrix: Ground Water
Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/07/24 14:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/07/24 14:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/07/24 14:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/07/24 14:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/07/24 14:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/07/24 14:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/07/24 14:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/07/24 14:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/07/24 14:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/07/24 14:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/07/24 14:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/07/24 14:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/07/24 14:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/07/24 14:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/07/24 14:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/07/24 14:20	1
Acetone	<3.10		10.0	3.10	ug/L			12/07/24 14:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/07/24 14:20	1
Benzene	<0.220		0.500	0.220	ug/L			12/07/24 14:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/07/24 14:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/07/24 14:20	1
Bromoform	<0.780		5.00	0.780	ug/L			12/07/24 14:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/07/24 14:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/07/24 14:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/07/24 14:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/07/24 14:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/07/24 14:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/07/24 14:20	1
Chloroform	<1.30		3.00	1.30	ug/L			12/07/24 14:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/07/24 14:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/07/24 14:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/07/24 14:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/07/24 14:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/07/24 14:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/07/24 14:20	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/07/24 14:20	1
Styrene	<0.370		1.00	0.370	ug/L			12/07/24 14:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/07/24 14:20	1
Toluene	<0.430		1.00	0.430	ug/L			12/07/24 14:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/07/24 14:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/07/24 14:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/07/24 14:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/07/24 14:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/07/24 14:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/07/24 14:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/07/24 14:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/07/24 14:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*73 - 130*		*12/07/24 14:20*	*1*

Client Sample ID: MW-42A
Lab Sample ID: 310-296662-4

Date Collected: 12/05/24 11:15
Matrix: Ground Water

Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/07/24 14:20*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/07/24 14:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/10/24 09:30	12/12/24 13:58	1
Arsenic	**0.547**	**J**	2.00	0.530	ug/L		12/10/24 09:30	12/12/24 13:58	1
Barium	**177**		2.00	0.660	ug/L		12/10/24 09:30	12/12/24 13:58	1
Beryllium	<0.330		1.00	0.330	ug/L		12/10/24 09:30	12/12/24 13:58	1
Cadmium	<0.100		0.200	0.100	ug/L		12/10/24 09:30	12/12/24 13:58	1
Calcium	**201**		0.500	0.190	mg/L		12/10/24 09:30	12/12/24 13:58	1
Chromium	<1.20		5.00	1.20	ug/L		12/10/24 09:30	12/12/24 13:58	1
Cobalt	**2.77**		0.500	0.170	ug/L		12/10/24 09:30	12/12/24 13:58	1
Copper	**2.00**	**J**	5.00	1.80	ug/L		12/10/24 09:30	12/12/24 13:58	1
Lead	<0.260		0.500	0.260	ug/L		12/10/24 09:30	12/12/24 13:58	1
Magnesium	**64.7**		0.500	0.150	mg/L		12/10/24 09:30	12/12/24 13:58	1
Nickel	**27.6**		5.00	2.10	ug/L		12/10/24 09:30	12/12/24 13:58	1
Selenium	<1.40		5.00	1.40	ug/L		12/10/24 09:30	12/12/24 13:58	1
Silver	<0.500		1.00	0.500	ug/L		12/10/24 09:30	12/12/24 13:58	1
Sodium	**50.4**		1.00	0.480	mg/L		12/10/24 09:30	12/12/24 13:58	1
Thallium	<0.570		1.00	0.570	ug/L		12/10/24 09:30	12/12/24 13:58	1
Vanadium	<1.10		5.00	1.10	ug/L		12/10/24 09:30	12/12/24 13:58	1
Zinc	<9.70		20.0	9.70	ug/L		12/10/24 09:30	12/12/24 13:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**0.687**		0.100	0.0800	mg/L			12/13/24 12:57	1
Fluoride (SM 4500 F C-2011)	**0.240**		0.100	0.0540	mg/L			12/13/24 11:52	1
Sulfate (ASTM D516-16)	**135**		25.0	12.0	mg/L			12/10/24 15:48	5
Total Suspended Solids (USGS I-3765-85)	**14.1**		2.14	1.59	mg/L			12/06/24 18:21	1
Anion/Cation Balance (SM 1030E)	**3.67**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**500**		5.00	2.50	mg/L			12/11/24 08:51	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**500**		5.00	2.50	mg/L			12/11/24 08:51	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 08:51	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 08:51	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 08:51	1
Total Dissolved Solids (SM 2540C)	**888**		50.0	42.0	mg/L			12/06/24 17:28	1
Chloride (SM 4500 Cl- E)	**122**		20.0	14.0	mg/L			12/11/24 16:29	10
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			12/06/24 10:24	1
Chemical Oxygen Demand (SM 5220D)	**31.5**		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**33.63**				NTU			12/05/24 11:15	1

Client Sample ID: MW-19R
Lab Sample ID: 310-296662-5

Date Collected: 12/05/24 12:00
Matrix: Ground Water

Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/07/24 14:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/07/24 14:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/07/24 14:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/07/24 14:42	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/07/24 14:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/07/24 14:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/07/24 14:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/07/24 14:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/07/24 14:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/07/24 14:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/07/24 14:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/07/24 14:42	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/07/24 14:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/07/24 14:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/07/24 14:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/07/24 14:42	1
Acetone	<3.10		10.0	3.10	ug/L			12/07/24 14:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/07/24 14:42	1
Benzene	**0.235**	**J**	0.500	0.220	ug/L			12/07/24 14:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/07/24 14:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/07/24 14:42	1
Bromoform	<0.780		5.00	0.780	ug/L			12/07/24 14:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/07/24 14:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/07/24 14:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/07/24 14:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/07/24 14:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/07/24 14:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/07/24 14:42	1
Chloroform	<1.30		3.00	1.30	ug/L			12/07/24 14:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/07/24 14:42	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/07/24 14:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/07/24 14:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/07/24 14:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/07/24 14:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/07/24 14:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/07/24 14:42	1
Styrene	<0.370		1.00	0.370	ug/L			12/07/24 14:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/07/24 14:42	1
Toluene	<0.430		1.00	0.430	ug/L			12/07/24 14:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/07/24 14:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/07/24 14:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/07/24 14:42	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/07/24 14:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/07/24 14:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/07/24 14:42	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/07/24 14:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/07/24 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*12/07/24 14:42*	*1*

Client Sample ID: MW-19R
Lab Sample ID: 310-296662-5
Date Collected: 12/05/24 12:00
Matrix: Ground Water
Date Received: 12/06/24 09:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*12/07/24 14:42*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*12/07/24 14:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/10/24 09:30	12/12/24 14:00	1
Arsenic	<0.530		2.00	0.530	ug/L		12/10/24 09:30	12/12/24 14:00	1
Barium	**96.3**		2.00	0.660	ug/L		12/10/24 09:30	12/12/24 14:00	1
Beryllium	<0.330		1.00	0.330	ug/L		12/10/24 09:30	12/12/24 14:00	1
Cadmium	<0.100		0.200	0.100	ug/L		12/10/24 09:30	12/12/24 14:00	1
Calcium	**72.4**		0.500	0.190	mg/L		12/10/24 09:30	12/12/24 14:00	1
Chromium	<1.20		5.00	1.20	ug/L		12/10/24 09:30	12/12/24 14:00	1
Cobalt	**0.284**	**J**	0.500	0.170	ug/L		12/10/24 09:30	12/12/24 14:00	1
Copper	<1.80		5.00	1.80	ug/L		12/10/24 09:30	12/12/24 14:00	1
Lead	<0.260		0.500	0.260	ug/L		12/10/24 09:30	12/12/24 14:00	1
Magnesium	**34.1**		0.500	0.150	mg/L		12/10/24 09:30	12/12/24 14:00	1
Nickel	<2.10		5.00	2.10	ug/L		12/10/24 09:30	12/12/24 14:00	1
Selenium	<1.40		5.00	1.40	ug/L		12/10/24 09:30	12/12/24 14:00	1
Silver	<0.500		1.00	0.500	ug/L		12/10/24 09:30	12/12/24 14:00	1
Sodium	**5.32**		1.00	0.480	mg/L		12/10/24 09:30	12/12/24 14:00	1
Thallium	<0.570		1.00	0.570	ug/L		12/10/24 09:30	12/12/24 14:00	1
Vanadium	<1.10		5.00	1.10	ug/L		12/10/24 09:30	12/12/24 14:00	1
Zinc	<9.70		20.0	9.70	ug/L		12/10/24 09:30	12/12/24 14:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/13/24 12:59	1
Fluoride (SM 4500 F C-2011)	**0.965**		0.100	0.0540	mg/L			12/13/24 11:56	1
Sulfate (ASTM D516-16)	**9.24**		5.00	2.40	mg/L			12/10/24 15:39	1
Total Suspended Solids (USGS I-3765-85)	**12.1**		2.14	1.59	mg/L			12/06/24 18:21	1
Anion/Cation Balance (SM 1030E)	**2.00**				%			12/09/24 10:13	1
Total Alkalinity (SM 2320B)	**275**		5.00	2.50	mg/L			12/10/24 16:00	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**275**		5.00	2.50	mg/L			12/10/24 16:00	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/10/24 16:00	1
Total Dissolved Solids (SM 2540C)	**324**		50.0	42.0	mg/L			12/06/24 17:28	1
Chloride (SM 4500 Cl- E)	**23.1**		2.00	1.40	mg/L			12/11/24 16:29	1
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			12/06/24 10:27	1
Chemical Oxygen Demand (SM 5220D)	**38.1**		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.64**				NTU			12/05/24 12:00	1

Definitions/Glossary

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-296662-1	MW-33A	105	93	99
310-296662-1 MS	MW-33A	100	101	100
310-296662-1 MSD	MW-33A	96	100	97
310-296662-3	MW-1	108	94	98
310-296662-4	MW-42A	108	95	102
310-296662-5	MW-19R	110	93	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-296662-2	Trip Blank	110	95	100
LCS 310-441843/6	Lab Control Sample	97	100	96
LCS 310-441843/7	Lab Control Sample	107	94	99
MB 310-441843/5	Method Blank	109	95	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-441843/5
Matrix: Water
Analysis Batch: 441843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/07/24 09:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/07/24 09:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/07/24 09:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/07/24 09:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/07/24 09:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/07/24 09:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/07/24 09:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/07/24 09:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/07/24 09:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/07/24 09:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/07/24 09:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/07/24 09:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/07/24 09:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/07/24 09:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/07/24 09:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/07/24 09:48	1
Acetone	<3.10		10.0	3.10	ug/L			12/07/24 09:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/07/24 09:48	1
Benzene	<0.220		0.500	0.220	ug/L			12/07/24 09:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/07/24 09:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/07/24 09:48	1
Bromoform	<0.780		5.00	0.780	ug/L			12/07/24 09:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/07/24 09:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/07/24 09:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/07/24 09:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/07/24 09:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/07/24 09:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/07/24 09:48	1
Chloroform	<1.30		3.00	1.30	ug/L			12/07/24 09:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/07/24 09:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/07/24 09:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/07/24 09:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/07/24 09:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/07/24 09:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/07/24 09:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/07/24 09:48	1
Styrene	<0.370		1.00	0.370	ug/L			12/07/24 09:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/07/24 09:48	1
Toluene	<0.430		1.00	0.430	ug/L			12/07/24 09:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/07/24 09:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/07/24 09:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/07/24 09:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/07/24 09:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/07/24 09:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/07/24 09:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/07/24 09:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/07/24 09:48	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-441843/5
Matrix: Water
Analysis Batch: 441843

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*12/07/24 09:48*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/07/24 09:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*12/07/24 09:48*	*1*

Lab Sample ID: LCS 310-441843/6
Matrix: Water
Analysis Batch: 441843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	21.44		ug/L		107	71 - 120
1,1,1-Trichloroethane	20.0	21.67		ug/L		108	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.92		ug/L		105	68 - 124
1,1,2-Trichloroethane	20.0	21.02		ug/L		105	73 - 123
1,1-Dichloroethane	20.0	20.31		ug/L		102	70 - 127
1,1-Dichloroethene	20.0	20.14		ug/L		101	63 - 132
1,2,3-Trichloropropane	20.0	21.56		ug/L		108	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	19.53		ug/L		98	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.64		ug/L		103	75 - 125
1,2-Dichlorobenzene	20.0	19.85		ug/L		99	74 - 120
1,2-Dichloroethane	20.0	22.12		ug/L		111	71 - 125
1,2-Dichloropropane	20.0	21.64		ug/L		108	73 - 124
1,4-Dichlorobenzene	20.0	20.36		ug/L		102	72 - 120
2-Butanone (MEK)	40.0	41.72		ug/L		104	50 - 150
2-Hexanone	40.0	46.97		ug/L		117	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	45.30		ug/L		113	60 - 139
Acetone	40.0	40.61		ug/L		102	50 - 150
Acrylonitrile	200	197.2		ug/L		99	50 - 150
Benzene	20.0	20.30		ug/L		101	72 - 124
Bromochloromethane	20.0	20.67		ug/L		103	73 - 130
Bromodichloromethane	20.0	20.69		ug/L		103	74 - 122
Bromoform	20.0	18.38		ug/L		92	61 - 122
Carbon disulfide	20.0	19.71		ug/L		99	59 - 135
Carbon tetrachloride	20.0	21.31		ug/L		107	67 - 132
Chlorobenzene	20.0	20.00		ug/L		100	76 - 120
Chlorodibromomethane	20.0	21.45		ug/L		107	71 - 121
Chloroform	20.0	21.54		ug/L		108	72 - 125
cis-1,2-Dichloroethene	20.0	20.31		ug/L		102	74 - 123
cis-1,3-Dichloropropene	20.0	20.57		ug/L		103	71 - 125
Dibromomethane	20.0	21.40		ug/L		107	74 - 125
Ethylbenzene	20.0	20.46		ug/L		102	74 - 122
Iodomethane	20.0	14.38		ug/L		72	10 - 150
Methylene Chloride	20.0	21.64		ug/L		108	50 - 150
Styrene	20.0	21.44		ug/L		107	74 - 121
Tetrachloroethene	20.0	19.46		ug/L		97	71 - 130
Toluene	20.0	19.95		ug/L		100	74 - 123
trans-1,2-Dichloroethene	20.0	19.83		ug/L		99	70 - 126
trans-1,3-Dichloropropene	20.0	18.45		ug/L		92	69 - 123
trans-1,4-Dichloro-2-butene	20.0	19.14		ug/L		96	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-441843/6
Matrix: Water
Analysis Batch: 441843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.82		ug/L		104	72 - 126
Vinyl acetate	40.0	36.94		ug/L		92	50 - 150
Xylenes, Total	40.0	40.96		ug/L		102	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*97*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*

Lab Sample ID: LCS 310-441843/7
Matrix: Water
Analysis Batch: 441843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	14.83		ug/L		74	23 - 150
Chloroethane	20.0	22.18		ug/L		111	54 - 136
Chloromethane	20.0	18.40		ug/L		92	38 - 150
Trichlorofluoromethane	20.0	24.88		ug/L		124	54 - 149
Vinyl chloride	20.0	22.86		ug/L		114	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*107*		*73 - 130*
Toluene-d8 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: 310-296662-1 MS
Matrix: Ground Water
Analysis Batch: 441843

Client Sample ID: MW-33A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	22.01		ug/L		88	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	21.75		ug/L		87	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.12		ug/L		92	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	22.43		ug/L		90	58 - 130
1,1-Dichloroethane	<0.220		25.0	20.60		ug/L		82	49 - 130
1,1-Dichloroethene	<0.560		25.0	20.74		ug/L		83	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	22.56		ug/L		90	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	21.55		ug/L		86	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	22.24		ug/L		89	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	20.26		ug/L		81	59 - 130
1,2-Dichloroethane	<0.390		25.0	23.83		ug/L		95	51 - 130
1,2-Dichloropropane	<0.270		25.0	22.10		ug/L		88	57 - 130
1,4-Dichlorobenzene	0.231	J	25.0	20.78		ug/L		82	57 - 130
2-Butanone (MEK)	<2.10		50.0	47.02		ug/L		94	38 - 150
2-Hexanone	<2.00		50.0	49.59		ug/L		99	46 - 140
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	49.16		ug/L		98	47 - 139
Acetone	<3.10		50.0	48.55		ug/L		97	31 - 150
Acrylonitrile	<2.20		250	218.2		ug/L		87	40 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-296662-1 MS
Matrix: Ground Water
Analysis Batch: 441843

Client Sample ID: MW-33A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	2.45		25.0	23.21		ug/L		83	46 - 130
Bromochloromethane	<0.540		25.0	21.82		ug/L		87	57 - 130
Bromodichloromethane	<0.390		25.0	21.94		ug/L		88	57 - 130
Bromoform	<0.780		25.0	19.58		ug/L		78	44 - 130
Carbon disulfide	<0.450		25.0	23.07		ug/L		92	38 - 135
Carbon tetrachloride	<0.650		25.0	21.12		ug/L		84	45 - 132
Chlorobenzene	2.37		25.0	22.55		ug/L		81	59 - 130
Chlorodibromomethane	<0.750		25.0	21.84		ug/L		87	54 - 130
Chloroform	<1.30		25.0	22.46		ug/L		90	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	20.76		ug/L		83	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	21.32		ug/L		85	53 - 130
Dibromomethane	<0.330		25.0	22.59		ug/L		90	59 - 130
Ethylbenzene	<0.310		25.0	20.85		ug/L		83	45 - 130
Iodomethane	<7.00		25.0	16.32		ug/L		65	10 - 150
Methylene Chloride	<1.70		25.0	22.55		ug/L		90	37 - 150
Styrene	<0.370		25.0	22.37		ug/L		89	47 - 130
Tetrachloroethene	<0.480		25.0	19.53		ug/L		78	47 - 130
Toluene	<0.430		25.0	20.43		ug/L		82	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	20.45		ug/L		82	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	19.51		ug/L		78	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	20.30		ug/L		81	26 - 150
Trichloroethene	<0.430		25.0	20.58		ug/L		82	51 - 130
Vinyl acetate	<2.50		50.0	38.63		ug/L		77	29 - 150
Xylenes, Total	<0.400		50.0	42.06		ug/L		84	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-296662-1 MSD
Matrix: Ground Water
Analysis Batch: 441843

Client Sample ID: MW-33A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	21.58		ug/L		86	55 - 130	2	20
1,1,1-Trichloroethane	<0.190		25.0	20.94		ug/L		84	52 - 130	4	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.55		ug/L		90	54 - 130	2	20
1,1,2-Trichloroethane	<0.450		25.0	21.74		ug/L		87	58 - 130	3	20
1,1-Dichloroethane	<0.220		25.0	19.89		ug/L		80	49 - 130	4	20
1,1-Dichloroethene	<0.560		25.0	19.55		ug/L		78	37 - 132	6	26
1,2,3-Trichloropropane	<0.590		25.0	22.25		ug/L		89	49 - 130	1	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	21.65		ug/L		87	38 - 150	0	20
1,2-Dibromoethane (EDB)	<0.340		25.0	21.28		ug/L		85	60 - 130	4	20
1,2-Dichlorobenzene	<0.370		25.0	19.74		ug/L		79	59 - 130	3	20
1,2-Dichloroethane	<0.390		25.0	22.69		ug/L		91	51 - 130	5	20
1,2-Dichloropropane	<0.270		25.0	20.79		ug/L		83	57 - 130	6	20
1,4-Dichlorobenzene	0.231	J	25.0	19.94		ug/L		79	57 - 130	4	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-296662-1 MSD
Matrix: Ground Water
Analysis Batch: 441843

Client Sample ID: MW-33A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	<2.10		50.0	45.94		ug/L		92	38 - 150	2	20
2-Hexanone	<2.00		50.0	48.63		ug/L		97	46 - 140	2	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	48.13		ug/L		96	47 - 139	2	20
Acetone	<3.10		50.0	43.60		ug/L		87	31 - 150	11	29
Acrylonitrile	<2.20		250	211.0		ug/L		84	40 - 150	3	20
Benzene	2.45		25.0	21.96		ug/L		78	46 - 130	6	20
Bromochloromethane	<0.540		25.0	20.98		ug/L		84	57 - 130	4	20
Bromodichloromethane	<0.390		25.0	20.37		ug/L		81	57 - 130	7	20
Bromoform	<0.780		25.0	19.32		ug/L		77	44 - 130	1	20
Carbon disulfide	<0.450		25.0	19.36		ug/L		77	38 - 135	17	30
Carbon tetrachloride	<0.650		25.0	20.85		ug/L		83	45 - 132	1	20
Chlorobenzene	2.37		25.0	21.63		ug/L		77	59 - 130	4	20
Chlorodibromomethane	<0.750		25.0	21.14		ug/L		85	54 - 130	3	20
Chloroform	<1.30		25.0	21.42		ug/L		86	51 - 130	5	20
cis-1,2-Dichloroethene	<0.210		25.0	19.61		ug/L		78	45 - 130	6	20
cis-1,3-Dichloropropene	<0.250		25.0	20.73		ug/L		83	53 - 130	3	20
Dibromomethane	<0.330		25.0	22.02		ug/L		88	59 - 130	3	20
Ethylbenzene	<0.310		25.0	20.46		ug/L		82	45 - 130	2	20
Iodomethane	<7.00		25.0	16.44		ug/L		66	10 - 150	1	35
Methylene Chloride	<1.70		25.0	21.43		ug/L		86	37 - 150	5	24
Styrene	<0.370		25.0	21.47		ug/L		86	47 - 130	4	20
Tetrachloroethene	<0.480		25.0	18.52		ug/L		74	47 - 130	5	20
Toluene	<0.430		25.0	19.14		ug/L		77	51 - 130	6	20
trans-1,2-Dichloroethene	<0.270		25.0	19.10		ug/L		76	48 - 130	7	22
trans-1,3-Dichloropropene	<0.560		25.0	18.93		ug/L		76	50 - 130	3	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	19.00		ug/L		76	26 - 150	7	23
Trichloroethene	<0.430		25.0	19.41		ug/L		78	51 - 130	6	20
Vinyl acetate	<2.50		50.0	39.66		ug/L		79	29 - 150	3	23
Xylenes, Total	<0.400		50.0	41.17		ug/L		82	43 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-442005/1-A
Matrix: Water
Analysis Batch: 442386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/10/24 09:30	12/12/24 12:42	1
Arsenic	<0.530		2.00	0.530	ug/L		12/10/24 09:30	12/12/24 12:42	1
Barium	<0.660		2.00	0.660	ug/L		12/10/24 09:30	12/12/24 12:42	1
Beryllium	<0.330		1.00	0.330	ug/L		12/10/24 09:30	12/12/24 12:42	1
Cadmium	<0.100		0.200	0.100	ug/L		12/10/24 09:30	12/12/24 12:42	1
Calcium	<0.190		0.500	0.190	mg/L		12/10/24 09:30	12/12/24 12:42	1
Chromium	<1.20		5.00	1.20	ug/L		12/10/24 09:30	12/12/24 12:42	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-442005/1-A
Matrix: Water
Analysis Batch: 442386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.170		0.500	0.170	ug/L		12/10/24 09:30	12/12/24 12:42	1
Copper	<1.80		5.00	1.80	ug/L		12/10/24 09:30	12/12/24 12:42	1
Lead	<0.260		0.500	0.260	ug/L		12/10/24 09:30	12/12/24 12:42	1
Magnesium	<0.150		0.500	0.150	mg/L		12/10/24 09:30	12/12/24 12:42	1
Nickel	<2.10		5.00	2.10	ug/L		12/10/24 09:30	12/12/24 12:42	1
Selenium	<1.40		5.00	1.40	ug/L		12/10/24 09:30	12/12/24 12:42	1
Silver	<0.500		1.00	0.500	ug/L		12/10/24 09:30	12/12/24 12:42	1
Sodium	<0.480		1.00	0.480	mg/L		12/10/24 09:30	12/12/24 12:42	1
Thallium	<0.570		1.00	0.570	ug/L		12/10/24 09:30	12/12/24 12:42	1
Vanadium	<1.10		5.00	1.10	ug/L		12/10/24 09:30	12/12/24 12:42	1
Zinc	<9.70		20.0	9.70	ug/L		12/10/24 09:30	12/12/24 12:42	1

Lab Sample ID: LCS 310-442005/2-A
Matrix: Water
Analysis Batch: 442386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442005

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	204.3		ug/L		102	80 - 120
Arsenic	200	196.4		ug/L		98	80 - 120
Barium	100	103.5		ug/L		103	80 - 120
Beryllium	100	102.9		ug/L		103	80 - 120
Cadmium	100	101.0		ug/L		101	80 - 120
Calcium	2.00	1.788		mg/L		89	80 - 120
Chromium	100	106.1		ug/L		106	80 - 120
Cobalt	100	108.1		ug/L		108	80 - 120
Copper	200	218.3		ug/L		109	80 - 120
Lead	200	209.5		ug/L		105	80 - 120
Magnesium	2.00	1.965		mg/L		98	80 - 120
Nickel	200	213.7		ug/L		107	80 - 120
Selenium	400	392.5		ug/L		98	80 - 120
Silver	100	104.6		ug/L		105	80 - 120
Sodium	2.00	1.900		mg/L		95	80 - 120
Thallium	100	103.4		ug/L		103	80 - 120
Vanadium	100	103.8		ug/L		104	80 - 120
Zinc	200	190.3		ug/L		95	80 - 120

Lab Sample ID: 310-296662-1 DU
Matrix: Ground Water
Analysis Batch: 442386

Client Sample ID: MW-33A
Prep Type: Total/NA
Prep Batch: 442005

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Arsenic	112		110.7		ug/L		0.8	20
Barium	199		197.2		ug/L		1	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Calcium	146		146.1		mg/L		0.06	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	2.40		2.419		ug/L		1	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-296662-1 DU
Matrix: Ground Water
Analysis Batch: 442386

Client Sample ID: MW-33A
Prep Type: Total/NA
Prep Batch: 442005

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Copper	<1.80		<1.80		ug/L		NC	20
Lead	<0.260		<0.260		ug/L		NC	20
Magnesium	50.1		50.29		mg/L		0.4	20
Nickel	2.15	J	<2.10		ug/L		NC	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20
Sodium	9.83		9.802		mg/L		0.3	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	<1.10		<1.10		ug/L		NC	20
Zinc	<9.70		<9.70		ug/L		NC	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-442471/17
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/13/24 10:35	1

Lab Sample ID: LCS 310-442471/18
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.993		mg/L		100	90 - 110

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-442139/16
Matrix: Water
Analysis Batch: 442139

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/10/24 15:27	1

Lab Sample ID: LCS 310-442139/14
Matrix: Water
Analysis Batch: 442139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.944		mg/L		99	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-441859/1
Matrix: Water
Analysis Batch: 441859

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/06/24 18:21	1

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: LCS 310-441859/2
Matrix: Water
Analysis Batch: 441859

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	107.0		mg/L		107	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-442173/23
Matrix: Water
Analysis Batch: 442173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	907.1		mg/L		91	86 - 111

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-441856/1
Matrix: Water
Analysis Batch: 441856

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/06/24 17:28	1

Lab Sample ID: LCS 310-441856/2
Matrix: Water
Analysis Batch: 441856

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	986.0		mg/L		99	88 - 110

Lab Sample ID: 310-296662-5 DU
Matrix: Ground Water
Analysis Batch: 441856

Client Sample ID: MW-19R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	324		318.0		mg/L		2	16

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-442249/16
Matrix: Water
Analysis Batch: 442249

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			12/11/24 16:22	1

Lab Sample ID: LCS 310-442249/14
Matrix: Water
Analysis Batch: 442249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.797		mg/L		98	90 - 110

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-441729/1
Matrix: Water
Analysis Batch: 441729

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			12/06/24 07:36	1

Lab Sample ID: LCS 310-441729/2
Matrix: Water
Analysis Batch: 441729

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	138.6	*-	mg/L		70	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-442291/32
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/12/24 08:55	1

Lab Sample ID: LCS 310-442291/33
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	128.8		mg/L		103	85 - 110

GC/MS VOA

Analysis Batch: 441843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	8260D	
310-296662-2	Trip Blank	Total/NA	Water	8260D	
310-296662-3	MW-1	Total/NA	Ground Water	8260D	
310-296662-4	MW-42A	Total/NA	Ground Water	8260D	
310-296662-5	MW-19R	Total/NA	Ground Water	8260D	
MB 310-441843/5	Method Blank	Total/NA	Water	8260D	
LCS 310-441843/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-441843/7	Lab Control Sample	Total/NA	Water	8260D	
310-296662-1 MS	MW-33A	Total/NA	Ground Water	8260D	
310-296662-1 MSD	MW-33A	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 442005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	3005A	
310-296662-3	MW-1	Total/NA	Ground Water	3005A	
310-296662-4	MW-42A	Total/NA	Ground Water	3005A	
310-296662-5	MW-19R	Total/NA	Ground Water	3005A	
MB 310-442005/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-442005/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-296662-1 DU	MW-33A	Total/NA	Ground Water	3005A	

Analysis Batch: 442386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	6020B	442005
310-296662-3	MW-1	Total/NA	Ground Water	6020B	442005
310-296662-4	MW-42A	Total/NA	Ground Water	6020B	442005
310-296662-5	MW-19R	Total/NA	Ground Water	6020B	442005
MB 310-442005/1-A	Method Blank	Total/NA	Water	6020B	442005
LCS 310-442005/2-A	Lab Control Sample	Total/NA	Water	6020B	442005
310-296662-1 DU	MW-33A	Total/NA	Ground Water	6020B	442005

General Chemistry

Analysis Batch: 441729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	SM 5210B	
310-296662-3	MW-1	Total/NA	Ground Water	SM 5210B	
310-296662-4	MW-42A	Total/NA	Ground Water	SM 5210B	
310-296662-5	MW-19R	Total/NA	Ground Water	SM 5210B	
USB 310-441729/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-441729/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 441856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	SM 2540C	
310-296662-3	MW-1	Total/NA	Ground Water	SM 2540C	
310-296662-4	MW-42A	Total/NA	Ground Water	SM 2540C	
310-296662-5	MW-19R	Total/NA	Ground Water	SM 2540C	
MB 310-441856/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-441856/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 441856 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-5 DU	MW-19R	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 441859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	I-3765-85	
310-296662-3	MW-1	Total/NA	Ground Water	I-3765-85	
310-296662-4	MW-42A	Total/NA	Ground Water	I-3765-85	
310-296662-5	MW-19R	Total/NA	Ground Water	I-3765-85	
MB 310-441859/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-441859/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 441951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	353.2	
310-296662-3	MW-1	Total/NA	Ground Water	353.2	
310-296662-4	MW-42A	Total/NA	Ground Water	353.2	
310-296662-5	MW-19R	Total/NA	Ground Water	353.2	

Analysis Batch: 441952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	SM 1030E	
310-296662-3	MW-1	Total/NA	Ground Water	SM 1030E	
310-296662-4	MW-42A	Total/NA	Ground Water	SM 1030E	
310-296662-5	MW-19R	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 442139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	D516-16	
310-296662-3	MW-1	Total/NA	Ground Water	D516-16	
310-296662-4	MW-42A	Total/NA	Ground Water	D516-16	
310-296662-5	MW-19R	Total/NA	Ground Water	D516-16	
MB 310-442139/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-442139/14	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 442173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	SM 2320B	
310-296662-3	MW-1	Total/NA	Ground Water	SM 2320B	
310-296662-5	MW-19R	Total/NA	Ground Water	SM 2320B	
LCS 310-442173/23	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 442206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-4	MW-42A	Total/NA	Ground Water	SM 2320B	

Analysis Batch: 442249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296662-3	MW-1	Total/NA	Ground Water	SM 4500 Cl- E	
310-296662-4	MW-42A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296662-5	MW-19R	Total/NA	Ground Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 442249 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-442249/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-442249/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 442291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	SM 5220D	
310-296662-3	MW-1	Total/NA	Ground Water	SM 5220D	
310-296662-4	MW-42A	Total/NA	Ground Water	SM 5220D	
310-296662-5	MW-19R	Total/NA	Ground Water	SM 5220D	
MB 310-442291/32	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-442291/33	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 442471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	4500 F C-2011	
310-296662-3	MW-1	Total/NA	Ground Water	4500 F C-2011	
310-296662-4	MW-42A	Total/NA	Ground Water	4500 F C-2011	
310-296662-5	MW-19R	Total/NA	Ground Water	4500 F C-2011	
MB 310-442471/17	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-442471/18	Lab Control Sample	Total/NA	Water	4500 F C-2011	

Field Service / Mobile Lab

Analysis Batch: 441941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296662-1	MW-33A	Total/NA	Ground Water	Field Sampling	
310-296662-3	MW-1	Total/NA	Ground Water	Field Sampling	
310-296662-4	MW-42A	Total/NA	Ground Water	Field Sampling	
310-296662-5	MW-19R	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-33A
Lab Sample ID: 310-296662-1
Date Collected: 12/05/24 14:45
Matrix: Ground Water
Date Received: 12/06/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441843	WSE8	EET CF	12/07/24 13:34
Total/NA	Prep	3005A			442005	F5MW	EET CF	12/10/24 09:30
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 13:37
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/16/24 23:19
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 11:46
Total/NA	Analysis	D516-16		1	442139	ENB7	EET CF	12/10/24 15:38
Total/NA	Analysis	I-3765-85		1	441859	HE7K	EET CF	12/06/24 18:21
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	442173	MDU9	EET CF	12/10/24 16:00
Total/NA	Analysis	SM 2540C		1	441856	XJ7V	EET CF	12/06/24 17:28
Total/NA	Analysis	SM 4500 Cl- E		1	442249	ENB7	EET CF	12/11/24 16:28
Total/NA	Analysis	SM 5210B		1	441729	W9YR	EET CF	12/06/24 10:33
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/05/24 14:45

Client Sample ID: Trip Blank
Lab Sample ID: 310-296662-2
Date Collected: 12/05/24 06:00
Matrix: Water
Date Received: 12/06/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441843	WSE8	EET CF	12/07/24 10:56

Client Sample ID: MW-1
Lab Sample ID: 310-296662-3
Date Collected: 12/05/24 13:15
Matrix: Ground Water
Date Received: 12/06/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441843	WSE8	EET CF	12/07/24 13:57
Total/NA	Prep	3005A			442005	F5MW	EET CF	12/10/24 09:30
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 13:55
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/16/24 23:21
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 11:49
Total/NA	Analysis	D516-16		1	442139	ENB7	EET CF	12/10/24 15:38
Total/NA	Analysis	I-3765-85		1	441859	HE7K	EET CF	12/06/24 18:21
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	442173	MDU9	EET CF	12/10/24 16:00
Total/NA	Analysis	SM 2540C		1	441856	XJ7V	EET CF	12/06/24 17:28
Total/NA	Analysis	SM 4500 Cl- E		2	442249	ENB7	EET CF	12/11/24 16:29
Total/NA	Analysis	SM 5210B		1	441729	W9YR	EET CF	12/06/24 10:30
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/05/24 13:15

Lab Chronicle

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-42A
Lab Sample ID: 310-296662-4
Date Collected: 12/05/24 11:15
Matrix: Ground Water
Date Received: 12/06/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441843	WSE8	EET CF	12/07/24 14:20
Total/NA	Prep	3005A			442005	F5MW	EET CF	12/10/24 09:30
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 13:58
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/13/24 12:57
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 11:52
Total/NA	Analysis	D516-16		5	442139	ENB7	EET CF	12/10/24 15:48
Total/NA	Analysis	I-3765-85		1	441859	HE7K	EET CF	12/06/24 18:21
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 08:51
Total/NA	Analysis	SM 2540C		1	441856	XJ7V	EET CF	12/06/24 17:28
Total/NA	Analysis	SM 4500 Cl- E		10	442249	ENB7	EET CF	12/11/24 16:29
Total/NA	Analysis	SM 5210B		1	441729	W9YR	EET CF	12/06/24 10:24
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/05/24 11:15

Client Sample ID: MW-19R
Lab Sample ID: 310-296662-5
Date Collected: 12/05/24 12:00
Matrix: Ground Water
Date Received: 12/06/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	441843	WSE8	EET CF	12/07/24 14:42
Total/NA	Prep	3005A			442005	F5MW	EET CF	12/10/24 09:30
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 14:00
Total/NA	Analysis	353.2		1	441951	HE7K	EET CF	12/13/24 12:59
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 11:56
Total/NA	Analysis	D516-16		1	442139	ENB7	EET CF	12/10/24 15:39
Total/NA	Analysis	I-3765-85		1	441859	HE7K	EET CF	12/06/24 18:21
Total/NA	Analysis	SM 1030E		1	441952	HE7K	EET CF	12/09/24 10:13
Total/NA	Analysis	SM 2320B		1	442173	MDU9	EET CF	12/10/24 16:00
Total/NA	Analysis	SM 2540C		1	441856	XJ7V	EET CF	12/06/24 17:28
Total/NA	Analysis	SM 4500 Cl- E		1	442249	ENB7	EET CF	12/11/24 16:29
Total/NA	Analysis	SM 5210B		1	441729	W9YR	EET CF	12/06/24 10:27
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	441941	BJ0R	EET CF	12/05/24 12:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-296662-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-296662 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: √E (OM)

City/State: CITY Jaeger STATE WV Project: Diamond Ck CO

Receipt Information

Date/Time Received: DATE 11/6/24 TIME 0930 Received By: JP

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

2 sets of 2 trip blanks 1 set VOA frozen/cracked/bulging septa

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 2 Correction Factor (°C): -0.3

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	250 mL	
Uncorrected Temp (°C):	1.9	
Corrected Temp (°C):	1.9	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-6-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 3 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No:
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-31A			G	GW		N		X	X	X	X	X	
MW-33A	12-5-24	1445	G	GW	8	N		X	X		X	X	Turbidity – 13.5 NTU
MW-34A			G	GW		N		X	X		X	X	
MW-37A-FD			G	GW		N		X	X		X	X	
MW-37A			G	GW		N		X	X		X	X	
MW-38A			G	GW		N		X	X		X	X	
MW-38A-FD			G	GW		N		X	X		X	X	
MW-39A			G	GW		N		X	X		X	X	
MW-40A			G	GW		N		X	X		X	X	
MW-41A			G	GW		N		X	X		X	X	
Trip Blank	12-5-24	0600	G	W	2	N			X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd. _____ Corr'd _____	Therm ID No. _____

Relinquished by: Ben Poor	Company: Aecom	Date/Time: 12-6-24	Received by:	Company:	Date/Time: 12/6/24 0900
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/10/2024

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277 2401 fax 319 277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☑ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-6-24	COC No
AECOM	Email Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 3 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-1	12-5-24	1315	G	GW	8	N		X	X		X	X	Turbidity – 10.60 NTU
MW-2R			G	GW		N		X	X		X	X	
MW-3			G	GW		N		X	X		X	X	
MW-4			G	GW		N		X	X		X	X	
MW-4B			G	GW		N		X	X		X	X	
MW-7A			G	GW		N		X	X		X	X	
MW-24A			G	GW		N		X	X		X	X	
MW-25A			G	GW		N		X	X		X	X	
MW-29A			G	GW		N		X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd _____ Therm ID No._____

	Company	Date/Time		Company	Date/Time
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 12-6-24	Received by:	Company:	Date/Time: 12/6/24 0705
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-6-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	3 of 3 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			Job / SDG No:
Site: Winneshiek County Landfill	☐ 1 week			
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-42A	12-5-24	1115	G	GW	8	N		X	X	X	X	Turbidity – 33.63 NTU
MW-43A			G	GW		N		X	X	X	X	
MW-44A			G	GW		N		X	X	X	X	
MW-45A			G	GW		N		X	X	X	X	
MW-46A			G	GW		N		X	X	X	X	
MW-101			G	GW		N		X	X	X	X	
MW-11			G	GW		N		X	X	X	X	
MW-19R	12-5-24	1200	G	GW	8	N		X	X	X	X	Turbidity – 5.64 NTU
MW-22			G	GW		N		X	X	X	X	
MW-22-FD			G	GW		N		X	X	X	X	
MW-35			G	GW		N		X	X	X	X	
MW-18			G	GW		N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd. ____ Corr'd. ____	Therm ID No. ____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 12-6-24	Received by:	Company:	Date/Time: 12/6/24 0905
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/18/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-296662-1

Login Number: 296662

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 12/19/2024 1:33:59 PM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-296771-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
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(319)595-2016

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Job ID: 310-296771-1 — Eurofins Cedar Falls

Job Narrative
310-296771-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/10/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-442181 recovered above the upper control limit for 1,2,3-Trichloropropane (21.6%D), 2-Hexanone (41.7%D), cis-1,3-Dichloropropene (33.4%D), Chlorodibromomethane (21.3%D), 1,1,2-Trichloroethane (20.1%D), 4-Methyl-2-pentanone (41.3%D), and 1,1,1,2-Tetrachloroethane (23.6%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-442181/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-442181 recovered above the upper control limit for Trichlorofluoromethane (30.0%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-442181/4).

Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample(s) was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : MW-38A (310-296771-1), MW-38A-FD (310-296771-2), Equipment Blank #1 Shallow (310-296771-3), MW-29A (310-296771-4), MW-46A (310-296771-5), MW-101 (310-296771-6) and Trip Blank (310-296771-7). The requested target analyte list includes Acrylonitrile.

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-296771-1	MW-38A	Ground Water	12/09/24 14:30	12/10/24 08:00
310-296771-2	MW-38A-FD	Ground Water	12/09/24 14:30	12/10/24 08:00
310-296771-3	Equipment Blank #1 Shallow	Ground Water	12/09/24 15:00	12/10/24 08:00
310-296771-4	MW-29A	Ground Water	12/09/24 12:40	12/10/24 08:00
310-296771-5	MW-46A	Ground Water	12/09/24 10:30	12/10/24 08:00
310-296771-6	MW-101	Ground Water	12/09/24 11:30	12/10/24 08:00
310-296771-7	Trip Blank	Water	12/09/24 00:00	12/10/24 08:00

Detection Summary

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A — Lab Sample ID: 310-296771-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	153		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	96.9		0.500	0.190	mg/L	1		6020B	Total/NA
Magnesium	36.8		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	9.61		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	26.4		1.00	0.800	mg/L	1		353.2	Total/NA
Fluoride	0.164		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	30.7		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	3.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-7.26				%	1		SM 1030E	Total/NA
Total Alkalinity	311		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	311		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	452		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	29.5		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	33.1		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	15.68				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-38A-FD — Lab Sample ID: 310-296771-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	153		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	98.7		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.186	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	37.0		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	9.54		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	15.6		1.00	0.800	mg/L	1		353.2	Total/NA
Fluoride	0.157		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	31.0		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	3.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-2.62				%	1		SM 1030E	Total/NA
Total Alkalinity	313		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	313		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	460		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	28.9		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	31.5		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: Equipment Blank #1 Shallow — Lab Sample ID: 310-296771-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	17.4		10.0	3.10	ug/L	1		8260D	Total/NA
Sodium	6.53		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	0.270		0.100	0.0800	mg/L	1		353.2	Total/NA
Total Suspended Solids	4.00	J	5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-2.66				%	1		SM 1030E	Total/NA
Total Alkalinity	9.44		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	9.44		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Chloride	3.25		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	34.8		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-29A — Lab Sample ID: 310-296771-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.75		2.00	0.530	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-29A (Continued)
Lab Sample ID: 310-296771-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	161		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	244		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	16.5		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	49.7		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	69.6		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	106		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.109		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfide	2930	J	3000	1410	ug/L	1		9034	Total/NA
Sulfate	99.2		25.0	12.0	mg/L	5		D516-16	Total/NA
Total Suspended Solids	13.7		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	0.140				%	1		SM 1030E	Total/NA
Total Alkalinity	718		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	718		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1120		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	156		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	44.1		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	32.22				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-46A
Lab Sample ID: 310-296771-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.805	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	262		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.115	J	0.200	0.100	ug/L	1		6020B	Total/NA
Calcium	179		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.288	J	0.500	0.170	ug/L	1		6020B	Total/NA
Copper	1.99	J	5.00	1.80	ug/L	1		6020B	Total/NA
Lead	0.307	J	0.500	0.260	ug/L	1		6020B	Total/NA
Magnesium	56.5		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	28.2		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	141		1.00	0.480	mg/L	1		6020B	Total/NA
Vanadium	1.35	J	5.00	1.10	ug/L	1		6020B	Total/NA
Fluoride	0.121		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	64.0		25.0	12.0	mg/L	5		D516-16	Total/NA
Total Suspended Solids	19.6		2.00	1.48	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	2.88				%	1		SM 1030E	Total/NA
Total Alkalinity	582		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	582		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1010		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	200		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	29.1		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	103.12				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-101
Lab Sample ID: 310-296771-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	221		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	180		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.189	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	37.0		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	8.19		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	27.7		1.00	0.480	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-101 (Continued)
Lab Sample ID: 310-296771-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.18		1.00	0.800	mg/L	1		353.2	Total/NA
Fluoride	0.0958	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	44.9		25.0	12.0	mg/L	5		D516-16	Total/NA
Anion/Cation Balance	0.311				%	1		SM 1030E	Total/NA
Total Alkalinity	503		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	503		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	686		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	68.5		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	3.35				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-296771-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A
Lab Sample ID: 310-296771-1
Date Collected: 12/09/24 14:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 14:51	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 14:51	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 14:51	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 14:51	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 14:51	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 14:51	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 14:51	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 14:51	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 14:51	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 14:51	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 14:51	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 14:51	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 14:51	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 14:51	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 14:51	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 14:51	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 14:51	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 14:51	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 14:51	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 14:51	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 14:51	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 14:51	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 14:51	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 14:51	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 14:51	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 14:51	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 14:51	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 14:51	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 14:51	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 14:51	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 14:51	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 14:51	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 14:51	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 14:51	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 14:51	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 14:51	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 14:51	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 14:51	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 14:51	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 14:51	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 14:51	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 14:51	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 14:51	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 14:51	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 14:51	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 14:51	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*12/11/24 14:51*	*1*

Client Sample ID: MW-38A
Lab Sample ID: 310-296771-1

Date Collected: 12/09/24 14:30
Matrix: Ground Water

Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/11/24 14:51*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/11/24 14:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 16:00	1
Arsenic	<0.530		2.00	0.530	ug/L		12/11/24 09:00	12/12/24 16:00	1
Barium	**153**		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 16:00	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 16:00	1
Cadmium	<0.100		0.200	0.100	ug/L		12/11/24 09:00	12/12/24 16:00	1
Calcium	**96.9**		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 16:00	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 16:00	1
Cobalt	<0.170		0.500	0.170	ug/L		12/11/24 09:00	12/12/24 16:00	1
Copper	<1.80		5.00	1.80	ug/L		12/11/24 09:00	12/12/24 16:00	1
Lead	<0.260		0.500	0.260	ug/L		12/11/24 09:00	12/12/24 16:00	1
Magnesium	**36.8**		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 16:00	1
Nickel	<2.10		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 16:00	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 16:00	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 16:00	1
Sodium	**9.61**		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 16:00	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 16:00	1
Vanadium	<1.10		5.00	1.10	ug/L		12/11/24 09:00	12/12/24 16:00	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 16:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**26.4**		1.00	0.800	mg/L			12/16/24 23:59	1
Fluoride (SM 4500 F C-2011)	**0.164**		0.100	0.0540	mg/L			12/13/24 11:59	1
Sulfate (ASTM D516-16)	**30.7**		5.00	2.40	mg/L			12/16/24 11:57	1
Total Suspended Solids (USGS I-3765-85)	**3.00**		1.88	1.39	mg/L			12/10/24 16:29	1
Anion/Cation Balance (SM 1030E)	**-7.26**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**311**		5.00	2.50	mg/L			12/11/24 09:17	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**311**		5.00	2.50	mg/L			12/11/24 09:17	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:17	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:17	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:17	1
Total Dissolved Solids (SM 2540C)	**452**		50.0	42.0	mg/L			12/12/24 15:19	1
Chloride (SM 4500 Cl- E)	**29.5**		2.00	1.40	mg/L			12/11/24 16:30	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/11/24 06:45	1
Chemical Oxygen Demand (SM 5220D)	**33.1**		25.0	24.0	mg/L			12/12/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**15.68**				NTU			12/09/24 14:30	1

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-296771-2
Date Collected: 12/09/24 14:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 15:14	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 15:14	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 15:14	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 15:14	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 15:14	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 15:14	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 15:14	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 15:14	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 15:14	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 15:14	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 15:14	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 15:14	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 15:14	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 15:14	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 15:14	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 15:14	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 15:14	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 15:14	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 15:14	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 15:14	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 15:14	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 15:14	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 15:14	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 15:14	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 15:14	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 15:14	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 15:14	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 15:14	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 15:14	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 15:14	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 15:14	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 15:14	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 15:14	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 15:14	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 15:14	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 15:14	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 15:14	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 15:14	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 15:14	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 15:14	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 15:14	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 15:14	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 15:14	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 15:14	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 15:14	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 15:14	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*12/11/24 15:14*	*1*

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-296771-2

Date Collected: 12/09/24 14:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/11/24 15:14*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/11/24 15:14*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 16:06	1
Arsenic	<0.530		2.00	0.530	ug/L		12/11/24 09:00	12/12/24 16:06	1
Barium	**153**		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 16:06	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 16:06	1
Cadmium	<0.100		0.200	0.100	ug/L		12/11/24 09:00	12/12/24 16:06	1
Calcium	**98.7**		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 16:06	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 16:06	1
Cobalt	**0.186**	**J**	0.500	0.170	ug/L		12/11/24 09:00	12/12/24 16:06	1
Copper	<1.80		5.00	1.80	ug/L		12/11/24 09:00	12/12/24 16:06	1
Lead	<0.260		0.500	0.260	ug/L		12/11/24 09:00	12/12/24 16:06	1
Magnesium	**37.0**		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 16:06	1
Nickel	<2.10		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 16:06	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 16:06	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 16:06	1
Sodium	**9.54**		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 16:06	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 16:06	1
Vanadium	<1.10		5.00	1.10	ug/L		12/11/24 09:00	12/12/24 16:06	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 16:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**15.6**		1.00	0.800	mg/L			12/17/24 00:00	1
Fluoride (SM 4500 F C-2011)	**0.157**		0.100	0.0540	mg/L			12/13/24 12:02	1
Sulfate (ASTM D516-16)	**31.0**		5.00	2.40	mg/L			12/16/24 11:58	1
Total Suspended Solids (USGS I-3765-85)	**3.25**		1.88	1.39	mg/L			12/10/24 16:29	1
Anion/Cation Balance (SM 1030E)	**-2.62**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**313**		5.00	2.50	mg/L			12/11/24 09:26	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**313**		5.00	2.50	mg/L			12/11/24 09:26	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:26	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:26	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:26	1
Total Dissolved Solids (SM 2540C)	**460**		50.0	42.0	mg/L			12/12/24 15:19	1
Chloride (SM 4500 Cl- E)	**28.9**		2.00	1.40	mg/L			12/11/24 16:31	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/11/24 06:48	1
Chemical Oxygen Demand (SM 5220D)	**31.5**		25.0	24.0	mg/L			12/12/24 08:55	5

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-296771-3
Date Collected: 12/09/24 15:00
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 11:51	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 11:51	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 11:51	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 11:51	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 11:51	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 11:51	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 11:51	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 11:51	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 11:51	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 11:51	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 11:51	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 11:51	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 11:51	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 11:51	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 11:51	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 11:51	1
Acetone	**17.4**		10.0	3.10	ug/L			12/11/24 11:51	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 11:51	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 11:51	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 11:51	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 11:51	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 11:51	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 11:51	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 11:51	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 11:51	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 11:51	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 11:51	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 11:51	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 11:51	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 11:51	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 11:51	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 11:51	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 11:51	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 11:51	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 11:51	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 11:51	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 11:51	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 11:51	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 11:51	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 11:51	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 11:51	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 11:51	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 11:51	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 11:51	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 11:51	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 11:51	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 11:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*12/11/24 11:51*	*1*

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-296771-3

Date Collected: 12/09/24 15:00
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/11/24 11:51*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*12/11/24 11:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 16:09	1
Arsenic	<0.530		2.00	0.530	ug/L		12/11/24 09:00	12/12/24 16:09	1
Barium	<0.660		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 16:09	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 16:09	1
Cadmium	<0.100		0.200	0.100	ug/L		12/11/24 09:00	12/12/24 16:09	1
Calcium	<0.190		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 16:09	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 16:09	1
Cobalt	<0.170		0.500	0.170	ug/L		12/11/24 09:00	12/12/24 16:09	1
Copper	<1.80		5.00	1.80	ug/L		12/11/24 09:00	12/12/24 16:09	1
Lead	<0.260		0.500	0.260	ug/L		12/11/24 09:00	12/12/24 16:09	1
Magnesium	<0.150		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 16:09	1
Nickel	<2.10		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 16:09	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 16:09	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 16:09	1
Sodium	**6.53**		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 16:09	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 16:09	1
Vanadium	<1.10		5.00	1.10	ug/L		12/11/24 09:00	12/12/24 16:09	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 16:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**0.270**		0.100	0.0800	mg/L			12/17/24 00:02	1
Fluoride (SM 4500 F C-2011)	<0.0540		0.100	0.0540	mg/L			12/13/24 12:12	1
Sulfate (ASTM D516-16)	<2.40		5.00	2.40	mg/L			12/16/24 11:59	1
Total Suspended Solids (USGS I-3765-85)	**4.00**	**J**	5.00	3.70	mg/L			12/10/24 16:29	1
Anion/Cation Balance (SM 1030E)	**-2.66**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**9.44**		5.00	2.50	mg/L			12/11/24 09:36	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**9.44**		5.00	2.50	mg/L			12/11/24 09:36	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:36	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:36	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:36	1
Total Dissolved Solids (SM 2540C)	<42.0		50.0	42.0	mg/L			12/12/24 15:19	1
Chloride (SM 4500 Cl- E)	**3.25**		2.00	1.40	mg/L			12/11/24 16:32	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/11/24 06:51	1
Chemical Oxygen Demand (SM 5220D)	**34.8**		25.0	24.0	mg/L			12/12/24 08:55	5

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-29A
Lab Sample ID: 310-296771-4
Date Collected: 12/09/24 12:40
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 15:36	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 15:36	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 15:36	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 15:36	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 15:36	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 15:36	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 15:36	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 15:36	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 15:36	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 15:36	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 15:36	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 15:36	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 15:36	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 15:36	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 15:36	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 15:36	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 15:36	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 15:36	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 15:36	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 15:36	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 15:36	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 15:36	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 15:36	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 15:36	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 15:36	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 15:36	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 15:36	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 15:36	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 15:36	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 15:36	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 15:36	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 15:36	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 15:36	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 15:36	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 15:36	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 15:36	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 15:36	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 15:36	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 15:36	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 15:36	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 15:36	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 15:36	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 15:36	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 15:36	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 15:36	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 15:36	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 15:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*73 - 130*		*12/11/24 15:36*	*1*

Client Sample ID: MW-29A
Lab Sample ID: 310-296771-4

Date Collected: 12/09/24 12:40
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/11/24 15:36*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/11/24 15:36*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 16:12	1
Arsenic	**6.75**		2.00	0.530	ug/L		12/11/24 09:00	12/12/24 16:12	1
Barium	**161**		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 16:12	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 16:12	1
Cadmium	<0.100		0.200	0.100	ug/L		12/11/24 09:00	12/12/24 16:12	1
Calcium	**244**		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 16:12	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 16:12	1
Cobalt	**16.5**		0.500	0.170	ug/L		12/11/24 09:00	12/12/24 16:12	1
Copper	<1.80		5.00	1.80	ug/L		12/11/24 09:00	12/12/24 16:12	1
Lead	<0.260		0.500	0.260	ug/L		12/11/24 09:00	12/12/24 16:12	1
Magnesium	**49.7**		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 16:12	1
Nickel	**69.6**		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 16:12	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 16:12	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 16:12	1
Sodium	**106**		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 16:12	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 16:12	1
Vanadium	<1.10		5.00	1.10	ug/L		12/11/24 09:00	12/12/24 16:12	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 16:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/17/24 00:03	1
Fluoride (SM 4500 F C-2011)	**0.109**		0.100	0.0540	mg/L			12/13/24 12:27	1
Sulfide (SW846 9034)	**2930**	**J**	3000	1410	ug/L		12/12/24 08:52	12/12/24 12:20	1
Sulfate (ASTM D516-16)	**99.2**		25.0	12.0	mg/L			12/16/24 11:59	5
Total Suspended Solids (USGS I-3765-85)	**13.7**		5.00	3.70	mg/L			12/10/24 16:29	1
Anion/Cation Balance (SM 1030E)	**0.140**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**718**		5.00	2.50	mg/L			12/11/24 09:41	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**718**		5.00	2.50	mg/L			12/11/24 09:41	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:41	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:41	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:41	1
Total Dissolved Solids (SM 2540C)	**1120**		50.0	42.0	mg/L			12/12/24 15:19	1
Chloride (SM 4500 Cl- E)	**156**		20.0	14.0	mg/L			12/11/24 16:33	10
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/11/24 06:54	1
Chemical Oxygen Demand (SM 5220D)	**44.1**		25.0	24.0	mg/L			12/18/24 09:03	5

Client Sample Results

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-29A
Lab Sample ID: 310-296771-4
Date Collected: 12/09/24 12:40
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	32.22				NTU			12/09/24 12:40	1

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-46A
Lab Sample ID: 310-296771-5
Date Collected: 12/09/24 10:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 15:59	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 15:59	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 15:59	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 15:59	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 15:59	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 15:59	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 15:59	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 15:59	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 15:59	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 15:59	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 15:59	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 15:59	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 15:59	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 15:59	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 15:59	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 15:59	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 15:59	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 15:59	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 15:59	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 15:59	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 15:59	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 15:59	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 15:59	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 15:59	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 15:59	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 15:59	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 15:59	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 15:59	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 15:59	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 15:59	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 15:59	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 15:59	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 15:59	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 15:59	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 15:59	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 15:59	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 15:59	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 15:59	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 15:59	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 15:59	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 15:59	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 15:59	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 15:59	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 15:59	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 15:59	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 15:59	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*12/11/24 15:59*	*1*

Client Sample ID: MW-46A
Lab Sample ID: 310-296771-5

Date Collected: 12/09/24 10:30
Matrix: Ground Water

Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/11/24 15:59*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*12/11/24 15:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 16:15	1
Arsenic	**0.805**	**J**	2.00	0.530	ug/L		12/11/24 09:00	12/12/24 16:15	1
Barium	**262**		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 16:15	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 16:15	1
Cadmium	**0.115**	**J**	0.200	0.100	ug/L		12/11/24 09:00	12/12/24 16:15	1
Calcium	**179**		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 16:15	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 16:15	1
Cobalt	**0.288**	**J**	0.500	0.170	ug/L		12/11/24 09:00	12/12/24 16:15	1
Copper	**1.99**	**J**	5.00	1.80	ug/L		12/11/24 09:00	12/12/24 16:15	1
Lead	**0.307**	**J**	0.500	0.260	ug/L		12/11/24 09:00	12/12/24 16:15	1
Magnesium	**56.5**		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 16:15	1
Nickel	**28.2**		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 16:15	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 16:15	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 16:15	1
Sodium	**141**		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 16:15	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 16:15	1
Vanadium	**1.35**	**J**	5.00	1.10	ug/L		12/11/24 09:00	12/12/24 16:15	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/18/24 16:50	1
Fluoride (SM 4500 F C-2011)	**0.121**		0.100	0.0540	mg/L			12/13/24 12:30	1
Sulfate (ASTM D516-16)	**64.0**		25.0	12.0	mg/L			12/16/24 11:59	5
Total Suspended Solids (USGS I-3765-85)	**19.6**		2.00	1.48	mg/L			12/12/24 15:30	1
Anion/Cation Balance (SM 1030E)	**2.88**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**582**		5.00	2.50	mg/L			12/11/24 09:54	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**582**		5.00	2.50	mg/L			12/11/24 09:54	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:54	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:54	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 09:54	1
Total Dissolved Solids (SM 2540C)	**1010**		50.0	42.0	mg/L			12/12/24 15:19	1
Chloride (SM 4500 Cl- E)	**200**		20.0	14.0	mg/L			12/11/24 16:33	10
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/11/24 06:57	1
Chemical Oxygen Demand (SM 5220D)	**29.1**		25.0	24.0	mg/L			12/18/24 09:03	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**103.12**				NTU			12/09/24 10:30	1

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-101
Lab Sample ID: 310-296771-6
Date Collected: 12/09/24 11:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 16:21	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 16:21	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 16:21	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 16:21	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 16:21	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 16:21	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 16:21	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 16:21	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 16:21	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 16:21	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 16:21	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 16:21	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 16:21	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 16:21	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 16:21	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 16:21	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 16:21	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 16:21	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 16:21	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 16:21	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 16:21	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 16:21	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 16:21	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 16:21	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 16:21	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 16:21	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 16:21	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 16:21	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 16:21	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 16:21	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 16:21	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 16:21	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 16:21	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 16:21	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 16:21	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 16:21	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 16:21	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 16:21	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 16:21	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 16:21	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 16:21	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 16:21	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 16:21	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 16:21	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 16:21	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 16:21	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*12/11/24 16:21*	*1*

Client Sample ID: MW-101
Date Collected: 12/09/24 11:30
Date Received: 12/10/24 08:00

Lab Sample ID: 310-296771-6
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/11/24 16:21*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*12/11/24 16:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 16:18	1
Arsenic	<0.530		2.00	0.530	ug/L		12/11/24 09:00	12/12/24 16:18	1
Barium	**221**		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 16:18	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 16:18	1
Cadmium	<0.100		0.200	0.100	ug/L		12/11/24 09:00	12/12/24 16:18	1
Calcium	**180**		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 16:18	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 16:18	1
Cobalt	**0.189**	**J**	0.500	0.170	ug/L		12/11/24 09:00	12/12/24 16:18	1
Copper	<1.80		5.00	1.80	ug/L		12/11/24 09:00	12/12/24 16:18	1
Lead	<0.260		0.500	0.260	ug/L		12/11/24 09:00	12/12/24 16:18	1
Magnesium	**37.0**		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 16:18	1
Nickel	**8.19**		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 16:18	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 16:18	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 16:18	1
Sodium	**27.7**		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 16:18	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 16:18	1
Vanadium	<1.10		5.00	1.10	ug/L		12/11/24 09:00	12/12/24 16:18	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 16:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**3.18**		1.00	0.800	mg/L			12/18/24 16:55	1
Fluoride (SM 4500 F C-2011)	**0.0958**	**J**	0.100	0.0540	mg/L			12/13/24 12:34	1
Sulfate (ASTM D516-16)	**44.9**		25.0	12.0	mg/L			12/16/24 16:57	5
Total Suspended Solids (USGS I-3765-85)	<1.53		2.07	1.53	mg/L			12/12/24 15:30	1
Anion/Cation Balance (SM 1030E)	**0.311**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**503**		5.00	2.50	mg/L			12/11/24 10:16	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**503**		5.00	2.50	mg/L			12/11/24 10:16	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 10:16	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 10:16	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/11/24 10:16	1
Total Dissolved Solids (SM 2540C)	**686**		50.0	42.0	mg/L			12/12/24 15:19	1
Chloride (SM 4500 Cl- E)	**68.5**		2.00	1.40	mg/L			12/11/24 16:34	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/11/24 07:01	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/18/24 09:03	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**3.35**				NTU			12/09/24 11:30	1

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-296771-7
Date Collected: 12/09/24 00:00
Matrix: Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 12:13	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 12:13	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 12:13	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 12:13	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 12:13	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 12:13	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 12:13	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 12:13	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 12:13	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 12:13	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 12:13	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 12:13	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 12:13	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 12:13	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 12:13	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 12:13	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 12:13	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 12:13	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 12:13	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 12:13	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 12:13	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 12:13	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 12:13	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 12:13	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 12:13	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 12:13	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 12:13	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 12:13	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 12:13	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 12:13	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 12:13	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 12:13	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 12:13	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 12:13	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 12:13	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 12:13	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 12:13	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 12:13	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 12:13	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 12:13	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 12:13	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 12:13	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 12:13	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 12:13	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 12:13	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 12:13	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*12/11/24 12:13*	*1*

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-296771-7
Date Collected: 12/09/24 00:00
Matrix: Water
Date Received: 12/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/11/24 12:13	1
4-Bromofluorobenzene (Surr)	100		80 - 120		12/11/24 12:13	1

Definitions/Glossary

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

Metals

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

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-296771-1	MW-38A	112	94	102
310-296771-1 MS	MW-38A	96	100	97
310-296771-1 MSD	MW-38A	100	101	98
310-296771-2	MW-38A-FD	109	96	103
310-296771-3	Equipment Blank #1 Shallow	111	95	101
310-296771-4	MW-29A	109	97	102
310-296771-5	MW-46A	114	94	104
310-296771-6	MW-101	112	94	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-296771-7	Trip Blank	112	95	100
LCS 310-442181/6	Lab Control Sample	97	98	99
LCS 310-442181/7	Lab Control Sample	112	95	101
MB 310-442181/5	Method Blank	112	97	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-442181/5
Matrix: Water
Analysis Batch: 442181

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/11/24 09:58	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/11/24 09:58	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/11/24 09:58	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/11/24 09:58	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/11/24 09:58	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/11/24 09:58	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/11/24 09:58	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/11/24 09:58	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/11/24 09:58	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/11/24 09:58	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/11/24 09:58	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/11/24 09:58	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/11/24 09:58	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/11/24 09:58	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/11/24 09:58	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/11/24 09:58	1
Acetone	<3.10		10.0	3.10	ug/L			12/11/24 09:58	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/11/24 09:58	1
Benzene	<0.220		0.500	0.220	ug/L			12/11/24 09:58	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/11/24 09:58	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/11/24 09:58	1
Bromoform	<0.780		5.00	0.780	ug/L			12/11/24 09:58	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/11/24 09:58	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/11/24 09:58	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/11/24 09:58	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/11/24 09:58	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/11/24 09:58	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/11/24 09:58	1
Chloroform	<1.30		3.00	1.30	ug/L			12/11/24 09:58	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/11/24 09:58	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/11/24 09:58	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/11/24 09:58	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/11/24 09:58	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/11/24 09:58	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/11/24 09:58	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/11/24 09:58	1
Styrene	<0.370		1.00	0.370	ug/L			12/11/24 09:58	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/11/24 09:58	1
Toluene	<0.430		1.00	0.430	ug/L			12/11/24 09:58	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/11/24 09:58	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/11/24 09:58	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/11/24 09:58	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/11/24 09:58	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/11/24 09:58	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/11/24 09:58	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/11/24 09:58	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/11/24 09:58	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-442181/5
Matrix: Water
Analysis Batch: 442181

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*112*		*73 - 130*		*12/11/24 09:58*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/11/24 09:58*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*12/11/24 09:58*	*1*

Lab Sample ID: LCS 310-442181/6
Matrix: Water
Analysis Batch: 442181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.37		ug/L		92	71 - 120
1,1,1-Trichloroethane	20.0	20.59		ug/L		103	73 - 129
1,1,2,2-Tetrachloroethane	20.0	18.45		ug/L		92	68 - 124
1,1,2-Trichloroethane	20.0	19.53		ug/L		98	73 - 123
1,1-Dichloroethane	20.0	19.46		ug/L		97	70 - 127
1,1-Dichloroethene	20.0	19.00		ug/L		95	63 - 132
1,2,3-Trichloropropane	20.0	18.99		ug/L		95	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	18.70		ug/L		94	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.51		ug/L		93	75 - 125
1,2-Dichlorobenzene	20.0	17.43		ug/L		87	74 - 120
1,2-Dichloroethane	20.0	20.87		ug/L		104	71 - 125
1,2-Dichloropropane	20.0	20.53		ug/L		103	73 - 124
1,4-Dichlorobenzene	20.0	17.77		ug/L		89	72 - 120
2-Butanone (MEK)	40.0	40.23		ug/L		101	50 - 150
2-Hexanone	40.0	42.95		ug/L		107	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	43.01		ug/L		108	60 - 139
Acetone	40.0	35.57		ug/L		89	50 - 150
Acrylonitrile	200	183.8		ug/L		92	50 - 150
Benzene	20.0	18.94		ug/L		95	72 - 124
Bromochloromethane	20.0	19.15		ug/L		96	73 - 130
Bromodichloromethane	20.0	19.12		ug/L		96	74 - 122
Bromoform	20.0	16.46		ug/L		82	61 - 122
Carbon disulfide	20.0	19.04		ug/L		95	59 - 135
Carbon tetrachloride	20.0	19.65		ug/L		98	67 - 132
Chlorobenzene	20.0	17.69		ug/L		88	76 - 120
Chlorodibromomethane	20.0	18.50		ug/L		93	71 - 121
Chloroform	20.0	20.22		ug/L		101	72 - 125
cis-1,2-Dichloroethene	20.0	18.91		ug/L		95	74 - 123
cis-1,3-Dichloropropene	20.0	21.17		ug/L		106	71 - 125
Dibromomethane	20.0	19.69		ug/L		98	74 - 125
Ethylbenzene	20.0	18.78		ug/L		94	74 - 122
Iodomethane	20.0	12.27		ug/L		61	10 - 150
Methylene Chloride	20.0	20.19		ug/L		101	50 - 150
Styrene	20.0	19.22		ug/L		96	74 - 121
Tetrachloroethene	20.0	18.62		ug/L		93	71 - 130
Toluene	20.0	18.23		ug/L		91	74 - 123
trans-1,2-Dichloroethene	20.0	18.39		ug/L		92	70 - 126
trans-1,3-Dichloropropene	20.0	18.83		ug/L		94	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.42		ug/L		92	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-442181/6
Matrix: Water
Analysis Batch: 442181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	19.10		ug/L		96	72 - 126
Vinyl acetate	40.0	39.90		ug/L		100	50 - 150
Xylenes, Total	40.0	36.70		ug/L		92	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*97*		*73 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-442181/7
Matrix: Water
Analysis Batch: 442181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	9.561		ug/L		48	23 - 150
Chloroethane	20.0	21.52		ug/L		108	54 - 136
Chloromethane	20.0	15.83		ug/L		79	38 - 150
Trichlorofluoromethane	20.0	25.57		ug/L		128	54 - 149
Vinyl chloride	20.0	21.13		ug/L		106	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*112*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: 310-296771-1 MS
Matrix: Ground Water
Analysis Batch: 442181

Client Sample ID: MW-38A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	22.47		ug/L		90	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	22.67		ug/L		91	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	22.89		ug/L		92	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	22.58		ug/L		90	58 - 130
1,1-Dichloroethane	<0.220		25.0	21.96		ug/L		88	49 - 130
1,1-Dichloroethene	<0.560		25.0	22.44		ug/L		90	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	23.07		ug/L		92	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	22.84		ug/L		91	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	22.24		ug/L		89	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	20.66		ug/L		83	59 - 130
1,2-Dichloroethane	<0.390		25.0	24.25		ug/L		97	51 - 130
1,2-Dichloropropane	<0.270		25.0	22.89		ug/L		92	57 - 130
1,4-Dichlorobenzene	<0.230		25.0	21.12		ug/L		84	57 - 130
2-Butanone (MEK)	<2.10		50.0	45.22		ug/L		90	38 - 150
2-Hexanone	<2.00		50.0	52.91		ug/L		106	46 - 140
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	52.07		ug/L		104	47 - 139
Acetone	<3.10		50.0	43.54		ug/L		87	31 - 150
Acrylonitrile	<2.20		250	213.8		ug/L		86	40 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-296771-1 MS
Matrix: Ground Water
Analysis Batch: 442181

Client Sample ID: MW-38A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.220		25.0	21.76		ug/L		87	46 - 130
Bromochloromethane	<0.540		25.0	21.53		ug/L		86	57 - 130
Bromodichloromethane	<0.390		25.0	21.40		ug/L		86	57 - 130
Bromoform	<0.780		25.0	19.61		ug/L		78	44 - 130
Carbon disulfide	<0.450		25.0	24.21		ug/L		97	38 - 135
Carbon tetrachloride	<0.650		25.0	22.48		ug/L		90	45 - 132
Chlorobenzene	<0.400		25.0	20.71		ug/L		83	59 - 130
Chlorodibromomethane	<0.750		25.0	22.04		ug/L		88	54 - 130
Chloroform	<1.30		25.0	22.99		ug/L		92	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	21.26		ug/L		85	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	23.27		ug/L		93	53 - 130
Dibromomethane	<0.330		25.0	23.08		ug/L		92	59 - 130
Ethylbenzene	<0.310		25.0	21.33		ug/L		85	45 - 130
Iodomethane	<7.00		25.0	18.07		ug/L		72	10 - 150
Methylene Chloride	<1.70		25.0	23.77		ug/L		95	37 - 150
Styrene	<0.370		25.0	22.65		ug/L		91	47 - 130
Tetrachloroethene	<0.480		25.0	20.74		ug/L		83	47 - 130
Toluene	<0.430		25.0	20.84		ug/L		83	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	21.20		ug/L		85	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	21.02		ug/L		84	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.96		ug/L		88	26 - 150
Trichloroethene	<0.430		25.0	21.58		ug/L		86	51 - 130
Vinyl acetate	<2.50		50.0	42.45		ug/L		85	29 - 150
Xylenes, Total	<0.400		50.0	42.21		ug/L		84	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: 310-296771-1 MSD
Matrix: Ground Water
Analysis Batch: 442181

Client Sample ID: MW-38A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	22.32		ug/L		89	55 - 130	1	20
1,1,1-Trichloroethane	<0.190		25.0	23.21		ug/L		93	52 - 130	2	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	23.05		ug/L		92	54 - 130	1	20
1,1,2-Trichloroethane	<0.450		25.0	22.93		ug/L		92	58 - 130	2	20
1,1-Dichloroethane	<0.220		25.0	22.29		ug/L		89	49 - 130	2	20
1,1-Dichloroethene	<0.560		25.0	22.28		ug/L		89	37 - 132	1	26
1,2,3-Trichloropropane	<0.590		25.0	23.55		ug/L		94	49 - 130	2	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	23.15		ug/L		93	38 - 150	1	20
1,2-Dibromoethane (EDB)	<0.340		25.0	22.44		ug/L		90	60 - 130	1	20
1,2-Dichlorobenzene	<0.370		25.0	21.24		ug/L		85	59 - 130	3	20
1,2-Dichloroethane	<0.390		25.0	24.38		ug/L		98	51 - 130	1	20
1,2-Dichloropropane	<0.270		25.0	23.20		ug/L		93	57 - 130	1	20
1,4-Dichlorobenzene	<0.230		25.0	21.69		ug/L		87	57 - 130	3	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-296771-1 MSD
Matrix: Ground Water
Analysis Batch: 442181

Client Sample ID: MW-38A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	<2.10		50.0	48.89		ug/L		98	38 - 150	8	20
2-Hexanone	<2.00		50.0	55.00		ug/L		110	46 - 140	4	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	53.32		ug/L		107	47 - 139	2	20
Acetone	<3.10		50.0	45.31		ug/L		91	31 - 150	4	29
Acrylonitrile	<2.20		250	221.9		ug/L		89	40 - 150	4	20
Benzene	<0.220		25.0	21.68		ug/L		87	46 - 130	0	20
Bromochloromethane	<0.540		25.0	22.34		ug/L		89	57 - 130	4	20
Bromodichloromethane	<0.390		25.0	22.07		ug/L		88	57 - 130	3	20
Bromoform	<0.780		25.0	19.85		ug/L		79	44 - 130	1	20
Carbon disulfide	<0.450		25.0	21.94		ug/L		88	38 - 135	10	30
Carbon tetrachloride	<0.650		25.0	23.32		ug/L		93	45 - 132	4	20
Chlorobenzene	<0.400		25.0	20.47		ug/L		82	59 - 130	1	20
Chlorodibromomethane	<0.750		25.0	22.61		ug/L		90	54 - 130	3	20
Chloroform	<1.30		25.0	22.98		ug/L		92	51 - 130	0	20
cis-1,2-Dichloroethene	<0.210		25.0	21.18		ug/L		85	45 - 130	0	20
cis-1,3-Dichloropropene	<0.250		25.0	23.60		ug/L		94	53 - 130	1	20
Dibromomethane	<0.330		25.0	23.40		ug/L		94	59 - 130	1	20
Ethylbenzene	<0.310		25.0	21.14		ug/L		85	45 - 130	1	20
Iodomethane	<7.00		25.0	18.53		ug/L		74	10 - 150	3	35
Methylene Chloride	<1.70		25.0	23.58		ug/L		94	37 - 150	1	24
Styrene	<0.370		25.0	22.44		ug/L		90	47 - 130	1	20
Tetrachloroethene	<0.480		25.0	20.40		ug/L		82	47 - 130	2	20
Toluene	<0.430		25.0	20.70		ug/L		83	51 - 130	1	20
trans-1,2-Dichloroethene	<0.270		25.0	20.60		ug/L		82	48 - 130	3	22
trans-1,3-Dichloropropene	<0.560		25.0	21.29		ug/L		85	50 - 130	1	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	21.51		ug/L		86	26 - 150	2	23
Trichloroethene	<0.430		25.0	21.75		ug/L		87	51 - 130	1	20
Vinyl acetate	<2.50		50.0	43.42		ug/L		87	29 - 150	2	23
Xylenes, Total	<0.400		50.0	42.13		ug/L		84	43 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-442115/1-A
Matrix: Water
Analysis Batch: 442386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442115

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/11/24 09:00	12/12/24 14:53	1
Arsenic	<0.530		2.00	0.530	ug/L		12/11/24 09:00	12/12/24 14:53	1
Barium	<0.660		2.00	0.660	ug/L		12/11/24 09:00	12/12/24 14:53	1
Beryllium	<0.330		1.00	0.330	ug/L		12/11/24 09:00	12/12/24 14:53	1
Cadmium	<0.100		0.200	0.100	ug/L		12/11/24 09:00	12/12/24 14:53	1
Calcium	<0.190		0.500	0.190	mg/L		12/11/24 09:00	12/12/24 14:53	1
Chromium	<1.20		5.00	1.20	ug/L		12/11/24 09:00	12/12/24 14:53	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-442115/1-A
Matrix: Water
Analysis Batch: 442386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442115

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.170		0.500	0.170	ug/L		12/11/24 09:00	12/12/24 14:53	1
Copper	<1.80		5.00	1.80	ug/L		12/11/24 09:00	12/12/24 14:53	1
Lead	<0.260		0.500	0.260	ug/L		12/11/24 09:00	12/12/24 14:53	1
Magnesium	<0.150		0.500	0.150	mg/L		12/11/24 09:00	12/12/24 14:53	1
Nickel	<2.10		5.00	2.10	ug/L		12/11/24 09:00	12/12/24 14:53	1
Selenium	<1.40		5.00	1.40	ug/L		12/11/24 09:00	12/12/24 14:53	1
Silver	<0.500		1.00	0.500	ug/L		12/11/24 09:00	12/12/24 14:53	1
Sodium	<0.480		1.00	0.480	mg/L		12/11/24 09:00	12/12/24 14:53	1
Thallium	<0.570		1.00	0.570	ug/L		12/11/24 09:00	12/12/24 14:53	1
Vanadium	<1.10		5.00	1.10	ug/L		12/11/24 09:00	12/12/24 14:53	1
Zinc	<9.70		20.0	9.70	ug/L		12/11/24 09:00	12/12/24 14:53	1

Lab Sample ID: LCS 310-442115/2-A
Matrix: Water
Analysis Batch: 442386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442115

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	210.3		ug/L		105	80 - 120
Arsenic	200	206.3		ug/L		103	80 - 120
Barium	100	106.6		ug/L		107	80 - 120
Beryllium	100	105.5		ug/L		106	80 - 120
Cadmium	100	103.8		ug/L		104	80 - 120
Calcium	2.00	1.915		mg/L		96	80 - 120
Chromium	100	110.8		ug/L		111	80 - 120
Cobalt	100	111.9		ug/L		112	80 - 120
Copper	200	223.6		ug/L		112	80 - 120
Lead	200	216.1		ug/L		108	80 - 120
Magnesium	2.00	2.023		mg/L		101	80 - 120
Nickel	200	220.8		ug/L		110	80 - 120
Selenium	400	403.0		ug/L		101	80 - 120
Silver	100	108.2		ug/L		108	80 - 120
Sodium	2.00	2.077		mg/L		104	80 - 120
Thallium	100	103.9		ug/L		104	80 - 120
Vanadium	100	108.3		ug/L		108	80 - 120
Zinc	200	199.1		ug/L		100	80 - 120

Lab Sample ID: 310-296771-1 DU
Matrix: Ground Water
Analysis Batch: 442386

Client Sample ID: MW-38A
Prep Type: Total/NA
Prep Batch: 442115

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Arsenic	<0.530		<0.530		ug/L		NC	20
Barium	153		154.8		ug/L		1	20
Beryllium	<0.330		<0.330		ug/L		NC	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Calcium	96.9		98.07		mg/L		1	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	<0.170		0.1740	J	ug/L		NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-296771-1 DU
Matrix: Ground Water
Analysis Batch: 442386

Client Sample ID: MW-38A
Prep Type: Total/NA
Prep Batch: 442115

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Copper	<1.80		<1.80		ug/L		NC	20
Lead	<0.260		<0.260		ug/L		NC	20
Magnesium	36.8		36.88		mg/L		0.3	20
Nickel	<2.10		<2.10		ug/L		NC	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20
Sodium	9.61		9.726		mg/L		1	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	<1.10		<1.10		ug/L		NC	20
Zinc	<9.70		<9.70		ug/L		NC	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-442471/17
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/13/24 10:35	1

Lab Sample ID: MB 310-442471/45
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/13/24 12:05	1

Lab Sample ID: LCS 310-442471/18
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.993		mg/L		100	90 - 110

Lab Sample ID: LCS 310-442471/46
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	2.029		mg/L		101	90 - 110

Lab Sample ID: 310-296771-3 MS
Matrix: Ground Water
Analysis Batch: 442471

Client Sample ID: Equipment Blank #1 Shallow
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	<0.0540		1.00	0.9506		mg/L		95	75 - 125

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode) (Continued)

Lab Sample ID: 310-296771-3 MSD
Matrix: Ground Water
Analysis Batch: 442471

Client Sample ID: Equipment Blank #1 Shallow
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	<0.0540		1.00	0.9704		mg/L		97	75 - 125	2	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-638496/6-A
Matrix: Water
Analysis Batch: 638559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 638496

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1410		3000	1410	ug/L		12/12/24 08:52	12/12/24 12:20	1

Lab Sample ID: LCS 240-638496/7-A
Matrix: Water
Analysis Batch: 638559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 638496

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	7330	6933		ug/L		95	70 - 120

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-442598/16
Matrix: Water
Analysis Batch: 442598

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/16/24 11:57	1

Lab Sample ID: LCS 310-442598/14
Matrix: Water
Analysis Batch: 442598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.148		mg/L		91	85 - 115

Lab Sample ID: 310-296771-1 MS
Matrix: Ground Water
Analysis Batch: 442598

Client Sample ID: MW-38A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	30.7		10.0	39.36		mg/L		87	70 - 130

Lab Sample ID: 310-296771-1 MSD
Matrix: Ground Water
Analysis Batch: 442598

Client Sample ID: MW-38A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	30.7		10.0	38.50		mg/L		78	70 - 130	2	20

Method: D516-16 - Sulfate (Continued)

Lab Sample ID: MB 310-442625/16
Matrix: Water
Analysis Batch: 442625

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/16/24 16:56	1

Lab Sample ID: LCS 310-442625/14
Matrix: Water
Analysis Batch: 442625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.196		mg/L		92	85 - 115

Lab Sample ID: 310-296771-6 MS
Matrix: Ground Water
Analysis Batch: 442625

Client Sample ID: MW-101
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	44.9		50.0	82.70		mg/L		76	70 - 130

Lab Sample ID: 310-296771-6 MSD
Matrix: Ground Water
Analysis Batch: 442625

Client Sample ID: MW-101
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	44.9		50.0	90.31		mg/L		91	70 - 130	9	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-442144/1
Matrix: Water
Analysis Batch: 442144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/10/24 16:29	1

Lab Sample ID: LCS 310-442144/2
Matrix: Water
Analysis Batch: 442144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.00		mg/L		95	81 - 116

Lab Sample ID: MB 310-442359/1
Matrix: Water
Analysis Batch: 442359

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/12/24 15:30	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-442359/2
Matrix: Water
Analysis Batch: 442359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-442173/23
Matrix: Water
Analysis Batch: 442173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	907.1		mg/L		91	86 - 111

Lab Sample ID: 310-296771-5 DU
Matrix: Ground Water
Analysis Batch: 442206

Client Sample ID: MW-46A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity	582		577.3		mg/L		0.9	16
Bicarbonate Alkalinity as CaCO3	582		577.3		mg/L		0.9	
Carbonate Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	
Hydroxide Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<2.50		<2.50		mg/L		NC	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-442357/1
Matrix: Water
Analysis Batch: 442357

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/12/24 15:19	1

Lab Sample ID: LCS 310-442357/2
Matrix: Water
Analysis Batch: 442357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	952.0		mg/L		95	88 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-442249/16
Matrix: Water
Analysis Batch: 442249

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			12/11/24 16:22	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 310-442249/14
Matrix: Water
Analysis Batch: 442249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.797		mg/L		98	90 - 110

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-442157/1
Matrix: Water
Analysis Batch: 442157

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			12/11/24 06:07	1

Lab Sample ID: LCS 310-442157/2
Matrix: Water
Analysis Batch: 442157

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	182.3		mg/L		92	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-442291/60
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/12/24 08:55	1

Lab Sample ID: LCS 310-442291/63
Matrix: Water
Analysis Batch: 442291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	127.8		mg/L		102	85 - 110

Lab Sample ID: MB 310-442795/5
Matrix: Water
Analysis Batch: 442795

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/18/24 09:03	1

Lab Sample ID: LCS 310-442795/3
Matrix: Water
Analysis Batch: 442795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	126.6		mg/L		101	85 - 110

GC/MS VOA

Analysis Batch: 442181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	8260D	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	8260D	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	8260D	
310-296771-4	MW-29A	Total/NA	Ground Water	8260D	
310-296771-5	MW-46A	Total/NA	Ground Water	8260D	
310-296771-6	MW-101	Total/NA	Ground Water	8260D	
310-296771-7	Trip Blank	Total/NA	Water	8260D	
MB 310-442181/5	Method Blank	Total/NA	Water	8260D	
LCS 310-442181/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-442181/7	Lab Control Sample	Total/NA	Water	8260D	
310-296771-1 MS	MW-38A	Total/NA	Ground Water	8260D	
310-296771-1 MSD	MW-38A	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 442115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	3005A	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	3005A	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	3005A	
310-296771-4	MW-29A	Total/NA	Ground Water	3005A	
310-296771-5	MW-46A	Total/NA	Ground Water	3005A	
310-296771-6	MW-101	Total/NA	Ground Water	3005A	
MB 310-442115/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-442115/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-296771-1 DU	MW-38A	Total/NA	Ground Water	3005A	

Analysis Batch: 442386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	6020B	442115
310-296771-2	MW-38A-FD	Total/NA	Ground Water	6020B	442115
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	6020B	442115
310-296771-4	MW-29A	Total/NA	Ground Water	6020B	442115
310-296771-5	MW-46A	Total/NA	Ground Water	6020B	442115
310-296771-6	MW-101	Total/NA	Ground Water	6020B	442115
MB 310-442115/1-A	Method Blank	Total/NA	Water	6020B	442115
LCS 310-442115/2-A	Lab Control Sample	Total/NA	Water	6020B	442115
310-296771-1 DU	MW-38A	Total/NA	Ground Water	6020B	442115

General Chemistry

Analysis Batch: 442144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	I-3765-85	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	I-3765-85	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	I-3765-85	
310-296771-4	MW-29A	Total/NA	Ground Water	I-3765-85	
MB 310-442144/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-442144/2	Lab Control Sample	Total/NA	Water	I-3765-85	

General Chemistry

Analysis Batch: 442157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	SM 5210B	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	SM 5210B	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	SM 5210B	
310-296771-4	MW-29A	Total/NA	Ground Water	SM 5210B	
310-296771-5	MW-46A	Total/NA	Ground Water	SM 5210B	
310-296771-6	MW-101	Total/NA	Ground Water	SM 5210B	
USB 310-442157/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-442157/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 442173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-442173/23	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 442206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	SM 2320B	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	SM 2320B	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	SM 2320B	
310-296771-4	MW-29A	Total/NA	Ground Water	SM 2320B	
310-296771-5	MW-46A	Total/NA	Ground Water	SM 2320B	
310-296771-6	MW-101	Total/NA	Ground Water	SM 2320B	
310-296771-5 DU	MW-46A	Total/NA	Ground Water	SM 2320B	

Analysis Batch: 442249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	SM 4500 Cl- E	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	SM 4500 Cl- E	
310-296771-4	MW-29A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296771-5	MW-46A	Total/NA	Ground Water	SM 4500 Cl- E	
310-296771-6	MW-101	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-442249/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-442249/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 442291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	SM 5220D	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	SM 5220D	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	SM 5220D	
MB 310-442291/60	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-442291/63	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 442357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	SM 2540C	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	SM 2540C	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	SM 2540C	
310-296771-4	MW-29A	Total/NA	Ground Water	SM 2540C	
310-296771-5	MW-46A	Total/NA	Ground Water	SM 2540C	
310-296771-6	MW-101	Total/NA	Ground Water	SM 2540C	
MB 310-442357/1	Method Blank	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 442357 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-442357/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 442359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-5	MW-46A	Total/NA	Ground Water	I-3765-85	
310-296771-6	MW-101	Total/NA	Ground Water	I-3765-85	
MB 310-442359/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-442359/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 442471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	4500 F C-2011	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	4500 F C-2011	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	4500 F C-2011	
310-296771-4	MW-29A	Total/NA	Ground Water	4500 F C-2011	
310-296771-5	MW-46A	Total/NA	Ground Water	4500 F C-2011	
310-296771-6	MW-101	Total/NA	Ground Water	4500 F C-2011	
MB 310-442471/17	Method Blank	Total/NA	Water	4500 F C-2011	
MB 310-442471/45	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-442471/18	Lab Control Sample	Total/NA	Water	4500 F C-2011	
LCS 310-442471/46	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-296771-3 MS	Equipment Blank #1 Shallow	Total/NA	Ground Water	4500 F C-2011	
310-296771-3 MSD	Equipment Blank #1 Shallow	Total/NA	Ground Water	4500 F C-2011	

Analysis Batch: 442598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	D516-16	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	D516-16	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	D516-16	
310-296771-4	MW-29A	Total/NA	Ground Water	D516-16	
310-296771-5	MW-46A	Total/NA	Ground Water	D516-16	
MB 310-442598/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-442598/14	Lab Control Sample	Total/NA	Water	D516-16	
310-296771-1 MS	MW-38A	Total/NA	Ground Water	D516-16	
310-296771-1 MSD	MW-38A	Total/NA	Ground Water	D516-16	

Analysis Batch: 442613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	353.2	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	353.2	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	353.2	
310-296771-4	MW-29A	Total/NA	Ground Water	353.2	
310-296771-5	MW-46A	Total/NA	Ground Water	353.2	
310-296771-6	MW-101	Total/NA	Ground Water	353.2	

Analysis Batch: 442615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	SM 1030E	
310-296771-2	MW-38A-FD	Total/NA	Ground Water	SM 1030E	
310-296771-3	Equipment Blank #1 Shallow	Total/NA	Ground Water	SM 1030E	
310-296771-4	MW-29A	Total/NA	Ground Water	SM 1030E	

General Chemistry (Continued)

Analysis Batch: 442615 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-5	MW-46A	Total/NA	Ground Water	SM 1030E	
310-296771-6	MW-101	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 442625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-6	MW-101	Total/NA	Ground Water	D516-16	
MB 310-442625/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-442625/14	Lab Control Sample	Total/NA	Water	D516-16	
310-296771-6 MS	MW-101	Total/NA	Ground Water	D516-16	
310-296771-6 MSD	MW-101	Total/NA	Ground Water	D516-16	

Analysis Batch: 442795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-4	MW-29A	Total/NA	Ground Water	SM 5220D	
310-296771-5	MW-46A	Total/NA	Ground Water	SM 5220D	
310-296771-6	MW-101	Total/NA	Ground Water	SM 5220D	
MB 310-442795/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-442795/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Prep Batch: 638496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-4	MW-29A	Total/NA	Ground Water	9030B	
MB 240-638496/6-A	Method Blank	Total/NA	Water	9030B	
LCS 240-638496/7-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 638559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-4	MW-29A	Total/NA	Ground Water	9034	638496
MB 240-638496/6-A	Method Blank	Total/NA	Water	9034	638496
LCS 240-638496/7-A	Lab Control Sample	Total/NA	Water	9034	638496

Field Service / Mobile Lab

Analysis Batch: 442433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-4	MW-29A	Total/NA	Ground Water	Field Sampling	
310-296771-5	MW-46A	Total/NA	Ground Water	Field Sampling	
310-296771-6	MW-101	Total/NA	Ground Water	Field Sampling	

Analysis Batch: 442436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-296771-1	MW-38A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-38A
Lab Sample ID: 310-296771-1
Date Collected: 12/09/24 14:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 14:51
Total/NA	Prep	3005A			442115	F5MW	EET CF	12/11/24 09:00
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 16:00
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/16/24 23:59
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 11:59
Total/NA	Analysis	D516-16		1	442598	ENB7	EET CF	12/16/24 11:57
Total/NA	Analysis	I-3765-85		1	442144	MDU9	EET CF	12/10/24 16:29
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 09:17
Total/NA	Analysis	SM 2540C		1	442357	XJ7V	EET CF	12/12/24 15:19
Total/NA	Analysis	SM 4500 Cl- E		1	442249	ENB7	EET CF	12/11/24 16:30
Total/NA	Analysis	SM 5210B		1	442157	W9YR	EET CF	12/11/24 06:45
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55
Total/NA	Analysis	Field Sampling		1	442436	BJ0R	EET CF	12/09/24 14:30

Client Sample ID: MW-38A-FD
Lab Sample ID: 310-296771-2
Date Collected: 12/09/24 14:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 15:14
Total/NA	Prep	3005A			442115	F5MW	EET CF	12/11/24 09:00
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 16:06
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/17/24 00:00
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:02
Total/NA	Analysis	D516-16		1	442598	ENB7	EET CF	12/16/24 11:58
Total/NA	Analysis	I-3765-85		1	442144	MDU9	EET CF	12/10/24 16:29
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 09:26
Total/NA	Analysis	SM 2540C		1	442357	XJ7V	EET CF	12/12/24 15:19
Total/NA	Analysis	SM 4500 Cl- E		1	442249	ENB7	EET CF	12/11/24 16:31
Total/NA	Analysis	SM 5210B		1	442157	W9YR	EET CF	12/11/24 06:48
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-296771-3
Date Collected: 12/09/24 15:00
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 11:51
Total/NA	Prep	3005A			442115	F5MW	EET CF	12/11/24 09:00
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 16:09

Client Sample ID: Equipment Blank #1 Shallow
Lab Sample ID: 310-296771-3

Date Collected: 12/09/24 15:00
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/17/24 00:02
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:12
Total/NA	Analysis	D516-16		1	442598	ENB7	EET CF	12/16/24 11:59
Total/NA	Analysis	I-3765-85		1	442144	MDU9	EET CF	12/10/24 16:29
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 09:36
Total/NA	Analysis	SM 2540C		1	442357	XJ7V	EET CF	12/12/24 15:19
Total/NA	Analysis	SM 4500 Cl- E		1	442249	ENB7	EET CF	12/11/24 16:32
Total/NA	Analysis	SM 5210B		1	442157	W9YR	EET CF	12/11/24 06:51
Total/NA	Analysis	SM 5220D		5	442291	HE7K	EET CF	12/12/24 08:55

Client Sample ID: MW-29A
Lab Sample ID: 310-296771-4

Date Collected: 12/09/24 12:40
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 15:36
Total/NA	Prep	3005A			442115	F5MW	EET CF	12/11/24 09:00
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 16:12
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/17/24 00:03
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:27
Total/NA	Prep	9030B			638496	PQD2	EET CLE	12/12/24 08:52
Total/NA	Analysis	9034		1	638559	PQD2	EET CLE	12/12/24 12:20
Total/NA	Analysis	D516-16		5	442598	ENB7	EET CF	12/16/24 11:59
Total/NA	Analysis	I-3765-85		1	442144	MDU9	EET CF	12/10/24 16:29
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 09:41
Total/NA	Analysis	SM 2540C		1	442357	XJ7V	EET CF	12/12/24 15:19
Total/NA	Analysis	SM 4500 Cl- E		10	442249	ENB7	EET CF	12/11/24 16:33
Total/NA	Analysis	SM 5210B		1	442157	W9YR	EET CF	12/11/24 06:54
Total/NA	Analysis	SM 5220D		5	442795	ENB7	EET CF	12/18/24 09:03
Total/NA	Analysis	Field Sampling		1	442433	BJ0R	EET CF	12/09/24 12:40

Client Sample ID: MW-46A
Lab Sample ID: 310-296771-5

Date Collected: 12/09/24 10:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 15:59
Total/NA	Prep	3005A			442115	F5MW	EET CF	12/11/24 09:00
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 16:15
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/18/24 16:50

Client Sample ID: MW-46A
Lab Sample ID: 310-296771-5

Date Collected: 12/09/24 10:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:30
Total/NA	Analysis	D516-16		5	442598	ENB7	EET CF	12/16/24 11:59
Total/NA	Analysis	I-3765-85		1	442359	MDU9	EET CF	12/12/24 15:30
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 09:54
Total/NA	Analysis	SM 2540C		1	442357	XJ7V	EET CF	12/12/24 15:19
Total/NA	Analysis	SM 4500 Cl- E		10	442249	ENB7	EET CF	12/11/24 16:33
Total/NA	Analysis	SM 5210B		1	442157	W9YR	EET CF	12/11/24 06:57
Total/NA	Analysis	SM 5220D		5	442795	ENB7	EET CF	12/18/24 09:03
Total/NA	Analysis	Field Sampling		1	442433	BJ0R	EET CF	12/09/24 10:30

Client Sample ID: MW-101
Lab Sample ID: 310-296771-6

Date Collected: 12/09/24 11:30
Matrix: Ground Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 16:21
Total/NA	Prep	3005A			442115	F5MW	EET CF	12/11/24 09:00
Total/NA	Analysis	6020B		1	442386	NFT2	EET CF	12/12/24 16:18
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/18/24 16:55
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:34
Total/NA	Analysis	D516-16		5	442625	ENB7	EET CF	12/16/24 16:57
Total/NA	Analysis	I-3765-85		1	442359	MDU9	EET CF	12/12/24 15:30
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442206	WZC8	EET CF	12/11/24 10:16
Total/NA	Analysis	SM 2540C		1	442357	XJ7V	EET CF	12/12/24 15:19
Total/NA	Analysis	SM 4500 Cl- E		1	442249	ENB7	EET CF	12/11/24 16:34
Total/NA	Analysis	SM 5210B		1	442157	W9YR	EET CF	12/11/24 07:01
Total/NA	Analysis	SM 5220D		5	442795	ENB7	EET CF	12/18/24 09:03
Total/NA	Analysis	Field Sampling		1	442433	BJ0R	EET CF	12/09/24 11:30

Client Sample ID: Trip Blank
Lab Sample ID: 310-296771-7

Date Collected: 12/09/24 00:00
Matrix: Water
Date Received: 12/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442181	WSE8	EET CF	12/11/24 12:13

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-25
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24
Wisconsin	State	399167560	08-31-25

Method Summary

Client: AECOM
Job ID: 310-296771-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY | STATE: PA | Project:

Receipt Information

Date/Time Received: DATE: 12/10/24 | TIME: 0800 | Received By: [illegible]

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☒ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

All

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.8 | Corrected Temp (°C): 1.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-10-24	COC No
AECOM	Email Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 24 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes.
MW-31A			G	GW		N		X	X	X	X	X	
MW-33A			G	GW		N		X	X		X	X	
MW-34A			G	GW		N		X	X		X	X	
MW-37A-FD			G	GW		N		X	X		X	X	
MW-37A			G	GW		N		X	X		X	X	
MW-38A	12-9-24	1430	G	GW	8	N		X	X		X	X	Turbidity – 15.68 NTU
MW-38A-FD	12-9-24	1430	G	GW	8	N		X	X		X	X	
MW-39A			G	GW		N		X	X		X	X	
MW-40A			G	GW		N		X	X		X	X	
MW-41A			G	GW		N		X	X		X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd.____ Corr'd.____ Therm ID No.____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	12-10-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/19/2024

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-10-24	COC No
AECOM	Email Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 4 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes:
GU-1			G	GW		N		X	X	X	X	
GU-2			G	GW		N		X	X	X	X	
SW-1			G	GW		N		X	X	X	X	
SW-2			G	GW		N		X	X	X	X	
SW-1-FD			G	GW		N		X	X	X	X	
SW-5			G	GW		N		X	X	X	X	
MH-1AA			G	GW		N		X	X	X	X	
MH-4-2			G	GW		N		X	X	X	X	
Equipment Blank #1 Shallow	12-9-24	1500	G	GW	8	N		X	X	X	X	
Equipment Blank #2 Deep			G	GW		N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd. ____ Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	12-10-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/19/2024

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☑ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-10-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	3 of 4 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No:
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-1			G	GW		N		X	X		X	X	
MW-2R			G	GW		N		X	X		X	X	
MW-3			G	GW		N		X	X		X	X	
MW-4			G	GW		N		X	X		X	X	
MW-4B			G	GW		N		X	X		X	X	
MW-7A			G	GW		N		X	X		X	X	
MW-24A			G	GW		N		X	X		X	X	
MW-25A			G	GW		N		X	X		X	X	
MW-29A	12-9-24	1240	G	GW	9	N		X	X	X	X	X	Turbidity - 32.22 NTU

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd.____ Corr'd.____	Therm ID No.____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 12-10-24	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/19/2024

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-10-24	COC No
AECOM	Email Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	4 of 4 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes.
MW-42A			G	GW		N		X	X	X	X	
MW-43A			G	GW		N		X	X	X	X	
MW-44A			G	GW		N		X	X	X	X	
MW-45A			G	GW		N		X	X	X	X	
MW-46A	12-9-24	1030	G	GW	8	N		X	X	X	X	Turbidity - 103.12 NTU
MW-101 *	12-9-24	1130	G	GW	7	N		X	X	X	X	Turbidity - 3.35 NTU
MW-11			G	GW		N		X	X	X	X	
MW-19R			G	GW		N		X	X	X	X	
MW-22			G	GW		N		X	X	X	X	
MW-22-FD			G	GW		N		X	X	X	X	
MW-35			G	GW		N		X	X	X	X	
MW-18			G	GW		N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
* Well sampled dry - 7 of 8 bottles were collected (missing one 500ml unpreserved container)

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd._____ Therm ID No._____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	12-10-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/19/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Bindert, Zach T	Carrier Tracking No(s): N/A	COC No: 310-79121.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-296771-1
Address: 180 S. Van Buren Avenue, ,	Due Date Requested: 12/26/2024			
City: Barberton	TAT Requested (days): N/A			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Winneshiek County Landfill - Groundwater	Project #: 31017151			
Site: 310 - AECOM - Winneshiek County	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

661

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-29A (310-296771-4)	12/9/24	12:40 Central	G	Water			X	1	

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/10/24 1200		MALISSA LOAR	12-11-24 8	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Eur Cedar Falls Site Name _____ Cooler unpacked by: MALISSA LOAR

Cooler Received on 12-11-24 Opened on 12-11-24

FedEx: 1st Grd Exp, UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used. Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp 0.5 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC448976
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	No
17 Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page | Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container

Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved. _____ Preservative(s) added/Lot number(s) _____

VOA Sample Preservation - Date/Time VOAs Frozen _____

Part # 15

164-2083

PRIORITY OVERNIGHT

44203-3543-80



ORIGIN ID ALOA (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY

CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 10DEC24
ACTWGT 18 40 LB
CAD 0870970/CAFE3855

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396
REF S310-101159

FedEx

E

WED - 11 DEC 12:00P
PRIORITY OVERNIGHT

TRK# 0201 4085 8614 7013

XS CAKA

44203
OH-US CLE

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-296771-1

Login Number: 296771

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 12/23/2024 9:48:41 AM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-297010-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
12/23/2024 9:48:41 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job Narrative
310-297010-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/12/2024 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -0.6°C.

GC/MS VOA
Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample(s) was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : MW-22 (310-297010-1), MW-35 (310-297010-2) and Trip Blank (310-297010-4). The requested target analyte list includes Acrylonitrile.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-442412 recovered above the upper control limit for 2- Hexanone (23.0%D), cis-1,3-Dichloropropene (29.0%D), trans-1,3-Dichloropropene (26.9%D), Chlorodibromomethane (23.9%D), 1,1,2-Trichloroethane (24.2%D), Ethylene Dibromide (23.5%D), Bromoform (22.3%D), Trichloroethene (20.9%D), 1,2-Dichloropropane (23.1%D), 1,2-Dibromo-3-Chloropropane (21.3%D), 2-Butanone (24.0%D), 1,2,3-Trichlorobenzene (23.8%D), Naphthalene (28.3%D), 1,2-Dibromo-3-Chloropropane (21.3%D), 2-Butanone (24.0%D), Hexachlorobutadiene (31.9%D), and 1,1,1,2-Tetrachloroethane (21.2%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-442412/3).

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

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

General Chemistry
Method SM5210B_Calc: All the dilutions failed to deplete the method-required 2 mgO2/L for the following samples: MW-22 (310-297010-1). Only a "less than" result could be calculated from the least dilute preparation.

Method SM5210B_Calc: The glucose-glutamic acid standard (LCS) recovered outside the recovery limits specified in the method in batch 310-442301. The method holding time had expired, therefore the analysis was not repeated. The data was qualified and reported.

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

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

Sample Summary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-297010-1	MW-22	Ground Water	12/11/24 11:20	12/12/24 10:40
310-297010-2	MW-35	Ground Water	12/11/24 12:45	12/12/24 10:40
310-297010-4	Trip Blank	Water	12/11/24 00:00	12/12/24 10:40

Detection Summary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22
Lab Sample ID: 310-297010-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.864	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	146		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	105		0.500	0.190	mg/L	1		6020B	Total/NA
Lead	0.293	J	0.500	0.260	ug/L	1		6020B	Total/NA
Magnesium	41.8		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	7.63		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	14.2		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.236		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	36.4		25.0	12.0	mg/L	5		D516-16	Total/NA
Total Suspended Solids	7.25		3.75	2.78	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-1.10				%	1		SM 1030E	Total/NA
Total Alkalinity	383		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	383		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	490		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	38.3		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	9.18				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-35
Lab Sample ID: 310-297010-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.338	J	1.00	0.220	ug/L	1		8260D	Total/NA
Arsenic	1.09	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	186		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	130		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	1.98		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	60.2		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	11.8		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	18.3		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.258		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	18.9		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	3.31		2.07	1.53	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-1.87				%	1		SM 1030E	Total/NA
Total Alkalinity	516		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	516		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	606		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	70.4		4.00	2.80	mg/L	2		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	30.8		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	14.84				NTU	1		Field Sampling	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 310-297010-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22
Lab Sample ID: 310-297010-1
Date Collected: 12/11/24 11:20
Matrix: Ground Water
Date Received: 12/12/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/13/24 17:38	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/13/24 17:38	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/13/24 17:38	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/13/24 17:38	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/13/24 17:38	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/13/24 17:38	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/13/24 17:38	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/13/24 17:38	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/13/24 17:38	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/13/24 17:38	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/13/24 17:38	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/13/24 17:38	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/13/24 17:38	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/13/24 17:38	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/13/24 17:38	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/13/24 17:38	1
Acetone	<3.10		10.0	3.10	ug/L			12/13/24 17:38	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/13/24 17:38	1
Benzene	<0.220		0.500	0.220	ug/L			12/13/24 17:38	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/13/24 17:38	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/13/24 17:38	1
Bromoform	<0.780		5.00	0.780	ug/L			12/13/24 17:38	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/13/24 17:38	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/13/24 17:38	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/13/24 17:38	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/13/24 17:38	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/13/24 17:38	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/13/24 17:38	1
Chloroform	<1.30		3.00	1.30	ug/L			12/13/24 17:38	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/13/24 17:38	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/13/24 17:38	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/13/24 17:38	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/13/24 17:38	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/13/24 17:38	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/13/24 17:38	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/13/24 17:38	1
Styrene	<0.370		1.00	0.370	ug/L			12/13/24 17:38	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/13/24 17:38	1
Toluene	<0.430		1.00	0.430	ug/L			12/13/24 17:38	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/13/24 17:38	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/13/24 17:38	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/13/24 17:38	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/13/24 17:38	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/13/24 17:38	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/13/24 17:38	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/13/24 17:38	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/13/24 17:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*12/13/24 17:38*	*1*

Client Sample ID: MW-22
Lab Sample ID: 310-297010-1
Date Collected: 12/11/24 11:20
Matrix: Ground Water
Date Received: 12/12/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/13/24 17:38*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/13/24 17:38*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/16/24 09:00	12/17/24 15:22	1
Arsenic	**0.864**	**J**	2.00	0.530	ug/L		12/16/24 09:00	12/17/24 15:22	1
Barium	**146**		2.00	0.660	ug/L		12/16/24 09:00	12/17/24 15:22	1
Beryllium	<0.330		1.00	0.330	ug/L		12/16/24 09:00	12/18/24 16:20	1
Cadmium	<0.100		0.200	0.100	ug/L		12/16/24 09:00	12/17/24 15:22	1
Calcium	**105**		0.500	0.190	mg/L		12/16/24 09:00	12/17/24 15:22	1
Chromium	<1.20		5.00	1.20	ug/L		12/16/24 09:00	12/17/24 15:22	1
Cobalt	<0.170		0.500	0.170	ug/L		12/16/24 09:00	12/17/24 15:22	1
Copper	<1.80		5.00	1.80	ug/L		12/16/24 09:00	12/17/24 15:22	1
Lead	**0.293**	**J**	0.500	0.260	ug/L		12/16/24 09:00	12/17/24 15:22	1
Magnesium	**41.8**		0.500	0.150	mg/L		12/16/24 09:00	12/18/24 16:20	1
Nickel	**7.63**		5.00	2.10	ug/L		12/16/24 09:00	12/17/24 15:22	1
Selenium	<1.40		5.00	1.40	ug/L		12/16/24 09:00	12/17/24 15:22	1
Silver	<0.500		1.00	0.500	ug/L		12/16/24 09:00	12/17/24 15:22	1
Sodium	**14.2**		1.00	0.480	mg/L		12/16/24 09:00	12/17/24 15:22	1
Thallium	<0.570		1.00	0.570	ug/L		12/16/24 09:00	12/17/24 15:22	1
Vanadium	<1.10		5.00	1.10	ug/L		12/16/24 09:00	12/17/24 15:22	1
Zinc	<9.70		20.0	9.70	ug/L		12/16/24 09:00	12/18/24 16:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/19/24 16:14	1
Fluoride (SM 4500 F C-2011)	**0.236**		0.100	0.0540	mg/L			12/13/24 12:37	1
Sulfate (ASTM D516-16)	**36.4**		25.0	12.0	mg/L			12/17/24 11:21	5
Total Suspended Solids (USGS I-3765-85)	**7.25**		3.75	2.78	mg/L			12/12/24 19:43	1
Anion/Cation Balance (SM 1030E)	**-1.10**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**383**		5.00	2.50	mg/L			12/16/24 22:39	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**383**		5.00	2.50	mg/L			12/16/24 22:39	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/16/24 22:39	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/16/24 22:39	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/16/24 22:39	1
Total Dissolved Solids (SM 2540C)	**490**		50.0	42.0	mg/L			12/13/24 16:08	1
Chloride (SM 4500 Cl- E)	**38.3**		2.00	1.40	mg/L			12/18/24 14:45	1
Biochemical Oxygen Demand (SM 5210B)	<6.00	*-	6.00	6.00	mg/L			12/12/24 10:52	2
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/18/24 09:03	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**9.18**				NTU			12/11/24 11:20	1

Client Sample ID: MW-35
Date Collected: 12/11/24 12:45
Date Received: 12/12/24 10:40

Lab Sample ID: 310-297010-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/13/24 18:00	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/13/24 18:00	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/13/24 18:00	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/13/24 18:00	1
1,1-Dichloroethane	**0.338**	**J**	1.00	0.220	ug/L			12/13/24 18:00	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/13/24 18:00	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/13/24 18:00	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/13/24 18:00	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/13/24 18:00	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/13/24 18:00	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/13/24 18:00	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/13/24 18:00	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/13/24 18:00	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/13/24 18:00	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/13/24 18:00	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/13/24 18:00	1
Acetone	<3.10		10.0	3.10	ug/L			12/13/24 18:00	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/13/24 18:00	1
Benzene	<0.220		0.500	0.220	ug/L			12/13/24 18:00	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/13/24 18:00	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/13/24 18:00	1
Bromoform	<0.780		5.00	0.780	ug/L			12/13/24 18:00	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/13/24 18:00	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/13/24 18:00	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/13/24 18:00	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/13/24 18:00	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/13/24 18:00	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/13/24 18:00	1
Chloroform	<1.30		3.00	1.30	ug/L			12/13/24 18:00	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/13/24 18:00	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/13/24 18:00	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/13/24 18:00	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/13/24 18:00	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/13/24 18:00	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/13/24 18:00	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/13/24 18:00	1
Styrene	<0.370		1.00	0.370	ug/L			12/13/24 18:00	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/13/24 18:00	1
Toluene	<0.430		1.00	0.430	ug/L			12/13/24 18:00	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/13/24 18:00	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/13/24 18:00	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/13/24 18:00	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/13/24 18:00	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/13/24 18:00	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/13/24 18:00	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/13/24 18:00	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/13/24 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*107*		*73 - 130*		*12/13/24 18:00*	*1*

Client Sample ID: MW-35
Date Collected: 12/11/24 12:45
Date Received: 12/12/24 10:40

Lab Sample ID: 310-297010-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/13/24 18:00*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*12/13/24 18:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/16/24 09:00	12/17/24 15:26	1
Arsenic	**1.09**	**J**	2.00	0.530	ug/L		12/16/24 09:00	12/17/24 15:26	1
Barium	**186**		2.00	0.660	ug/L		12/16/24 09:00	12/17/24 15:26	1
Beryllium	<0.330		1.00	0.330	ug/L		12/16/24 09:00	12/18/24 16:28	1
Cadmium	<0.100		0.200	0.100	ug/L		12/16/24 09:00	12/17/24 15:26	1
Calcium	**130**		0.500	0.190	mg/L		12/16/24 09:00	12/17/24 15:26	1
Chromium	<1.20		5.00	1.20	ug/L		12/16/24 09:00	12/17/24 15:26	1
Cobalt	**1.98**		0.500	0.170	ug/L		12/16/24 09:00	12/17/24 15:26	1
Copper	<1.80		5.00	1.80	ug/L		12/16/24 09:00	12/17/24 15:26	1
Lead	<0.260		0.500	0.260	ug/L		12/16/24 09:00	12/17/24 15:26	1
Magnesium	**60.2**		0.500	0.150	mg/L		12/16/24 09:00	12/18/24 16:28	1
Nickel	**11.8**		5.00	2.10	ug/L		12/16/24 09:00	12/17/24 15:26	1
Selenium	<1.40		5.00	1.40	ug/L		12/16/24 09:00	12/17/24 15:26	1
Silver	<0.500		1.00	0.500	ug/L		12/16/24 09:00	12/17/24 15:26	1
Sodium	**18.3**		1.00	0.480	mg/L		12/16/24 09:00	12/17/24 15:26	1
Thallium	<0.570		1.00	0.570	ug/L		12/16/24 09:00	12/17/24 15:26	1
Vanadium	<1.10		5.00	1.10	ug/L		12/16/24 09:00	12/17/24 15:26	1
Zinc	<9.70		20.0	9.70	ug/L		12/16/24 09:00	12/18/24 16:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/19/24 16:15	1
Fluoride (SM 4500 F C-2011)	**0.258**		0.100	0.0540	mg/L			12/13/24 12:40	1
Sulfate (ASTM D516-16)	**18.9**		5.00	2.40	mg/L			12/17/24 11:21	1
Total Suspended Solids (USGS I-3765-85)	**3.31**		2.07	1.53	mg/L			12/12/24 19:43	1
Anion/Cation Balance (SM 1030E)	**-1.87**				%			12/16/24 14:29	1
Total Alkalinity (SM 2320B)	**516**		5.00	2.50	mg/L			12/16/24 22:48	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**516**		5.00	2.50	mg/L			12/16/24 22:48	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/16/24 22:48	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/16/24 22:48	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/16/24 22:48	1
Total Dissolved Solids (SM 2540C)	**606**		50.0	42.0	mg/L			12/13/24 16:08	1
Chloride (SM 4500 Cl- E)	**70.4**		4.00	2.80	mg/L			12/18/24 14:46	2
Biochemical Oxygen Demand (SM 5210B)	<3.00	*-	3.00	3.00	mg/L			12/12/24 10:55	1
Chemical Oxygen Demand (SM 5220D)	**30.8**		25.0	24.0	mg/L			12/18/24 09:03	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**14.84**				NTU			12/11/24 12:45	1

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297010-4
Date Collected: 12/11/24 00:00
Matrix: Water
Date Received: 12/12/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/13/24 12:34	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/13/24 12:34	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/13/24 12:34	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/13/24 12:34	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/13/24 12:34	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/13/24 12:34	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/13/24 12:34	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/13/24 12:34	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/13/24 12:34	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/13/24 12:34	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/13/24 12:34	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/13/24 12:34	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/13/24 12:34	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/13/24 12:34	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/13/24 12:34	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/13/24 12:34	1
Acetone	<3.10		10.0	3.10	ug/L			12/13/24 12:34	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/13/24 12:34	1
Benzene	<0.220		0.500	0.220	ug/L			12/13/24 12:34	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/13/24 12:34	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/13/24 12:34	1
Bromoform	<0.780		5.00	0.780	ug/L			12/13/24 12:34	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/13/24 12:34	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/13/24 12:34	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/13/24 12:34	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/13/24 12:34	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/13/24 12:34	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/13/24 12:34	1
Chloroform	<1.30		3.00	1.30	ug/L			12/13/24 12:34	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/13/24 12:34	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/13/24 12:34	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/13/24 12:34	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/13/24 12:34	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/13/24 12:34	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/13/24 12:34	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/13/24 12:34	1
Styrene	<0.370		1.00	0.370	ug/L			12/13/24 12:34	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/13/24 12:34	1
Toluene	<0.430		1.00	0.430	ug/L			12/13/24 12:34	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/13/24 12:34	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/13/24 12:34	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/13/24 12:34	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/13/24 12:34	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/13/24 12:34	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/13/24 12:34	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/13/24 12:34	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/13/24 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*12/13/24 12:34*	*1*

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297010-4
Date Collected: 12/11/24 00:00
Matrix: Water
Date Received: 12/12/24 10:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/13/24 12:34	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/13/24 12:34	1

Definitions/Glossary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-297010-1	MW-22	115	94	102
310-297010-2	MW-35	107	95	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-297010-4	Trip Blank	113	96	102
LCS 310-442412/6	Lab Control Sample	96	100	99
LCS 310-442412/7	Lab Control Sample	110	95	102
MB 310-442412/5	Method Blank	104	94	102

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-442412/5
Matrix: Water
Analysis Batch: 442412

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/13/24 10:23	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/13/24 10:23	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/13/24 10:23	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/13/24 10:23	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/13/24 10:23	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/13/24 10:23	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/13/24 10:23	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/13/24 10:23	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/13/24 10:23	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/13/24 10:23	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/13/24 10:23	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/13/24 10:23	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/13/24 10:23	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/13/24 10:23	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/13/24 10:23	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/13/24 10:23	1
Acetone	<3.10		10.0	3.10	ug/L			12/13/24 10:23	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/13/24 10:23	1
Benzene	<0.220		0.500	0.220	ug/L			12/13/24 10:23	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/13/24 10:23	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/13/24 10:23	1
Bromoform	<0.780		5.00	0.780	ug/L			12/13/24 10:23	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/13/24 10:23	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/13/24 10:23	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/13/24 10:23	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/13/24 10:23	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/13/24 10:23	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/13/24 10:23	1
Chloroform	<1.30		3.00	1.30	ug/L			12/13/24 10:23	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/13/24 10:23	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/13/24 10:23	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/13/24 10:23	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/13/24 10:23	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/13/24 10:23	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/13/24 10:23	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/13/24 10:23	1
Styrene	<0.370		1.00	0.370	ug/L			12/13/24 10:23	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/13/24 10:23	1
Toluene	<0.430		1.00	0.430	ug/L			12/13/24 10:23	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/13/24 10:23	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/13/24 10:23	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/13/24 10:23	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/13/24 10:23	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/13/24 10:23	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/13/24 10:23	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/13/24 10:23	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/13/24 10:23	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-442412/5
Matrix: Water
Analysis Batch: 442412

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*104*		*73 - 130*		*12/13/24 10:23*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/13/24 10:23*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/13/24 10:23*	*1*

Lab Sample ID: LCS 310-442412/6
Matrix: Water
Analysis Batch: 442412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.61		ug/L		103	71 - 120
1,1,1-Trichloroethane	20.0	21.09		ug/L		105	73 - 129
1,1,2,2-Tetrachloroethane	20.0	20.75		ug/L		104	68 - 124
1,1,2-Trichloroethane	20.0	21.61		ug/L		108	73 - 123
1,1-Dichloroethane	20.0	20.54		ug/L		103	70 - 127
1,1-Dichloroethene	20.0	19.68		ug/L		98	63 - 132
1,2,3-Trichloropropane	20.0	21.25		ug/L		106	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	22.45		ug/L		112	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.12		ug/L		106	75 - 125
1,2-Dichlorobenzene	20.0	21.69		ug/L		108	74 - 120
1,2-Dichloroethane	20.0	20.28		ug/L		101	71 - 125
1,2-Dichloropropane	20.0	21.76		ug/L		109	73 - 124
1,4-Dichlorobenzene	20.0	21.35		ug/L		107	72 - 120
2-Butanone (MEK)	40.0	42.13		ug/L		105	50 - 150
2-Hexanone	40.0	45.56		ug/L		114	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	41.15		ug/L		103	60 - 139
Acetone	40.0	38.83		ug/L		97	50 - 150
Acrylonitrile	200	212.8		ug/L		106	50 - 150
Benzene	20.0	20.79		ug/L		104	72 - 124
Bromochloromethane	20.0	20.61		ug/L		103	73 - 130
Bromodichloromethane	20.0	20.32		ug/L		102	74 - 122
Bromoform	20.0	20.52		ug/L		103	61 - 122
Carbon disulfide	20.0	19.31		ug/L		97	59 - 135
Carbon tetrachloride	20.0	20.46		ug/L		102	67 - 132
Chlorobenzene	20.0	20.98		ug/L		105	76 - 120
Chlorodibromomethane	20.0	20.73		ug/L		104	71 - 121
Chloroform	20.0	20.85		ug/L		104	72 - 125
cis-1,2-Dichloroethene	20.0	21.03		ug/L		105	74 - 123
cis-1,3-Dichloropropene	20.0	21.03		ug/L		105	71 - 125
Dibromomethane	20.0	21.38		ug/L		107	74 - 125
Ethylbenzene	20.0	21.08		ug/L		105	74 - 122
Iodomethane	20.0	12.67		ug/L		63	10 - 150
Methylene Chloride	20.0	20.71		ug/L		104	50 - 150
Styrene	20.0	21.92		ug/L		110	74 - 121
Tetrachloroethene	20.0	21.41		ug/L		107	71 - 130
Toluene	20.0	21.85		ug/L		109	74 - 123
trans-1,2-Dichloroethene	20.0	20.31		ug/L		102	70 - 126
trans-1,3-Dichloropropene	20.0	21.23		ug/L		106	69 - 123
trans-1,4-Dichloro-2-butene	20.0	20.67		ug/L		103	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-442412/6
Matrix: Water
Analysis Batch: 442412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	21.05		ug/L		105	72 - 126
Vinyl acetate	40.0	36.87		ug/L		92	50 - 150
Xylenes, Total	40.0	42.31		ug/L		106	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*73 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-442412/7
Matrix: Water
Analysis Batch: 442412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.79		ug/L		79	23 - 150
Chloroethane	20.0	18.48		ug/L		92	54 - 136
Chloromethane	20.0	19.39		ug/L		97	38 - 150
Trichlorofluoromethane	20.0	19.55		ug/L		98	54 - 149
Vinyl chloride	20.0	19.08		ug/L		95	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*110*		*73 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-442470/1-A
Matrix: Water
Analysis Batch: 442780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/16/24 09:00	12/17/24 14:27	1
Arsenic	<0.530		2.00	0.530	ug/L		12/16/24 09:00	12/17/24 14:27	1
Barium	<0.660		2.00	0.660	ug/L		12/16/24 09:00	12/17/24 14:27	1
Beryllium	<0.330		1.00	0.330	ug/L		12/16/24 09:00	12/17/24 14:27	1
Cadmium	<0.100		0.200	0.100	ug/L		12/16/24 09:00	12/17/24 14:27	1
Calcium	<0.190		0.500	0.190	mg/L		12/16/24 09:00	12/17/24 14:27	1
Chromium	<1.20		5.00	1.20	ug/L		12/16/24 09:00	12/17/24 14:27	1
Cobalt	<0.170		0.500	0.170	ug/L		12/16/24 09:00	12/17/24 14:27	1
Copper	<1.80		5.00	1.80	ug/L		12/16/24 09:00	12/17/24 14:27	1
Lead	<0.260		0.500	0.260	ug/L		12/16/24 09:00	12/17/24 14:27	1
Magnesium	<0.150		0.500	0.150	mg/L		12/16/24 09:00	12/17/24 14:27	1
Nickel	<2.10		5.00	2.10	ug/L		12/16/24 09:00	12/17/24 14:27	1
Selenium	<1.40		5.00	1.40	ug/L		12/16/24 09:00	12/17/24 14:27	1
Silver	<0.500		1.00	0.500	ug/L		12/16/24 09:00	12/17/24 14:27	1
Sodium	<0.480		1.00	0.480	mg/L		12/16/24 09:00	12/17/24 14:27	1
Thallium	<0.570		1.00	0.570	ug/L		12/16/24 09:00	12/17/24 14:27	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-442470/1-A
Matrix: Water
Analysis Batch: 442780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<1.10		5.00	1.10	ug/L		12/16/24 09:00	12/17/24 14:27	1
Zinc	<9.70		20.0	9.70	ug/L		12/16/24 09:00	12/17/24 14:27	1

Lab Sample ID: LCS 310-442470/2-A
Matrix: Water
Analysis Batch: 442780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	216.4		ug/L		108	80 - 120
Arsenic	200	203.9		ug/L		102	80 - 120
Barium	100	99.70		ug/L		100	80 - 120
Beryllium	100	88.11		ug/L		88	80 - 120
Cadmium	100	98.04		ug/L		98	80 - 120
Calcium	2.00	1.752		mg/L		88	80 - 120
Chromium	100	96.24		ug/L		96	80 - 120
Cobalt	100	101.8		ug/L		102	80 - 120
Copper	200	207.8		ug/L		104	80 - 120
Lead	200	205.1		ug/L		103	80 - 120
Magnesium	2.00	1.879		mg/L		94	80 - 120
Nickel	200	196.1		ug/L		98	80 - 120
Selenium	400	383.9		ug/L		96	80 - 120
Silver	100	103.9		ug/L		104	80 - 120
Sodium	2.00	2.128		mg/L		106	80 - 120
Thallium	100	85.76		ug/L		86	80 - 120
Vanadium	100	94.85		ug/L		95	80 - 120
Zinc	200	174.2		ug/L		87	80 - 120

Lab Sample ID: 310-297010-1 DU
Matrix: Ground Water
Analysis Batch: 442780

Client Sample ID: MW-22
Prep Type: Total/NA
Prep Batch: 442470

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.00		<1.00		ug/L		NC	20
Arsenic	0.864	J	0.8900	J	ug/L		3	20
Barium	146		152.1		ug/L		4	20
Cadmium	<0.100		<0.100		ug/L		NC	20
Calcium	105		107.5		mg/L		3	20
Chromium	<1.20		<1.20		ug/L		NC	20
Cobalt	<0.170		0.1760	J	ug/L		NC	20
Copper	<1.80		<1.80		ug/L		NC	20
Lead	0.293	J	0.2950	J	ug/L		0.7	20
Nickel	7.63		7.976		ug/L		4	20
Selenium	<1.40		<1.40		ug/L		NC	20
Silver	<0.500		<0.500		ug/L		NC	20
Sodium	14.2		14.71		mg/L		4	20
Thallium	<0.570		<0.570		ug/L		NC	20
Vanadium	<1.10		<1.10		ug/L		NC	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-297010-1 DU
Matrix: Ground Water
Analysis Batch: 442908

Client Sample ID: MW-22
Prep Type: Total/NA
Prep Batch: 442470

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Beryllium	<0.330		<0.330		ug/L		NC	20
Magnesium	41.8		42.04		mg/L		0.6	20
Zinc	<9.70		<9.70		ug/L		NC	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-442471/45
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/13/24 12:05	1

Lab Sample ID: LCS 310-442471/46
Matrix: Water
Analysis Batch: 442471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	2.029		mg/L		101	90 - 110

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-442709/16
Matrix: Water
Analysis Batch: 442709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/17/24 11:16	1

Lab Sample ID: LCS 310-442709/14
Matrix: Water
Analysis Batch: 442709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.216		mg/L		92	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-442374/1
Matrix: Water
Analysis Batch: 442374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/12/24 19:43	1

Lab Sample ID: LCS 310-442374/2
Matrix: Water
Analysis Batch: 442374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.00		mg/L		95	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-442656/2
Matrix: Water
Analysis Batch: 442656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Alkalinity			1000	936.2		mg/L		94	86 - 111		

Lab Sample ID: 310-297010-2 DU
Matrix: Ground Water
Analysis Batch: 442656

Client Sample ID: MW-35
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity	516			512.4		mg/L				0.6	16
Bicarbonate Alkalinity as CaCO3	516			512.4		mg/L				0.6	
Carbonate Alkalinity as CaCO3	<2.50			<2.50		mg/L				NC	
Hydroxide Alkalinity as CaCO3	<2.50			<2.50		mg/L				NC	
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<2.50			<2.50		mg/L				NC	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-442498/1
Matrix: Water
Analysis Batch: 442498

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/13/24 16:08	1

Lab Sample ID: LCS 310-442498/2
Matrix: Water
Analysis Batch: 442498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	986.0		mg/L		99	88 - 110		

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-442874/16
Matrix: Water
Analysis Batch: 442874

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			12/18/24 14:40	1

Lab Sample ID: LCS 310-442874/14
Matrix: Water
Analysis Batch: 442874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			10.0	11.04		mg/L		110	90 - 110		

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-442301/1
Matrix: Water
Analysis Batch: 442301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			12/12/24 09:23	1

Lab Sample ID: LCS 310-442301/2
Matrix: Water
Analysis Batch: 442301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	<3.00	*-	mg/L		0	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-442795/5
Matrix: Water
Analysis Batch: 442795

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/18/24 09:03	1

Lab Sample ID: LCS 310-442795/3
Matrix: Water
Analysis Batch: 442795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	126.6		mg/L		101	85 - 110

GC/MS VOA

Analysis Batch: 442412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	8260D	
310-297010-2	MW-35	Total/NA	Ground Water	8260D	
310-297010-4	Trip Blank	Total/NA	Water	8260D	
MB 310-442412/5	Method Blank	Total/NA	Water	8260D	
LCS 310-442412/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-442412/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 442470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	3005A	
310-297010-2	MW-35	Total/NA	Ground Water	3005A	
MB 310-442470/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-442470/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-297010-1 DU	MW-22	Total/NA	Ground Water	3005A	

Analysis Batch: 442780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	6020B	442470
310-297010-2	MW-35	Total/NA	Ground Water	6020B	442470
MB 310-442470/1-A	Method Blank	Total/NA	Water	6020B	442470
LCS 310-442470/2-A	Lab Control Sample	Total/NA	Water	6020B	442470
310-297010-1 DU	MW-22	Total/NA	Ground Water	6020B	442470

Analysis Batch: 442908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	6020B	442470
310-297010-2	MW-35	Total/NA	Ground Water	6020B	442470
310-297010-1 DU	MW-22	Total/NA	Ground Water	6020B	442470

General Chemistry

Analysis Batch: 442301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	SM 5210B	
310-297010-2	MW-35	Total/NA	Ground Water	SM 5210B	
USB 310-442301/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-442301/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 442374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	I-3765-85	
310-297010-2	MW-35	Total/NA	Ground Water	I-3765-85	
MB 310-442374/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-442374/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 442471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	4500 F C-2011	
310-297010-2	MW-35	Total/NA	Ground Water	4500 F C-2011	
MB 310-442471/45	Method Blank	Total/NA	Water	4500 F C-2011	

General Chemistry (Continued)

Analysis Batch: 442471 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-442471/46	Lab Control Sample	Total/NA	Water	4500 F C-2011	

Analysis Batch: 442498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	SM 2540C	
310-297010-2	MW-35	Total/NA	Ground Water	SM 2540C	
MB 310-442498/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-442498/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 442613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	353.2	
310-297010-2	MW-35	Total/NA	Ground Water	353.2	

Analysis Batch: 442615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	SM 1030E	
310-297010-2	MW-35	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 442656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	SM 2320B	
310-297010-2	MW-35	Total/NA	Ground Water	SM 2320B	
LCS 310-442656/2	Lab Control Sample	Total/NA	Water	SM 2320B	
310-297010-2 DU	MW-35	Total/NA	Ground Water	SM 2320B	

Analysis Batch: 442709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	D516-16	
310-297010-2	MW-35	Total/NA	Ground Water	D516-16	
MB 310-442709/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-442709/14	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 442795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	SM 5220D	
310-297010-2	MW-35	Total/NA	Ground Water	SM 5220D	
MB 310-442795/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-442795/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 442874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	SM 4500 Cl- E	
310-297010-2	MW-35	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-442874/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-442874/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

QC Association Summary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Field Service / Mobile Lab

Analysis Batch: 442433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297010-1	MW-22	Total/NA	Ground Water	Field Sampling	
310-297010-2	MW-35	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-22
Lab Sample ID: 310-297010-1
Date Collected: 12/11/24 11:20
Matrix: Ground Water
Date Received: 12/12/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442412	WSE8	EET CF	12/13/24 17:38
Total/NA	Prep	3005A			442470	F5MW	EET CF	12/16/24 09:00
Total/NA	Analysis	6020B		1	442908	NFT2	EET CF	12/18/24 16:20
Total/NA	Prep	3005A			442470	F5MW	EET CF	12/16/24 09:00
Total/NA	Analysis	6020B		1	442780	NFT2	EET CF	12/17/24 15:22
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/19/24 16:14
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:37
Total/NA	Analysis	D516-16		5	442709	ENB7	EET CF	12/17/24 11:21
Total/NA	Analysis	I-3765-85		1	442374	MDU9	EET CF	12/12/24 19:43
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442656	MDU9	EET CF	12/16/24 22:39
Total/NA	Analysis	SM 2540C		1	442498	XJ7V	EET CF	12/13/24 16:08
Total/NA	Analysis	SM 4500 Cl- E		1	442874	ENB7	EET CF	12/18/24 14:45
Total/NA	Analysis	SM 5210B		2	442301	W9YR	EET CF	12/12/24 10:52
Total/NA	Analysis	SM 5220D		5	442795	ENB7	EET CF	12/18/24 09:03
Total/NA	Analysis	Field Sampling		1	442433	BJ0R	EET CF	12/11/24 11:20

Client Sample ID: MW-35
Lab Sample ID: 310-297010-2
Date Collected: 12/11/24 12:45
Matrix: Ground Water
Date Received: 12/12/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442412	WSE8	EET CF	12/13/24 18:00
Total/NA	Prep	3005A			442470	F5MW	EET CF	12/16/24 09:00
Total/NA	Analysis	6020B		1	442908	NFT2	EET CF	12/18/24 16:28
Total/NA	Prep	3005A			442470	F5MW	EET CF	12/16/24 09:00
Total/NA	Analysis	6020B		1	442780	NFT2	EET CF	12/17/24 15:26
Total/NA	Analysis	353.2		1	442613	HE7K	EET CF	12/19/24 16:15
Total/NA	Analysis	4500 F C-2011		1	442471	WZC8	EET CF	12/13/24 12:40
Total/NA	Analysis	D516-16		1	442709	ENB7	EET CF	12/17/24 11:21
Total/NA	Analysis	I-3765-85		1	442374	MDU9	EET CF	12/12/24 19:43
Total/NA	Analysis	SM 1030E		1	442615	HE7K	EET CF	12/16/24 14:29
Total/NA	Analysis	SM 2320B		1	442656	MDU9	EET CF	12/16/24 22:48
Total/NA	Analysis	SM 2540C		1	442498	XJ7V	EET CF	12/13/24 16:08
Total/NA	Analysis	SM 4500 Cl- E		2	442874	ENB7	EET CF	12/18/24 14:46
Total/NA	Analysis	SM 5210B		1	442301	W9YR	EET CF	12/12/24 10:55
Total/NA	Analysis	SM 5220D		5	442795	ENB7	EET CF	12/18/24 09:03
Total/NA	Analysis	Field Sampling		1	442433	BJ0R	EET CF	12/11/24 12:45

Lab Chronicle

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297010-4
Date Collected: 12/11/24 00:00
Matrix: Water
Date Received: 12/12/24 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442412	WSE8	EET CF	12/13/24 12:34

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-297010-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-297010 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State: CITY Ua Erico	STATE IA	Project: Winnestick Co.	
Receipt Information			
Date/Time Received: 12 12 24	DATE	TIME 1040	Received By: TD
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☑ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: R		Correction Factor (°C): 0.0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): -0.6		Corrected Temp (°C): -0.6	
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☑ No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

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Revision 26
Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-12-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below			Lab Sampling
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
MW-42A			G	GW		N		X	X	X	X	
MW-43A			G	GW		N		X	X	X	X	
MW-44A			G	GW		N		X	X	X	X	
MW-45A			G	GW		N		X	X	X	X	
MW-46A			G	GW		N		X	X	X	X	
MW-101			G	GW		N		X	X	X	X	
MW-11			G	GW		N		X	X	X	X	
MW-19R			G	GW		N		X	X	X	X	
MW-22 *	12-11-24	1120	G	GW	8	N		X	X	X	X	Turbidity - 9.18 NTU
MW-22-FD			G	GW		N		X	X	X	X	
MW-35	12-11-24	1245	G	GW	8	N		X	X	X	X	Turbidity - 14.84 NTU
MW-18			G	GW		N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

* Well Sampled dry - 7½ containers collected

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd. _____	Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	12-12-24			12/12/24, 0810
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

12/23/2024

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-297010-1

Login Number: 297010

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

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JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-297323-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-297323-1 — Eurofins Cedar Falls

Job Narrative
310-297323-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/18/2024 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3°C and 4.4°C.

GC/MS VOA
Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : MW-18 (310-297323-1), MW-3 (310-297323-2), MW-31A (310-297323-3), MW-34A (310-297323-4), MW-41A (310-297323-5), GU-1 (310-297323-6), Equipment Blank #2 Deep (310-297323-7), Duplicate #3 (310-297323-8) and Trip Blank (310-297323-9). The requested target analyte list includes Acrylonitrile.

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

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-297323-1	MW-18	Water	12/17/24 16:00	12/18/24 09:30
310-297323-2	MW-3	Ground Water	12/17/24 14:15	12/18/24 09:30
310-297323-3	MW-31A	Ground Water	12/17/24 09:30	12/18/24 09:30
310-297323-4	MW-34A	Ground Water	12/17/24 11:30	12/18/24 09:30
310-297323-5	MW-41A	Ground Water	12/17/24 13:30	12/18/24 09:30
310-297323-6	GU-1	Ground Water	12/17/24 12:30	12/18/24 09:30
310-297323-7	Equipment Blank #2 Deep	Ground Water	12/17/24 16:30	12/18/24 09:30
310-297323-8	Duplicate #3	Water	12/17/24 16:30	12/18/24 09:30
310-297323-9	Trip Blank	Water	12/17/24 00:00	12/18/24 09:30

Detection Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-18
Lab Sample ID: 310-297323-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	76.2		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	75.8		0.500	0.190	mg/L	1		6020B	Total/NA
Magnesium	28.2		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	4.40		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.398		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	13.2		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	5.33		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	1.74				%	1		SM 1030E	Total/NA
Total Alkalinity	285		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	285		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	298		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	3.12		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	1.54				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-3
Lab Sample ID: 310-297323-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.34	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	205		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	122		0.500	0.190	mg/L	1		6020B	Total/NA
Magnesium	49.1		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	6.42		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.166		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	28.0		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	5.00		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	0.818				%	1		SM 1030E	Total/NA
Total Alkalinity	465		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	465		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	482		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	12.6		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	14.78				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-31A
Lab Sample ID: 310-297323-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.484	J	1.00	0.220	ug/L	1		8260D	Total/NA
Arsenic	0.562	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	279		2.00	0.660	ug/L	1		6020B	Total/NA
Cadmium	0.161	J	0.200	0.100	ug/L	1		6020B	Total/NA
Calcium	251		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	2.09		0.500	0.170	ug/L	1		6020B	Total/NA
Copper	2.60	J	5.00	1.80	ug/L	1		6020B	Total/NA
Magnesium	64.3		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	32.3		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	101		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	35.2		1.00	0.800	mg/L	1		353.2	Total/NA
Fluoride	0.0692	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	71.9		25.0	12.0	mg/L	5		D516-16	Total/NA
Anion/Cation Balance	6.73				%	1		SM 1030E	Total/NA
Total Alkalinity	515		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	515		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1210		50.0	42.0	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-31A (Continued)
Lab Sample ID: 310-297323-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	181		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Field Turbidity	5.30				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-34A
Lab Sample ID: 310-297323-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	67.5		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	60.8		0.500	0.190	mg/L	1		6020B	Total/NA
Chromium	1.88	J	5.00	1.20	ug/L	1		6020B	Total/NA
Magnesium	21.9		0.500	0.150	mg/L	1		6020B	Total/NA
Selenium	2.01	J	5.00	1.40	ug/L	1		6020B	Total/NA
Sodium	6.26		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	9.87		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.168		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	3.63	J	5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	6.00		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-1.31				%	1		SM 1030E	Total/NA
Total Alkalinity	210		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	210		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	270		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	9.17		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	8.37				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-41A
Lab Sample ID: 310-297323-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.967	J	2.00	0.530	ug/L	1		6020B	Total/NA
Barium	159		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	91.4		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.211	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	36.5		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	9.47		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	1.03		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.0987	J	0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	27.0		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	6.00		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	1.27				%	1		SM 1030E	Total/NA
Total Alkalinity	339		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	339		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	384		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	12.8		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	12.99				NTU	1		Field Sampling	Total/NA

Client Sample ID: GU-1
Lab Sample ID: 310-297323-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	241		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	164		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.513		0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	59.5		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	16.1		5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	42.3		1.00	0.480	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GU-1 (Continued) — Lab Sample ID: 310-297323-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.211		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	36.1		25.0	12.0	mg/L	5		D516-16	Total/NA
Anion/Cation Balance	3.65				%	1		SM 1030E	Total/NA
Total Alkalinity	471		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	471		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	722		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	131		20.0	14.0	mg/L	10		SM 4500 Cl- E	Total/NA
Field Turbidity	11.73				NTU	1		Field Sampling	Total/NA

Client Sample ID: Equipment Blank #2 Deep — Lab Sample ID: 310-297323-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	22.5		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	59.4		0.500	0.190	mg/L	1		6020B	Total/NA
Magnesium	22.2		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	2.59		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	3.03		0.100	0.0800	mg/L	1		353.2	Total/NA
Sulfate	10.7		5.00	2.40	mg/L	1		D516-16	Total/NA
Anion/Cation Balance	1.20				%	1		SM 1030E	Total/NA
Total Alkalinity	209		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	209		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	222		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	6.10		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: Duplicate #3 — Lab Sample ID: 310-297323-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	74.4		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	73.0		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.219	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	27.4		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	4.24		1.00	0.480	mg/L	1		6020B	Total/NA
Fluoride	0.403		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	11.6		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	4.33	J	5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-0.957				%	1		SM 1030E	Total/NA
Total Alkalinity	293		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	293		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	286		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	2.91		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-297323-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-18
Lab Sample ID: 310-297323-1
Date Collected: 12/17/24 16:00
Matrix: Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 15:59	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 15:59	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 15:59	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 15:59	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 15:59	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 15:59	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 15:59	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 15:59	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 15:59	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 15:59	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 15:59	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 15:59	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 15:59	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 15:59	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 15:59	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 15:59	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 15:59	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 15:59	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 15:59	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 15:59	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 15:59	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 15:59	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 15:59	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 15:59	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 15:59	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 15:59	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 15:59	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 15:59	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 15:59	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 15:59	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 15:59	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 15:59	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 15:59	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 15:59	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 15:59	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 15:59	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 15:59	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 15:59	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 15:59	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 15:59	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 15:59	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 15:59	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 15:59	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 15:59	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 15:59	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 15:59	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*12/19/24 15:59*	*1*

Client Sample ID: MW-18
Lab Sample ID: 310-297323-1
Date Collected: 12/17/24 16:00
Matrix: Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/19/24 15:59*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*12/19/24 15:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:00	1
Arsenic	<0.530		2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:00	1
Barium	**76.2**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:00	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:00	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:00	1
Calcium	**75.8**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:00	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:00	1
Cobalt	<0.170		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:00	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:00	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:00	1
Magnesium	**28.2**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:00	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:00	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:00	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:00	1
Sodium	**4.40**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:00	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:00	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:00	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/27/24 03:40	1
Fluoride (SM 4500 F C-2011)	**0.398**		0.100	0.0540	mg/L			12/26/24 14:38	1
Sulfate (ASTM D516-16)	**13.2**		5.00	2.40	mg/L			12/23/24 13:25	1
Total Suspended Solids (USGS I-3765-85)	**5.33**		5.00	3.70	mg/L			12/19/24 10:07	1
Anion/Cation Balance (SM 1030E)	**1.74**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**285**		5.00	2.50	mg/L			12/20/24 08:44	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**285**		5.00	2.50	mg/L			12/20/24 08:44	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 08:44	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 08:44	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 08:44	1
Total Dissolved Solids (SM 2540C)	**298**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**3.12**		2.00	1.40	mg/L			12/20/24 10:01	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:38	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**1.54**				NTU			12/17/24 16:00	1

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-3
Lab Sample ID: 310-297323-2
Date Collected: 12/17/24 14:15
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 16:20	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 16:20	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 16:20	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 16:20	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 16:20	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 16:20	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 16:20	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 16:20	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 16:20	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 16:20	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 16:20	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 16:20	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 16:20	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 16:20	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 16:20	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 16:20	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 16:20	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 16:20	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 16:20	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 16:20	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 16:20	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 16:20	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 16:20	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 16:20	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 16:20	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 16:20	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 16:20	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 16:20	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 16:20	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 16:20	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 16:20	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 16:20	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 16:20	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 16:20	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 16:20	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 16:20	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 16:20	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 16:20	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 16:20	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 16:20	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 16:20	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 16:20	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 16:20	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 16:20	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 16:20	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 16:20	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*12/19/24 16:20*	*1*

Client Sample ID: MW-3
Lab Sample ID: 310-297323-2

Date Collected: 12/17/24 14:15
Matrix: Ground Water

Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/19/24 16:20*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/19/24 16:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:15	1
Arsenic	**1.34**	**J**	2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:15	1
Barium	**205**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:15	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:15	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:15	1
Calcium	**122**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:15	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:15	1
Cobalt	<0.170		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:15	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:15	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:15	1
Magnesium	**49.1**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:15	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:15	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:15	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:15	1
Sodium	**6.42**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:15	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:15	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:15	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/27/24 03:42	1
Fluoride (SM 4500 F C-2011)	**0.166**		0.100	0.0540	mg/L			12/26/24 14:48	1
Sulfate (ASTM D516-16)	**28.0**		5.00	2.40	mg/L			12/23/24 13:26	1
Total Suspended Solids (USGS I-3765-85)	**5.00**		5.00	3.70	mg/L			12/19/24 10:07	1
Anion/Cation Balance (SM 1030E)	**0.818**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**465**		5.00	2.50	mg/L			12/20/24 08:53	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**465**		5.00	2.50	mg/L			12/20/24 08:53	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 08:53	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 08:53	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 08:53	1
Total Dissolved Solids (SM 2540C)	**482**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**12.6**		2.00	1.40	mg/L			12/20/24 10:03	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:35	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**14.78**				NTU			12/17/24 14:15	1

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-31A
Lab Sample ID: 310-297323-3
Date Collected: 12/17/24 09:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 16:42	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 16:42	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 16:42	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 16:42	1
1,1-Dichloroethane	**0.484**	**J**	1.00	0.220	ug/L			12/19/24 16:42	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 16:42	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 16:42	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 16:42	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 16:42	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 16:42	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 16:42	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 16:42	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 16:42	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 16:42	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 16:42	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 16:42	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 16:42	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 16:42	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 16:42	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 16:42	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 16:42	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 16:42	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 16:42	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 16:42	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 16:42	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 16:42	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 16:42	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 16:42	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 16:42	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 16:42	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 16:42	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 16:42	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 16:42	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 16:42	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 16:42	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 16:42	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 16:42	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 16:42	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 16:42	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 16:42	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 16:42	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 16:42	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 16:42	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 16:42	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 16:42	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 16:42	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 16:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*73 - 130*		*12/19/24 16:42*	*1*

Client Sample ID: MW-31A
Lab Sample ID: 310-297323-3

Date Collected: 12/17/24 09:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/19/24 16:42*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*12/19/24 16:42*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	<0.0261		0.0931	0.0261	ug/L		12/19/24 13:48	01/03/25 11:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*44*		*10 - 136*	*12/19/24 13:48*	*01/03/25 11:26*	*1*
Tetrachloro-m-xylene	*70*		*10 - 130*	*12/19/24 13:48*	*01/03/25 11:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:18	1
Arsenic	**0.562**	**J**	2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:18	1
Barium	**279**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:18	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:18	1
Cadmium	**0.161**	**J**	0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:18	1
Calcium	**251**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:18	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:18	1
Cobalt	**2.09**		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:18	1
Copper	**2.60**	**J**	5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:18	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:18	1
Magnesium	**64.3**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:18	1
Nickel	**32.3**		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:18	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:18	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:18	1
Sodium	**101**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:18	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:18	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:18	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**35.2**		1.00	0.800	mg/L			12/27/24 05:20	1
Fluoride (SM 4500 F C-2011)	**0.0692**	**J**	0.100	0.0540	mg/L			12/26/24 14:50	1
Sulfate (ASTM D516-16)	**71.9**		25.0	12.0	mg/L			12/23/24 13:28	5
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			12/19/24 10:07	1
Anion/Cation Balance (SM 1030E)	**6.73**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**515**		5.00	2.50	mg/L			12/20/24 09:05	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**515**		5.00	2.50	mg/L			12/20/24 09:05	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:05	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:05	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:05	1
Total Dissolved Solids (SM 2540C)	**1210**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**181**		20.0	14.0	mg/L			12/20/24 10:03	10

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-31A
Lab Sample ID: 310-297323-3
Date Collected: 12/17/24 09:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:50	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**5.30**				NTU			12/17/24 09:30	1

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A
Lab Sample ID: 310-297323-4
Date Collected: 12/17/24 11:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 17:04	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 17:04	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 17:04	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 17:04	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 17:04	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 17:04	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 17:04	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 17:04	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 17:04	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 17:04	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 17:04	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 17:04	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 17:04	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 17:04	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 17:04	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 17:04	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 17:04	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 17:04	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 17:04	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 17:04	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 17:04	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 17:04	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 17:04	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 17:04	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 17:04	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 17:04	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 17:04	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 17:04	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 17:04	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 17:04	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 17:04	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 17:04	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 17:04	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 17:04	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 17:04	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 17:04	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 17:04	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 17:04	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 17:04	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 17:04	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 17:04	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 17:04	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 17:04	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 17:04	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 17:04	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 17:04	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*12/19/24 17:04*	*1*

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-34A
Lab Sample ID: 310-297323-4

Date Collected: 12/17/24 11:30
Matrix: Ground Water

Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/19/24 17:04*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/19/24 17:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:21	1
Arsenic	<0.530		2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:21	1
Barium	**67.5**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:21	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:21	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:21	1
Calcium	**60.8**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:21	1
Chromium	**1.88**	**J**	5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:21	1
Cobalt	<0.170		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:21	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:21	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:21	1
Magnesium	**21.9**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:21	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:21	1
Selenium	**2.01**	**J**	5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:21	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:21	1
Sodium	**6.26**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:21	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:21	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:21	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**9.87**		0.100	0.0800	mg/L			12/27/24 03:48	1
Fluoride (SM 4500 F C-2011)	**0.168**		0.100	0.0540	mg/L			12/26/24 14:53	1
Sulfate (ASTM D516-16)	**3.63**	**J**	5.00	2.40	mg/L			12/23/24 13:28	1
Total Suspended Solids (USGS I-3765-85)	**6.00**		5.00	3.70	mg/L			12/19/24 10:07	1
Anion/Cation Balance (SM 1030E)	**-1.31**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**210**		5.00	2.50	mg/L			12/20/24 09:22	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**210**		5.00	2.50	mg/L			12/20/24 09:22	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:22	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:22	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:22	1
Total Dissolved Solids (SM 2540C)	**270**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**9.17**		2.00	1.40	mg/L			12/20/24 10:04	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:31	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**8.37**				NTU			12/17/24 11:30	1

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-41A
Lab Sample ID: 310-297323-5
Date Collected: 12/17/24 13:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 17:26	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 17:26	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 17:26	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 17:26	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 17:26	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 17:26	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 17:26	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 17:26	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 17:26	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 17:26	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 17:26	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 17:26	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 17:26	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 17:26	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 17:26	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 17:26	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 17:26	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 17:26	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 17:26	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 17:26	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 17:26	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 17:26	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 17:26	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 17:26	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 17:26	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 17:26	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 17:26	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 17:26	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 17:26	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 17:26	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 17:26	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 17:26	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 17:26	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 17:26	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 17:26	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 17:26	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 17:26	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 17:26	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 17:26	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 17:26	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 17:26	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 17:26	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 17:26	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 17:26	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 17:26	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 17:26	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*73 - 130*		*12/19/24 17:26*	*1*

Client Sample ID: MW-41A
Lab Sample ID: 310-297323-5

Date Collected: 12/17/24 13:30
Matrix: Ground Water

Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/19/24 17:26*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/19/24 17:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:35	1
Arsenic	**0.967**	**J**	2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:35	1
Barium	**159**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:35	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:35	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:35	1
Calcium	**91.4**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:35	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:35	1
Cobalt	**0.211**	**J**	0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:35	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:35	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:35	1
Magnesium	**36.5**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:35	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:35	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:35	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:35	1
Sodium	**9.47**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:35	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:35	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:35	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**1.03**		0.100	0.0800	mg/L			12/27/24 03:50	1
Fluoride (SM 4500 F C-2011)	**0.0987**	**J**	0.100	0.0540	mg/L			12/26/24 14:56	1
Sulfate (ASTM D516-16)	**27.0**		5.00	2.40	mg/L			12/23/24 13:28	1
Total Suspended Solids (USGS I-3765-85)	**6.00**		5.00	3.70	mg/L			12/19/24 10:07	1
Anion/Cation Balance (SM 1030E)	**1.27**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**339**		5.00	2.50	mg/L			12/20/24 09:31	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**339**		5.00	2.50	mg/L			12/20/24 09:31	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:31	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:31	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:31	1
Total Dissolved Solids (SM 2540C)	**384**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**12.8**		2.00	1.40	mg/L			12/20/24 10:04	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:44	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**12.99**				NTU			12/17/24 13:30	1

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: GU-1
Lab Sample ID: 310-297323-6
Date Collected: 12/17/24 12:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 17:48	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 17:48	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 17:48	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 17:48	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 17:48	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 17:48	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 17:48	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 17:48	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 17:48	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 17:48	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 17:48	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 17:48	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 17:48	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 17:48	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 17:48	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 17:48	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 17:48	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 17:48	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 17:48	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 17:48	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 17:48	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 17:48	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 17:48	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 17:48	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 17:48	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 17:48	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 17:48	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 17:48	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 17:48	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 17:48	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 17:48	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 17:48	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 17:48	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 17:48	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 17:48	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 17:48	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 17:48	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 17:48	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 17:48	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 17:48	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 17:48	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 17:48	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 17:48	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 17:48	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 17:48	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 17:48	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*73 - 130*		*12/19/24 17:48*	*1*

Client Sample ID: GU-1
Lab Sample ID: 310-297323-6

Date Collected: 12/17/24 12:30
Matrix: Ground Water

Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/19/24 17:48*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/19/24 17:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:38	1
Arsenic	<0.530		2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:38	1
Barium	**241**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:38	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:38	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:38	1
Calcium	**164**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:38	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:38	1
Cobalt	**0.513**		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:38	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:38	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:38	1
Magnesium	**59.5**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:38	1
Nickel	**16.1**		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:38	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:38	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:38	1
Sodium	**42.3**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:38	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:38	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:38	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/27/24 03:52	1
Fluoride (SM 4500 F C-2011)	**0.211**		0.100	0.0540	mg/L			12/26/24 15:04	1
Sulfate (ASTM D516-16)	**36.1**		25.0	12.0	mg/L			12/23/24 13:29	5
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			12/19/24 10:36	1
Anion/Cation Balance (SM 1030E)	**3.65**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**471**		5.00	2.50	mg/L			12/20/24 09:40	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**471**		5.00	2.50	mg/L			12/20/24 09:40	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:40	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:40	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 09:40	1
Total Dissolved Solids (SM 2540C)	**722**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**131**		20.0	14.0	mg/L			12/20/24 10:04	10
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:47	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**11.73**				NTU			12/17/24 12:30	1

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-297323-7
Date Collected: 12/17/24 16:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 14:10	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 14:10	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 14:10	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 14:10	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 14:10	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 14:10	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 14:10	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 14:10	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 14:10	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 14:10	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 14:10	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 14:10	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 14:10	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 14:10	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 14:10	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 14:10	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 14:10	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 14:10	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 14:10	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 14:10	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 14:10	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 14:10	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 14:10	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 14:10	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 14:10	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 14:10	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 14:10	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 14:10	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 14:10	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 14:10	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 14:10	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 14:10	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 14:10	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 14:10	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 14:10	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 14:10	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 14:10	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 14:10	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 14:10	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 14:10	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 14:10	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 14:10	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 14:10	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 14:10	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 14:10	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 14:10	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*73 - 130*		*12/19/24 14:10*	*1*

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep

Lab Sample ID: 310-297323-7

Date Collected: 12/17/24 16:30

Matrix: Ground Water

Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/19/24 14:10*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*12/19/24 14:10*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:41	1
Arsenic	<0.530		2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:41	1
Barium	**22.5**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:41	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:41	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:41	1
Calcium	**59.4**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:41	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:41	1
Cobalt	<0.170		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:41	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:41	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:41	1
Magnesium	**22.2**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:41	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:41	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:41	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:41	1
Sodium	**2.59**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:41	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:41	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:41	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**3.03**		0.100	0.0800	mg/L			12/27/24 04:18	1
Fluoride (SM 4500 F C-2011)	<0.0540		0.100	0.0540	mg/L			12/26/24 15:07	1
Sulfate (ASTM D516-16)	**10.7**		5.00	2.40	mg/L			12/23/24 13:29	1
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			12/19/24 10:07	1
Anion/Cation Balance (SM 1030E)	**1.20**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**209**		5.00	2.50	mg/L			12/20/24 10:01	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**209**		5.00	2.50	mg/L			12/20/24 10:01	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:01	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:01	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:01	1
Total Dissolved Solids (SM 2540C)	**222**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**6.10**		2.00	1.40	mg/L			12/20/24 10:05	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:27	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Duplicate #3
Lab Sample ID: 310-297323-8
Date Collected: 12/17/24 16:30
Matrix: Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 18:09	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 18:09	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 18:09	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 18:09	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 18:09	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 18:09	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 18:09	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 18:09	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 18:09	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 18:09	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 18:09	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 18:09	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 18:09	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 18:09	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 18:09	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 18:09	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 18:09	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 18:09	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 18:09	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 18:09	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 18:09	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 18:09	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 18:09	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 18:09	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 18:09	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 18:09	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 18:09	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 18:09	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 18:09	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 18:09	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 18:09	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 18:09	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 18:09	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 18:09	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 18:09	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 18:09	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 18:09	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 18:09	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 18:09	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 18:09	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 18:09	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 18:09	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 18:09	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 18:09	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 18:09	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 18:09	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*12/19/24 18:09*	*1*

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Duplicate #3
Lab Sample ID: 310-297323-8
Date Collected: 12/17/24 16:30
Matrix: Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/19/24 18:09*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*12/19/24 18:09*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 17:44	1
Arsenic	<0.530		2.00	0.530	ug/L		12/19/24 09:00	12/26/24 17:44	1
Barium	**74.4**		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 17:44	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 17:44	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 17:44	1
Calcium	**73.0**		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 17:44	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 17:44	1
Cobalt	**0.219**	**J**	0.500	0.170	ug/L		12/19/24 09:00	12/26/24 17:44	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 17:44	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 17:44	1
Magnesium	**27.4**		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 17:44	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 17:44	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 17:44	1
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 17:44	1
Sodium	**4.24**		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 17:44	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 17:44	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 17:44	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	<0.0800		0.100	0.0800	mg/L			12/27/24 04:23	1
Fluoride (SM 4500 F C-2011)	**0.403**		0.100	0.0540	mg/L			12/26/24 15:10	1
Sulfate (ASTM D516-16)	**11.6**		5.00	2.40	mg/L			12/23/24 13:30	1
Total Suspended Solids (USGS I-3765-85)	**4.33**	**J**	5.00	3.70	mg/L			12/19/24 10:36	1
Anion/Cation Balance (SM 1030E)	**-0.957**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**293**		5.00	2.50	mg/L			12/20/24 10:09	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**293**		5.00	2.50	mg/L			12/20/24 10:09	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:09	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:09	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:09	1
Total Dissolved Solids (SM 2540C)	**286**		50.0	42.0	mg/L			12/19/24 20:20	1
Chloride (SM 4500 Cl- E)	**2.91**		2.00	1.40	mg/L			12/20/24 10:05	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/18/24 10:41	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/26/24 09:18	5

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297323-9
Date Collected: 12/17/24 00:00
Matrix: Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 14:32	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 14:32	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 14:32	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 14:32	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 14:32	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 14:32	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 14:32	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 14:32	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 14:32	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 14:32	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 14:32	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 14:32	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 14:32	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 14:32	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 14:32	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 14:32	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 14:32	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 14:32	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 14:32	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 14:32	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 14:32	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 14:32	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 14:32	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 14:32	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 14:32	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 14:32	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 14:32	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 14:32	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 14:32	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 14:32	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 14:32	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 14:32	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 14:32	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 14:32	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 14:32	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 14:32	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 14:32	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 14:32	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 14:32	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 14:32	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 14:32	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 14:32	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 14:32	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 14:32	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 14:32	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 14:32	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*12/19/24 14:32*	*1*

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297323-9
Date Collected: 12/17/24 00:00
Matrix: Water
Date Received: 12/18/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		12/19/24 14:32	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/19/24 14:32	1

Definitions/Glossary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

GC/MS VOA

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

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-297323-2	MW-3	114	99	103
310-297323-3	MW-31A	115	99	104
310-297323-4	MW-34A	114	96	102
310-297323-5	MW-41A	111	96	103
310-297323-6	GU-1	118	96	103
310-297323-7	Equipment Blank #2 Deep	114	97	107

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-297323-1	MW-18	113	97	100
310-297323-1 MS	MW-18	99	102	102
310-297323-1 MSD	MW-18	101	101	98
310-297323-8	Duplicate #3	116	97	100
310-297323-9	Trip Blank	116	100	102
LCS 310-442958/6	Lab Control Sample	102	103	100
LCS 310-442958/7	Lab Control Sample	117	103	100
MB 310-442958/5	Method Blank	116	98	103

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(10-136)	(10-130)
310-297323-3	MW-31A	44	70
310-297323-3 MS	MW-31A	53	76
310-297323-3 MSD	MW-31A	65	96

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		DCB1	TCX1								
Lab Sample ID	Client Sample ID	(10-136)	(10-130)								
LCS 310-443025/6-A	Lab Control Sample	19	62								
MB 310-443025/1-A	Method Blank	13	89								

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-442958/5
Matrix: Water
Analysis Batch: 442958

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/19/24 13:05	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/19/24 13:05	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/19/24 13:05	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/19/24 13:05	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/19/24 13:05	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/19/24 13:05	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/19/24 13:05	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/19/24 13:05	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/19/24 13:05	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/19/24 13:05	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/19/24 13:05	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/19/24 13:05	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/19/24 13:05	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/19/24 13:05	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/19/24 13:05	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/19/24 13:05	1
Acetone	<3.10		10.0	3.10	ug/L			12/19/24 13:05	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/19/24 13:05	1
Benzene	<0.220		0.500	0.220	ug/L			12/19/24 13:05	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/19/24 13:05	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/19/24 13:05	1
Bromoform	<0.780		5.00	0.780	ug/L			12/19/24 13:05	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/19/24 13:05	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/19/24 13:05	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/19/24 13:05	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/19/24 13:05	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/19/24 13:05	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/19/24 13:05	1
Chloroform	<1.30		3.00	1.30	ug/L			12/19/24 13:05	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/19/24 13:05	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/19/24 13:05	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/19/24 13:05	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/19/24 13:05	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/19/24 13:05	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/19/24 13:05	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/19/24 13:05	1
Styrene	<0.370		1.00	0.370	ug/L			12/19/24 13:05	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/19/24 13:05	1
Toluene	<0.430		1.00	0.430	ug/L			12/19/24 13:05	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/19/24 13:05	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/19/24 13:05	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/19/24 13:05	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/19/24 13:05	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/19/24 13:05	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/19/24 13:05	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/19/24 13:05	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/19/24 13:05	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-442958/5
Matrix: Water
Analysis Batch: 442958

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*12/19/24 13:05*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/19/24 13:05*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/19/24 13:05*	*1*

Lab Sample ID: LCS 310-442958/6
Matrix: Water
Analysis Batch: 442958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	15.84		ug/L		79	71 - 120
1,1,1-Trichloroethane	20.0	18.53		ug/L		93	73 - 129
1,1,2,2-Tetrachloroethane	20.0	16.93		ug/L		85	68 - 124
1,1,2-Trichloroethane	20.0	17.76		ug/L		89	73 - 123
1,1-Dichloroethane	20.0	16.54		ug/L		83	70 - 127
1,1-Dichloroethene	20.0	18.73		ug/L		94	63 - 132
1,2,3-Trichloropropane	20.0	17.72		ug/L		89	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	17.85		ug/L		89	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.68		ug/L		88	75 - 125
1,2-Dichlorobenzene	20.0	17.42		ug/L		87	74 - 120
1,2-Dichloroethane	20.0	18.79		ug/L		94	71 - 125
1,2-Dichloropropane	20.0	17.53		ug/L		88	73 - 124
1,4-Dichlorobenzene	20.0	16.59		ug/L		83	72 - 120
2-Butanone (MEK)	40.0	29.00		ug/L		72	50 - 150
2-Hexanone	40.0	35.10		ug/L		88	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	33.76		ug/L		84	60 - 139
Acetone	40.0	40.14		ug/L		100	50 - 150
Acrylonitrile	200	160.7		ug/L		80	50 - 150
Benzene	20.0	16.61		ug/L		83	72 - 124
Bromochloromethane	20.0	17.12		ug/L		86	73 - 130
Bromodichloromethane	20.0	17.77		ug/L		89	74 - 122
Bromoform	20.0	15.59		ug/L		78	61 - 122
Carbon disulfide	20.0	17.20		ug/L		86	59 - 135
Carbon tetrachloride	20.0	18.05		ug/L		90	67 - 132
Chlorobenzene	20.0	17.37		ug/L		87	76 - 120
Chlorodibromomethane	20.0	17.81		ug/L		89	71 - 121
Chloroform	20.0	18.72		ug/L		94	72 - 125
cis-1,2-Dichloroethene	20.0	16.74		ug/L		84	74 - 123
cis-1,3-Dichloropropene	20.0	17.37		ug/L		87	71 - 125
Dibromomethane	20.0	18.09		ug/L		90	74 - 125
Ethylbenzene	20.0	17.03		ug/L		85	74 - 122
Iodomethane	20.0	14.61		ug/L		73	10 - 150
Methylene Chloride	20.0	19.97		ug/L		100	50 - 150
Styrene	20.0	17.63		ug/L		88	74 - 121
Tetrachloroethene	20.0	16.60		ug/L		83	71 - 130
Toluene	20.0	17.45		ug/L		87	74 - 123
trans-1,2-Dichloroethene	20.0	17.69		ug/L		88	70 - 126
trans-1,3-Dichloropropene	20.0	16.77		ug/L		84	69 - 123
trans-1,4-Dichloro-2-butene	20.0	16.41		ug/L		82	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-442958/6
Matrix: Water
Analysis Batch: 442958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	17.47		ug/L		87	72 - 126
Vinyl acetate	40.0	30.12		ug/L		75	50 - 150
Xylenes, Total	40.0	33.48		ug/L		84	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 310-442958/7
Matrix: Water
Analysis Batch: 442958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	20.50		ug/L		103	23 - 150
Chloroethane	20.0	18.78		ug/L		94	54 - 136
Chloromethane	20.0	19.31		ug/L		97	38 - 150
Trichlorofluoromethane	20.0	21.20		ug/L		106	54 - 149
Vinyl chloride	20.0	19.73		ug/L		99	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*117*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-297323-1 MS
Matrix: Water
Analysis Batch: 442958

Client Sample ID: MW-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<0.380		25.0	18.76		ug/L		75	55 - 130
1,1,1-Trichloroethane	<0.190		25.0	20.52		ug/L		82	52 - 130
1,1,2,2-Tetrachloroethane	<0.470		25.0	20.52		ug/L		82	54 - 130
1,1,2-Trichloroethane	<0.450		25.0	19.59		ug/L		78	58 - 130
1,1-Dichloroethane	<0.220		25.0	17.78		ug/L		71	49 - 130
1,1-Dichloroethene	<0.560		25.0	20.77		ug/L		83	37 - 132
1,2,3-Trichloropropane	<0.590		25.0	20.80		ug/L		83	49 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	23.93		ug/L		96	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	20.03		ug/L		80	60 - 130
1,2-Dichlorobenzene	<0.370		25.0	21.35		ug/L		85	59 - 130
1,2-Dichloroethane	<0.390		25.0	21.54		ug/L		86	51 - 130
1,2-Dichloropropane	<0.270		25.0	19.64		ug/L		79	57 - 130
1,4-Dichlorobenzene	<0.230		25.0	20.11		ug/L		80	57 - 130
2-Butanone (MEK)	<2.10		50.0	34.99		ug/L		70	38 - 150
2-Hexanone	<2.00		50.0	38.55		ug/L		77	46 - 140
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	38.30		ug/L		77	47 - 139
Acetone	<3.10		50.0	48.64		ug/L		97	31 - 150
Acrylonitrile	<2.20		250	185.3		ug/L		74	40 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-297323-1 MS
Matrix: Water
Analysis Batch: 442958

Client Sample ID: MW-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.220		25.0	19.34		ug/L		77	46 - 130
Bromochloromethane	<0.540		25.0	19.76		ug/L		79	57 - 130
Bromodichloromethane	<0.390		25.0	20.24		ug/L		81	57 - 130
Bromoform	<0.780		25.0	18.81		ug/L		75	44 - 130
Carbon disulfide	<0.450		25.0	19.70		ug/L		79	38 - 135
Carbon tetrachloride	<0.650		25.0	20.21		ug/L		81	45 - 132
Chlorobenzene	<0.400		25.0	19.71		ug/L		79	59 - 130
Chlorodibromomethane	<0.750		25.0	19.95		ug/L		80	54 - 130
Chloroform	<1.30		25.0	21.47		ug/L		86	51 - 130
cis-1,2-Dichloroethene	<0.210		25.0	19.16		ug/L		77	45 - 130
cis-1,3-Dichloropropene	<0.250		25.0	18.96		ug/L		76	53 - 130
Dibromomethane	<0.330		25.0	20.13		ug/L		81	59 - 130
Ethylbenzene	<0.310		25.0	19.38		ug/L		78	45 - 130
Iodomethane	<7.00		25.0	12.18		ug/L		49	10 - 150
Methylene Chloride	<1.70		25.0	21.99		ug/L		88	37 - 150
Styrene	<0.370		25.0	20.06		ug/L		80	47 - 130
Tetrachloroethene	<0.480		25.0	17.94		ug/L		72	47 - 130
Toluene	<0.430		25.0	19.23		ug/L		77	51 - 130
trans-1,2-Dichloroethene	<0.270		25.0	19.58		ug/L		78	48 - 130
trans-1,3-Dichloropropene	<0.560		25.0	18.76		ug/L		75	50 - 130
trans-1,4-Dichloro-2-butene	<1.10		25.0	20.54		ug/L		82	26 - 150
Trichloroethene	<0.430		25.0	20.24		ug/L		81	51 - 130
Vinyl acetate	<2.50		50.0	34.52		ug/L		69	29 - 150
Xylenes, Total	<0.400		50.0	37.81		ug/L		76	43 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: 310-297323-1 MSD
Matrix: Water
Analysis Batch: 442958

Client Sample ID: MW-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<0.380		25.0	18.09		ug/L		72	55 - 130	4	20
1,1,1-Trichloroethane	<0.190		25.0	18.87		ug/L		75	52 - 130	8	20
1,1,2,2-Tetrachloroethane	<0.470		25.0	20.11		ug/L		80	54 - 130	2	20
1,1,2-Trichloroethane	<0.450		25.0	19.47		ug/L		78	58 - 130	1	20
1,1-Dichloroethane	<0.220		25.0	17.08		ug/L		68	49 - 130	4	20
1,1-Dichloroethene	<0.560		25.0	19.88		ug/L		80	37 - 132	4	26
1,2,3-Trichloropropane	<0.590		25.0	20.04		ug/L		80	49 - 130	4	26
1,2-Dibromo-3-Chloropropane	<1.20		25.0	20.34		ug/L		81	38 - 150	16	20
1,2-Dibromoethane (EDB)	<0.340		25.0	20.04		ug/L		80	60 - 130	0	20
1,2-Dichlorobenzene	<0.370		25.0	19.86		ug/L		79	59 - 130	7	20
1,2-Dichloroethane	<0.390		25.0	20.85		ug/L		83	51 - 130	3	20
1,2-Dichloropropane	<0.270		25.0	19.10		ug/L		76	57 - 130	3	20
1,4-Dichlorobenzene	<0.230		25.0	19.07		ug/L		76	57 - 130	5	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-297323-1 MSD
Matrix: Water
Analysis Batch: 442958

Client Sample ID: MW-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	<2.10		50.0	34.21		ug/L		68	38 - 150	2	20
2-Hexanone	<2.00		50.0	39.41		ug/L		79	46 - 140	2	20
4-Methyl-2-pentanone (MIBK)	<2.10		50.0	38.66		ug/L		77	47 - 139	1	20
Acetone	<3.10		50.0	47.78		ug/L		96	31 - 150	2	29
Acrylonitrile	<2.20		250	194.6		ug/L		78	40 - 150	5	20
Benzene	<0.220		25.0	18.00		ug/L		72	46 - 130	7	20
Bromochloromethane	<0.540		25.0	18.34		ug/L		73	57 - 130	7	20
Bromodichloromethane	<0.390		25.0	19.77		ug/L		79	57 - 130	2	20
Bromoform	<0.780		25.0	18.35		ug/L		73	44 - 130	2	20
Carbon disulfide	<0.450		25.0	18.81		ug/L		75	38 - 135	5	30
Carbon tetrachloride	<0.650		25.0	19.75		ug/L		79	45 - 132	2	20
Chlorobenzene	<0.400		25.0	19.01		ug/L		76	59 - 130	4	20
Chlorodibromomethane	<0.750		25.0	20.07		ug/L		80	54 - 130	1	20
Chloroform	<1.30		25.0	20.15		ug/L		81	51 - 130	6	20
cis-1,2-Dichloroethene	<0.210		25.0	17.96		ug/L		72	45 - 130	6	20
cis-1,3-Dichloropropene	<0.250		25.0	18.96		ug/L		76	53 - 130	0	20
Dibromomethane	<0.330		25.0	19.76		ug/L		79	59 - 130	2	20
Ethylbenzene	<0.310		25.0	18.79		ug/L		75	45 - 130	3	20
Iodomethane	<7.00		25.0	15.83		ug/L		63	10 - 150	26	35
Methylene Chloride	<1.70		25.0	21.81		ug/L		87	37 - 150	1	24
Styrene	<0.370		25.0	19.49		ug/L		78	47 - 130	3	20
Tetrachloroethene	<0.480		25.0	18.22		ug/L		73	47 - 130	2	20
Toluene	<0.430		25.0	18.63		ug/L		75	51 - 130	3	20
trans-1,2-Dichloroethene	<0.270		25.0	19.30		ug/L		77	48 - 130	1	22
trans-1,3-Dichloropropene	<0.560		25.0	18.99		ug/L		76	50 - 130	1	20
trans-1,4-Dichloro-2-butene	<1.10		25.0	20.31		ug/L		81	26 - 150	1	23
Trichloroethene	<0.430		25.0	19.03		ug/L		76	51 - 130	6	20
Vinyl acetate	<2.50		50.0	34.42		ug/L		69	29 - 150	0	23
Xylenes, Total	<0.400		50.0	36.97		ug/L		74	43 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-443025/1-A
Matrix: Water
Analysis Batch: 443898

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 443025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	<0.0257		0.0919	0.0257	ug/L		12/19/24 13:48	01/03/25 11:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*13*		*10 - 136*	*12/19/24 13:48*	*01/03/25 11:13*	*1*
Tetrachloro-m-xylene	*89*		*10 - 130*	*12/19/24 13:48*	*01/03/25 11:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 310-443025/6-A
Matrix: Water
Analysis Batch: 443898

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 443025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Endosulfan I			2.69	1.842		ug/L		69	10 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*19*		*10 - 136*
Tetrachloro-m-xylene	*62*		*10 - 130*

Lab Sample ID: 310-297323-3 MS
Matrix: Ground Water
Analysis Batch: 443898

Client Sample ID: MW-31A
Prep Type: Total/NA
Prep Batch: 443025

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Endosulfan I	<0.0261		2.67	1.867		ug/L		70	10 - 120		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*53*		*10 - 136*
Tetrachloro-m-xylene	*76*		*10 - 130*

Lab Sample ID: 310-297323-3 MSD
Matrix: Ground Water
Analysis Batch: 443898

Client Sample ID: MW-31A
Prep Type: Total/NA
Prep Batch: 443025

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Endosulfan I	<0.0261		2.65	2.358		ug/L		89	10 - 120	23	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*65*		*10 - 136*
Tetrachloro-m-xylene	*96*		*10 - 130*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-442866/1-A
Matrix: Water
Analysis Batch: 443426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/19/24 09:00	12/26/24 16:54	1
Arsenic	<0.530		2.00	0.530	ug/L		12/19/24 09:00	12/26/24 16:54	1
Barium	<0.660		2.00	0.660	ug/L		12/19/24 09:00	12/26/24 16:54	1
Beryllium	<0.330		1.00	0.330	ug/L		12/19/24 09:00	12/26/24 16:54	1
Cadmium	<0.100		0.200	0.100	ug/L		12/19/24 09:00	12/26/24 16:54	1
Calcium	<0.190		0.500	0.190	mg/L		12/19/24 09:00	12/26/24 16:54	1
Chromium	<1.20		5.00	1.20	ug/L		12/19/24 09:00	12/26/24 16:54	1
Cobalt	<0.170		0.500	0.170	ug/L		12/19/24 09:00	12/26/24 16:54	1
Copper	<1.80		5.00	1.80	ug/L		12/19/24 09:00	12/26/24 16:54	1
Lead	<0.260		0.500	0.260	ug/L		12/19/24 09:00	12/26/24 16:54	1
Magnesium	<0.150		0.500	0.150	mg/L		12/19/24 09:00	12/26/24 16:54	1
Nickel	<2.10		5.00	2.10	ug/L		12/19/24 09:00	12/26/24 16:54	1
Selenium	<1.40		5.00	1.40	ug/L		12/19/24 09:00	12/26/24 16:54	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-442866/1-A
Matrix: Water
Analysis Batch: 443426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.500		1.00	0.500	ug/L		12/19/24 09:00	12/26/24 16:54	1
Sodium	<0.480		1.00	0.480	mg/L		12/19/24 09:00	12/26/24 16:54	1
Thallium	<0.570		1.00	0.570	ug/L		12/19/24 09:00	12/26/24 16:54	1
Vanadium	<1.10		5.00	1.10	ug/L		12/19/24 09:00	12/26/24 16:54	1
Zinc	<9.70		20.0	9.70	ug/L		12/19/24 09:00	12/26/24 16:54	1

Lab Sample ID: LCS 310-442866/2-A
Matrix: Water
Analysis Batch: 443426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	207.0		ug/L		104	80 - 120
Arsenic	200	200.8		ug/L		100	80 - 120
Barium	100	104.8		ug/L		105	80 - 120
Beryllium	100	97.12		ug/L		97	80 - 120
Cadmium	100	101.3		ug/L		101	80 - 120
Calcium	2.00	1.776		mg/L		89	80 - 120
Chromium	100	103.0		ug/L		103	80 - 120
Cobalt	100	106.9		ug/L		107	80 - 120
Copper	200	209.3		ug/L		105	80 - 120
Lead	200	220.5		ug/L		110	80 - 120
Magnesium	2.00	1.904		mg/L		95	80 - 120
Nickel	200	207.5		ug/L		104	80 - 120
Selenium	400	394.7		ug/L		99	80 - 120
Silver	100	111.3		ug/L		111	80 - 120
Sodium	2.00	2.046		mg/L		102	80 - 120
Thallium	100	104.3		ug/L		104	80 - 120
Vanadium	100	103.3		ug/L		103	80 - 120
Zinc	200	194.0		ug/L		97	80 - 120

Lab Sample ID: 310-297323-1 MS
Matrix: Water
Analysis Batch: 443426

Client Sample ID: MW-18
Prep Type: Total/NA
Prep Batch: 442866

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<1.00		200	218.1		ug/L		109	75 - 125
Arsenic	<0.530		200	213.2		ug/L		107	75 - 125
Barium	76.2		100	185.6		ug/L		109	75 - 125
Beryllium	<0.330		100	102.2		ug/L		102	75 - 125
Cadmium	<0.100		100	105.9		ug/L		106	75 - 125
Calcium	75.8		2.00	78.06	4	mg/L		111	75 - 125
Chromium	<1.20		100	104.4		ug/L		104	75 - 125
Cobalt	<0.170		100	106.5		ug/L		106	75 - 125
Copper	<1.80		200	206.7		ug/L		103	75 - 125
Lead	<0.260		200	221.7		ug/L		111	75 - 125
Magnesium	28.2		2.00	30.48	4	mg/L		111	75 - 125
Nickel	<2.10		200	204.9		ug/L		102	75 - 125
Selenium	<1.40		400	410.6		ug/L		103	75 - 125
Silver	<0.500		100	109.0		ug/L		109	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-297323-1 MS
Matrix: Water
Analysis Batch: 443426

Client Sample ID: MW-18
Prep Type: Total/NA
Prep Batch: 442866

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	4.40		2.00	6.729		mg/L		116	75 - 125
Thallium	<0.570		100	94.14		ug/L		94	75 - 125
Vanadium	<1.10		100	106.0		ug/L		106	75 - 125
Zinc	<9.70		200	200.4		ug/L		100	75 - 125

Lab Sample ID: 310-297323-1 MSD
Matrix: Water
Analysis Batch: 443426

Client Sample ID: MW-18
Prep Type: Total/NA
Prep Batch: 442866

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<1.00		200	219.6		ug/L		110	75 - 125	1	20
Arsenic	<0.530		200	213.8		ug/L		107	75 - 125	0	20
Barium	76.2		100	187.8		ug/L		112	75 - 125	1	20
Beryllium	<0.330		100	104.7		ug/L		105	75 - 125	2	20
Cadmium	<0.100		100	106.8		ug/L		107	75 - 125	1	20
Calcium	75.8		2.00	79.16	4	mg/L		166	75 - 125	1	20
Chromium	<1.20		100	102.8		ug/L		103	75 - 125	2	20
Cobalt	<0.170		100	105.6		ug/L		106	75 - 125	1	20
Copper	<1.80		200	205.7		ug/L		103	75 - 125	0	20
Lead	<0.260		200	219.7		ug/L		110	75 - 125	1	20
Magnesium	28.2		2.00	30.64	4	mg/L		120	75 - 125	1	20
Nickel	<2.10		200	204.0		ug/L		102	75 - 125	0	20
Selenium	<1.40		400	410.1		ug/L		103	75 - 125	0	20
Silver	<0.500		100	110.0		ug/L		110	75 - 125	1	20
Sodium	4.40		2.00	6.760		mg/L		118	75 - 125	0	20
Thallium	<0.570		100	95.04		ug/L		95	75 - 125	1	20
Vanadium	<1.10		100	104.9		ug/L		105	75 - 125	1	20
Zinc	<9.70		200	202.6		ug/L		101	75 - 125	1	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-443415/5
Matrix: Water
Analysis Batch: 443415

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/26/24 14:35	1

Lab Sample ID: LCS 310-443415/3
Matrix: Water
Analysis Batch: 443415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.949		mg/L		97	90 - 110

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode) (Continued)

Lab Sample ID: 310-297323-1 MS — **Client Sample ID: MW-18**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 443415

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.398		1.00	1.302		mg/L		90	75 - 125		

Lab Sample ID: 310-297323-1 MSD — **Client Sample ID: MW-18**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 443415

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.398		1.00	1.370		mg/L		97	75 - 125	5	20

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-443298/16 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 443298

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/23/24 13:07	1

Lab Sample ID: LCS 310-443298/14 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 443298

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.971		mg/L		100	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-442955/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442955

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/19/24 10:07	1

Lab Sample ID: LCS 310-442955/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442955

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	112.0		mg/L		112	81 - 116

Lab Sample ID: MB 310-442977/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/19/24 10:36	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-442977/2
Matrix: Water
Analysis Batch: 442977

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	107.0		mg/L		107	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-443159/2
Matrix: Water
Analysis Batch: 443159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	877.1		mg/L		88	86 - 111

Lab Sample ID: 310-297323-6 DU
Matrix: Ground Water
Analysis Batch: 443159

Client Sample ID: GU-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity	471		474.6		mg/L		0.7	16
Bicarbonate Alkalinity as CaCO3	471		474.6		mg/L		0.7	
Carbonate Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	
Hydroxide Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<2.50		<2.50		mg/L		NC	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-443049/1
Matrix: Water
Analysis Batch: 443049

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/19/24 20:20	1

Lab Sample ID: LCS 310-443049/2
Matrix: Water
Analysis Batch: 443049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	992.0		mg/L		99	88 - 110

Lab Sample ID: 310-297323-7 DU
Matrix: Ground Water
Analysis Batch: 443049

Client Sample ID: Equipment Blank #2 Deep
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	222		222.0		mg/L		0	16

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-443116/16
Matrix: Water
Analysis Batch: 443116

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			12/20/24 09:58	1

Lab Sample ID: LCS 310-443116/14
Matrix: Water
Analysis Batch: 443116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.74		mg/L		107	90 - 110

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-442781/1
Matrix: Water
Analysis Batch: 442781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			12/18/24 08:48	1

Lab Sample ID: LCS 310-442781/2
Matrix: Water
Analysis Batch: 442781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	179.4		mg/L		91	85 - 115

Method: SM 5220D - COD

Lab Sample ID: MB 310-443351/32
Matrix: Water
Analysis Batch: 443351

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/26/24 09:18	1

Lab Sample ID: MB 310-443351/5
Matrix: Water
Analysis Batch: 443351

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/26/24 09:18	1

Lab Sample ID: LCS 310-443351/3
Matrix: Water
Analysis Batch: 443351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	129.3		mg/L		103	85 - 110

Method: SM 5220D - COD (Continued)

Lab Sample ID: LCS 310-443351/33
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 443351

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chemical Oxygen Demand			125	128.9		mg/L		103	85 - 110		

Lab Sample ID: 310-297323-8 MS
Client Sample ID: Duplicate #3
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 443351

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chemical Oxygen Demand	<24.0		250	301.9		mg/L		121	83 - 145		

Lab Sample ID: 310-297323-8 MSD
Client Sample ID: Duplicate #3
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 443351

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	<24.0		250	291.7		mg/L		117	83 - 145	3	16

QC Association Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

GC/MS VOA

Analysis Batch: 442958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	8260D	
310-297323-2	MW-3	Total/NA	Ground Water	8260D	
310-297323-3	MW-31A	Total/NA	Ground Water	8260D	
310-297323-4	MW-34A	Total/NA	Ground Water	8260D	
310-297323-5	MW-41A	Total/NA	Ground Water	8260D	
310-297323-6	GU-1	Total/NA	Ground Water	8260D	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	8260D	
310-297323-8	Duplicate #3	Total/NA	Water	8260D	
310-297323-9	Trip Blank	Total/NA	Water	8260D	
MB 310-442958/5	Method Blank	Total/NA	Water	8260D	
LCS 310-442958/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-442958/7	Lab Control Sample	Total/NA	Water	8260D	
310-297323-1 MS	MW-18	Total/NA	Water	8260D	
310-297323-1 MSD	MW-18	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 443025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-3	MW-31A	Total/NA	Ground Water	3511	
MB 310-443025/1-A	Method Blank	Total/NA	Water	3511	
LCS 310-443025/6-A	Lab Control Sample	Total/NA	Water	3511	
310-297323-3 MS	MW-31A	Total/NA	Ground Water	3511	
310-297323-3 MSD	MW-31A	Total/NA	Ground Water	3511	

Analysis Batch: 443898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-3	MW-31A	Total/NA	Ground Water	8081B	443025
MB 310-443025/1-A	Method Blank	Total/NA	Water	8081B	443025
LCS 310-443025/6-A	Lab Control Sample	Total/NA	Water	8081B	443025
310-297323-3 MS	MW-31A	Total/NA	Ground Water	8081B	443025
310-297323-3 MSD	MW-31A	Total/NA	Ground Water	8081B	443025

Metals

Prep Batch: 442866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	3005A	
310-297323-2	MW-3	Total/NA	Ground Water	3005A	
310-297323-3	MW-31A	Total/NA	Ground Water	3005A	
310-297323-4	MW-34A	Total/NA	Ground Water	3005A	
310-297323-5	MW-41A	Total/NA	Ground Water	3005A	
310-297323-6	GU-1	Total/NA	Ground Water	3005A	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	3005A	
310-297323-8	Duplicate #3	Total/NA	Water	3005A	
MB 310-442866/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-442866/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-297323-1 MS	MW-18	Total/NA	Water	3005A	
310-297323-1 MSD	MW-18	Total/NA	Water	3005A	

Metals

Analysis Batch: 443426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	6020B	442866
310-297323-2	MW-3	Total/NA	Ground Water	6020B	442866
310-297323-3	MW-31A	Total/NA	Ground Water	6020B	442866
310-297323-4	MW-34A	Total/NA	Ground Water	6020B	442866
310-297323-5	MW-41A	Total/NA	Ground Water	6020B	442866
310-297323-6	GU-1	Total/NA	Ground Water	6020B	442866
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	6020B	442866
310-297323-8	Duplicate #3	Total/NA	Water	6020B	442866
MB 310-442866/1-A	Method Blank	Total/NA	Water	6020B	442866
LCS 310-442866/2-A	Lab Control Sample	Total/NA	Water	6020B	442866
310-297323-1 MS	MW-18	Total/NA	Water	6020B	442866
310-297323-1 MSD	MW-18	Total/NA	Water	6020B	442866

General Chemistry

Analysis Batch: 442781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	SM 5210B	
310-297323-2	MW-3	Total/NA	Ground Water	SM 5210B	
310-297323-3	MW-31A	Total/NA	Ground Water	SM 5210B	
310-297323-4	MW-34A	Total/NA	Ground Water	SM 5210B	
310-297323-5	MW-41A	Total/NA	Ground Water	SM 5210B	
310-297323-6	GU-1	Total/NA	Ground Water	SM 5210B	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 5210B	
310-297323-8	Duplicate #3	Total/NA	Water	SM 5210B	
USB 310-442781/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-442781/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 442955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	I-3765-85	
310-297323-2	MW-3	Total/NA	Ground Water	I-3765-85	
310-297323-3	MW-31A	Total/NA	Ground Water	I-3765-85	
310-297323-4	MW-34A	Total/NA	Ground Water	I-3765-85	
310-297323-5	MW-41A	Total/NA	Ground Water	I-3765-85	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	I-3765-85	
MB 310-442955/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-442955/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 442977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-6	GU-1	Total/NA	Ground Water	I-3765-85	
310-297323-8	Duplicate #3	Total/NA	Water	I-3765-85	
MB 310-442977/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-442977/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 443049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	SM 2540C	
310-297323-2	MW-3	Total/NA	Ground Water	SM 2540C	
310-297323-3	MW-31A	Total/NA	Ground Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 443049 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-4	MW-34A	Total/NA	Ground Water	SM 2540C	
310-297323-5	MW-41A	Total/NA	Ground Water	SM 2540C	
310-297323-6	GU-1	Total/NA	Ground Water	SM 2540C	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 2540C	
310-297323-8	Duplicate #3	Total/NA	Water	SM 2540C	
MB 310-443049/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-443049/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-297323-7 DU	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 443116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	SM 4500 Cl- E	
310-297323-2	MW-3	Total/NA	Ground Water	SM 4500 Cl- E	
310-297323-3	MW-31A	Total/NA	Ground Water	SM 4500 Cl- E	
310-297323-4	MW-34A	Total/NA	Ground Water	SM 4500 Cl- E	
310-297323-5	MW-41A	Total/NA	Ground Water	SM 4500 Cl- E	
310-297323-6	GU-1	Total/NA	Ground Water	SM 4500 Cl- E	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 4500 Cl- E	
310-297323-8	Duplicate #3	Total/NA	Water	SM 4500 Cl- E	
MB 310-443116/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-443116/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 443159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	SM 2320B	
310-297323-2	MW-3	Total/NA	Ground Water	SM 2320B	
310-297323-3	MW-31A	Total/NA	Ground Water	SM 2320B	
310-297323-4	MW-34A	Total/NA	Ground Water	SM 2320B	
310-297323-5	MW-41A	Total/NA	Ground Water	SM 2320B	
310-297323-6	GU-1	Total/NA	Ground Water	SM 2320B	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 2320B	
310-297323-8	Duplicate #3	Total/NA	Water	SM 2320B	
LCS 310-443159/2	Lab Control Sample	Total/NA	Water	SM 2320B	
310-297323-6 DU	GU-1	Total/NA	Ground Water	SM 2320B	

Analysis Batch: 443233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	353.2	
310-297323-2	MW-3	Total/NA	Ground Water	353.2	
310-297323-3	MW-31A	Total/NA	Ground Water	353.2	
310-297323-4	MW-34A	Total/NA	Ground Water	353.2	
310-297323-5	MW-41A	Total/NA	Ground Water	353.2	
310-297323-6	GU-1	Total/NA	Ground Water	353.2	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	353.2	
310-297323-8	Duplicate #3	Total/NA	Water	353.2	

Analysis Batch: 443234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	SM 1030E	
310-297323-2	MW-3	Total/NA	Ground Water	SM 1030E	
310-297323-3	MW-31A	Total/NA	Ground Water	SM 1030E	

General Chemistry (Continued)

Analysis Batch: 443234 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-4	MW-34A	Total/NA	Ground Water	SM 1030E	
310-297323-5	MW-41A	Total/NA	Ground Water	SM 1030E	
310-297323-6	GU-1	Total/NA	Ground Water	SM 1030E	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 1030E	
310-297323-8	Duplicate #3	Total/NA	Water	SM 1030E	

Analysis Batch: 443298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	D516-16	
310-297323-2	MW-3	Total/NA	Ground Water	D516-16	
310-297323-3	MW-31A	Total/NA	Ground Water	D516-16	
310-297323-4	MW-34A	Total/NA	Ground Water	D516-16	
310-297323-5	MW-41A	Total/NA	Ground Water	D516-16	
310-297323-6	GU-1	Total/NA	Ground Water	D516-16	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	D516-16	
310-297323-8	Duplicate #3	Total/NA	Water	D516-16	
MB 310-443298/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-443298/14	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 443351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	SM 5220D	
310-297323-2	MW-3	Total/NA	Ground Water	SM 5220D	
310-297323-3	MW-31A	Total/NA	Ground Water	SM 5220D	
310-297323-4	MW-34A	Total/NA	Ground Water	SM 5220D	
310-297323-5	MW-41A	Total/NA	Ground Water	SM 5220D	
310-297323-6	GU-1	Total/NA	Ground Water	SM 5220D	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	SM 5220D	
310-297323-8	Duplicate #3	Total/NA	Water	SM 5220D	
MB 310-443351/32	Method Blank	Total/NA	Water	SM 5220D	
MB 310-443351/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-443351/3	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-443351/33	Lab Control Sample	Total/NA	Water	SM 5220D	
310-297323-8 MS	Duplicate #3	Total/NA	Water	SM 5220D	
310-297323-8 MSD	Duplicate #3	Total/NA	Water	SM 5220D	

Analysis Batch: 443415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	4500 F C-2011	
310-297323-2	MW-3	Total/NA	Ground Water	4500 F C-2011	
310-297323-3	MW-31A	Total/NA	Ground Water	4500 F C-2011	
310-297323-4	MW-34A	Total/NA	Ground Water	4500 F C-2011	
310-297323-5	MW-41A	Total/NA	Ground Water	4500 F C-2011	
310-297323-6	GU-1	Total/NA	Ground Water	4500 F C-2011	
310-297323-7	Equipment Blank #2 Deep	Total/NA	Ground Water	4500 F C-2011	
310-297323-8	Duplicate #3	Total/NA	Water	4500 F C-2011	
MB 310-443415/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-443415/3	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-297323-1 MS	MW-18	Total/NA	Water	4500 F C-2011	
310-297323-1 MSD	MW-18	Total/NA	Water	4500 F C-2011	

QC Association Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Field Service / Mobile Lab

Analysis Batch: 443543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297323-1	MW-18	Total/NA	Water	Field Sampling	
310-297323-2	MW-3	Total/NA	Ground Water	Field Sampling	
310-297323-3	MW-31A	Total/NA	Ground Water	Field Sampling	
310-297323-4	MW-34A	Total/NA	Ground Water	Field Sampling	
310-297323-5	MW-41A	Total/NA	Ground Water	Field Sampling	
310-297323-6	GU-1	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-18
Lab Sample ID: 310-297323-1
Date Collected: 12/17/24 16:00
Matrix: Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 15:59
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:00
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 03:40
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 14:38
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:25
Total/NA	Analysis	I-3765-85		1	442955	HE7K	EET CF	12/19/24 10:07
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 08:44
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:01
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:38
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18
Total/NA	Analysis	Field Sampling		1	443543	PDE6	EET CF	12/17/24 16:00

Client Sample ID: MW-3
Lab Sample ID: 310-297323-2
Date Collected: 12/17/24 14:15
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 16:20
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:15
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 03:42
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 14:48
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:26
Total/NA	Analysis	I-3765-85		1	442955	HE7K	EET CF	12/19/24 10:07
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 08:53
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:03
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:35
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18
Total/NA	Analysis	Field Sampling		1	443543	PDE6	EET CF	12/17/24 14:15

Client Sample ID: MW-31A
Lab Sample ID: 310-297323-3
Date Collected: 12/17/24 09:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 16:42

Lab Chronicle

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-31A
Lab Sample ID: 310-297323-3
Date Collected: 12/17/24 09:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3511			443025	AYK7	EET CF	12/19/24 13:48
Total/NA	Analysis	8081B		1	443898	BW2O	EET CF	01/03/25 11:26
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:18
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 05:20
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 14:50
Total/NA	Analysis	D516-16		5	443298	ENB7	EET CF	12/23/24 13:28
Total/NA	Analysis	I-3765-85		1	442955	HE7K	EET CF	12/19/24 10:07
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 09:05
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		10	443116	ENB7	EET CF	12/20/24 10:03
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:50
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18
Total/NA	Analysis	Field Sampling		1	443543	PDE6	EET CF	12/17/24 09:30

Client Sample ID: MW-34A
Lab Sample ID: 310-297323-4
Date Collected: 12/17/24 11:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 17:04
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:21
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 03:48
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 14:53
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:28
Total/NA	Analysis	I-3765-85		1	442955	HE7K	EET CF	12/19/24 10:07
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 09:22
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:04
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:31
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18
Total/NA	Analysis	Field Sampling		1	443543	PDE6	EET CF	12/17/24 11:30

Client Sample ID: MW-41A
Lab Sample ID: 310-297323-5
Date Collected: 12/17/24 13:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 17:26

Lab Chronicle

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: MW-41A
Lab Sample ID: 310-297323-5
Date Collected: 12/17/24 13:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:35
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 03:50
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 14:56
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:28
Total/NA	Analysis	I-3765-85		1	442955	HE7K	EET CF	12/19/24 10:07
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 09:31
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:04
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:44
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18
Total/NA	Analysis	Field Sampling		1	443543	PDE6	EET CF	12/17/24 13:30

Client Sample ID: GU-1
Lab Sample ID: 310-297323-6
Date Collected: 12/17/24 12:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 17:48
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:38
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 03:52
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 15:04
Total/NA	Analysis	D516-16		5	443298	ENB7	EET CF	12/23/24 13:29
Total/NA	Analysis	I-3765-85		1	442977	HE7K	EET CF	12/19/24 10:36
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 09:40
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		10	443116	ENB7	EET CF	12/20/24 10:04
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:47
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18
Total/NA	Analysis	Field Sampling		1	443543	PDE6	EET CF	12/17/24 12:30

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-297323-7
Date Collected: 12/17/24 16:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 14:10
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:41

Lab Chronicle

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Equipment Blank #2 Deep
Lab Sample ID: 310-297323-7
Date Collected: 12/17/24 16:30
Matrix: Ground Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 04:18
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 15:07
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:29
Total/NA	Analysis	I-3765-85		1	442955	HE7K	EET CF	12/19/24 10:07
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 10:01
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:05
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:27
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18

Client Sample ID: Duplicate #3
Lab Sample ID: 310-297323-8
Date Collected: 12/17/24 16:30
Matrix: Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 18:09
Total/NA	Prep	3005A			442866	F5MW	EET CF	12/19/24 09:00
Total/NA	Analysis	6020B		1	443426	NFT2	EET CF	12/26/24 17:44
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 04:23
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 15:10
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:30
Total/NA	Analysis	I-3765-85		1	442977	HE7K	EET CF	12/19/24 10:36
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 10:09
Total/NA	Analysis	SM 2540C		1	443049	MDU9	EET CF	12/19/24 20:20
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:05
Total/NA	Analysis	SM 5210B		1	442781	W9YR	EET CF	12/18/24 10:41
Total/NA	Analysis	SM 5220D		5	443351	HE7K	EET CF	12/26/24 09:18

Client Sample ID: Trip Blank
Lab Sample ID: 310-297323-9
Date Collected: 12/17/24 00:00
Matrix: Water
Date Received: 12/18/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	442958	WSE8	EET CF	12/19/24 14:32

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
Field Sampling		Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance
SM 1030E		Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-297323-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-297323 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: Denver | STATE: CO | Project: Windsock

Receipt Information

Date/Time Received: DATE: 12/18/24 | TIME: 0930 | Received By: b

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

2 sets of 3

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.3 | Corrected Temp (°C): 1.3

• **Sample Container Temperature**

Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

All VOAs in This Cooler

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo | STATE IA | Project: Winnestick

Receipt Information

Date/Time Received: DATE 12/18/24 | TIME 0930 | Received By: [illegible]

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☒ No	*If yes:* Cooler # 2 of 2
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): 0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	GV / 250 ml	
Uncorrected Temp (°C):	4.4	
Corrected Temp (°C):	4.4	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Document: CED-P-SAM-FRM45521
Revision: 26
Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-18-24	COC No:
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 4 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No.:
P O #	☑ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes:
MW-42A			G	GW		N		X	X	X	X	
MW-43A			G	GW		N		X	X	X	X	
MW-44A			G	GW		N		X	X	X	X	
MW-45A			G	GW		N		X	X	X	X	
MW-46A			G	GW		N		X	X	X	X	
MW-101			G	GW		N		X	X	X	X	
MW-11			G	GW		N		X	X	X	X	
MW-19R			G	GW		N		X	X	X	X	
MW-22			G	GW		N		X	X	X	X	
MW-22-FD			G	GW		N		X	X	X	X	
MW-35			G	GW		N		X	X	X	X	
MW-18	12-17-24	1600	G	GW	8	N		X	X	X	X	Turbidity - 1.54 NTU

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 12-18-24	Received by:	Company:	Date/Time: 12/18/24 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☑ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-18-24	COC No:
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	2 of 4 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No.:
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Sulfide	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes:
MW-1			G	GW		N		X	X		X	X	
MW-2R			G	GW		N		X	X		X	X	
MW-3	12-17-24	1415	G	GW	8	N		X	X		X	X	Turbidity - 14.78 NTU
MW-4			G	GW		N		X	X		X	X	
MW-4B			G	GW		N		X	X		X	X	
MW-7A			G	GW		N		X	X		X	X	
MW-24A			G	GW		N		X	X		X	X	
MW-25A			G	GW		N		X	X		X	X	
MW-29A			G	GW		N		X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Iowa DNR**

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-18-24	COC No:
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	3 of 4 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No.:
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Appendix I Metals and VOCs	Endosulfan I	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes:
MW-31A	12-17-24	0930	G	GW	~~10~~	N		X	X	X	X	X	Turbidity - 5.30 NTU
MW-33A			G	GW		N		X	X		X	X	
MW-34A	12-17-24	1130	G	GW	8	N		X	X		X	X	Turbidity - 8.37 NTU
MW-37A-FD			G	GW		N		X	X		X	X	
MW-37A			G	GW		N		X	X		X	X	
MW-38A			G	GW		N		X	X		X	X	
MW-38A-FD			G	GW		N		X	X		X	X	
MW-39A			G	GW		N		X	X		X	X	
MW-40A			G	GW		N		X	X		X	X	
MW-41A	12-17-24	1330	G	GW	8	N		X	X		X	X	Turbidity - 12.99 NTU

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by: Ben Porter	Company: Aecom	Date/Time: 12-18-24	Received by:	Company:	Date/Time: 12/18/24 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date:	COC No:
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	____ of ____ COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No.:
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes:
GU-1	12-17-24	1230	G	GW	8	N		X	X	X	X	Turbidity - 11.73 NTU
GU-2			G	GW		N		X	X	X	X	
SW-1			G	GW		N		X	X	X	X	
SW-2			G	GW		N		X	X	X	X	
SW-1-FD			G	GW		N		X	X	X	X	
SW-5			G	GW		N		X	X	X	X	
MH-1AA			G	GW		N		X	X	X	X	
MH-4-2			G	GW		N		X	X	X	X	
Equipment Blank #1 Shallow			G	GW		N		X	X	X	X	
Equipment Blank #2 Deep	12-17-24	1630	G	GW	8	N		X	X	X	X	
Duplicate #3	12-17-24	1630	G	W	8	N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____	Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 12/18/24 0730
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-297323-1
SDG Number:

Login Number: 297323
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 1/2/2025 7:28:39 AM

JOB DESCRIPTION

Winneshiek County Landfill - Groundwater
2024 Fall Groundwater

JOB NUMBER

310-297452-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
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Job ID: 310-297452-1 — Eurofins Cedar Falls

Job Narrative
310-297452-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/19/2024 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C.

GC/MS VOA
Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample(s) was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : SW-2 (310-297452-1), SW-5-FD (310-297452-2), SW-5 (310-297452-3) and Trip Blank (310-297452-4). The requested target analyte list includes Acrylonitrile.

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

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

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

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

Sample Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-297452-1	SW-2	Ground Water	12/18/24 11:00	12/19/24 09:50
310-297452-2	SW-5-FD	Ground Water	12/18/24 12:00	12/19/24 09:50
310-297452-3	SW-5	Ground Water	12/18/24 12:00	12/19/24 09:50
310-297452-4	Trip Blank	Water	12/18/24 06:00	12/19/24 09:50

Detection Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-2
Lab Sample ID: 310-297452-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	110		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	87.1		0.500	0.190	mg/L	1		6020B	Total/NA
Cobalt	0.237	J	0.500	0.170	ug/L	1		6020B	Total/NA
Magnesium	36.9		0.500	0.150	mg/L	1		6020B	Total/NA
Nickel	3.27	J	5.00	2.10	ug/L	1		6020B	Total/NA
Sodium	14.0		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	7.49		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.135		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	33.7		5.00	2.40	mg/L	1		D516-16	Total/NA
Total Suspended Solids	4.67	J	5.00	3.70	mg/L	1		I-3765-85	Total/NA
Anion/Cation Balance	-1.90				%	1		SM 1030E	Total/NA
Total Alkalinity	303		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	303		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	414		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	35.6		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	36.9		25.0	24.0	mg/L	5		SM 5220D	Total/NA
Field Turbidity	4.76				NTU	1		Field Sampling	Total/NA

Client Sample ID: SW-5-FD
Lab Sample ID: 310-297452-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	87.0		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	83.2		0.500	0.190	mg/L	1		6020B	Total/NA
Magnesium	29.6		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	7.53		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	8.57		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.110		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	27.0		5.00	2.40	mg/L	1		D516-16	Total/NA
Anion/Cation Balance	-1.59				%	1		SM 1030E	Total/NA
Total Alkalinity	267		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	267		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	364		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	22.1		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Chemical Oxygen Demand	33.6		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: SW-5
Lab Sample ID: 310-297452-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	87.2		2.00	0.660	ug/L	1		6020B	Total/NA
Calcium	80.8		0.500	0.190	mg/L	1		6020B	Total/NA
Magnesium	29.5		0.500	0.150	mg/L	1		6020B	Total/NA
Sodium	6.94		1.00	0.480	mg/L	1		6020B	Total/NA
Nitrate as N	8.26		0.100	0.0800	mg/L	1		353.2	Total/NA
Fluoride	0.105		0.100	0.0540	mg/L	1		4500 F C-2011	Total/NA
Sulfate	26.7		5.00	2.40	mg/L	1		D516-16	Total/NA
Anion/Cation Balance	-1.13				%	1		SM 1030E	Total/NA
Total Alkalinity	257		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	257		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	360		50.0	42.0	mg/L	1		SM 2540C	Total/NA
Chloride	22.3		2.00	1.40	mg/L	1		SM 4500 Cl- E	Total/NA
Field Turbidity	4.78				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank **Lab Sample ID: 310-297452-4**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-2
Lab Sample ID: 310-297452-1
Date Collected: 12/18/24 11:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/21/24 01:24	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/21/24 01:24	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/21/24 01:24	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/21/24 01:24	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/21/24 01:24	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/21/24 01:24	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/21/24 01:24	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/21/24 01:24	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/21/24 01:24	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/21/24 01:24	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/21/24 01:24	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/21/24 01:24	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/21/24 01:24	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/21/24 01:24	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/21/24 01:24	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/21/24 01:24	1
Acetone	<3.10		10.0	3.10	ug/L			12/21/24 01:24	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/21/24 01:24	1
Benzene	<0.220		0.500	0.220	ug/L			12/21/24 01:24	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/21/24 01:24	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/21/24 01:24	1
Bromoform	<0.780		5.00	0.780	ug/L			12/21/24 01:24	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/21/24 01:24	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/21/24 01:24	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/21/24 01:24	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/21/24 01:24	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/21/24 01:24	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/21/24 01:24	1
Chloroform	<1.30		3.00	1.30	ug/L			12/21/24 01:24	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/21/24 01:24	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/21/24 01:24	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/21/24 01:24	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/21/24 01:24	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/21/24 01:24	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/21/24 01:24	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/21/24 01:24	1
Styrene	<0.370		1.00	0.370	ug/L			12/21/24 01:24	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/21/24 01:24	1
Toluene	<0.430		1.00	0.430	ug/L			12/21/24 01:24	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/21/24 01:24	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/21/24 01:24	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/21/24 01:24	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/21/24 01:24	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/21/24 01:24	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/21/24 01:24	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/21/24 01:24	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/21/24 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*12/21/24 01:24*	*1*

Client Sample ID: SW-2
Lab Sample ID: 310-297452-1

Date Collected: 12/18/24 11:00
Matrix: Ground Water

Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/21/24 01:24*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*12/21/24 01:24*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/20/24 09:00	12/30/24 14:20	1
Arsenic	<0.530		2.00	0.530	ug/L		12/20/24 09:00	12/30/24 14:20	1
Barium	**110**		2.00	0.660	ug/L		12/20/24 09:00	12/30/24 14:20	1
Beryllium	<0.330		1.00	0.330	ug/L		12/20/24 09:00	12/30/24 14:20	1
Cadmium	<0.100		0.200	0.100	ug/L		12/20/24 09:00	12/30/24 14:20	1
Calcium	**87.1**		0.500	0.190	mg/L		12/20/24 09:00	12/30/24 14:20	1
Chromium	<1.20		5.00	1.20	ug/L		12/20/24 09:00	12/30/24 14:20	1
Cobalt	**0.237**	**J**	0.500	0.170	ug/L		12/20/24 09:00	12/30/24 14:20	1
Copper	<1.80		5.00	1.80	ug/L		12/20/24 09:00	12/30/24 14:20	1
Lead	<0.260		0.500	0.260	ug/L		12/20/24 09:00	12/30/24 14:20	1
Magnesium	**36.9**		0.500	0.150	mg/L		12/20/24 09:00	12/30/24 14:20	1
Nickel	**3.27**	**J**	5.00	2.10	ug/L		12/20/24 09:00	12/30/24 14:20	1
Selenium	<1.40		5.00	1.40	ug/L		12/20/24 09:00	12/30/24 14:20	1
Silver	<0.500		1.00	0.500	ug/L		12/20/24 09:00	12/30/24 14:20	1
Sodium	**14.0**		1.00	0.480	mg/L		12/20/24 09:00	12/30/24 14:20	1
Thallium	<0.570		1.00	0.570	ug/L		12/20/24 09:00	12/30/24 14:20	1
Vanadium	<1.10		5.00	1.10	ug/L		12/20/24 09:00	12/30/24 14:20	1
Zinc	<9.70		20.0	9.70	ug/L		12/20/24 09:00	12/30/24 14:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**7.49**		0.100	0.0800	mg/L			12/27/24 04:54	1
Fluoride (SM 4500 F C-2011)	**0.135**		0.100	0.0540	mg/L			12/26/24 15:16	1
Sulfate (ASTM D516-16)	**33.7**		5.00	2.40	mg/L			12/23/24 13:30	1
Total Suspended Solids (USGS I-3765-85)	**4.67**	**J**	5.00	3.70	mg/L			12/19/24 11:37	1
Anion/Cation Balance (SM 1030E)	**-1.90**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**303**		5.00	2.50	mg/L			12/20/24 10:50	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**303**		5.00	2.50	mg/L			12/20/24 10:50	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:50	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:50	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 10:50	1
Total Dissolved Solids (SM 2540C)	**414**		50.0	42.0	mg/L			12/19/24 20:26	1
Chloride (SM 4500 Cl- E)	**35.6**		2.00	1.40	mg/L			12/20/24 10:41	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/19/24 10:54	1
Chemical Oxygen Demand (SM 5220D)	**36.9**		25.0	24.0	mg/L			12/30/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.76**				NTU			12/18/24 11:00	1

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-5-FD
Lab Sample ID: 310-297452-2
Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/21/24 01:45	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/21/24 01:45	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/21/24 01:45	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/21/24 01:45	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/21/24 01:45	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/21/24 01:45	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/21/24 01:45	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/21/24 01:45	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/21/24 01:45	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/21/24 01:45	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/21/24 01:45	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/21/24 01:45	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/21/24 01:45	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/21/24 01:45	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/21/24 01:45	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/21/24 01:45	1
Acetone	<3.10		10.0	3.10	ug/L			12/21/24 01:45	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/21/24 01:45	1
Benzene	<0.220		0.500	0.220	ug/L			12/21/24 01:45	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/21/24 01:45	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/21/24 01:45	1
Bromoform	<0.780		5.00	0.780	ug/L			12/21/24 01:45	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/21/24 01:45	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/21/24 01:45	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/21/24 01:45	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/21/24 01:45	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/21/24 01:45	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/21/24 01:45	1
Chloroform	<1.30		3.00	1.30	ug/L			12/21/24 01:45	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/21/24 01:45	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/21/24 01:45	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/21/24 01:45	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/21/24 01:45	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/21/24 01:45	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/21/24 01:45	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/21/24 01:45	1
Styrene	<0.370		1.00	0.370	ug/L			12/21/24 01:45	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/21/24 01:45	1
Toluene	<0.430		1.00	0.430	ug/L			12/21/24 01:45	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/21/24 01:45	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/21/24 01:45	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/21/24 01:45	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/21/24 01:45	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/21/24 01:45	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/21/24 01:45	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/21/24 01:45	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/21/24 01:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*73 - 130*		*12/21/24 01:45*	*1*

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-5-FD
Lab Sample ID: 310-297452-2
Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/21/24 01:45*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/21/24 01:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/23/24 09:00	12/30/24 15:46	1
Arsenic	<0.530		2.00	0.530	ug/L		12/23/24 09:00	12/30/24 15:46	1
Barium	**87.0**		2.00	0.660	ug/L		12/23/24 09:00	12/30/24 15:46	1
Beryllium	<0.330		1.00	0.330	ug/L		12/23/24 09:00	12/30/24 15:46	1
Cadmium	<0.100		0.200	0.100	ug/L		12/23/24 09:00	12/30/24 15:46	1
Calcium	**83.2**		0.500	0.190	mg/L		12/23/24 09:00	12/30/24 15:46	1
Chromium	<1.20		5.00	1.20	ug/L		12/23/24 09:00	12/30/24 15:46	1
Cobalt	<0.170		0.500	0.170	ug/L		12/23/24 09:00	12/30/24 15:46	1
Copper	<1.80		5.00	1.80	ug/L		12/23/24 09:00	12/30/24 15:46	1
Lead	<0.260		0.500	0.260	ug/L		12/23/24 09:00	12/30/24 15:46	1
Magnesium	**29.6**		0.500	0.150	mg/L		12/23/24 09:00	12/30/24 15:46	1
Nickel	<2.10		5.00	2.10	ug/L		12/23/24 09:00	12/30/24 15:46	1
Selenium	<1.40		5.00	1.40	ug/L		12/23/24 09:00	12/30/24 15:46	1
Silver	<0.500		1.00	0.500	ug/L		12/23/24 09:00	12/30/24 15:46	1
Sodium	**7.53**		1.00	0.480	mg/L		12/23/24 09:00	12/30/24 15:46	1
Thallium	<0.570		1.00	0.570	ug/L		12/23/24 09:00	12/30/24 15:46	1
Vanadium	<1.10		5.00	1.10	ug/L		12/23/24 09:00	12/30/24 15:46	1
Zinc	<9.70		20.0	9.70	ug/L		12/23/24 09:00	12/30/24 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**8.57**		0.100	0.0800	mg/L			12/27/24 04:55	1
Fluoride (SM 4500 F C-2011)	**0.110**		0.100	0.0540	mg/L			12/26/24 15:18	1
Sulfate (ASTM D516-16)	**27.0**		5.00	2.40	mg/L			12/30/24 14:03	1
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			12/19/24 11:37	1
Anion/Cation Balance (SM 1030E)	**-1.59**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**267**		5.00	2.50	mg/L			12/20/24 11:07	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**267**		5.00	2.50	mg/L			12/20/24 11:07	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 11:07	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 11:07	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/20/24 11:07	1
Total Dissolved Solids (SM 2540C)	**364**		50.0	42.0	mg/L			12/19/24 20:26	1
Chloride (SM 4500 Cl- E)	**22.1**		2.00	1.40	mg/L			12/20/24 10:41	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**33.6**		25.0	24.0	mg/L			12/30/24 08:55	5

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-5
Lab Sample ID: 310-297452-3
Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/21/24 02:07	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/21/24 02:07	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/21/24 02:07	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/21/24 02:07	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/21/24 02:07	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/21/24 02:07	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/21/24 02:07	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/21/24 02:07	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/21/24 02:07	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/21/24 02:07	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/21/24 02:07	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/21/24 02:07	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/21/24 02:07	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/21/24 02:07	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/21/24 02:07	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/21/24 02:07	1
Acetone	<3.10		10.0	3.10	ug/L			12/21/24 02:07	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/21/24 02:07	1
Benzene	<0.220		0.500	0.220	ug/L			12/21/24 02:07	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/21/24 02:07	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/21/24 02:07	1
Bromoform	<0.780		5.00	0.780	ug/L			12/21/24 02:07	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/21/24 02:07	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/21/24 02:07	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/21/24 02:07	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/21/24 02:07	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/21/24 02:07	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/21/24 02:07	1
Chloroform	<1.30		3.00	1.30	ug/L			12/21/24 02:07	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/21/24 02:07	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/21/24 02:07	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/21/24 02:07	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/21/24 02:07	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/21/24 02:07	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/21/24 02:07	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/21/24 02:07	1
Styrene	<0.370		1.00	0.370	ug/L			12/21/24 02:07	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/21/24 02:07	1
Toluene	<0.430		1.00	0.430	ug/L			12/21/24 02:07	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/21/24 02:07	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/21/24 02:07	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/21/24 02:07	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/21/24 02:07	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/21/24 02:07	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/21/24 02:07	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/21/24 02:07	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/21/24 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*106*		*73 - 130*		*12/21/24 02:07*	*1*

Client Sample ID: SW-5
Lab Sample ID: 310-297452-3
Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/21/24 02:07*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*12/21/24 02:07*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/20/24 09:00	12/30/24 14:22	1
Arsenic	<0.530		2.00	0.530	ug/L		12/20/24 09:00	12/30/24 14:22	1
Barium	**87.2**		2.00	0.660	ug/L		12/20/24 09:00	12/30/24 14:22	1
Beryllium	<0.330		1.00	0.330	ug/L		12/20/24 09:00	12/30/24 14:22	1
Cadmium	<0.100		0.200	0.100	ug/L		12/20/24 09:00	12/30/24 14:22	1
Calcium	**80.8**		0.500	0.190	mg/L		12/20/24 09:00	12/30/24 14:22	1
Chromium	<1.20		5.00	1.20	ug/L		12/20/24 09:00	12/30/24 14:22	1
Cobalt	<0.170		0.500	0.170	ug/L		12/20/24 09:00	12/30/24 14:22	1
Copper	<1.80		5.00	1.80	ug/L		12/20/24 09:00	12/30/24 14:22	1
Lead	<0.260		0.500	0.260	ug/L		12/20/24 09:00	12/30/24 14:22	1
Magnesium	**29.5**		0.500	0.150	mg/L		12/20/24 09:00	12/30/24 14:22	1
Nickel	<2.10		5.00	2.10	ug/L		12/20/24 09:00	12/30/24 14:22	1
Selenium	<1.40		5.00	1.40	ug/L		12/20/24 09:00	12/30/24 14:22	1
Silver	<0.500		1.00	0.500	ug/L		12/20/24 09:00	12/30/24 14:22	1
Sodium	**6.94**		1.00	0.480	mg/L		12/20/24 09:00	12/30/24 14:22	1
Thallium	<0.570		1.00	0.570	ug/L		12/20/24 09:00	12/30/24 14:22	1
Vanadium	<1.10		5.00	1.10	ug/L		12/20/24 09:00	12/30/24 14:22	1
Zinc	<9.70		20.0	9.70	ug/L		12/20/24 09:00	12/30/24 14:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	**8.26**		0.100	0.0800	mg/L			12/27/24 04:56	1
Fluoride (SM 4500 F C-2011)	**0.105**		0.100	0.0540	mg/L			12/26/24 15:21	1
Sulfate (ASTM D516-16)	**26.7**		5.00	2.40	mg/L			12/30/24 14:04	1
Total Suspended Solids (USGS I-3765-85)	<3.70		5.00	3.70	mg/L			12/19/24 11:37	1
Anion/Cation Balance (SM 1030E)	**-1.13**				%			12/23/24 09:41	1
Total Alkalinity (SM 2320B)	**257**		5.00	2.50	mg/L			12/26/24 19:37	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**257**		5.00	2.50	mg/L			12/26/24 19:37	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/26/24 19:37	1
Hydroxide Alkalinity as CaCO3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/26/24 19:37	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3 (SM 2320B)	<2.50		5.00	2.50	mg/L			12/26/24 19:37	1
Total Dissolved Solids (SM 2540C)	**360**		50.0	42.0	mg/L			12/19/24 20:26	1
Chloride (SM 4500 Cl- E)	**22.3**		2.00	1.40	mg/L			12/20/24 10:42	1
Biochemical Oxygen Demand (SM 5210B)	<3.00		3.00	3.00	mg/L			12/19/24 10:57	1
Chemical Oxygen Demand (SM 5220D)	<24.0		25.0	24.0	mg/L			12/30/24 08:55	5

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**4.78**				NTU			12/18/24 12:00	1

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297452-4
Date Collected: 12/18/24 06:00
Matrix: Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/20/24 22:08	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/20/24 22:08	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/20/24 22:08	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/20/24 22:08	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/20/24 22:08	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/20/24 22:08	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/20/24 22:08	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/20/24 22:08	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/20/24 22:08	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/20/24 22:08	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/20/24 22:08	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/20/24 22:08	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/20/24 22:08	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/20/24 22:08	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/20/24 22:08	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/20/24 22:08	1
Acetone	<3.10		10.0	3.10	ug/L			12/20/24 22:08	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/20/24 22:08	1
Benzene	<0.220		0.500	0.220	ug/L			12/20/24 22:08	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/20/24 22:08	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/20/24 22:08	1
Bromoform	<0.780		5.00	0.780	ug/L			12/20/24 22:08	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/20/24 22:08	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/20/24 22:08	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/20/24 22:08	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/20/24 22:08	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/20/24 22:08	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/20/24 22:08	1
Chloroform	<1.30		3.00	1.30	ug/L			12/20/24 22:08	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/20/24 22:08	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/20/24 22:08	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/20/24 22:08	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/20/24 22:08	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/20/24 22:08	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/20/24 22:08	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/20/24 22:08	1
Styrene	<0.370		1.00	0.370	ug/L			12/20/24 22:08	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/20/24 22:08	1
Toluene	<0.430		1.00	0.430	ug/L			12/20/24 22:08	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/20/24 22:08	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/20/24 22:08	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/20/24 22:08	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/20/24 22:08	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/20/24 22:08	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/20/24 22:08	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/20/24 22:08	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/20/24 22:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*73 - 130*		*12/20/24 22:08*	*1*

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: Trip Blank
Lab Sample ID: 310-297452-4
Date Collected: 12/18/24 06:00
Matrix: Water
Date Received: 12/19/24 09:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/20/24 22:08	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/20/24 22:08	1

Definitions/Glossary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Qualifiers

Metals

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

General Chemistry

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

Glossary

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

Surrogate Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-297452-1	SW-2	116	97	102
310-297452-2	SW-5-FD	116	98	103
310-297452-3	SW-5	106	96	103

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-297452-4	Trip Blank	113	98	103
LCS 310-443083/6	Lab Control Sample	99	101	101
LCS 310-443083/7	Lab Control Sample	112	99	105
MB 310-443083/5	Method Blank	110	98	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-443083/5
Matrix: Water
Analysis Batch: 443083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/20/24 20:41	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/20/24 20:41	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/20/24 20:41	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/20/24 20:41	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/20/24 20:41	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/20/24 20:41	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/20/24 20:41	1
1,2-Dibromo-3-Chloropropane	<1.20		5.00	1.20	ug/L			12/20/24 20:41	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/20/24 20:41	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/20/24 20:41	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/20/24 20:41	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/20/24 20:41	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/20/24 20:41	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/20/24 20:41	1
2-Hexanone	<2.00		10.0	2.00	ug/L			12/20/24 20:41	1
4-Methyl-2-pentanone (MIBK)	<2.10		10.0	2.10	ug/L			12/20/24 20:41	1
Acetone	<3.10		10.0	3.10	ug/L			12/20/24 20:41	1
Acrylonitrile	<2.20		5.00	2.20	ug/L			12/20/24 20:41	1
Benzene	<0.220		0.500	0.220	ug/L			12/20/24 20:41	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/20/24 20:41	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/20/24 20:41	1
Bromoform	<0.780		5.00	0.780	ug/L			12/20/24 20:41	1
Bromomethane	<1.10		4.00	1.10	ug/L			12/20/24 20:41	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/20/24 20:41	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/20/24 20:41	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/20/24 20:41	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/20/24 20:41	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/20/24 20:41	1
Chloroform	<1.30		3.00	1.30	ug/L			12/20/24 20:41	1
Chloromethane	<0.610		3.00	0.610	ug/L			12/20/24 20:41	1
cis-1,2-Dichloroethene	<0.210		1.00	0.210	ug/L			12/20/24 20:41	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/20/24 20:41	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/20/24 20:41	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/20/24 20:41	1
Iodomethane	<7.00		10.0	7.00	ug/L			12/20/24 20:41	1
Methylene Chloride	<1.70		5.00	1.70	ug/L			12/20/24 20:41	1
Styrene	<0.370		1.00	0.370	ug/L			12/20/24 20:41	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/20/24 20:41	1
Toluene	<0.430		1.00	0.430	ug/L			12/20/24 20:41	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/20/24 20:41	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/20/24 20:41	1
trans-1,4-Dichloro-2-butene	<1.10		10.0	1.10	ug/L			12/20/24 20:41	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/20/24 20:41	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/20/24 20:41	1
Vinyl acetate	<2.50		10.0	2.50	ug/L			12/20/24 20:41	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/20/24 20:41	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/20/24 20:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-443083/5
Matrix: Water
Analysis Batch: 443083

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*110*		*73 - 130*		*12/20/24 20:41*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/20/24 20:41*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*12/20/24 20:41*	*1*

Lab Sample ID: LCS 310-443083/6
Matrix: Water
Analysis Batch: 443083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	16.60		ug/L		83	71 - 120
1,1,1-Trichloroethane	20.0	19.96		ug/L		100	73 - 129
1,1,2,2-Tetrachloroethane	20.0	17.81		ug/L		89	68 - 124
1,1,2-Trichloroethane	20.0	18.65		ug/L		93	73 - 123
1,1-Dichloroethane	20.0	17.82		ug/L		89	70 - 127
1,1-Dichloroethene	20.0	19.37		ug/L		97	63 - 132
1,2,3-Trichloropropane	20.0	18.62		ug/L		93	65 - 127
1,2-Dibromo-3-Chloropropane	20.0	18.23		ug/L		91	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.87		ug/L		94	75 - 125
1,2-Dichlorobenzene	20.0	16.98		ug/L		85	74 - 120
1,2-Dichloroethane	20.0	18.90		ug/L		94	71 - 125
1,2-Dichloropropane	20.0	19.53		ug/L		98	73 - 124
1,4-Dichlorobenzene	20.0	16.70		ug/L		84	72 - 120
2-Butanone (MEK)	40.0	34.68		ug/L		87	50 - 150
2-Hexanone	40.0	37.15		ug/L		93	60 - 140
4-Methyl-2-pentanone (MIBK)	40.0	37.81		ug/L		95	60 - 139
Acetone	40.0	39.84		ug/L		100	50 - 150
Acrylonitrile	200	178.5		ug/L		89	50 - 150
Benzene	20.0	17.90		ug/L		89	72 - 124
Bromochloromethane	20.0	17.96		ug/L		90	73 - 130
Bromodichloromethane	20.0	18.88		ug/L		94	74 - 122
Bromoform	20.0	16.60		ug/L		83	61 - 122
Carbon disulfide	20.0	17.73		ug/L		89	59 - 135
Carbon tetrachloride	20.0	19.15		ug/L		96	67 - 132
Chlorobenzene	20.0	17.61		ug/L		88	76 - 120
Chlorodibromomethane	20.0	18.55		ug/L		93	71 - 121
Chloroform	20.0	19.64		ug/L		98	72 - 125
cis-1,2-Dichloroethene	20.0	17.20		ug/L		86	74 - 123
cis-1,3-Dichloropropene	20.0	17.99		ug/L		90	71 - 125
Dibromomethane	20.0	18.98		ug/L		95	74 - 125
Ethylbenzene	20.0	17.13		ug/L		86	74 - 122
Iodomethane	20.0	11.05		ug/L		55	10 - 150
Methylene Chloride	20.0	21.20		ug/L		106	50 - 150
Styrene	20.0	17.57		ug/L		88	74 - 121
Tetrachloroethene	20.0	16.53		ug/L		83	71 - 130
Toluene	20.0	17.84		ug/L		89	74 - 123
trans-1,2-Dichloroethene	20.0	18.26		ug/L		91	70 - 126
trans-1,3-Dichloropropene	20.0	18.35		ug/L		92	69 - 123
trans-1,4-Dichloro-2-butene	20.0	18.07		ug/L		90	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-443083/6
Matrix: Water
Analysis Batch: 443083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	18.16		ug/L		91	72 - 126
Vinyl acetate	40.0	33.47		ug/L		84	50 - 150
Xylenes, Total	40.0	33.00		ug/L		83	73 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*99*		*73 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-443083/7
Matrix: Water
Analysis Batch: 443083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	18.03		ug/L		90	23 - 150
Chloroethane	20.0	19.63		ug/L		98	54 - 136
Chloromethane	20.0	19.29		ug/L		96	38 - 150
Trichlorofluoromethane	20.0	20.26		ug/L		101	54 - 149
Vinyl chloride	20.0	20.23		ug/L		101	56 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*112*		*73 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-443022/1-A
Matrix: Water
Analysis Batch: 443693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 443022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/20/24 09:00	12/30/24 12:56	1
Arsenic	<0.530		2.00	0.530	ug/L		12/20/24 09:00	12/30/24 12:56	1
Barium	<0.660		2.00	0.660	ug/L		12/20/24 09:00	12/30/24 12:56	1
Beryllium	<0.330		1.00	0.330	ug/L		12/20/24 09:00	12/30/24 12:56	1
Cadmium	<0.100		0.200	0.100	ug/L		12/20/24 09:00	12/30/24 12:56	1
Calcium	<0.190		0.500	0.190	mg/L		12/20/24 09:00	12/30/24 12:56	1
Chromium	<1.20		5.00	1.20	ug/L		12/20/24 09:00	12/30/24 12:56	1
Cobalt	<0.170		0.500	0.170	ug/L		12/20/24 09:00	12/30/24 12:56	1
Copper	<1.80		5.00	1.80	ug/L		12/20/24 09:00	12/30/24 12:56	1
Lead	<0.260		0.500	0.260	ug/L		12/20/24 09:00	12/30/24 12:56	1
Magnesium	<0.150		0.500	0.150	mg/L		12/20/24 09:00	12/30/24 12:56	1
Nickel	<2.10		5.00	2.10	ug/L		12/20/24 09:00	12/30/24 12:56	1
Selenium	<1.40		5.00	1.40	ug/L		12/20/24 09:00	12/30/24 12:56	1
Silver	<0.500		1.00	0.500	ug/L		12/20/24 09:00	12/30/24 12:56	1
Sodium	<0.480		1.00	0.480	mg/L		12/20/24 09:00	12/30/24 12:56	1
Thallium	<0.570		1.00	0.570	ug/L		12/20/24 09:00	12/30/24 12:56	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-443022/1-A
Matrix: Water
Analysis Batch: 443693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 443022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<1.10		5.00	1.10	ug/L		12/20/24 09:00	12/30/24 12:56	1
Zinc	<9.70		20.0	9.70	ug/L		12/20/24 09:00	12/30/24 12:56	1

Lab Sample ID: LCS 310-443022/2-A
Matrix: Water
Analysis Batch: 443693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 443022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	219.9		ug/L		110	80 - 120
Arsenic	200	207.2		ug/L		104	80 - 120
Barium	100	103.6		ug/L		104	80 - 120
Beryllium	100	89.41		ug/L		89	80 - 120
Cadmium	100	101.2		ug/L		101	80 - 120
Calcium	2.00	1.781		mg/L		89	80 - 120
Chromium	100	97.86		ug/L		98	80 - 120
Cobalt	100	100.1		ug/L		100	80 - 120
Copper	200	203.2		ug/L		102	80 - 120
Lead	200	204.1		ug/L		102	80 - 120
Magnesium	2.00	1.976		mg/L		99	80 - 120
Nickel	200	197.3		ug/L		99	80 - 120
Selenium	400	385.3		ug/L		96	80 - 120
Silver	100	104.5		ug/L		105	80 - 120
Sodium	2.00	2.041		mg/L		102	80 - 120
Thallium	100	83.11		ug/L		83	80 - 120
Vanadium	100	97.20		ug/L		97	80 - 120
Zinc	200	187.8		ug/L		94	80 - 120

Lab Sample ID: MB 310-443182/1-A
Matrix: Water
Analysis Batch: 443693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 443182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.00		2.00	1.00	ug/L		12/23/24 09:00	12/30/24 14:29	1
Arsenic	<0.530		2.00	0.530	ug/L		12/23/24 09:00	12/30/24 14:29	1
Barium	<0.660		2.00	0.660	ug/L		12/23/24 09:00	12/30/24 14:29	1
Beryllium	<0.330		1.00	0.330	ug/L		12/23/24 09:00	12/30/24 14:29	1
Cadmium	<0.100		0.200	0.100	ug/L		12/23/24 09:00	12/30/24 14:29	1
Calcium	<0.190		0.500	0.190	mg/L		12/23/24 09:00	12/30/24 14:29	1
Chromium	<1.20		5.00	1.20	ug/L		12/23/24 09:00	12/30/24 14:29	1
Cobalt	<0.170		0.500	0.170	ug/L		12/23/24 09:00	12/30/24 14:29	1
Copper	<1.80		5.00	1.80	ug/L		12/23/24 09:00	12/30/24 14:29	1
Lead	<0.260		0.500	0.260	ug/L		12/23/24 09:00	12/30/24 14:29	1
Magnesium	<0.150		0.500	0.150	mg/L		12/23/24 09:00	12/30/24 14:29	1
Nickel	<2.10		5.00	2.10	ug/L		12/23/24 09:00	12/30/24 14:29	1
Selenium	<1.40		5.00	1.40	ug/L		12/23/24 09:00	12/30/24 14:29	1
Silver	<0.500		1.00	0.500	ug/L		12/23/24 09:00	12/30/24 14:29	1
Sodium	<0.480		1.00	0.480	mg/L		12/23/24 09:00	12/30/24 14:29	1
Thallium	<0.570		1.00	0.570	ug/L		12/23/24 09:00	12/30/24 14:29	1
Vanadium	<1.10		5.00	1.10	ug/L		12/23/24 09:00	12/30/24 14:29	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-443182/1-A
Matrix: Water
Analysis Batch: 443693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 443182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<9.70		20.0	9.70	ug/L		12/23/24 09:00	12/30/24 14:29	1

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-443415/5
Matrix: Water
Analysis Batch: 443415

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.0540		0.100	0.0540	mg/L			12/26/24 14:35	1

Lab Sample ID: LCS 310-443415/3
Matrix: Water
Analysis Batch: 443415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.949		mg/L		97	90 - 110

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-443298/16
Matrix: Water
Analysis Batch: 443298

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/23/24 13:07	1

Lab Sample ID: LCS 310-443298/14
Matrix: Water
Analysis Batch: 443298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.971		mg/L		100	85 - 115

Lab Sample ID: MB 310-443641/16
Matrix: Water
Analysis Batch: 443641

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<2.40		5.00	2.40	mg/L			12/30/24 13:19	1

Lab Sample ID: LCS 310-443641/14
Matrix: Water
Analysis Batch: 443641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	10.18		mg/L		102	85 - 115

Method: D516-16 - Sulfate (Continued)

Lab Sample ID: 310-297452-2 MS
Matrix: Ground Water
Analysis Batch: 443641

Client Sample ID: SW-5-FD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	27.0		10.0	34.22		mg/L		72	70 - 130

Lab Sample ID: 310-297452-2 MSD
Matrix: Ground Water
Analysis Batch: 443641

Client Sample ID: SW-5-FD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	27.0		10.0	34.28		mg/L		73	70 - 130	0	20

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-442994/1
Matrix: Water
Analysis Batch: 442994

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<3.70		5.00	3.70	mg/L			12/19/24 11:37	1

Lab Sample ID: LCS 310-442994/2
Matrix: Water
Analysis Batch: 442994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.00		mg/L		95	81 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-443159/2
Matrix: Water
Analysis Batch: 443159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	877.1		mg/L		88	86 - 111

Lab Sample ID: LCS 310-443423/2
Matrix: Water
Analysis Batch: 443423

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity	1000	932.0		mg/L		93	86 - 111

Lab Sample ID: 310-297452-3 DU
Matrix: Ground Water
Analysis Batch: 443423

Client Sample ID: SW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity	257		260.5		mg/L		1	16
Bicarbonate Alkalinity as CaCO3	257		260.5		mg/L		1	
Carbonate Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	
Hydroxide Alkalinity as CaCO3	<2.50		<2.50		mg/L		NC	

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 310-297452-3 DU
Matrix: Ground Water
Analysis Batch: 443423

Client Sample ID: SW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<2.50		<2.50		mg/L		NC	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-443051/1
Matrix: Water
Analysis Batch: 443051

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<42.0		50.0	42.0	mg/L			12/19/24 20:26	1

Lab Sample ID: LCS 310-443051/2
Matrix: Water
Analysis Batch: 443051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	992.0		mg/L		99	88 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-443116/60
Matrix: Water
Analysis Batch: 443116

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.40		2.00	1.40	mg/L			12/20/24 10:39	1

Lab Sample ID: LCS 310-443116/61
Matrix: Water
Analysis Batch: 443116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.83		mg/L		108	90 - 110

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-442947/1
Matrix: Water
Analysis Batch: 442947

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00	3.00	mg/L			12/19/24 10:16	1

Lab Sample ID: LCS 310-442947/2
Matrix: Water
Analysis Batch: 442947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	183.5		mg/L		93	85 - 115

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Method: SM 5220D - COD

Lab Sample ID: MB 310-443577/5
Matrix: Water
Analysis Batch: 443577

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.80		5.00	4.80	mg/L			12/30/24 08:55	1

Lab Sample ID: LCS 310-443577/3
Matrix: Water
Analysis Batch: 443577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	126.7		mg/L		101	85 - 110

GC/MS VOA

Analysis Batch: 443083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	8260D	
310-297452-2	SW-5-FD	Total/NA	Ground Water	8260D	
310-297452-3	SW-5	Total/NA	Ground Water	8260D	
310-297452-4	Trip Blank	Total/NA	Water	8260D	
MB 310-443083/5	Method Blank	Total/NA	Water	8260D	
LCS 310-443083/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-443083/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 443022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	3005A	
310-297452-3	SW-5	Total/NA	Ground Water	3005A	
MB 310-443022/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-443022/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 443182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-2	SW-5-FD	Total/NA	Ground Water	3005A	
MB 310-443182/1-A	Method Blank	Total/NA	Water	3005A	

Analysis Batch: 443693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	6020B	443022
310-297452-2	SW-5-FD	Total/NA	Ground Water	6020B	443182
310-297452-3	SW-5	Total/NA	Ground Water	6020B	443022
MB 310-443022/1-A	Method Blank	Total/NA	Water	6020B	443022
MB 310-443182/1-A	Method Blank	Total/NA	Water	6020B	443182
LCS 310-443022/2-A	Lab Control Sample	Total/NA	Water	6020B	443022

General Chemistry

Analysis Batch: 442947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	SM 5210B	
310-297452-2	SW-5-FD	Total/NA	Ground Water	SM 5210B	
310-297452-3	SW-5	Total/NA	Ground Water	SM 5210B	
USB 310-442947/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-442947/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 442994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	I-3765-85	
310-297452-2	SW-5-FD	Total/NA	Ground Water	I-3765-85	
310-297452-3	SW-5	Total/NA	Ground Water	I-3765-85	
MB 310-442994/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-442994/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 443051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 443051 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-2	SW-5-FD	Total/NA	Ground Water	SM 2540C	
310-297452-3	SW-5	Total/NA	Ground Water	SM 2540C	
MB 310-443051/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-443051/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 443116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	SM 4500 Cl- E	
310-297452-2	SW-5-FD	Total/NA	Ground Water	SM 4500 Cl- E	
310-297452-3	SW-5	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-443116/60	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-443116/61	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 443159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	SM 2320B	
310-297452-2	SW-5-FD	Total/NA	Ground Water	SM 2320B	
LCS 310-443159/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 443233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	353.2	
310-297452-2	SW-5-FD	Total/NA	Ground Water	353.2	
310-297452-3	SW-5	Total/NA	Ground Water	353.2	

Analysis Batch: 443234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	SM 1030E	
310-297452-2	SW-5-FD	Total/NA	Ground Water	SM 1030E	
310-297452-3	SW-5	Total/NA	Ground Water	SM 1030E	

Analysis Batch: 443298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	D516-16	
MB 310-443298/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-443298/14	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 443415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	4500 F C-2011	
310-297452-2	SW-5-FD	Total/NA	Ground Water	4500 F C-2011	
310-297452-3	SW-5	Total/NA	Ground Water	4500 F C-2011	
MB 310-443415/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-443415/3	Lab Control Sample	Total/NA	Water	4500 F C-2011	

Analysis Batch: 443423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-3	SW-5	Total/NA	Ground Water	SM 2320B	
LCS 310-443423/2	Lab Control Sample	Total/NA	Water	SM 2320B	
310-297452-3 DU	SW-5	Total/NA	Ground Water	SM 2320B	

QC Association Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

General Chemistry

Analysis Batch: 443577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	SM 5220D	
310-297452-2	SW-5-FD	Total/NA	Ground Water	SM 5220D	
310-297452-3	SW-5	Total/NA	Ground Water	SM 5220D	
MB 310-443577/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-443577/3	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 443641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-2	SW-5-FD	Total/NA	Ground Water	D516-16	
310-297452-3	SW-5	Total/NA	Ground Water	D516-16	
MB 310-443641/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-443641/14	Lab Control Sample	Total/NA	Water	D516-16	
310-297452-2 MS	SW-5-FD	Total/NA	Ground Water	D516-16	
310-297452-2 MSD	SW-5-FD	Total/NA	Ground Water	D516-16	

Field Service / Mobile Lab

Analysis Batch: 443439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-297452-1	SW-2	Total/NA	Ground Water	Field Sampling	
310-297452-3	SW-5	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-2
Lab Sample ID: 310-297452-1
Date Collected: 12/18/24 11:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	443083	WSE8	EET CF	12/21/24 01:24
Total/NA	Prep	3005A			443022	F5MW	EET CF	12/20/24 09:00
Total/NA	Analysis	6020B		1	443693	NFT2	EET CF	12/30/24 14:20
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 04:54
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 15:16
Total/NA	Analysis	D516-16		1	443298	ENB7	EET CF	12/23/24 13:30
Total/NA	Analysis	I-3765-85		1	442994	HE7K	EET CF	12/19/24 11:37
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 10:50
Total/NA	Analysis	SM 2540C		1	443051	MDU9	EET CF	12/19/24 20:26
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:41
Total/NA	Analysis	SM 5210B		1	442947	W9YR	EET CF	12/19/24 10:54
Total/NA	Analysis	SM 5220D		5	443577	ENB7	EET CF	12/30/24 08:55
Total/NA	Analysis	Field Sampling		1	443439	BJ0R	EET CF	12/18/24 11:00

Client Sample ID: SW-5-FD
Lab Sample ID: 310-297452-2
Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	443083	WSE8	EET CF	12/21/24 01:45
Total/NA	Prep	3005A			443182	F5MW	EET CF	12/23/24 09:00
Total/NA	Analysis	6020B		1	443693	NFT2	EET CF	12/30/24 15:46
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 04:55
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 15:18
Total/NA	Analysis	D516-16		1	443641	ENB7	EET CF	12/30/24 14:03
Total/NA	Analysis	I-3765-85		1	442994	HE7K	EET CF	12/19/24 11:37
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443159	MDU9	EET CF	12/20/24 11:07
Total/NA	Analysis	SM 2540C		1	443051	MDU9	EET CF	12/19/24 20:26
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:41
Total/NA	Analysis	SM 5210B		1	442947	W9YR	EET CF	12/19/24 11:01
Total/NA	Analysis	SM 5220D		5	443577	ENB7	EET CF	12/30/24 08:55

Client Sample ID: SW-5
Lab Sample ID: 310-297452-3
Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	443083	WSE8	EET CF	12/21/24 02:07
Total/NA	Prep	3005A			443022	F5MW	EET CF	12/20/24 09:00
Total/NA	Analysis	6020B		1	443693	NFT2	EET CF	12/30/24 14:22

Lab Chronicle

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Client Sample ID: SW-5
Lab Sample ID: 310-297452-3

Date Collected: 12/18/24 12:00
Matrix: Ground Water
Date Received: 12/19/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	353.2		1	443233	HE7K	EET CF	12/27/24 04:56
Total/NA	Analysis	4500 F C-2011		1	443415	WZC8	EET CF	12/26/24 15:21
Total/NA	Analysis	D516-16		1	443641	ENB7	EET CF	12/30/24 14:04
Total/NA	Analysis	I-3765-85		1	442994	HE7K	EET CF	12/19/24 11:37
Total/NA	Analysis	SM 1030E		1	443234	HE7K	EET CF	12/23/24 09:41
Total/NA	Analysis	SM 2320B		1	443423	WZC8	EET CF	12/26/24 19:37
Total/NA	Analysis	SM 2540C		1	443051	MDU9	EET CF	12/19/24 20:26
Total/NA	Analysis	SM 4500 Cl- E		1	443116	ENB7	EET CF	12/20/24 10:42
Total/NA	Analysis	SM 5210B		1	442947	W9YR	EET CF	12/19/24 10:57
Total/NA	Analysis	SM 5220D		5	443577	ENB7	EET CF	12/30/24 08:55
Total/NA	Analysis	Field Sampling		1	443439	BJ0R	EET CF	12/18/24 12:00

Client Sample ID: Trip Blank
Lab Sample ID: 310-297452-4

Date Collected: 12/18/24 06:00
Matrix: Water
Date Received: 12/19/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	443083	WSE8	EET CF	12/20/24 22:08

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity
SM 1030E		Ground Water	Anion/Cation Balance

Method Summary

Client: AECOM
Job ID: 310-297452-1
Project/Site: Winneshiek County Landfill - Groundwater

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
353.2	Nitrogen, Nitrate (Calculation)	EPA	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 1030E	Cation Anion Balance	SM	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
SM 5220D	COD	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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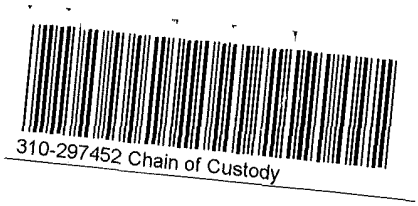
310-297452 Chain of Custody



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: AECOM			
City/State. CITY Waterloo	STATE IA	Project: Lymestrick	
Receipt Information			
Date/Time Received: 11/9/14	DATE	TIME 0950	Received By: TD
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	☑ Yes ☐ No	*If yes:* Cooler ID:	
Multiple Coolers?	☐ Yes ☑ No	*If yes:* Cooler # _____ of _____	
Cooler Custody Seals Present?	☐ Yes ☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present?	☐ Yes ☐ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?	☑ Yes ☐ ~~No~~	*If yes:* Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE			
Thermometer ID: F		Correction Factor (°C): 0.0	
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 0.6		Corrected Temp (°C): 0.6	
• **Sample Container Temperature**			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Document CED-P-SAM-FRM45521
Revision 26
Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319 277.2401 fax 319.277 2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 12-19-24	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below			Lab Sampling:
Project Name: Winneshiek Groundwater Monitoring	☑ 2 weeks			Job / SDG No:
Site: Winneshiek County Landfill	☐ 1 week			
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS	Appendix I Metals and VOCs	Cations/Anions, Alkalinity	TDS, COD, BOD	Sample Specific Notes
GU-1			G	GW		N		X	X	X	X	
GU-2			G	GW		N		X	X	X	X	
SW-1			G	GW		N		X	X	X	X	
SW-2	12-18-24	1100	G	GW	8	N		X	X	X	X	Turbidity - 4.76 NTU
SW-5-FD	12-18-24	1200	G	GW	8	N		X	X	X	X	
SW-5	12-18-24	1200	G	GW	8	N		X	X	X	X	Turbidity - 4.78 NTU
MH-1AA			G	GW		N		X	X	X	X	
MH-4-2			G	GW		N		X	X	X	X	
Equipment Blank #1 Shallow			G	GW		N		X	X	X	X	
Equipment Blank #2 Deep			G	GW		N		X	X	X	X	
Trip Blank	12-18-24	0600	G	W	3	N			X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd. _____ Corr'd. _____ Therm ID No. _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Ben Porter	Aecom	12-19-24			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-297452-1
SDG Number:

Login Number: 297452
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

Appendix B4 – 2024 August Resample Laboratory Reports - NONE

Appendix B5 – 2025 February Resample Laboratory Reports

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 2/24/2025 10:54:57 AM

JOB DESCRIPTION

Winneshiek Groundwater Monitoring
2025 Winter Resampling

JOB NUMBER

310-300441-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
2/24/2025 10:54:57 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Job ID: 310-300441-1 — Eurofins Cedar Falls

Job Narrative
310-300441-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 2/14/2025 2:50 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.0°C.

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

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

Sample Summary

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-300441-1	MW-4	Ground Water	02/14/25 10:45	02/14/25 14:50
310-300441-2	MW-7A	Ground Water	02/14/25 11:50	02/14/25 14:50
310-300441-3	MW-42A	Ground Water	02/14/25 13:00	02/14/25 14:50

Detection Summary

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-4 — Lab Sample ID: 310-300441-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Field Turbidity	0.84				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-7A — Lab Sample ID: 310-300441-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	196		2.00	0.660	ug/L	1		6020B	Total/NA
Field Turbidity	0.75				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-42A — Lab Sample ID: 310-300441-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	23.5		5.00	2.10	ug/L	1		6020B	Total/NA
Field Turbidity	4.29				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-4
Lab Sample ID: 310-300441-1
Date Collected: 02/14/25 10:45
Matrix: Ground Water
Date Received: 02/14/25 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.100		0.200	0.100	ug/L		02/18/25 09:00	02/20/25 15:20	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	**0.84**				NTU			02/14/25 10:45	1

Client Sample Results

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-7A
Lab Sample ID: 310-300441-2

Date Collected: 02/14/25 11:50
Matrix: Ground Water

Date Received: 02/14/25 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	196		2.00	0.660	ug/L		02/18/25 09:00	02/20/25 15:23	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	0.75				NTU			02/14/25 11:50	1

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-42A
Lab Sample ID: 310-300441-3
Date Collected: 02/14/25 13:00
Matrix: Ground Water
Date Received: 02/14/25 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	23.5		5.00	2.10	ug/L		02/18/25 09:00	02/21/25 13:32	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field Turbidity	4.29				NTU			02/14/25 13:00	1

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Glossary

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

Client: AECOM
Project/Site: Winneshiek Groundwater Monitoring

Job ID: 310-300441-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-447000/1-A
Matrix: Water
Analysis Batch: 447303

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447000

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.660		2.00	0.660	ug/L		02/18/25 09:00	02/20/25 14:49	1
Cadmium	<0.100		0.200	0.100	ug/L		02/18/25 09:00	02/20/25 14:49	1

Lab Sample ID: MB 310-447000/1-A
Matrix: Water
Analysis Batch: 447362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447000

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.10		5.00	2.10	ug/L		02/18/25 09:00	02/21/25 13:18	1

Lab Sample ID: LCS 310-447000/2-A
Matrix: Water
Analysis Batch: 447303

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	100	101.1		ug/L		101	80 - 120
Cadmium	100	97.08		ug/L		97	80 - 120

Lab Sample ID: LCS 310-447000/2-A
Matrix: Water
Analysis Batch: 447362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	210.4		ug/L		105	80 - 120

QC Association Summary

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Metals

Prep Batch: 447000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-300441-1	MW-4	Total/NA	Ground Water	3005A	
310-300441-2	MW-7A	Total/NA	Ground Water	3005A	
310-300441-3	MW-42A	Total/NA	Ground Water	3005A	
MB 310-447000/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-447000/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 447303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-300441-1	MW-4	Total/NA	Ground Water	6020B	447000
310-300441-2	MW-7A	Total/NA	Ground Water	6020B	447000
MB 310-447000/1-A	Method Blank	Total/NA	Water	6020B	447000
LCS 310-447000/2-A	Lab Control Sample	Total/NA	Water	6020B	447000

Analysis Batch: 447362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-300441-3	MW-42A	Total/NA	Ground Water	6020B	447000
MB 310-447000/1-A	Method Blank	Total/NA	Water	6020B	447000
LCS 310-447000/2-A	Lab Control Sample	Total/NA	Water	6020B	447000

Field Service / Mobile Lab

Analysis Batch: 447059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-300441-1	MW-4	Total/NA	Ground Water	Field Sampling	
310-300441-2	MW-7A	Total/NA	Ground Water	Field Sampling	
310-300441-3	MW-42A	Total/NA	Ground Water	Field Sampling	

Lab Chronicle

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Client Sample ID: MW-4
Lab Sample ID: 310-300441-1
Date Collected: 02/14/25 10:45
Matrix: Ground Water
Date Received: 02/14/25 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			447000	F5MW	EET CF	02/18/25 09:00
Total/NA	Analysis	6020B		1	447303	NFT2	EET CF	02/20/25 15:20
Total/NA	Analysis	Field Sampling		1	447059	BJ0R	EET CF	02/14/25 10:45

Client Sample ID: MW-7A
Lab Sample ID: 310-300441-2
Date Collected: 02/14/25 11:50
Matrix: Ground Water
Date Received: 02/14/25 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			447000	F5MW	EET CF	02/18/25 09:00
Total/NA	Analysis	6020B		1	447303	NFT2	EET CF	02/20/25 15:23
Total/NA	Analysis	Field Sampling		1	447059	BJ0R	EET CF	02/14/25 11:50

Client Sample ID: MW-42A
Lab Sample ID: 310-300441-3
Date Collected: 02/14/25 13:00
Matrix: Ground Water
Date Received: 02/14/25 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			447000	F5MW	EET CF	02/18/25 09:00
Total/NA	Analysis	6020B		1	447362	NFT2	EET CF	02/21/25 13:32
Total/NA	Analysis	Field Sampling		1	447059	BJ0R	EET CF	02/14/25 13:00

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Ground Water	Field Turbidity

Method Summary

Client: AECOM
Job ID: 310-300441-1
Project/Site: Winneshiek Groundwater Monitoring

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-300441 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA | Project:

Receipt Information

Date/Time Received: DATE 2-14-25 TIME 1450 | Received By: PH

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	PL 250 N	
Uncorrected Temp (°C):	6.0	
Corrected Temp (°C):	6.0	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613
phone 319.277 2401 fax 319.277.2425

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Christopher Oelkers	Site Contact:	Date: 2-14-25	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact:	Carrier:	1 of 1 COCs
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below			Lab Sampling
Project Name Winneshiek Groundwater Monitoring	☑ 2 weeks			
Site. Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Arsenic	Barium	Cadmium	Cobalt	Nickel	Benzene	Chlorobenzene	Appendix I VOCs	Appendix I Metals	Sample Specific Notes.
MW-4	2-14-25	1045	G	GW	1	N				X							Turbidity- 0.84 NTU
MW-7A	2-14-25	1150	G	GW	1	N			X								Turbidity- 0.75 NTU
MW-29A			G	GW		N		X									
MW-33A			G	GW		N							X	X			
MW-42A	2-14-25	1300	G	GW	1	N						X					Turbidity- 4.29 NTU
MW-43A			G	GW		N						X					
MW-37A			G	GW		N		X	X		X		X				
Equipment Blank #1			G	GW		N									X	X	
Trip Blank			G	GW		N									X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C). Obs'd _____ Corr'd _____		Therm ID No _____
Relinquished by: Ben Porter	Company: Aecom	Date/Time: 2-14-25	Received by:	Company:	Date/Time: 2-14-25 1450
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time

Page 17 of 18

2/24/2025

Login Sample Receipt Checklist

Client: AECOM

Job Number: 310-300441-1

Login Number: 300441

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

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

Appendix C – Groundwater Sampling Field Sheets

GROUNDWATER ELEVATIONS

AECOM

Daily Time Log

Date: 3 / 20 / 2024

Sat. Sun. Mon. Tues. (Weds.) Thurs. Fri.

Site: WINNESHIEK CO. LF Project No.: 60711359.120

Weather: SUNNY COLD 28°F NNW 16MPH RH45%

Task/Equipment: GROUNDWATER, SURFACE WATER

Firm/Contractor's Personnel: Hrs On-Site:

AECOM Personnel: R. Henning Hrs On-Site:

Site Visitor:

Time Log indicating work in progress, remarks:

0600-0630

0630-0700

0700-0730

0730-0800 Pack truck

0800-0830 Leave for Waterloo office

0830-0900 Work in Waterloo office

0900-0930

0930-1000

1000-1030

1030-1100 Leave office for Winneshiek Co. LF

1100-1130

1130-1200

1200-1230

1230-1300 Arrive Winneshiek; work w/ TJ on SWPPP bottles/coolers

1300-1330

1330-1400 Begin groundwater levels

1400-1430

1430-1500

1500-1530

1530-1600

1600-1630

1630-1700

1700-1730 Off site 1735

1730-1800 Arrive Fitchburg at 20:30

Items requiring follow up:

AECOM

Water Elevation

Project No.: 60711359.120 Site: WINNESHIEK

	Well Number	Elevation of Top of Pipe	Depth to Water	Water Elevation	Depth to Bottom	Well Integrity				Comments
						Locked	Capped	Cracked	Obstruct	
1340	SG-4		dry		<0.0	NA	NA	NA	Weeds	no flow
1333	MW41A		5.91		23.75	N	Y	N	N	Lock
1349	MW3		21.06		37.82	Y	Y	N	N	
1347	MW18		20.94		47.93	Y	Y	N	N	
1358	MW34A		8.21		26.52	N	Y	N	N	lock
1410	MW2R		14.98		28.48	N	Y	N	N	cant close well cover
1414	MW2		17.45		18.05	N	Y	N	N	lock; pro-top casing
1419	MW33A		19.89		22.30	N	Y	N	N	lock; soft 1" sed.
1428	MW37A		25.61		26.30	N	Y	N	N	lock
1434	MW1		18.35		22.02	Y	Y	N	N	
1439	MW19R		47.83		70.80	Y	Y	N	N	
1444	MW32A		22.45		22.60	N	Y	N	N	lock
1461	SG-1		dry		<0.0	NA	NA	NA	N	completely dry
1507	MW38A		25.06		32.50	Y	Y	N	N	1" sed.
1511	MW39A		23.86		32.32	N	Y	N	N	lock; 1" sed.
1517	MW40A		28.14		41.69	N	Y	N	N	lock
1520	SG-3		0.00		0.00	NA	NA	NA	Y	flowing; move SG
1528	MW-42A		13.50		23.74	N	Y	N	N	lock
1537	MW43A		8.26		20.22	N	Y	N	N	lock
1535	SG-5		0.16		—	NA	NA	NA	N	flow
1539	MW44A		9.59		20.25	N	Y	N	N	lock
1545	SG-2		0.30		—	NA	NA	NA	N	flowing
1552	MW27A		dry		18.06	Y	Y	N	N	dry
1559	MW12A		28.35		29.59	Y	Y	N	N	
1601	MW35		47.59		57.57	N	Y	N	N	1601 lock
1609	MW26A		19.89		20.17	Y	Y	N	N	
1607	MW-36		85.12		86.32	N	Y	N	N	lock
1613	MW-11		40.19		42.34	Y	Y	N	N	

Description of Site:

Soil Conditions:

Weather: Temperature:

Entered on Computer: Signature: Date: 3/20/2024

AECOM

Water Elevation

Project No.: 60711359.120 Site: WINNESHIEK

	Well Number	Elevation of Top of Pipe	Depth to Water	Water Elevation	Depth to Bottom	Well Integrity				Comments
						Locked	Capped	Cracked	Obstruct	
1625	MW31A		15.78		22.70	N	y	N	N	lock
1624	MW25A		16.80		21.74	y	y	N	N	
1627	MW24A		19.56		22.78	N	y	N	N	lock
1637	MW29A		23.22		27.20	N	y	N	N	lock
1635	MW30		39.78		40.12	N	y	N	N	lock
1645	MW100		34.82		35.00	N	y	N	N	lock
1641	MW101		39.09		40.38	N	y	N	N	lock
1653	MW7A		12.07		20.24	y	N	N	N	
1651	MW22		38.94		42.63	y	N	N	N	
1659	MW46A		9.18		18.14	N	y	N	N	mw464; Lock
1704	MW45A		8.30		19.13	y	y	N	N	
1708	MW11-2		6.33		~~21.95~~	y	y	N	N	
1713	MW-4B		34.25		40.17	N	y	N	N	lock
1726	MW-4		34.83		44.88	y	y	N	N	

Description of Site:

Soil Conditions:

Weather: Temperature:

Entered on Computer: _____ Signature: Russell J Hanson Date: 3/20/2024

GROUNDWATER ELEVATION DATA COLLECTION FORM
WINNESHIEK COUNTY LANDFILL

Project Number: ~~60635552.88.2023~~ 60711359
Name: ~~Russ Henning~~ Nate Klewer
Date: ~~05/17/2023~~ 8/27/2024

Monitoring Well	Top-of-Pipe Elevation (ft. MSL)	Depth to Water (ft.)	Groundwater Elevation (ft MSL)	Measured Well Depth (ft. below TOC)	Constructed Well Depth (ft. below TOC)	Locked	Capped	Cracked	Obstructed	Comments - Include Information on Well Integrity
Shallow Wells										
MW-1	1200.92	11.04	1200.92	22.01	22.04	Y	Y	N	N	good condition, removed hornets nest
MW-2	1188.40	17.20	1188.40	18.04	18.08	N	Y	N	N	repair protective casing; lock, spider web
MW-2R	1175.36	17.96	1175.36	28.45	28.54	Y	Y	N	N	repair protective casing; lock and 1" operator added extension to casing
MW-3	1162.81		1162.81	37.80		Y	Y	N	N	good condition, lots of hornets
MW-4	1180.35	32.49	1180.35	44.90	44.94	Y	Y	N	N	good condition, spider nests
MW-4B	1180.15	31.60	1180.15	40.15	40.24	N	Y	N	N	good condition
MW-5AR	1153.90	—	1153.90	23.83		N	Y	N	N	abandon; install new well east across road
MW-7A	1136.05	13.10	1136.05	20.23	20.27	Y	Y	N	N	good condition
MW-12A	1170.99	27.43	1170.99	29.60	29.64	Y	Y	N	N	good condition
MW-24A	1132.98	21.66	1132.98	22.78	22.80	N	Y	N	N	Lock, 5 ft bottom
MW-25A	1137.98	19.20	1137.98	21.75	21.74	Y	Y	N	N	good condition
MW-26A	1164.65	19.46	1164.65	20.16	20.20	Y	Y	N	N	good condition
MW-27A	1178.02	—	1178.02	18.05	—	Y	Y	N	N	good condition, Dry, outer casing is loose
MW-28A	1215.47		1215.47	16.84		Y	Y	N	N	good condition
MW-29A	1133.85	23.69	1133.85	27.19	27.24	N	Y	N	N	Lock
MW-31A	1138.77	16.51	1138.77	22.65	22.74	N	Y	N	N	2-in sediment; lock; redevelop, sediments present soft bottom
MW-32A	1219.37	22.47	1219.37	22.58	22.49	N	Y	N	N	Lock, solids material in well
MW-33A	1205.88	13.06	1205.88	22.35	22.40	N	Y	N	N	Lock
MW-34A	1166.70	630	1166.70	26.68	26.72	N	Y	N	N	1-in sediment; lock, soft sediment bottom
MW-37A	1210.30	14.93	1210.30	26.27	26.32	N	Y	N	N	Lock, soft sed bottom
MW-38A	1148.37	24.05	1148.37	32.42	32.55	N	Y	N	N	Lock; 3-in sediment; redevelop, spider nests
MW-39A	1146.90	23.45	1146.90	32.18	32.36	N	Y	N	N	Lock; 3-in sediment; redevelop, spider nests
MW-40A	1151.17	20.16	1151.17	41.65	41.72	N	Y	N	N	Lock; 3-in sediment; redevelop
MW-41A	1149.75	2.71 [illegible]	1149.75	23.75	23.82	N	Y	N	N	new monitoring well; lock
MW-42A	1135.43	14.72	1135.43	23.70	23.76	N	Y	N	N	Lock; 3-in sediment; redevelop
MW-43A	1119.21	8.93	1119.21	20.20	20.25	N	Y	N	N	casing key, small hole, bugs new monitoring well; lock; 1-in sediment
MW-44A	1117.88	9.40	1117.88	20.23	20.21	N	Y	N	N	new monitoring well; lock bugs in casing
MWII-2	1145.20	7.52	1145.20	21.96	21.98	Y	Y	N	N well	case protrudes up 3-4 in. [illegible]
MWII-3	1129.58		1129.58	16.53		Y	Y	N	N	water in casing; replace well
MW-100	1134.14	34.82	1134.14	34.98	35.02	N	Y	N	N	Lock, solids materials present
MW-101	1134.55	38.82	1134.55	40.35	40.42	N	Y	N	N	Lock, soft bottom, slight solids material present
MW-48A		9.25			18.12					good condition
Deep Wells										
MW-11	1138.92	41.46	1138.92	42.31	42.76	Y	Y	N	N	good condition
MW-18	1163.02	20.18	1163.02	47.90	48.00	Y	Y	N	N	good condition
MW-19R	1204.15	46.11	1204.15	70.10	70.91	Y	Y	N	N	redevelop well; 6-in sediment, soft bottom
MW-21AR	1153.61		1153.61	NM		N	Y	N	N	obstructed near top of well; abandon
MW-22	1135.52	39.09	1135.52	42.62	42.66	Y	Y	N	N	clear concrete pad
MW-30	1133.76	39.70	1133.76	40.12	40.17	N	Y	N	N	Lock
MW-35	1170.60	47.15	1170.60	55.56	55.64	N	Y	N	N	Lock
MW-36	1165.22	85.20	1165.22	85.30	85.40	N	Y	N	N	Lock
Surface Water										
SW-1	1127.98	—	1127.98	N/A	N/A	N/A	N/A	N/A	Y	good condition, covered by vegetation
SW-2	1106.22	0.03	1103.10	N/A	N/A	N/A	N/A	N/A	Y	good condition slight flow, weeds
SW-3	1121.65	—	1121.65	N/A	N/A	N/A	N/A	N/A	Y	good condition unavailable
SW-4	1139.75	—	1139.75	N/A	N/A	N/A	N/A	N/A	Y	good condition, unavailable
SW-5	1110.51	0.20	1110.51	N/A	N/A	N/A	N/A	N/A	Y	good condition remove weeds

Notes: TOC based on 2010 - 2022 Survey data (based on monitoring well installation).
NM - not measured

GROUNDWATER GRADIENTS

Horizontal Hydraulic Gradient and Groundwater Flow Velocity Calculations
Winneshiek County Landfill
Decorah, IA

Assumptions:
1) Water elevations were measured in March 2024.
2) Horizontal hydraulic gradients for the shallow and deep aquifers are estimated from flowlines shown on Figure 2 and Figure 3, respectively.
3) Horizontal hydraulic conductivities for the shallow and bedrock aquifer are estimated from field hydrualic conductivity tests. The geometric mean of field hydraulic conductivity tests conducted in the shallow aquifer is 9.27×10^{-4} cm/sec. The geometric mean of field hydraulic conductivity tests conducted in the bedrock aquifer is 9.18×10^{-6} cm/sec.

4) Assumed effect porosity in the shallow aquifer is 0.25 and in the bedrock aquifer is 0.10 (Freeze and Cherry, 1979).

Shallow Water Table (Figure 2)

Horizontal Hydraulic Gradient

$$Ih=\Delta h_h/\Delta l_h$$

Where:
I_h = Horizontal hydraulic gradient
Δh_h = Difference in water elevation along the flowlines A and B depicted on Figure 2.
Δl_h = Length (distance) of flowlines A and B depicted on Figure 2.

	Distance Along Flowline (feet)	Difference in Elevation (feet)	Horizontal Gradient
Flowline A	1,160	1190.00 - 1120 = 70	0.060
Flowline B	2,000	1190 - 1115 = 75	0.038
Flowline C	1,100	1195 - 1160 = 35	0.032
Flowline D	1,630	1195 - 1145 = 50	0.031

Average Linear Velocity

$$V=K\ I_h/n_e$$

Where:
K = Geometric mean of hydraulic conductivities of wells screen in the shallow aquifer from slug test (2.629 ft/day)
I_h = Horizontal hydraulic gradient along flowlines
n_e = Effective porosity (0.25)

	K (ft/day)	Horizontal Hydraulic Gradient (feet/foot)	Effective Porosity	Average Linear Velocity (ft/day)
Flowline A	2.629	0.060	0.25	0.635
Flowline B	2.629	0.038	0.25	0.394
Flowline C	2.629	0.032	0.25	0.335
Flowline D	2.629	0.031	0.25	0.323

Deep Aquifer (Figure 3)

Horizontal Hydraulic Gradient

$$Ih=\Delta hh/\Delta lh$$

Where:
I_h = Horizontal hydraulic gradient
Δh_h = Difference in water elevation along the flowlines A and B depicted on Figure 4.
Δl_h = Length (distance) of flowlines A and B depicted on Figure 4.

	Distance Along Flowline (feet)	Difference in Elevation (feet)	Horizontal Gradient
Flowline A	1,860	1145 - 1095 = 50	0.027
Flowline B	2,130	1155 - 1095 = 60	0.028

Average Linear Velocity

$$V=K\ I_h/n_e$$

Where:
K = Geometric mean of hydraulic conductivities of wells screen in the bedrock aquifer from slug test (0.026 ft/day)
I_h = Horizontal hydraulic gradient along flowlines
n_e = Effective porosity (0.10)

	K (ft/day)	Horizontal Hydraulic Gradient (feet/foot)	Effective Porosity	Average Linear Velocity (ft/day)
Flowline A	0.026	0.027	0.10	0.007
Flowline B	0.026	0.028	0.10	0.007

Calculated by: NMK Date: 10/09/2024
Checked by: RJH Date: 11/27/2023
Approved by: RJH Date: 11/27/2023

MONITORING WELL INSPECTION

Winneshiek Co. LF
2024 AWQR
IDNR Well Maintenance
March 2024

Well	Maintenance Required	J-Plug	Sand	Weep	Paint	Labels	Nests	Lock	Resurvey	Notes
MW-1	good condition; permanent labels	N	N	N	N	Y	N	N	N	
MW-2	Protective casing needs repair; lid doesn't close; permanent labels; needs lock	Y	N	N	Y	Y	N	Y	N	
MW-2R	Protective casing needs repair; lid doesn't close; permanent labels; needs lock	N	N	N	N	N	N	Y	Y	Well protective casing needs to be raised
MW-3	good condition	N	N	N	N	N	Y	N	N	
MW-4	good condition	N	N	N	N	N	Y	N	N	
MW-4B	good condition; lock	N	N	N	N	N	N	Y	N	
MW-7A	good condition	N	N	N	N	N	N	N	N	
MW-11	permanent lables	N	N	N	N	N	N	N	N	
MW-12A	good condition	N	Y	Y	N	N	N	N	N	
MW-18	good condition	N	N	N	N	N	N	N	N	
MW-19R	new monitoring well; permanent labels	N	N	N	N	N	N	N	N	
MW-22	good condition; clear concrete pad	N	N	N	N	N	N	N	N	
MW-24A	good condition; lock	N	N	N	N	N	N	Y	N	
MW-25A	permanent lables	N	N	N	N	N	N	N	N	
MW-26A	good condition	N	N	N	N	N	N	N	N	
MW-27A	Coarse sand or pea gravel needs to be added inside protective casing annular space; weep hole needs to be drilled; permanent labels	N	Y	Y	N	N	N	N	N	
MW-29A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-30	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-31A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-32A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-33A	new monitoring well; permanent labels, lock	N	N	N	N	Y	N	Y	N	
MW-34A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-35	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-36	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-37A	new monitoring well; permanent labels, lock	N	N	N	N	Y	N	Y	N	
MW-38A	new monitoring well; permanent labels	N	N	N	N	N	Y	N	N	
MW-39A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-40A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-41A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-42A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-43A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-44A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-45A	new monitoring well; permanent labels	N	N	N	N	N	N	N	N	
MW-46A	new monitoring well; permanent labels, lock	N	N	N	N	N	N	Y	N	
MW-100	good condition; lock	N	N	N	N	N	N	Y	N	
MW-101	good condition; lock	N	N	N	N	N	N	Y	N	
MWII-2	good condition	N	N	N	N	N	N	N	N	
SW-1	good condition; dry, no flow	NA	NA	NA	NA	NA	NA	NA	NA	
SW-2	good condition	NA	NA	NA	NA	NA	NA	NA	NA	
SW-3	move to main discharge channel	NA	NA	NA	NA	NA	NA	NA	Y	
SW-4	remove weeds; clean; dry, no flow	NA	NA	NA	NA	NA	NA	NA	NA	
SW-5	good condition	NA	NA	NA	NA	NA	NA	NA	NA	

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-41A Side View


MW-41A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



SG-4 Side View – Dry


SG-4 Upstream Discharge Pipe – No Flow

Location: Winneshiek, IA
Date Photos Taken: 3/20/24 – 3/20/24
Permit No.: # 96-SDP-1-74P
Photographer: R. Henning
Camera: iPhone 13 Pro
Complier: R. Henning



MW-18 Side View


MW-18 Top View

Location: Winneshiek, IA Permit No.: # 96-SDP-1-74P Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24 Photographer: R. Henning Complier: R. Henning



MW-3 Side View


MW-3 Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-34A Side View



MW-34A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-2R Side View



MW-2R Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-2 Side View



MW-2 Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-33A Side View



MW-33A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-37A Side View



MW-37A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-1 Side View



MW-1 Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-19R Side View



MW-19R Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-32A Side View



MW-32A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



SG-1 Side View - Dry



SG-1 View Downstream Culvert – Dry, No Flow

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-38A Side View



MW-38A Top View

Location: Winneshiek, IA
Date Photos Taken: 3/20/24 – 3/20/24
Permit No.: # 96-SDP-1-74P
Photographer: R. Henning
Camera: iPhone 13 Pro
Complier: R. Henning



MW-39A Side View


MW-39A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-40A Side View



MW-40A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



SG-3 Side View



SG-3 Close View – Move to Main Channel

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-42A Side View


MW-42A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-43A Side View



MW-43A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



SG-5 Side View



SG-2 Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-44A Side View



MW-44A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning

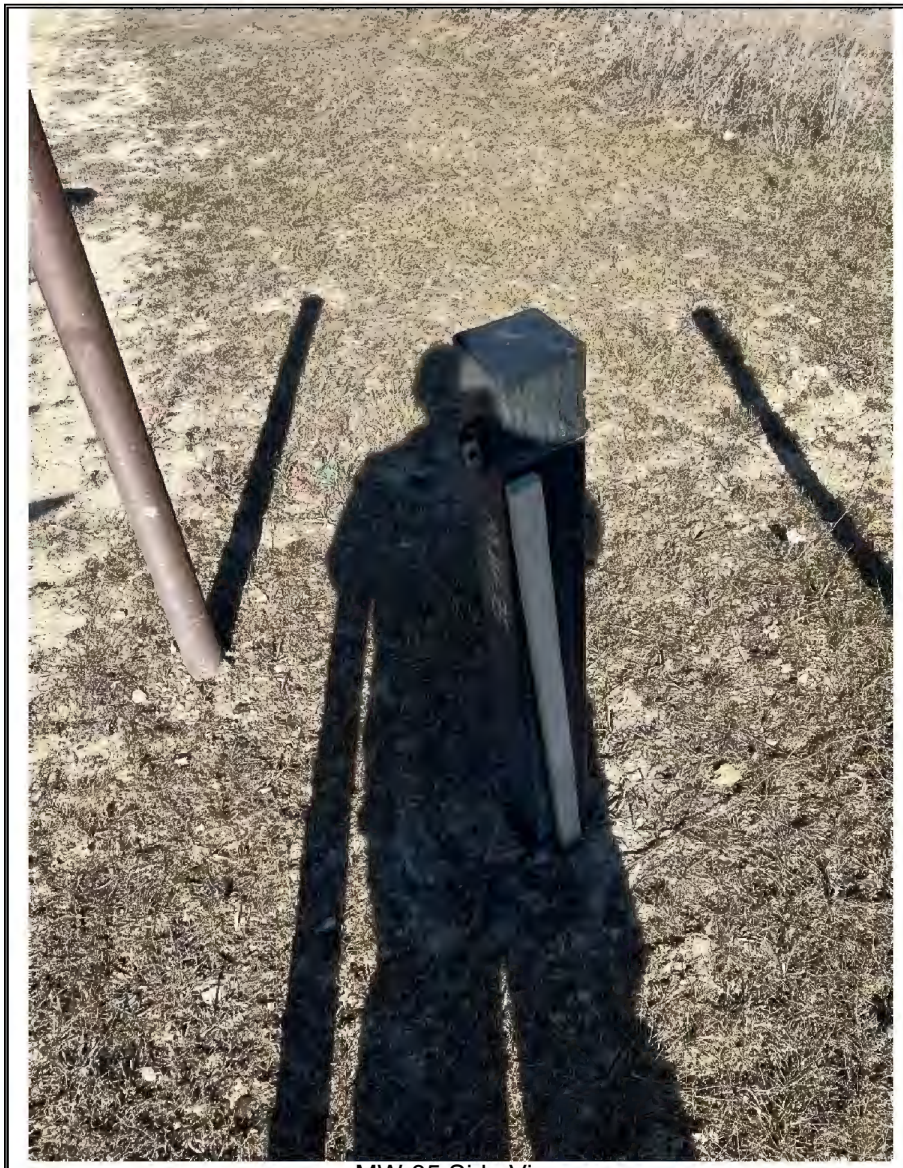


MW-27A Side View



MW-27A Top View

Location: Winneshiek, IA
Date Photos Taken: 3/20/24 – 3/20/24
Permit No.: # 96-SDP-1-74P
Photographer: R. Henning
Camera: iPhone 13 Pro
Complier: R. Henning



MW-35 Side View



MW-35 Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-12A Side View



MW-12A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-36 Side View



MW-36 Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-26A Side View


MW-26A Top View



MW-31A Side View


MW-31A Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-11 Side View



MW-11 Top View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning

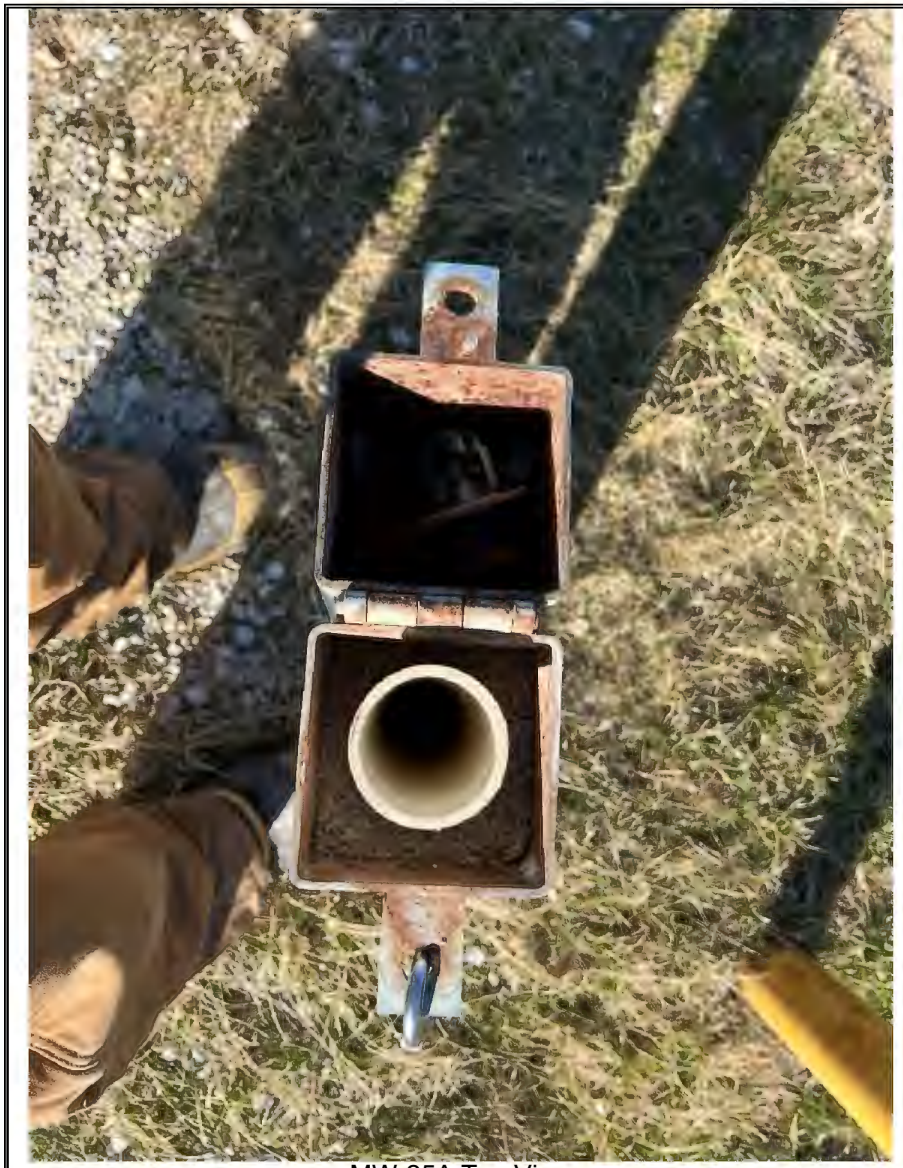


MH-4-2 Side View



MW-25A Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-25A Top View



MW-24A Side View

Location: Winneshiek, IA
Date Photos Taken: 3/20/24 – 3/20/24
Permit No.: # 96-SDP-1-74P
Photographer: R. Henning
Camera: iPhone 13 Pro
Complier: R. Henning



MW-24A Top View



MW-30 Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning

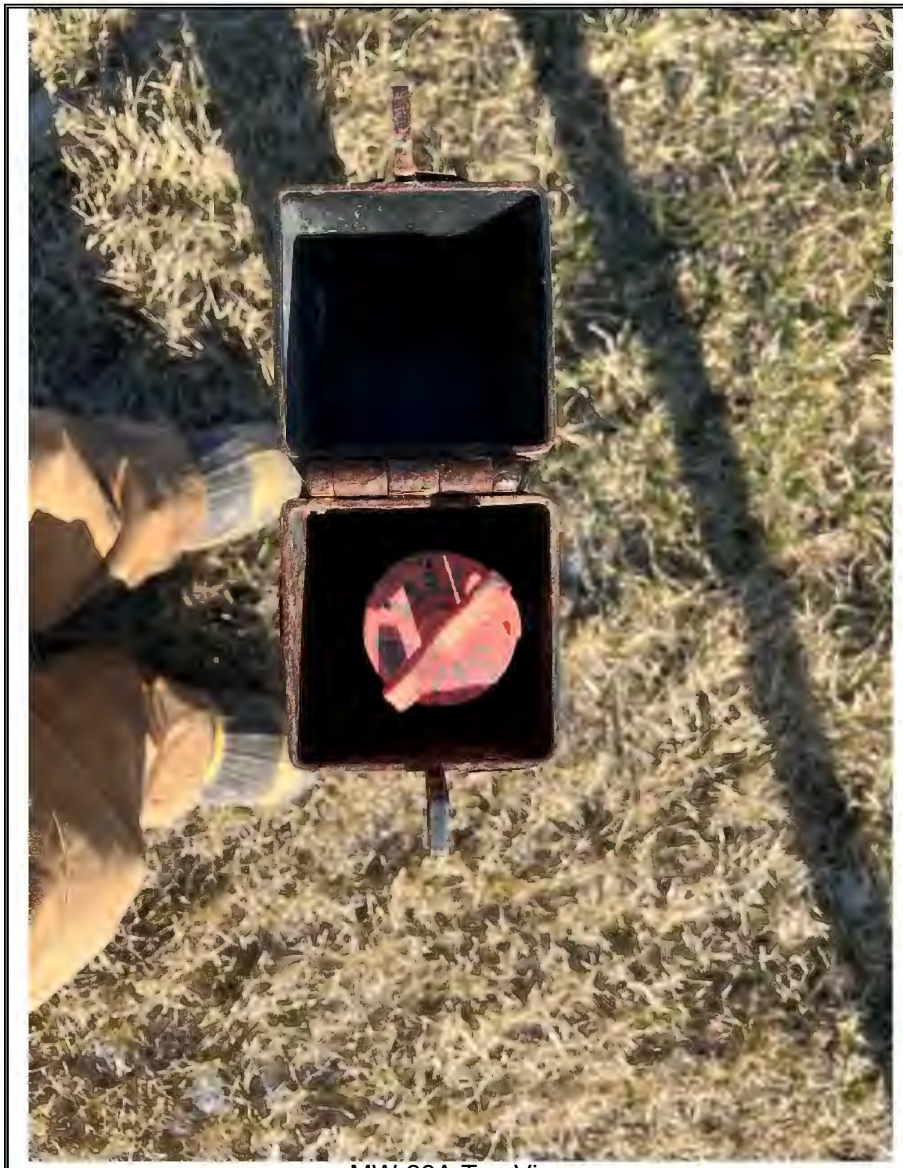


MW-30 Top View



MW-29A Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-29A Top View



MW-101 Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-101 Top View



MW-100 Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning

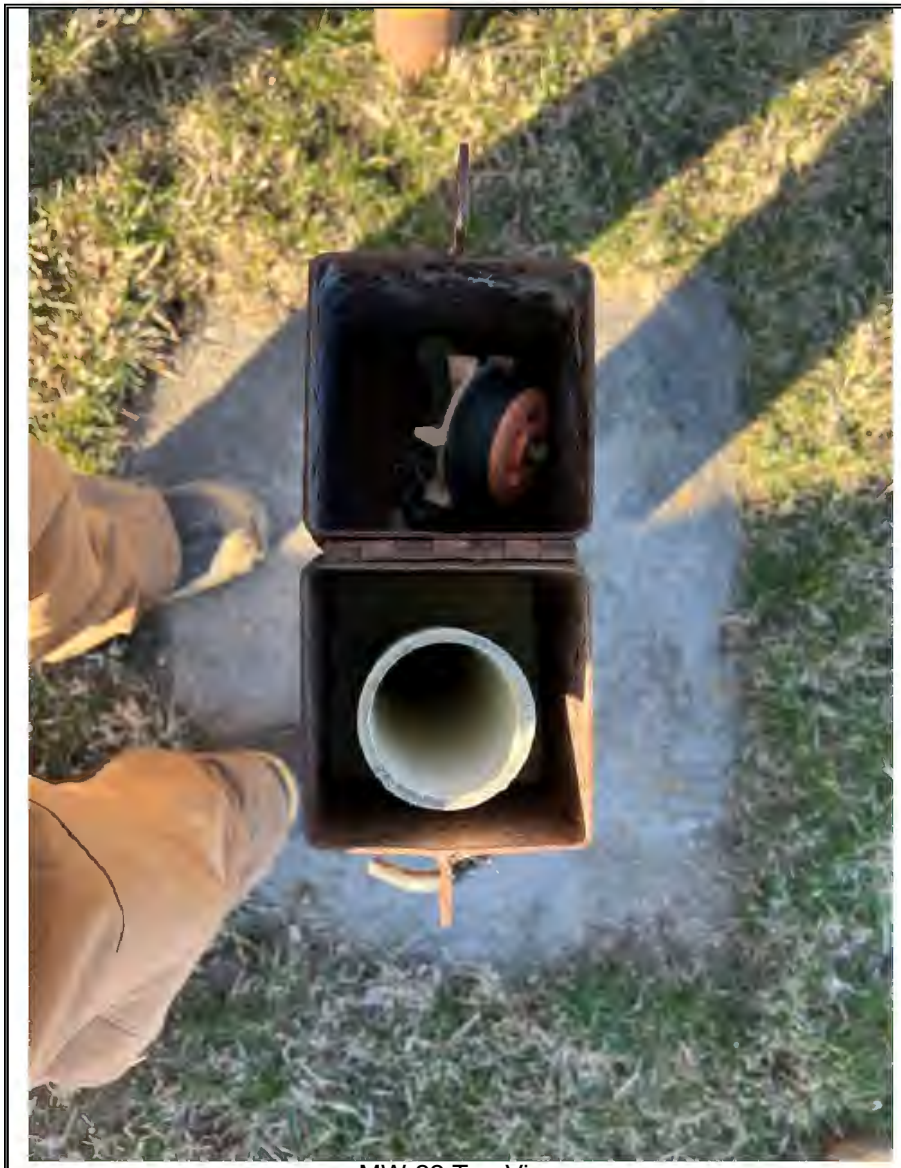


MW-100 Top View



MW-22 Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-22 Top View



MW-7A Side View

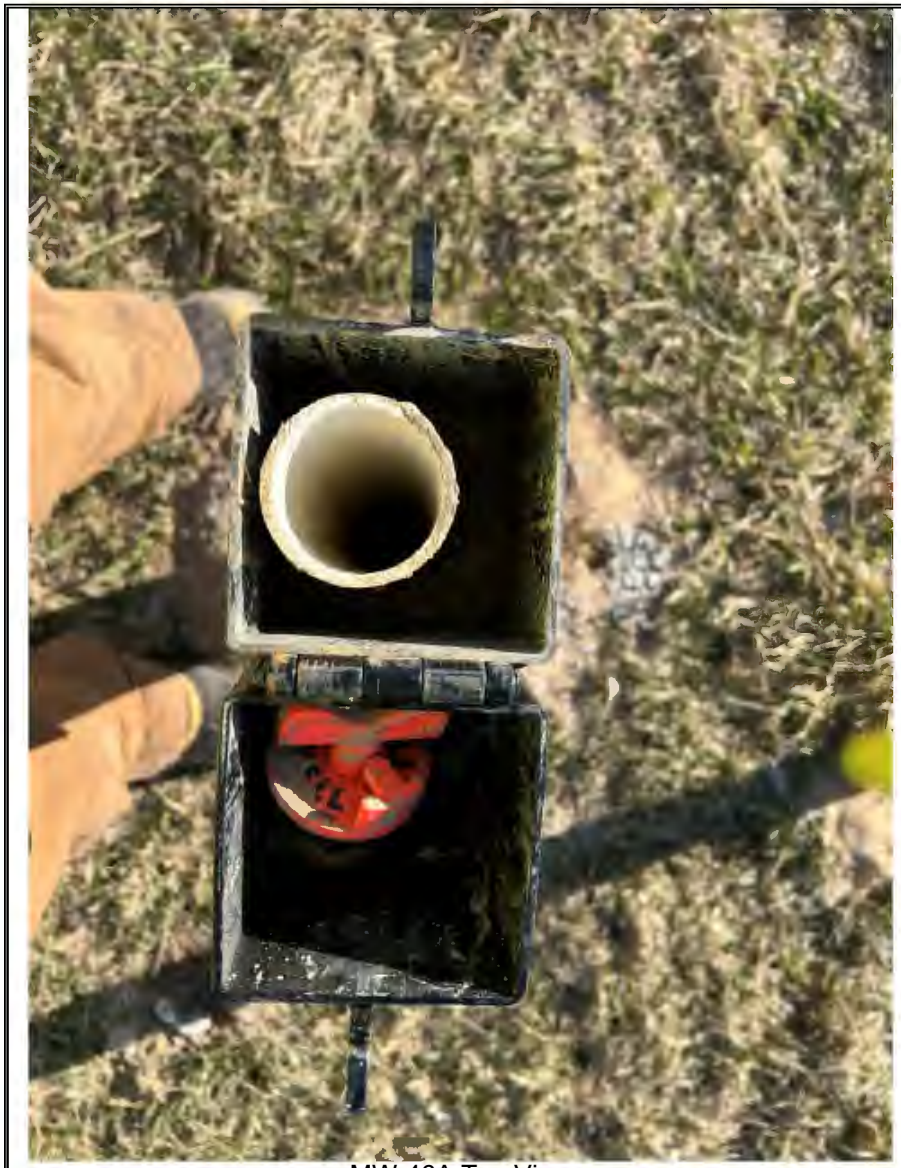


MW-7A Top View



MW-46A Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-46A Top View



MW-45A Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MW-45A Top View



MWII-2 Side View

Location: Winneshiek, IA
Permit No.: # 96-SDP-1-74P
Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24
Photographer: R. Henning
Complier: R. Henning



MWII-2 Top View



MW-4B Side View

Location: Winneshiek, IA
Date Photos Taken: 3/20/24 – 3/20/24
Permit No.: # 96-SDP-1-74P
Photographer: R. Henning
Camera: iPhone 13 Pro
Complier: R. Henning



MW-4B Top View



MW-4 Side View

Location: Winneshiek, IA Permit No.: # 96-SDP-1-74P Camera: iPhone 13 Pro
Date Photos Taken: 3/20/24 – 3/20/24 Photographer: R. Henning Complier: R. Henning



MW-4 Top View

No Photo

Appendix D - Leachate Collection System Performance Evaluation Report

LEACHATE COLLECTION SYSTEM PERFORMANCE EVALUATION FOR 2024

The leachate system (Figure 1) at the Winneshiek County Landfill (Winne) consists of four separate components:

1. Toe Drain Leachate Collection Pipe Around Original Areas 1, 2 and 3 - Installed in Approximately 1992. This toe drain system includes a gravity collection system, transfer pumping, a leachate storage tank and load-out facilities.
2. Leachate Collection System - Constructed as Part of Original Cell 4. This is a gravity collection system that flows to a leachate sump at the northeast corner of original Cell 4. Leachate is pumped from the sump to a load-out facility for loading a leachate tank truck.
3. Leachate Collection System - Constructed as Part of Original Cell 5. This is similar to the original Cell 4 system and flows to the northeast corner of original Cell 5. Leachate is pumped from the sump to a load-out for loading a leachate haul truck.
4. Leachate Collection System – Constructed as Part of the 2016 Project. There is a gravity collection system in the original Cell 5 Expansion Area that travels to Lagoon Bay No. 2. Also, there is a gravity toe drain that runs along the bottom of the abutment liner. The section across the north edge of original Cell 4 travels by gravity to the east to Lagoon Bay No. 2. The section across the west edge of original Cell 5 travels north and is deposited in the original Cell 5 Expansion Area Leachate Collection System.

Table 1 presents the leachate depths above the base grades in unlined original Areas 1, 2 and 3. Leachate piezometers LHPZ-1, LHPZ-2, LHPZ-3, LHPZ-4 and LHPZ-6 monitor leachate levels in original Areas 1, 2 and 3. Leachate depths at LHPZ-1 and LHPZ-2 suggest significant leachate accumulations in original Area 2. Leachate depths at LHPZ-3 and LHPZ-4 suggest no significant leachate accumulation in original Area 1. Leachate depths at LHPZ-6 suggest significant leachate accumulation in original Area 3. These leachate levels have remained stable since 2014.

When conditions allow, leachate is pumped through a sprinkler system and recirculated over composite-lined areas of the Landfill – C5 EXP. This has proven to be successful in the past and reduces leachate hauling and disposal costs for the site. Leachate is dispersed from the sprinklers and is partially evaporated and/or used by the vegetation on the site (evapotranspiration) with a reduction in volume. Leachate piezometers LHPZ 4-1, 5-1, 5-2, 5E-1 and 5E-2 (Figure 1) have been installed to monitor leachate levels above the top of the liner; and to date, the recirculation does not appear to result in any consistent leachate build-up in the system, see Table 1. Approximately 3.0 MG of leachate was recirculated in 2024.

In August 2017, Winne installed an SMI 420F Evaporator in Lagoon Bay No. 2 (see Figure No. 1). The anchoring points are adjusted by the landfill staff depending on the wind conditions, and the evaporator is not operated when wind is greater than 15 MPH to control the mist from drifting outside the lagoon boundary. The evaporator is designed to evaporate 2,000 gallons per hour at 50°F. The use of the Evaporator has had a significant effect on the leachate levels in the lagoon. In 2024, the evaporators were operated from May through October, for a total of 88 days and 703 total hours. Assuming the equipment evaporation rate is 2,000 gallons per hour, approximately 1.41 MG of leachate was evaporated in 2024.

Table 1 presents the leachate pumping records for 2024. No leachate was hauled to the Decorah sanitary sewer in 2020 and none since the Lagoons were approved for use by IDNR in 2016. Both lagoon bays are currently 1/4 full.

The leachate lines will be cleaned every 3 years in accordance with Iowa Administrative Code (IAC) 113.7(5)"b"(5). The following is the schedule:

Original Areas 1, 2 and 3
- Last cleaned in 2023
- Scheduled to be cleaned in 2026

Original Cell 4
- Last cleaned in 2022
- Scheduled to be cleaned in 2025

C5 EXP
- Last cleaned in 2024
- Scheduled to be cleaned in 2027

Overall, the leachate system at the landfill appears to be functioning as anticipated.

Table 1

2024

LEACHATE RECIRCULATION OPERATIONS PLAN TOTALS

WINNESHIEK COUNTY LANDFILL

AECOM

		Leachate Head-Lined					GW-Lined			Leachate Head-Unlined																		
Piezometer		4-1	5-1	5-2	5E-1	5E-2	GUSE-1	GULG-1	GU-01	LHPZ-1	LHPZ-2	LHPZ-3	LHPZ-4	LHPZ-5			Leachate Hauling			Leachate Recirculation			Evaporator			Weather Conditions	
Liner Elevation		1161.70	1122.70	1140.00	1140.50	1141.50	1036.00	1121.00	1107.00	1184.50	1173.00	1170.00	1159.00	1163.00			123 & 5	Cell 4		Pump (GPH)	Runoff Cir	4,000	Operation	Evap (GPH)	2,000	Precipitation - Inches	
Month		Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max			Cell	Cell	Total	Hours	Day	Cell. Recirc.	Days	Hours	Cell. Evap	Rain	Snow
January	Depth	0.00	0.75	0.00	0.20	0.50	0.40	0.10	-0.05	12.20	2.40	4.00	3.90	4.58		January	0	0	0	0	0	0	0	0	0	0.70	9.00
	Elevation	1161.70	1123.45	1140.00	1140.70	1142.00	1038.40	1121.10	1106.95	1196.70	1175.40	1174.00	1162.90	1167.58														
February	Depth	0.00	0.75	0.00	0.25	0.75	0.50	0.10	0.20	11.00	2.90	3.15	3.90	4.58		February	0	0	0	0	0	0	0	0	0	0.50	0.50
	Elevation	1161.70	1123.45	1140.00	1140.75	1142.25	1038.50	1121.10	1107.20	1195.50	1175.90	1173.15	1162.90	1167.58														
March	Depth	0.38	0.75	0.00	0.20	0.75	0.40	0.10	0.10	11.20	2.50	3.50	3.90	4.58		March	0	0	0	0	0	0	0	0	0	3.50	7.00
	Elevation	1162.08	1123.45	1140.00	1140.70	1142.25	1038.40	1121.10	1107.10	1195.70	1175.50	1173.50	1162.90	1167.58														
April	Depth	0.40	0.75	0.00	0.40	0.80	0.70	0.05	-2.30	13.30	4.30	3.50	3.75	4.58		April	0	0	0	66	0	264,000	0	0	0	5.90	5.00
	Elevation	1162.10	1123.45	1140.00	1140.90	1142.30	1038.70	1121.05	1104.70	1197.80	1177.30	1173.50	1162.75	1167.58														
May	Depth	0.88	0.80	0.00	0.50	1.00	0.80	0.40	0.20	20.00	5.80	3.50	3.90	4.58		May	0	0	0	70	0	280,000	10	80	320,000	11.20	0.70
	Elevation	1162.58	1123.50	1140.00	1141.00	1142.50	1038.80	1121.45	1107.20	1204.50	1178.80	1173.50	1162.60	1167.58														
June	Depth	0.50	0.80	0.00	0.60	0.90	0.80	0.40	0.10	18.00	5.60	3.50	3.60	4.49		June	0	0	0	134	0	536,000	16	128	512,000	7.85	0.00
	Elevation	1162.20	1123.50	1140.00	1141.10	1142.40	1038.80	1121.40	1107.10	1202.50	1178.60	1173.50	1162.60	1167.40														
July	Depth	0.78	0.90	0.00	0.50	0.80	0.85	0.40	0.20	18.50	5.80	3.50	3.60	5.15		July	0	0	0	136	0	544,000	20	160	640,000	5.00	0.00
	Elevation	1162.48	1123.60	1140.00	1141.00	1142.30	1038.85	1121.40	1107.20	1203.00	1178.80	1173.50	1162.60	1169.15														
August	Depth	0.70	0.80	0.00	0.50	0.80	0.80	0.10	0.20	18.40	4.30	2.10	3.40	5.09		August	0	0	0	163	0	652,000	20	163	652,000	3.50	0.00
	Elevation	1162.40	1123.50	1140.00	1141.00	1142.30	1038.80	1121.10	1107.20	1202.90	1177.30	1172.10	1162.40	1168.00														
September	Depth	0.68	0.90	0.00	0.40	0.70	0.80	0.10	0.20	18.40	4.30	2.10	3.40	5.08		September	0	0	0	118	0	472,000	16	130	520,000	1.00	0.00
	Elevation	1162.30	1123.20	1140.00	1140.90	1142.20	1038.80	1121.10	1107.20	1202.90	1177.30	1172.10	1162.40	1168.00														
October	Depth	0.40	0.60	0.00	0.40	0.70	0.80	0.10	0.20	18.40	4.30	2.00	3.30	5.00		October	0	0	0	70	0	280,000	6	42	168,000	1.00	0.00
	Elevation	1162.10	1123.30	1140.00	1140.90	1142.20	1038.80	1121.10	1107.20	1202.90	1177.30	1172.00	1162.30	1168.00														
November	Depth	0.00	0.50	0.00	0.40	0.60	0.80	0.10	0.20	18.40	4.30	2.00	3.30	5.10		November	0	0	0	0	0	0	0	0	0	4.00	0.00
	Elevation	1161.70	1123.20	1140.00	1140.90	1142.10	1038.80	1121.10	1107.20	1202.90	1177.30	1172.00	1162.30	1168.10														
December	Depth	0.00	0.60	0.00	0.50	0.70	0.90	0.00	0.20	13.80	4.10	0.50	3.25	4.90		December	0	0	0	0	0	0	0	0	0	0.25	3.00
	Elevation	1161.70	1123.30	1140.00	1141.00	1142.20	1038.90	1121.00	1107.20	1198.30	1177.10	1170.50	1162.25	1167.90														
Maximum Depth		**0.80**	**0.90**	**0.00**	**0.60**	**1.00**	**0.90**	**0.40**	**0.20**	**20.00**	**5.80**	**4.00**	**3.90**	**5.15**														
Maximum Elevation		**1162.58**	**1123.60**	**1140.00**	**1141.10**	**1142.50**	**1038.85**	**1121.45**	**1107.20**	**1204.50**	**1178.80**	**1173.50**	**1162.60**	**1169.15**														
2024 Avg Elevation		**1162.07**	**1123.41**	**1140.00**	**1140.90**	**1142.25**	**1038.71**	**1121.16**	**1106.95**	**1200.47**	**1177.22**	**1172.76**	**1162.36**	**1167.75**		**2024**	0	0	0	757		3,028,000	88	703	1,406,000	44.40	25.20
2023 Avg Elevation		**1161.70**	**1123.41**	**1140.03**	**1140.65**	**1142.01**	**1038.23**	**1121.26**	**1106.98**	**1199.34**	**1176.29**	**1171.48**	**1163.35**	**1167.55**		**2023**	0	0	0	515		2,060,000	101	782	1,564,000	30.10	33.50
2022 Avg Elevation		**1161.79**	**1123.17**	**1140.00**	**1140.60**	**1141.78**	**1038.08**	**1121.18**	**1106.44**	**1197.28**	**1175.52**	**1171.70**	**1162.32**	**1166.42**		**2022**	0	0	0	457		1,828,000	68	579	1,158,000	35.00	0.50
2021 Avg Elevation		**1161.70**	**1123.13**	**1140.02**	**1140.68**	**1141.79**	**1038.18**	**1121.27**	**1107.28**	**1200.46**	**1175.77**	**1171.22**	**1162.48**	**1167.56**		**2021**	0	0	0	828	85	2,504,000	104	851	1,702,000	36.70	29.00
2020 Avg Elevation		**1161.72**	**1122.84**	**1140.63**	**1140.95**	**1141.57**	**1038.06**	**1121.06**	**1107.08**	**1200.13**	**1174.40**	**1171.20**	**1163.17**	**1169.29**		**2020**	0	0	0	800		3,200,000	83	703	1,406,000	43.00	11.75
2019 Avg Elevation		**1161.95**	**1122.87**	**1140.37**	**1140.82**	**1141.50**	**1038.00**	**1121.00**	**1107.05**	**1203.03**	**1173.28**	**1171.78**	**1163.08**	**1169.75**		**2019**	0	0	0	437		1,748,000	118	962	1,924,000	44.85	63.50
2018 Avg Elevation		**1162.21**	**1122.87**	**1140.38**	**1141.21**	**1141.55**	**1038.41**	**1121.02**	**1107.02**	**1198.83**	**1174.27**	**1171.07**	**1162.98**	**1169.22**		**2018**	0	0	0	355		1,420,000				53.10	33.50
2017 Avg Elevation		**1161.83**	**1122.84**	**1140.13**	**1141.18**	**1141.50**	**1038.49**	**1121.00**	**1107.00**	**1201.98**	**1176.27**	**1170.84**	**1162.58**	**1169.97**		**2017**	0	0	0	458		1,832,000				31.90	16.00
2016 Avg Elevation		**1161.90**	**1122.92**	**1140.79**						**1201.76**	**1178.21**	**1171.19**	**1162.60**	**1169.84**		**2016**	1,231,800	70,200	1,302,000	202		808,000				56.60	29.00
2015 Avg Elevation		**1162.05**	**1122.95**	**1140.47**						**1200.61**	**1178.85**	**1172.33**	**1162.13**	**1191.08**		**2015**	639,600	253,400	893,000	835		3,340,000				28.47	43.90
2014 Avg Elevation		**1162.16**	**1123.14**	**1140.48**						**1199.12**	**1178.94**	**1170.68**	**1161.78**	**1191.28**		**2014**	3,238,300	186,200	3,434,600	680		2,720,000				39.40	

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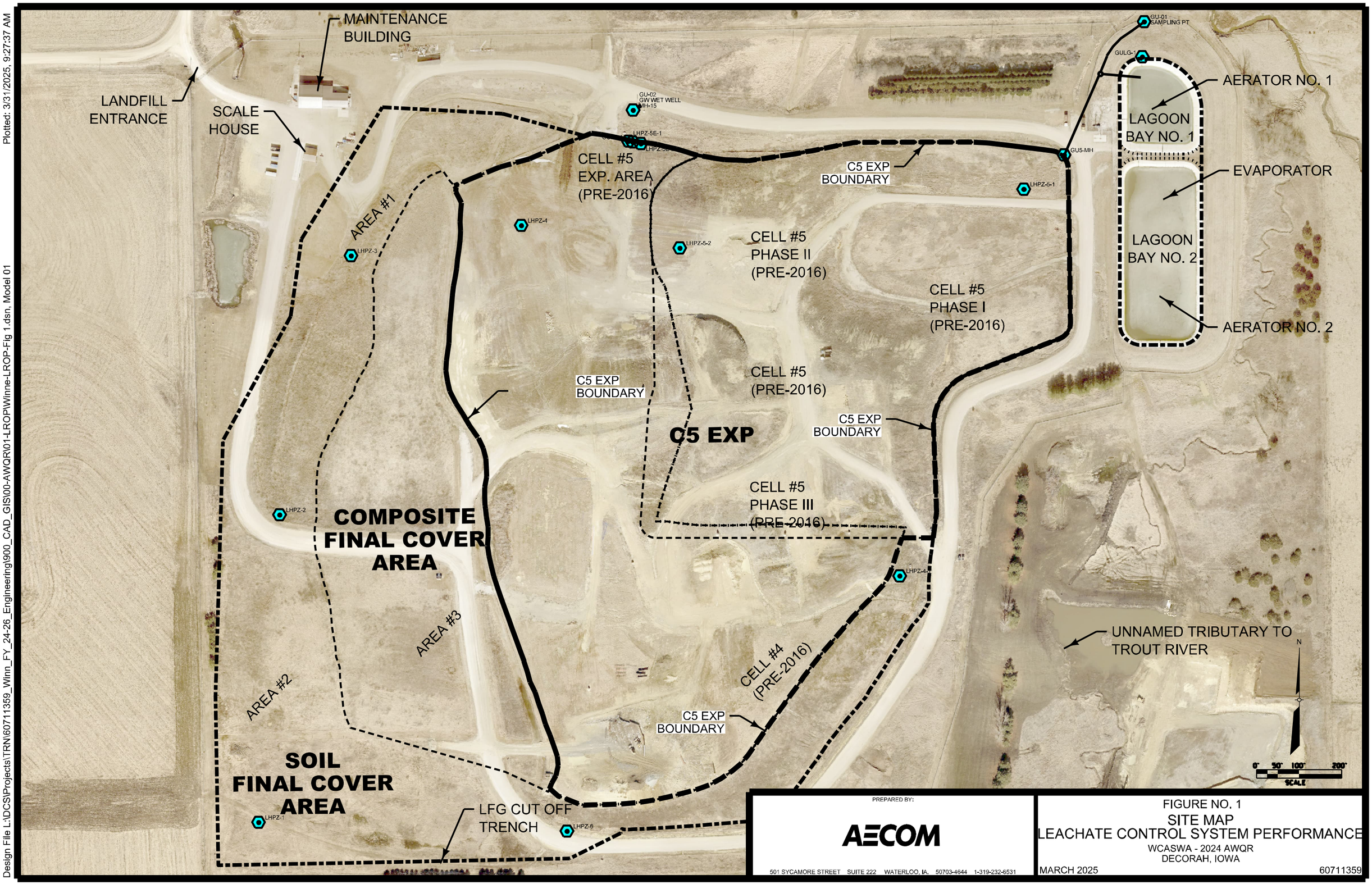

PREPARED BY:

AECOM

501 SYCAMORE STREET SUITE 222 WATERLOO, IA. 50703-4644 1-319-232-6531

FIGURE NO. 1

SITE MAP
LEACHATE CONTROL SYSTEM PERFORMANCE

WCASWA - 2024 AWQR
DECORAH, IOWA

MARCH 2025 60711359

Plotted: 3/31/2025, 9:27:37 AM
Waterloo, Iowa
Printed from MicroStation V8i
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Appendix E - Methane Monitoring Program Report

WINNESHIEK COUNTY LANDFILL
IDNR #17-SDP-01-75P
METHANE MONITORING PROGRAM REPORT
2024

1.0 PROGRAM PLAN

Landfill gas (LFG), produced during bio-degradation of the waste, can migrate through soils. Methane and carbon dioxide are the primary constituents. Methane is explosive at concentrations between 5% (lower explosive limit) (LEL) and 15% (upper explosive limit) (UEL) in air, and can collect in buildings or other structures.

At Winneshiek County Landfill, the LFG generated is passively vented through the final cover using a series of gas vents in original Areas 1, 2 and 3. The trenches are excavated into the waste 6 feet below the final cover. In the trenches, horizontal perforated PVC pipe surrounded by granular material or tire shreds create a path of least resistance for the LFG to collect. The final cover is placed over the trench to prevent precipitation from entering the waste mass. Vertical PVC pipes are connected to the horizontal pipes equipped with roof turbines, allowing the LFG to vent to the atmosphere.

Methane monitoring will be conducted quarterly at Winneshiek County Landfill in accordance with the permit. The site perimeter and all site buildings will be inspected to check for the presence of methane gas. The perimeter sample locations are sited on each side of the facility. Methane concentrations greater than 1.25% (25% of the LEL) in facility structures or greater than 5% at the facility boundary require immediate action, as discussed in IAC 113.26(15)c(1-3). Readings will be field recorded and included in the annual Methane Monitoring Report.

2.0 MONITORING RESULTS

During 2024, Winneshiek County Landfill was monitored for LFG in accordance with the permit. Methane monitoring was conducted using an RKI Eagle Portable Multi-Gas Meter which monitors for organic gases such as methane, oxygen deficiency, hydrogen sulfide and carbon monoxide. The samples were taken quarterly at the locations shown on Figure 1. The 2024 methane monitoring data is recorded in Table 1.

Methane gas was not recorded in any of the facility buildings or monitoring points.

TABLE 1

2024 METHANE MONITORING PROGRAM REPORT

WINNESHIEK COUNTY LANDFILL

CH_4 in % LEL																
MW & MH > 100%																
BUILDINGS > 25%																
Date																
LOCATION	**TYPE**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**	**CH_4**	**H_2S ppm**	**O_2**	**CO ppm**
Scale House	Building	0.0%	0	19.3%	0	0.0%	0	20.7%	0	0.0%	0	20.7%	0	0.0%	0	18.4%	0
Shop	Building	0.0%	0	18.0%	0	0.0%	0	20.7%	0	0.0%	0	19.5%	0	0.0%	0	18.1%	0
MW-4B	MW	1.0%	0	18.5%	0	0.0%	0	18.6%	0	0.0%	0	19.9%	0	0.0%	0	19.3%	0
MW-5AR	MW	0.0%	0	18.6%	0	0.0%	0	19.6%	0	0.0%	0	19.0%	0	0.0%	0	18.2%	0
GU-02	Pipe	0.0%	0	20.7%	0	0.0%	0	20.7%	0	0.0%	0	18.2%	0	0.0%	0	18.3%	0
MWII-3	MW	0.0%	0	20.7%	0	0.0%	0	18.5%	0	0.0%	0	18.3%	0	0.0%	0	18.1%	0
GU-01	Pipe	0.0%	0	18.0%	0	0.0%	0	18.8%	0	0.0%	0	19.2%	0	0.0%	0	19.7%	0
MW-22	MW	0.0%	0	18.5%	0	0.0%	0	18.1%	0	0.0%	0	20.7%	0	0.0%	0	19.5%	0
MW-24A	MW	0.0%	0	18.2%	0	0.0%	0	20.7%	0	0.0%	0	18.3%	0	0.0%	0	19.4%	0
MW-23	MW	0.0%	0	18.5%	0	0.0%	0	19.0%	0	0.0%	0	20.7%	0	0.0%	0	19.7%	0
MW-11	MW	1.0%	0	17.1%	0	0.0%	0	20.7%	0	1.0%	0	18.6%	0	0.0%	0	19.7%	0
GP-01	Gas Mon. PT	0.0%	0	18.4%	0	0.0%	0	18.0%	0	0.0%	0	18.5%	0	0.0%	0	18.1%	0
MW-12A	MW	3.0%	0	15.2%	0	1.0%	0	19.6%	0	0.0%	0	18.2%	0	3.0%	0	18.2%	0
MW-12	MW	0.0%	0	20.7%	0	0.0%	0	18.2%	0	0.0%	0	20.7%	0	0.0%	0	19.2%	0
GP-02	Gas Mon. PT	0.0%	0	18.7%	0	0.0%	0	20.7%	0	0.0%	0	18.6%	0	0.0%	0	18.7%	0
GP-03	Gas Mon. PT	0.0%	0	20.7%	0	0.0%	0	18.7%	0	0.0%	0	18.3%	0	0.0%	0	19.7%	0
MW-28A	MW	0.0%	0	18.2%	0	0.0%	0	19.4%	0	0.0%	0	20.6%	0	0.0%	0	18.9%	0
MW-19	MW	0.0%	0	20.7%	0	0.0%	0	20.7%	0	0.0%	0	18.7%	0	0.0%	0	18.0%	0
GP-04	Gas Mon. PT	0.0%	0	18.2%	0	0.0%	0	18.2%	0	0.0%	0	18.3%	0	0.0%	0	19.7%	0
GP-05	Gas Mon. PT	0.0%	0	18.0%	0	0.0%	0	20.7%	0	0.0%	0	20.7%	0	0.0%	0	19.0%	0
OW-1	Passive Gas Vent	0.0%	0	18.9%	0	0.0%	0	18.0%	0	0.0%	0	18.5%	0	0.0%	0	19.7%	0
GP-06	Gas Mon. PT	0.0%	0	18.3%	0	0.0%	0	20.3%	0	0.0%	0	20.7%	0	0.0%	0	18.3%	0
GP-07	Gas Mon. PT	0.0%	0	18.2%	0	0.0%	0	19.4%	0	0.0%	0	18.2%	0	0.0%	0	19.7%	0
MW-2	MW	0.0%	0	20.7%	0	0.0%	0	18.3%	0	0.0%	0	18.3%	0	0.0%	0	18.2%	0
GP-08	Gas Mon. PT	0.0%	0	19.7%	0	0.0%	0	20.7%	0	0.0%	0	19.0%	0	0.0%	0	20.6%	0
GP-09	Gas Mon. PT	0.0%	0	18.0%	0	0.0%	0	19.6%	0	0.0%	0	20.7%	0	0.0%	0	20.7%	0
MW-3	MW	0.0%	0	20.7%	0	0.0%	0	18.1%	0	0.0%	0	18.1%	0	0.0%	0	19.5%	0
MW-18	MW	0.0%	0	18.4%	0	0.0%	0	20.7%	0	0.0%	0	18.1%	0	0.0%	0	19.7%	0

Plotted: 3/31/2025, 9:43:54 AM
Waterloo, Iowa
Printed from MicroStation V8i
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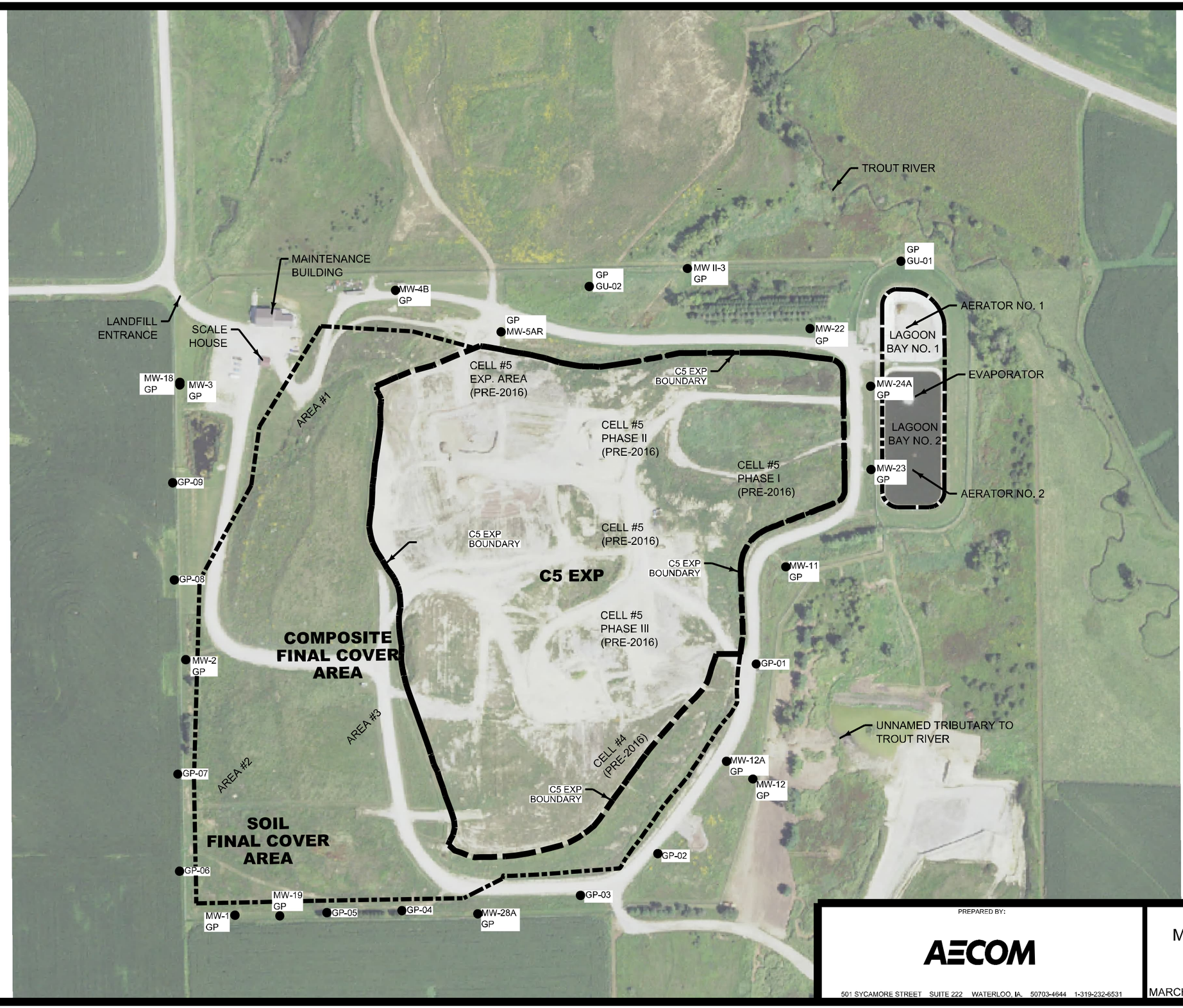

PREPARED BY:

AECOM

501 SYCAMORE STREET SUITE 222 WATERLOO, IA. 50703-4644 1-319-232-6531

FIGURE NO. 1
METHANE MONITORING PROGRAM PLAN

WCASWA - 2024 AWQR
DECORAH, IOWA

MARCH 2025

60711359

Appendix F - Storm Sampling Report

eurofins | Environment Testing

1 2 3 4 5 6 7

ANALYTICAL REPORT

PREPARED FOR

Attn: Chris Oelkers
AECOM
501 Sycamore Street
Suite #222
Waterloo, Iowa 50703

Generated 5/14/2024 12:02:47 PM

JOB DESCRIPTION

Winneshiek County SWPPP Stormwater

JOB NUMBER

310-280280-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

Job ID: 310-280280-1 — Eurofins Cedar Falls

Job Narrative
310-280280-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/2/2024 12:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7°C, 5.6°C and 7.1°C.

GC/MS Semi VOA
Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-420952. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-420952 and analytical batch 310-421454 recovered outside control limits for the following analytes: Pyridine.

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

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

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

General Chemistry
Method 1664A: Constant weight was not achieved after 3 drying cycles for the following sample: SW-2 Comp (310-280280-4).

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

Sample Summary

Client: AECOM
Job ID: 310-280280-1
Project/Site: Winneshiek County SWPPP Stormwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280280-1	SW-4 Grab	Water	05/02/24 07:20	05/02/24 12:45
310-280280-2	SW-4 Comp	Water	05/02/24 10:25	05/02/24 12:45
310-280280-3	SW-2 Grab	Water	05/02/24 07:15	05/02/24 12:45
310-280280-4	SW-2 Comp	Water	05/02/24 10:20	05/02/24 12:45
310-280280-5	SW-1 Grab	Water	05/02/24 07:00	05/02/24 12:45
310-280280-6	SW-1 Comp	Water	05/02/24 10:05	05/02/24 12:45

Client: AECOM
Job ID: 310-280280-1
Project/Site: Winneshiek County SWPPP Stormwater

Client Sample ID: SW-4 Grab
Lab Sample ID: 310-280280-1
Date Collected: 05/02/24 07:20
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Alpha-Terpineol	<10.0		10.0		ug/L		05/13/24 14:51	1	L0FS
Aniline	<10.0		10.0		ug/L		05/13/24 14:51	1	L0FS
Benzoic acid	<100		100		ug/L		05/13/24 14:51	1	L0FS
Naphthalene	<10.0		10.0		ug/L		05/13/24 14:51	1	L0FS
p-Cresol	<10.0		10.0		ug/L		05/13/24 14:51	1	L0FS
Phenol	<10.0		10.0		ug/L		05/13/24 14:51	1	L0FS
Pyridine	<10.0	*1	10.0		ug/L		05/13/24 14:51	1	L0FS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Analyzed*	*Dil Fac*	*Analyst*
2-Fluorophenol (Surr)	*63*		*25 - 110*	*05/13/24 14:51*	*1*	*L0FS*
Phenol-d5 (Surr)	*52*		*21 - 110*	*05/13/24 14:51*	*1*	*L0FS*
2,4,6-Tribromophenol (Surr)	*71*		*27 - 136*	*05/13/24 14:51*	*1*	*L0FS*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Chloride	**6.16**		5.00		mg/L		05/08/24 15:33	5	QTZ5
Sulfate	**19.1**		5.00		mg/L		05/08/24 15:33	5	QTZ5

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Aluminum	<0.100		0.100		mg/L		05/07/24 11:21	1	ZRI4
Antimony	<0.100		0.100		mg/L		05/07/24 11:21	1	ZRI4
Arsenic	<0.0800		0.0800		mg/L		05/07/24 11:21	1	ZRI4
Barium	**0.0135**		0.0100		mg/L		05/07/24 11:21	1	ZRI4
Beryllium	<0.0100		0.0100		mg/L		05/07/24 11:21	1	ZRI4
Cadmium	<0.0200		0.0200		mg/L		05/07/24 11:21	1	ZRI4
Calcium	**46.7**		1.00		mg/L		05/07/24 11:21	1	ZRI4
Chromium	<0.0200		0.0200		mg/L		05/07/24 11:21	1	ZRI4
Copper	<0.0200		0.0200		mg/L		05/07/24 11:21	1	ZRI4
Iron	<0.500		0.500		mg/L		05/07/24 11:21	1	ZRI4
Lead	<0.100		0.100		mg/L		05/07/24 11:21	1	ZRI4
Magnesium	**21.8**		1.00		mg/L		05/07/24 11:21	1	ZRI4
Nickel	<0.0500		0.0500		mg/L		05/07/24 11:21	1	ZRI4
Potassium	<2.00		2.00		mg/L		05/07/24 11:21	1	ZRI4
Selenium	<0.100		0.100		mg/L		05/07/24 11:21	1	ZRI4
Silver	<0.0200		0.0200		mg/L		05/07/24 11:21	1	ZRI4
Sodium	**6.39**		2.00		mg/L		05/07/24 11:21	1	ZRI4
Zinc	<0.0400		0.0400		mg/L		05/07/24 11:21	1	ZRI4

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Magnesium	**19.3**		1.00		mg/L		05/06/24 13:30	1	ZRI4

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		05/08/24 14:40	1	A6US

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Total hardness as CaCO3	**206**		4.12		mg/L		05/07/24 11:21	1	HE7K

Client: AECOM
Job ID: 310-280280-1
Project/Site: Winneshiek County SWPPP Stormwater

Client Sample ID: SW-4 Grab
Lab Sample ID: 310-280280-1
Date Collected: 05/02/24 07:20
Matrix: Water
Date Received: 05/02/24 12:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
HEM (Oil & Grease)	<5.3		5.3		mg/L		05/09/24 14:00	1	D7CP
Turbidity	**4.5**		1.0		NTU		05/02/24 14:03	1	KM3E
Cyanide, Total	<0.0100		0.0100		mg/L		05/07/24 16:12	1	ENB7
Ammonia	<0.500		0.500		mg/L		05/10/24 20:32	1	ZJX4
Nitrate Nitrite as N	<0.100		0.100		mg/L		05/11/24 02:33	1	ZJX4
Total Phosphorus as P	<0.100		0.100		mg/L		05/10/24 13:57	1	ENB7
Total Suspended Solids	**5.7**		5.0		mg/L		05/07/24 16:51	1	A4XP
Alkalinity, Total (As CaCO3)	**186**		5.00		mg/L		05/10/24 13:23	1	WZC8
Alkalinity, Bicarbonate (As CaCO3)	**186**		5.00		mg/L		05/10/24 13:23	1	WZC8
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L		05/10/24 13:23	1	WZC8
Total Dissolved Solids	**214**		50.0		mg/L		05/07/24 14:03	1	D7CP
Chemical Oxygen Demand	<25.0		25.0		mg/L		05/09/24 10:28	5	HE7K
Total Organic Carbon	**6.34**		1.00		mg/L		05/08/24 21:36	1	DGU1

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH	**8.4**	**HF**	1.0		SU		05/02/24 13:38	1	W9YR

Client Sample ID: SW-4 Comp
Lab Sample ID: 310-280280-2
Date Collected: 05/02/24 10:25
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Alpha-Terpineol	<12.5		12.5		ug/L		05/13/24 15:18	1	L0FS
Aniline	<12.5		12.5		ug/L		05/13/24 15:18	1	L0FS
Benzoic acid	<125		125		ug/L		05/13/24 15:18	1	L0FS
Naphthalene	<12.5		12.5		ug/L		05/13/24 15:18	1	L0FS
p-Cresol	<12.5		12.5		ug/L		05/13/24 15:18	1	L0FS
Phenol	<12.5		12.5		ug/L		05/13/24 15:18	1	L0FS
Pyridine	<12.5	*1	12.5		ug/L		05/13/24 15:18	1	L0FS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Analyzed*	*Dil Fac*	*Analyst*
2-Fluorophenol (Surr)	*44*		*25 - 110*	*05/13/24 15:18*	*1*	*L0FS*
Phenol-d5 (Surr)	*52*		*21 - 110*	*05/13/24 15:18*	*1*	*L0FS*
2,4,6-Tribromophenol (Surr)	*52*		*27 - 136*	*05/13/24 15:18*	*1*	*L0FS*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Chloride	**15.1**		10.0		mg/L		05/08/24 10:09	10	QTZ5
Sulfate	**21.4**		10.0		mg/L		05/08/24 10:09	10	QTZ5

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Aluminum	<0.100		0.100		mg/L		05/07/24 11:35	1	ZRI4
Antimony	<0.100		0.100		mg/L		05/07/24 11:35	1	ZRI4
Arsenic	<0.0800		0.0800		mg/L		05/07/24 11:35	1	ZRI4
Barium	**0.0411**		0.0100		mg/L		05/07/24 11:35	1	ZRI4
Beryllium	<0.0100		0.0100		mg/L		05/07/24 11:35	1	ZRI4
Cadmium	<0.0200		0.0200		mg/L		05/07/24 11:35	1	ZRI4
Calcium	**56.2**		1.00		mg/L		05/07/24 11:35	1	ZRI4
Chromium	<0.0200		0.0200		mg/L		05/07/24 11:35	1	ZRI4

Client Sample ID: SW-4 Comp
Lab Sample ID: 310-280280-2

Date Collected: 05/02/24 10:25
Matrix: Water
Date Received: 05/02/24 12:45

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Copper	<0.0200		0.0200		mg/L		05/07/24 11:35	1	ZRI4
Iron	<0.500		0.500		mg/L		05/07/24 11:35	1	ZRI4
Lead	<0.100		0.100		mg/L		05/07/24 11:35	1	ZRI4
Magnesium	**25.5**		1.00		mg/L		05/07/24 11:35	1	ZRI4
Nickel	<0.0500		0.0500		mg/L		05/07/24 11:35	1	ZRI4
Potassium	**2.27**		2.00		mg/L		05/07/24 11:35	1	ZRI4
Selenium	<0.100		0.100		mg/L		05/07/24 11:35	1	ZRI4
Silver	<0.0200		0.0200		mg/L		05/07/24 11:35	1	ZRI4
Sodium	**6.65**		2.00		mg/L		05/07/24 11:35	1	ZRI4
Zinc	<0.0400		0.0400		mg/L		05/07/24 11:35	1	ZRI4

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Magnesium	**25.9**		1.00		mg/L		05/06/24 13:34	1	ZRI4

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		05/08/24 14:43	1	A6US

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Total hardness as CaCO3	**245**		4.12		mg/L		05/07/24 11:35	1	HE7K

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
HEM (Oil & Grease)	<5.4		5.4		mg/L		05/09/24 14:00	1	D7CP
Turbidity	**3.8**		1.0		NTU		05/02/24 14:05	1	KM3E
Cyanide, Total	<0.0100		0.0100		mg/L		05/07/24 16:07	1	ENB7
Ammonia	<0.500		0.500		mg/L		05/10/24 20:34	1	ZJX4
Nitrate Nitrite as N	**4.65**		1.00		mg/L		05/11/24 02:34	10	ZJX4
Total Phosphorus as P	<0.100		0.100		mg/L		05/10/24 13:58	1	ENB7
Total Suspended Solids	**15.5**		7.5		mg/L		05/07/24 15:54	1	A4XP
Alkalinity, Total (As CaCO3)	**163**		5.00		mg/L		05/10/24 13:31	1	WZC8
Alkalinity, Bicarbonate (As CaCO3)	**163**		5.00		mg/L		05/10/24 13:31	1	WZC8
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L		05/10/24 13:31	1	WZC8
Total Dissolved Solids	**248**		50.0		mg/L		05/08/24 17:03	1	ENB7
Chemical Oxygen Demand	<25.0		25.0		mg/L		05/09/24 10:28	5	HE7K
Total Organic Carbon	**4.61**		1.00		mg/L		05/08/24 22:12	1	DGU1

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH	**8.0**	**HF**	1.0		SU		05/02/24 13:39	1	W9YR

Client Sample ID: SW-2 Grab
Lab Sample ID: 310-280280-3

Date Collected: 05/02/24 07:15
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Alpha-Terpineol	<10.0		10.0		ug/L		05/13/24 15:44	1	L0FS
Aniline	<10.0		10.0		ug/L		05/13/24 15:44	1	L0FS
Benzoic acid	<100		100		ug/L		05/13/24 15:44	1	L0FS

Client Sample ID: SW-2 Grab
Lab Sample ID: 310-280280-3

Date Collected: 05/02/24 07:15
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Naphthalene	<10.0		10.0		ug/L		05/13/24 15:44	1	L0FS
p-Cresol	<10.0		10.0		ug/L		05/13/24 15:44	1	L0FS
Phenol	<10.0		10.0		ug/L		05/13/24 15:44	1	L0FS
Pyridine	<10.0	*1	10.0		ug/L		05/13/24 15:44	1	L0FS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Analyzed*	*Dil Fac*	*Analyst*
2-Fluorophenol (Surr)	*54*		*25 - 110*	*05/13/24 15:44*	*1*	*L0FS*
Phenol-d5 (Surr)	*43*		*21 - 110*	*05/13/24 15:44*	*1*	*L0FS*
2,4,6-Tribromophenol (Surr)	*64*		*27 - 136*	*05/13/24 15:44*	*1*	*L0FS*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Chloride	**20.5**		10.0		mg/L		05/08/24 10:22	10	QTZ5
Sulfate	**18.7**		10.0		mg/L		05/08/24 10:22	10	QTZ5

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Aluminum	**0.719**		0.100		mg/L		05/07/24 11:37	1	ZRI4
Antimony	<0.100		0.100		mg/L		05/07/24 11:37	1	ZRI4
Arsenic	<0.0800		0.0800		mg/L		05/07/24 11:37	1	ZRI4
Barium	**0.0932**		0.0100		mg/L		05/07/24 11:37	1	ZRI4
Beryllium	<0.0100		0.0100		mg/L		05/07/24 11:37	1	ZRI4
Cadmium	<0.0200		0.0200		mg/L		05/07/24 11:37	1	ZRI4
Calcium	**75.4**		1.00		mg/L		05/07/24 11:37	1	ZRI4
Chromium	<0.0200		0.0200		mg/L		05/07/24 11:37	1	ZRI4
Copper	<0.0200		0.0200		mg/L		05/07/24 11:37	1	ZRI4
Iron	**0.658**		0.500		mg/L		05/07/24 11:37	1	ZRI4
Lead	<0.100		0.100		mg/L		05/07/24 11:37	1	ZRI4
Magnesium	**29.9**		1.00		mg/L		05/07/24 11:37	1	ZRI4
Nickel	<0.0500		0.0500		mg/L		05/07/24 11:37	1	ZRI4
Potassium	**2.14**		2.00		mg/L		05/07/24 11:37	1	ZRI4
Selenium	<0.100		0.100		mg/L		05/07/24 11:37	1	ZRI4
Silver	<0.0200		0.0200		mg/L		05/07/24 11:37	1	ZRI4
Sodium	**7.31**		2.00		mg/L		05/07/24 11:37	1	ZRI4
Zinc	<0.0400		0.0400		mg/L		05/07/24 11:37	1	ZRI4

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Magnesium	**26.3**		1.00		mg/L		05/06/24 13:38	1	ZRI4

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		05/08/24 14:45	1	A6US

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Total hardness as CaCO3	**311**		4.12		mg/L		05/07/24 11:37	1	HE7K

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
HEM (Oil & Grease)	<5.1		5.1		mg/L		05/07/24 06:00	1	DGU1

Client Sample ID: SW-2 Grab
Lab Sample ID: 310-280280-3

Date Collected: 05/02/24 07:15
Matrix: Water
Date Received: 05/02/24 12:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Turbidity	**11**		1.0		NTU		05/02/24 14:00	1	KM3E
Cyanide, Total	<0.0100		0.0100		mg/L		05/07/24 15:44	1	ENB7
Ammonia	<0.500		0.500		mg/L		05/10/24 20:34	1	ZJX4
Nitrate Nitrite as N	**10.2**		1.00		mg/L		05/11/24 02:36	10	ZJX4
Total Phosphorus as P	<0.100		0.100		mg/L		05/10/24 13:58	1	ENB7
Total Suspended Solids	**32.3**		5.0		mg/L		05/07/24 15:54	1	A4XP
Alkalinity, Total (As CaCO3)	**350**		5.00		mg/L		05/10/24 13:46	1	WZC8
Alkalinity, Bicarbonate (As CaCO3)	**350**		5.00		mg/L		05/10/24 13:46	1	WZC8
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L		05/10/24 13:46	1	WZC8
Total Dissolved Solids	**334**		50.0		mg/L		05/08/24 17:03	1	ENB7
Chemical Oxygen Demand	<25.0		25.0		mg/L		05/09/24 10:28	5	HE7K
Total Organic Carbon	**2.42**		1.00		mg/L		05/08/24 22:48	1	DGU1

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH	**8.3**	**HF**	1.0		SU		05/02/24 13:37	1	W9YR

Client Sample ID: SW-2 Comp
Lab Sample ID: 310-280280-4

Date Collected: 05/02/24 10:20
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Alpha-Terpineol	<10.4		10.4		ug/L		05/13/24 16:10	1	L0FS
Aniline	<10.4		10.4		ug/L		05/13/24 16:10	1	L0FS
Benzoic acid	<104		104		ug/L		05/13/24 16:10	1	L0FS
Naphthalene	<10.4		10.4		ug/L		05/13/24 16:10	1	L0FS
p-Cresol	<10.4		10.4		ug/L		05/13/24 16:10	1	L0FS
Phenol	<10.4		10.4		ug/L		05/13/24 16:10	1	L0FS
Pyridine	<10.4	*1	10.4		ug/L		05/13/24 16:10	1	L0FS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Analyzed*	*Dil Fac*	*Analyst*
2-Fluorophenol (Surr)	*54*		*25 - 110*	*05/13/24 16:10*	*1*	*L0FS*
Phenol-d5 (Surr)	*45*		*21 - 110*	*05/13/24 16:10*	*1*	*L0FS*
2,4,6-Tribromophenol (Surr)	*61*		*27 - 136*	*05/13/24 16:10*	*1*	*L0FS*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Chloride	**21.8**		10.0		mg/L		05/08/24 10:34	10	QTZ5
Sulfate	**18.5**		10.0		mg/L		05/08/24 10:34	10	QTZ5

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Aluminum	**0.438**		0.100		mg/L		05/07/24 11:39	1	ZRI4
Antimony	<0.100		0.100		mg/L		05/07/24 11:39	1	ZRI4
Arsenic	<0.0800		0.0800		mg/L		05/07/24 11:39	1	ZRI4
Barium	**0.0897**		0.0100		mg/L		05/07/24 11:39	1	ZRI4
Beryllium	<0.0100		0.0100		mg/L		05/07/24 11:39	1	ZRI4
Cadmium	<0.0200		0.0200		mg/L		05/07/24 11:39	1	ZRI4
Calcium	**74.5**		1.00		mg/L		05/07/24 11:39	1	ZRI4
Chromium	<0.0200		0.0200		mg/L		05/07/24 11:39	1	ZRI4
Copper	<0.0200		0.0200		mg/L		05/07/24 11:39	1	ZRI4

Client Sample ID: SW-2 Comp
Lab Sample ID: 310-280280-4

Date Collected: 05/02/24 10:20
Matrix: Water
Date Received: 05/02/24 12:45

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Iron	<0.500		0.500		mg/L		05/07/24 11:39	1	ZRI4
Lead	<0.100		0.100		mg/L		05/07/24 11:39	1	ZRI4
Magnesium	**29.5**		1.00		mg/L		05/07/24 11:39	1	ZRI4
Nickel	<0.0500		0.0500		mg/L		05/07/24 11:39	1	ZRI4
Potassium	**2.34**		2.00		mg/L		05/07/24 11:39	1	ZRI4
Selenium	<0.100		0.100		mg/L		05/07/24 11:39	1	ZRI4
Silver	<0.0200		0.0200		mg/L		05/07/24 11:39	1	ZRI4
Sodium	**7.86**		2.00		mg/L		05/07/24 11:39	1	ZRI4
Zinc	<0.0400		0.0400		mg/L		05/07/24 11:39	1	ZRI4

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Magnesium	**25.4**		1.00		mg/L		05/06/24 13:40	1	ZRI4

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		05/08/24 14:51	1	A6US

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Total hardness as CaCO3	**308**		4.12		mg/L		05/07/24 11:39	1	HE7K

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
HEM (Oil & Grease)	<5.3		5.3		mg/L		05/07/24 06:00	1	DGU1
Turbidity	**15**		1.0		NTU		05/02/24 14:01	1	KM3E
Cyanide, Total	<0.0100		0.0100		mg/L		05/07/24 15:44	1	ENB7
Ammonia	<0.500		0.500		mg/L		05/10/24 20:32	1	ZJX4
Nitrate Nitrite as N	**10.5**		1.00		mg/L		05/11/24 02:38	10	ZJX4
Total Phosphorus as P	<0.100		0.100		mg/L		05/10/24 13:56	1	ENB7
Total Suspended Solids	**48.0**		5.0		mg/L		05/07/24 16:51	1	A4XP
Alkalinity, Total (As CaCO3)	**328**		5.00		mg/L		05/10/24 13:54	1	WZC8
Alkalinity, Bicarbonate (As CaCO3)	**328**		5.00		mg/L		05/10/24 13:54	1	WZC8
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L		05/10/24 13:54	1	WZC8
Total Dissolved Solids	**338**		50.0		mg/L		05/08/24 17:03	1	ENB7
Chemical Oxygen Demand	<25.0		25.0		mg/L		05/09/24 10:28	5	HE7K
Total Organic Carbon	**2.75**		1.00		mg/L		05/08/24 23:24	1	DGU1

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH	**8.1**	**HF**	1.0		SU		05/02/24 13:40	1	W9YR

Client Sample ID: SW-1 Grab
Lab Sample ID: 310-280280-5

Date Collected: 05/02/24 07:00
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Alpha-Terpineol	<10.0		10.0		ug/L		05/13/24 16:37	1	L0FS
Aniline	<10.0		10.0		ug/L		05/13/24 16:37	1	L0FS
Benzoic acid	<100		100		ug/L		05/13/24 16:37	1	L0FS
Naphthalene	<10.0		10.0		ug/L		05/13/24 16:37	1	L0FS

Client Sample ID: SW-1 Grab
Lab Sample ID: 310-280280-5
Date Collected: 05/02/24 07:00
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
p-Cresol	<10.0		10.0		ug/L		05/13/24 16:37	1	L0FS
Phenol	<10.0		10.0		ug/L		05/13/24 16:37	1	L0FS
Pyridine	<10.0	*1	10.0		ug/L		05/13/24 16:37	1	L0FS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Analyzed*	*Dil Fac*	*Analyst*
2-Fluorophenol (Surr)	*48*		*25 - 110*	*05/13/24 16:37*	*1*	*L0FS*
Phenol-d5 (Surr)	*42*		*21 - 110*	*05/13/24 16:37*	*1*	*L0FS*
2,4,6-Tribromophenol (Surr)	*53*		*27 - 136*	*05/13/24 16:37*	*1*	*L0FS*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Chloride	**24.4**		10.0		mg/L		05/08/24 10:47	10	QTZ5
Sulfate	**25.2**		10.0		mg/L		05/08/24 10:47	10	QTZ5

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Aluminum	<0.100		0.100		mg/L		05/07/24 11:41	1	ZRI4
Antimony	<0.100		0.100		mg/L		05/07/24 11:41	1	ZRI4
Arsenic	<0.0800		0.0800		mg/L		05/07/24 11:41	1	ZRI4
Barium	**0.105**		0.0100		mg/L		05/07/24 11:41	1	ZRI4
Beryllium	<0.0100		0.0100		mg/L		05/07/24 11:41	1	ZRI4
Cadmium	<0.0200		0.0200		mg/L		05/07/24 11:41	1	ZRI4
Calcium	**82.3**		1.00		mg/L		05/07/24 11:41	1	ZRI4
Chromium	<0.0200		0.0200		mg/L		05/07/24 11:41	1	ZRI4
Copper	<0.0200		0.0200		mg/L		05/07/24 11:41	1	ZRI4
Iron	<0.500		0.500		mg/L		05/07/24 11:41	1	ZRI4
Lead	<0.100		0.100		mg/L		05/07/24 11:41	1	ZRI4
Magnesium	**36.2**		1.00		mg/L		05/07/24 11:41	1	ZRI4
Nickel	<0.0500		0.0500		mg/L		05/07/24 11:41	1	ZRI4
Potassium	**4.29**		2.00		mg/L		05/07/24 11:41	1	ZRI4
Selenium	<0.100		0.100		mg/L		05/07/24 11:41	1	ZRI4
Silver	<0.0200		0.0200		mg/L		05/07/24 11:41	1	ZRI4
Sodium	**7.98**		2.00		mg/L		05/07/24 11:41	1	ZRI4
Zinc	<0.0400		0.0400		mg/L		05/07/24 11:41	1	ZRI4

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Magnesium	**33.7**		1.00		mg/L		05/06/24 13:46	1	ZRI4

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		05/08/24 14:53	1	A6US

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Total hardness as CaCO3	**355**		4.12		mg/L		05/07/24 11:41	1	HE7K

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
HEM (Oil & Grease)	<4.8		4.8		mg/L		05/07/24 06:00	1	DGU1
Turbidity	**1.1**		1.0		NTU		05/02/24 13:55	1	KM3E

Client Sample ID: SW-1 Grab
Lab Sample ID: 310-280280-5

Date Collected: 05/02/24 07:00
Matrix: Water
Date Received: 05/02/24 12:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Cyanide, Total	<0.0100		0.0100		mg/L		05/07/24 15:47	1	ENB7
Ammonia	<0.500		0.500		mg/L		05/10/24 20:37	1	ZJX4
Nitrate Nitrite as N	**19.0**		1.00		mg/L		05/10/24 13:27	10	ENB7
Total Phosphorus as P	<0.100		0.100		mg/L		05/10/24 13:56	1	ENB7
Total Suspended Solids	<5.0		5.0		mg/L		05/07/24 15:54	1	A4XP
Alkalinity, Total (As CaCO3)	**312**		5.00		mg/L		05/10/24 14:03	1	WZC8
Alkalinity, Bicarbonate (As CaCO3)	**312**		5.00		mg/L		05/10/24 14:03	1	WZC8
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L		05/10/24 14:03	1	WZC8
Total Dissolved Solids	**420**		50.0		mg/L		05/08/24 17:03	1	ENB7
Chemical Oxygen Demand	<25.0		25.0		mg/L		05/09/24 10:28	5	HE7K
Total Organic Carbon	**2.59**		1.00		mg/L		05/09/24 00:00	1	DGU1

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH	**7.9**	**HF**	1.0		SU		05/02/24 13:35	1	W9YR

Client Sample ID: SW-1 Comp
Lab Sample ID: 310-280280-6

Date Collected: 05/02/24 10:05
Matrix: Water
Date Received: 05/02/24 12:45

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Alpha-Terpineol	<10.0		10.0		ug/L		05/13/24 17:03	1	L0FS
Aniline	<10.0		10.0		ug/L		05/13/24 17:03	1	L0FS
Benzoic acid	<100		100		ug/L		05/13/24 17:03	1	L0FS
Naphthalene	<10.0		10.0		ug/L		05/13/24 17:03	1	L0FS
p-Cresol	<10.0		10.0		ug/L		05/13/24 17:03	1	L0FS
Phenol	<10.0		10.0		ug/L		05/13/24 17:03	1	L0FS
Pyridine	<10.0	*1	10.0		ug/L		05/13/24 17:03	1	L0FS

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Analyzed*	*Dil Fac*	*Analyst*
2-Fluorophenol (Surr)	*61*		*25 - 110*	*05/13/24 17:03*	*1*	*L0FS*
Phenol-d5 (Surr)	*51*		*21 - 110*	*05/13/24 17:03*	*1*	*L0FS*
2,4,6-Tribromophenol (Surr)	*74*		*27 - 136*	*05/13/24 17:03*	*1*	*L0FS*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Chloride	**24.7**		10.0		mg/L		05/08/24 10:59	10	QTZ5
Sulfate	**24.9**		10.0		mg/L		05/08/24 10:59	10	QTZ5

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Aluminum	<0.100		0.100		mg/L		05/07/24 11:43	1	ZRI4
Antimony	<0.100		0.100		mg/L		05/07/24 11:43	1	ZRI4
Arsenic	<0.0800		0.0800		mg/L		05/07/24 11:43	1	ZRI4
Barium	**0.105**		0.0100		mg/L		05/07/24 11:43	1	ZRI4
Beryllium	<0.0100		0.0100		mg/L		05/07/24 11:43	1	ZRI4
Cadmium	<0.0200		0.0200		mg/L		05/07/24 11:43	1	ZRI4
Calcium	**82.3**		1.00		mg/L		05/07/24 11:43	1	ZRI4
Chromium	<0.0200		0.0200		mg/L		05/07/24 11:43	1	ZRI4
Copper	<0.0200		0.0200		mg/L		05/07/24 11:43	1	ZRI4
Iron	<0.500		0.500		mg/L		05/07/24 11:43	1	ZRI4

Client: AECOM
Job ID: 310-280280-1
Project/Site: Winneshiek County SWPPP Stormwater

Client Sample ID: SW-1 Comp
Lab Sample ID: 310-280280-6
Date Collected: 05/02/24 10:05
Matrix: Water
Date Received: 05/02/24 12:45

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Lead	<0.100		0.100		mg/L		05/07/24 11:43	1	ZRI4
Magnesium	**36.3**		1.00		mg/L		05/07/24 11:43	1	ZRI4
Nickel	<0.0500		0.0500		mg/L		05/07/24 11:43	1	ZRI4
Potassium	**4.31**		2.00		mg/L		05/07/24 11:43	1	ZRI4
Selenium	<0.100		0.100		mg/L		05/07/24 11:43	1	ZRI4
Silver	<0.0200		0.0200		mg/L		05/07/24 11:43	1	ZRI4
Sodium	**7.95**		2.00		mg/L		05/07/24 11:43	1	ZRI4
Zinc	<0.0400		0.0400		mg/L		05/07/24 11:43	1	ZRI4

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Magnesium	**33.1**		1.00		mg/L		05/06/24 13:48	1	ZRI4

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		05/08/24 14:12	1	A6US

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Total hardness as CaCO3	**355**		4.12		mg/L		05/07/24 11:43	1	HE7K

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
HEM (Oil & Grease)	<5.4		5.4		mg/L		05/09/24 14:00	1	D7CP
Turbidity	**2.1**		1.0		NTU		05/02/24 13:58	1	KM3E
Cyanide, Total	<0.0100		0.0100		mg/L		05/07/24 15:47	1	ENB7
Ammonia	<0.500		0.500		mg/L		05/10/24 20:39	1	ZJX4
Nitrate Nitrite as N	**18.5**		1.00		mg/L		05/10/24 13:29	10	ENB7
Total Phosphorus as P	<0.100		0.100		mg/L		05/10/24 13:55	1	ENB7
Total Suspended Solids	<5.0		5.0		mg/L		05/07/24 15:54	1	A4XP
Alkalinity, Total (As CaCO3)	**287**		5.00		mg/L		05/10/24 14:25	1	WZC8
Alkalinity, Bicarbonate (As CaCO3)	**287**		5.00		mg/L		05/10/24 14:25	1	WZC8
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L		05/10/24 14:25	1	WZC8
Total Dissolved Solids	**406**		50.0		mg/L		05/08/24 17:03	1	ENB7
Chemical Oxygen Demand	<25.0		25.0		mg/L		05/09/24 10:28	5	HE7K
Total Organic Carbon	**2.68**		1.00		mg/L		05/09/24 00:36	1	DGU1

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH	**7.9**	**HF**	1.0		SU		05/02/24 13:36	1	W9YR

Accreditation/Certification and Definitions Summary

Client: AECOM
Job ID: 310-280280-1
Project/Site: Winneshiek County SWPPP Stormwater

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8270E	3510C	Water	Alpha-Terpineol
8270E	3510C	Water	Aniline
8270E	3510C	Water	Benzoic acid
8270E	3510C	Water	Pyridine

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
MRL	Method Reporting Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
SDL	Sample Detection Limit
SDL	Sample Detection Limit
SDL	Sample Detection Limit
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: AECOM
Job ID: 310-280280-1
Project/Site: Winneshiek County SWPPP Stormwater

Method	Method Description	Protocol	Laboratory
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
200.7 Rev 4.4	Metals (ICP)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
180.1	Turbidity, Nephelometric	EPA	EET CF
335.4	Cyanide, Total	EPA	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
353.2	Nitrogen, Nitrate-Nitrite	EPA	EET CF
365.1	Phosphorus, Total	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5220D	COD	SM	EET CF
SM 5310C	TOC	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
200.7	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
365.1	Sample Digestion for Total Phosphorus	MCAWW	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF
Distill/CN	Distillation, Cyanide	None	EET CF
Filtration	Sample Filtration	None	EET CF

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-280280 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 5/2/24 TIME 1245 Received By: SB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 1 of 3

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

5⁴ Comp & Grab

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.7 Corrected Temp (°C): 1.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waterloo STATE IA Project:

Receipt Information

Date/Time Received: DATE 5/2/24 TIME 1245 Received By: SB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 2 of 3

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

S2 Comp + Grab

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 2 Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 5.6 Corrected Temp (°C): 5.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: AECOM

City/State: CITY Waverly STATE IA Project:

Receipt Information

Date/Time Received: DATE 5/2/24 TIME 1245 Received By: SB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 3 of 3

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

S1 Comp + Grab

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: IR Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 7.1 Corrected Temp (°C): 7.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: TJ Schissel	Date:	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	____ of ____ C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler
Waterloo, IA 50703	**Analysis Turnaround Time**			**For Lab Use Only:**
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek SWPPP Sampling	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No.
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Aniline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine	Sample Specific
SW-4	5-2-24	07:20	G	GW		N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SW-4	5-2-24	10:25	C	GW		N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____ Therm ID No ____		
Relinquished by	Company	Date/Time	Received by	Company	Date/Time 5-2-24 1245
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by SB	Company Eurofins	Date/Time 5/2/24 1245

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5/14/2024

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: TJ Schissel	Date:	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	_____ of _____ C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below _____			Lab Sampling
Project Name: Winneshiek SWPPP Sampling	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Aniline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine				Sample Specific
SW-2	5-2-24	07:15	G	GW		N		X	X	X	X	X	X	X	X	X	X	X	X	X	X				
SW-2	5-2-24	10:20	C	GW		N		X	X	X	X	X	X	X	X	X	X	X	X	X	X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____		
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time

Form No CA-C-WI-002, Rev 4.23, da

5/14/2024

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls IA 50613
phone 319.277 2401 fax 319 277.2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: Iowa DNR

Eurofins Environment T

Client Contact	Project Manager: Christopher Oelkers	Site Contact: TJ Schissel	Date:	COC No
AECOM	Email: Christopher.Oelkers@aecom.com	Lab Contact: Tayler Sanderson	Carrier:	____ of ____ C
501 Sycamore St., Suite 222	Tel/Fax: (319)232-6531/(319)232-0271			Sampler:
Waterloo, IA 50703	Analysis Turnaround Time			For Lab Use Only:
(319)232-6531 Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(319)232-0271 FAX	TAT if different from Below ____			Lab Sampling
Project Name: Winneshiek SWPPP Sampling	☑ 2 weeks			
Site: Winneshiek County Landfill	☐ 1 week			Job / SDG No
P O #	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total Metals (Al, Sb, Ar, Ba, Be, Ca, Cr, Cu, Fe, Pb, Hg, Mg, Ni, Se, Ag, Na, Zn)	NO2 + NO3, Ammonia, COD	Cl, SO4, TDS, TSS, Total P	Alkalinity, Total Hardness, Bicarbonate	Lab filter Mg	TOC	Cyanide	Oil & Grease	BOD	pH, Turbidity	Total Ca, K	a-Terpineol, Aniline, Benzoic Acid	Naphthalene, p-Cresol, Phenol	Pyridine				Sample Specific
SW-1	5-2-24	07:00	G	GW		N		X	X	X	X	X	X	X	X	X	X	X	X	X	X				
SW-1	5-2-24	10:05	C	GW		N		X	X	X	X	X	X	X	X	X	X	X	X	X	X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: Table 10-1 attached list of parameters required for SWPPP analyses

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd ____ Corr'd ____ Therm ID No ____		
Relinquished by	Company	Date/Time	Received by	Company	Date/Time 5/14/24 1245
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

Form No CA-C-WI-002, Rev 4 23, da

5/14/2024

MSGP Industrial Stormwater/Snowmelt Discharge Collection Form

Name of Facility: Winn Co Landfill

Address: 2000 140th Ave
Decorah IA 52101

Person(s)/Title(s) collecting sample: T.J. Schisse l

Permit Tracking Number:

Outfall Numbers/Sample Locations: 3

Discharge Information

Nature of Discharge (circle one): Rainfall or Snowmelt

Rainfall Amount (inches):

Date of Discharge Sampling: 5-2-24

Date & Time Storm Began: 5-2-24 0630

Date & Time Storm Ended:

Date & Time of Previous Measurable Storm Event:
4-30-24 1.4" rain

Date	Time	Sample Identification/Outfall	Preservative (Y/N)	Number of Containers	Ammonia, COD, NO2 + NO3	Cl, SO4, TDS	Alkalinity	Metals	Lab filter Mg	TOC	Cyanide	Oil & Grease for Grab Sample
5-2-24	07:00	SW-1										G,C
" "	07:20	SW-2										G,C
" "	07:30	SW-4										

Type of Analyses Required

Sample Collection Information

Date & Time Sample Collection Began: 5-2-24 07:00

Date & Time Sample Collection Ended (if different):

SW-1	SW-2	SW-4
0700	07:15	07:20
07:20	07:35	07:40
07:50	08:05	08:10
08:10	08:25	08:30
08:40	08:55	09:00
09:05	09:20	09:25
09:35	09:50	09:55
10:05	10:20	10:25

Shaded area for laboratory use only

Collection Method	Laboratory Log Number

Sampled by: (signature) TJ Schisse	Date/Time: 5-2-24	Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:
Received by: (signature)	Date/Time:	Received by: (signature)	Date/Time:	Received by: (signature)	Date/Time: 1310 5/2/24

The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

Detail any concerns, additional comments, descriptions of pictures taken, and any corrective actions below (attach additional sheets as necessary).

Certification by Facility Responsible Official (Refer to MSGP Subpart 11 Appendix B for Signatory Requirements)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name_____ B. Title_____

C. Signature_____ C. Date Signed_____

SWPPP INSPECTION REPORT

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 1

completed By TJ Date 01/01/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 2

completed By TJ Date 01/08/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 3

completed By TJ Date 01/15/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 4

completed By TJ Date 01/22/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 5

completed By TJ Date 01/29/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 6

completed By TJ Date 02/05/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 7

completed By TJ Date 02/12/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 8

completed By TJ Date 02/19/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 9

completed By TJ Date 02/26/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 10

completed By TJ Date 03/04/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 11

completed By TJ Date 03/11/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 12

completed By TJ Date 03/18/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 13

completed By TJ Date 03/25/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 14

completed By TJ Date 04/01/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 15

completed By TJ Date 04/08/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 16

completed By TJ Date 04/15/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 17

completed By TJ Date 04/22/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 18

completed By TJ Date 04/29/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 19

completed By TJ Date 05/06/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 20

completed By TJ Date 05/13/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 21

completed By TJ Date 05/20/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 22

completed By TJ Date 05/27/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 23

completed By TJ Date 06/03/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 24

completed By TJ Date 06/10/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 25

completed By TJ Date 06/17/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 26

completed By TJ Date 06/24/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 27

completed By TJ Date 07/01/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 28

completed By TJ Date 07/08/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 29

completed By TJ Date 07/15/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 30

completed By TJ Date 07/22/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 31

completed By TJ Date 07/29/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 32

completed By TJ Date 08/05/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 33

completed By TJ Date 08/12/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 34

completed By TJ Date 08/19/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 35

completed By TJ Date 08/26/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 36

completed By TJ Date 09/02/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 37

completed By TJ Date 09/09/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 38

completed By TJ Date 09/16/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 39

completed By TJ Date 09/23/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 40

completed By TJ Date 09/30/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 41

completed By TJ Date 10/07/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 42

completed By TJ Date 10/14/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 43

completed By TJ Date 10/21/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 44

completed By TJ Date 10/28/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 45

completed By TJ Date 11/04/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 46

completed By TJ Date 11/11/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 47

completed By TJ Date 11/18/24

SHOP		
	Status	Potential Concerns
Used Oil Burner	ok	Leaks
Used Oil Tank	ok	Leaks
Old & Lubricant Storage	ok	Leaks and Spills
Remarks		
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 48

completed By TJ Date 11/25/24

SHOP		
	Status	Potential Concerns
Used Oil Burner		Leaks
Used Oil Tank		Leaks
Old & Lubricant Storage		Leaks and Spills
Remarks	Shop burnt down	
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 49

completed By TJ Date 12/02/24

SHOP		
	Status	Potential Concerns
Used Oil Burner		Leaks
Used Oil Tank		Leaks
Old & Lubricant Storage		Leaks and Spills
Remarks	No shop	
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 50

completed By TJ Date 12/09/24

SHOP		
	Status	Potential Concerns
Used Oil Burner		Leaks
Used Oil Tank		Leaks
Old & Lubricant Storage		Leaks and Spills
Remarks	no shop	
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station		Drain Blockage, Holes in Piping, Pump Operation
	ok	
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1		Drain Blockage, Holes in Piping, Pump Operation
	ok	
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 51

completed By TJ Date 12/16/24

SHOP		
	Status	Potential Concerns
Used Oil Burner		Leaks
Used Oil Tank		Leaks
Old & Lubricant Storage		Leaks and Spills
Remarks		no shop
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 52

completed By TJ Date 12/23/24

SHOP		
	Status	Potential Concerns
Used Oil Burner		Leaks
Used Oil Tank		Leaks
Old & Lubricant Storage		Leaks and Spills
Remarks		no shop
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

Winneshiek County Landfill
Storm Water Pollution Prevention Plan
Weekly Inspection Checklist

Year 2024 Week 53

completed By TJ Date 12/30/24

SHOP		
	Status	Potential Concerns
Used Oil Burner		Leaks
Used Oil Tank		Leaks
Old & Lubricant Storage		Leaks and Spills
Remarks	No shop	
Action Taken		

STORM WATER CULVERTS		
	Status	Potential Concerns
C-01	ok	Blockages
C-02	ok	Blockages
C-03	ok	Blockages
C-04	ok	Blockages
C-05	ok	Blockages
C-06	ok	Blockages
C-07	ok	Blockages
C-08	ok	Blockages
C-09	ok	Blockages
Remarks		
Action Taken		

FUELING STATION		
	Status	Potential Concerns
Fueling Station	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		

LEACHATE LOAD OUTS		
	Status	Potential Concerns
Leachate Load Out No.1	ok	Drain Blockage, Holes in Piping, Pump Operation
Remarks		
Action Taken		