August 19, 2025
File No. 27224677.00

Mr. Brad Davison
Iowa Department of Natural Resources
Land Quality Bureau
6200 Park Avenue
Des Moines, Iowa 50321

Subject: 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Dear Brad:

SCS Engineers has completed the required groundwater monitoring and statistical evaluation at the Alter Highway 22 Monofill (Monofill) for the 2025 reporting year. Our services were performed in general accordance with Iowa Administrative Code (IAC) 567-115.26(4), the closure permit requirements for implementation of the Hydrologic Monitoring System Plan (HMSP), and subsequent permit amendments. Please find enclosed a copy of the 2025 Annual Water Quality Report for the Monofill.

Additionally, evaluations of the leachate control system and landfill gas monitoring program for the Monofill are included in accordance with IAC 567-115.26. The 2025 Leachate Control System Performance Evaluation Report and Landfill Gas Annual Report for the Monofill are included as Appendices F and G, respectively, to the Annual Water Quality Report.

If you have any questions about these reports, please contact us as noted below.

Sincerely,

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2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report

Alter Highway 22 Monofill
Solid Waste Permit No. 82-SDP-04-89C

Prepared for:

Alter Trading Corporation

SCS ENGINEERS

27224677.00 | August 2025

1690 All-State Court, Suite 100
West Des Moines, Iowa 50265
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CERTIFICATION

Prepared by: _____ Date: 8/19/2025

Typed: Semir Omerovic

Reviewed by: _____ Date: 8/19/2025

Typed: Kevin Jensen

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.

_____ Date: 8/19/2025

Timothy C. Buelow, P.E.

License No. 14445

My license renewal date is December 31, 2025.

Pages or sheets covered by this seal:

All except Appendix B-1.

EXECUTIVE SUMMARY

ES.1 PERIOD OF REPORT COVERAGE

SCS Engineers (SCS), on behalf of the Alter Trading Corporation, has completed the required groundwater sampling for the Alter Trading Corporation Highway 22 Monofill (Monofill). The purpose of this Annual Water Quality Report (AWQR) is to document and statistically evaluate the groundwater sampling results since the 2024 AWQR up to and including the 2025 annual sampling event. This AWQR was prepared in accordance with the requirements of Iowa Administrative Code (IAC) 567-115.26, the site permit, and current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP).

ES.2 REPORT PRIORITY

The following summarizes report priorities associated with groundwater compliance at the Monofill:

- Department review urgency: None.
- Department review impact on rules schedule: None.
- Actions or activities on hold pending Department review or comment: None.
- Actions and/or permit amendments needed: None.

ES.3 SITE STATUS AND APPLICABLE RULES

- Monofill Status: Closed, Closure Permit
- Types of waste accepted: Industrial
- Applicable IAC rules: 567-115.26

ES.4 COMMENTS

The following summarizes points of special emphasis:

- Analysis of Total Organic Halogens could not be performed due to a laboratory error. Insufficient sample volume remained and therefore the test was unable to be completed.
- In accordance with the DNR letter dated January 6, 2025 (Doc #111686), sampling for the supplemental constituents was approved to be discontinued prior to the 2025 sampling event.

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1.0 ACRONYMS/ABBREVIATIONS

AL = Action Level
CCV = Continuing Calibration Verification
CL = Control Limit - Mean plus Two Standard Deviations
DNR = Iowa Department of Natural Resources
DO = Dissolved Oxygen
GWPS = Groundwater Protection Standard
GWQAP = Groundwater Quality Assessment Plan
LEL = Lower Explosive Limit
LCL = Lower Confidence Limit
LCS = Laboratory Control Sample
LN = Lognormal
M+/-2SD = Mean Plus/Minus Two Standard Deviations
MCL = EPA Maximum Contaminant Level
MDL = Method Detection Limit
N = Normal
NC = No Change
NM = Not Measured
ORP = Oxidation-Reduction Potential
PL = Prediction Limit
QA = Quality Assurance
QC = Quality Control
RL = Reporting Limit
SWS = DNR Statewide Standard for a Protected Groundwater Source
SSI = Statistically Significant Increase Above Background
SSL = Statistically Significant Level Above Groundwater Protection Standard
SSS = Site-Specific Standard (Site-Specific GWPS)
TSS = Total Suspended Solids
UCL = Upper Confidence Limit
VOC = Volatile Organic Compound

2.0 SITE BACKGROUND

2.1 SITE LOCATION

The Alter Trading Corporation Highway 22 Monofill is depicted in **Figure 1**, Approved Monitoring Network. The Monofill property is located southeast of the intersection of Interstate 280 and Highway 22 (a.k.a. Rockingham Road) and is located in the NW ¼ of Section 8, Township 77 North, Range 3 East in Scott County, Iowa.

2.2 FACILITY

Background information regarding the Monofill was contained in the Remediation/Closure Plan dated March 2005 prepared by CPI Environmental Services, Inc. The following are excerpts from the report with additional supplemental information added as noted:

> *The Facility is approximately 117 acres in size. Approximately 12 acres has been used from the mid-to-late 1970's until the early 1990's for disposal of approximately 400,000 cubic yards* [also estimated to be 250,000 tons] *of automobile shredder fluff. The existing fill area consists of two unlined disposal phases (Phase 1 and Phase 2) separated by an east to southeast trending drainage ditch.*
>
> *Phase 1, the northern most portion of the Monofill, is approximately 4 acres in size and contains an approximate two-foot thick soil cover with vegetative growth. Phase 2 is approximately 8 acres in size and is located south of Phase 1. Phase 2 final cover consists of a two-foot thick layer of compacted clay followed by a two-foot thick soil layer with vegetation.*
>
> *In August 1995, the facility received a construction/operating permit (No. 82-SDP-4-89P) from IDNR to expand the disposal area south of Phase 2. The permit was issued following completion of the Final Permitting Document, prepared in 1995, that included an Engineering Design Report, Hydrogeologic Monitoring System Plan, Leachate Control Plan, Operations Plan and a Closure/Post-Closure Plan for the Facility. In the summer of 1996, construction of lined Cell 1 located south of Phase 2 was initiated. Improvements, including the installation of leachate extraction wells in Phases 1 and 2, placement of additional soil cover on Phase 1, and construction of final soil cover material on Phase 2, also were conducted during Cell 1 development.*
>
> *The facility's leachate collection system in Phase 1 and 2 is comprised of extraction wells. There are three extraction wells in Phase 1* [EW-6 through EW-8] *and five extraction wells in Phase 2* [EW-1 through EW-5, however, EW-1 was subsequently removed as part of landfill excavation activities]. *The wells are constructed of three-foot diameter perforated and non-perforated Contech-2000 corrugated PVC pipe. Permanent sump pumps are present in each well. Leachate pumped from the wells enters into three-inch diameter HDPE piping and is gravity drained to a pumping station located northwest of Phases 1 and 2. The pump station is connected via a 2-inch diameter polyethylene pipe to a City of Davenport sanitary sewer manhole at the intersection of Kimmel Drive and Highway 22. Generated leachate is treated at the City of Davenport's wastewater treatment plant under permit number 2005-03-003.*

The Hydrologic Monitoring System Plan (HMSP) monitoring network was revised after a Groundwater Quality Assessment Report (GWQAR) was submitted and approved by the DNR in September 2014. As part of the implementation of the GWQAR, the statistical process for assessing changes from background was modified to a method that could accommodate non-parametric data sets. The HMSP monitoring network revisions included abandonment of some monitoring wells, removal of some monitoring wells from the sampling program, and installation of new monitoring wells. The newly installed monitoring wells underwent the required first-year quarterly sampling during the 2015 reporting period.

A new HMSP configuration was submitted to the DNR in the GWQAR (Table 1-1) and approved in Permit Amendment #6 dated September 15, 2014 (Doc # 81198).

2.3 GEOLOGY OF THE SITE

The site geology is described as alluvial geology and bedrock geology. The subsections below contain descriptions of these two geologic units.

2.3.1 Alluvial Sediment Geology

Below is an excerpt of a description of the alluvial sediment geology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

> *Alluvial sediments overlie bedrock and generally thicken toward the intermittent stream located between Phase I and Phase II of the Monofill. Alluvial sediments in the vicinity of the stream range from 20 feet at MW-8 to greater than 33 feet thick at MW-18. Alluvial sediments thin north of the stream with borings B-13 through B-15 (MW-7) indicating sediment thickness of 15 to 16 feet. Alluvial sediments thin south of the stream with boring B-20 (MW-9, MW-10, MW-11) through B-23 (located at the southern edge of Phase II) indicating sediment thickness of 4 to 6 feet. Alluvial sediments thicken from the southern edge of Phase II to the area of borings B-1 through B-10 where the average alluvial thickness is approximately 14 feet.*
>
> *Alluvial sediments generally are composed of silts and clays with interbedded silty sands and sand lenses.*

Below is an excerpt of the unconsolidated geology from the 1996 Annual Water Quality Summary Report dated December 1996, prepared by Foth & Van Dyke.

> *A hydrogeologic investigation was conducted at the site in 1991 by Shive-Hattery. The Hydrogeologic Investigation Report (HIR), dated November 8, 1991, was submitted to the IDNR for review. The geology of the site is comprised of alluvial sediments overlying shale, sandstone, and limestone. The alluvium is present across the entire site, ranging from 5 to 40 feet in thickness, and consists primarily of stratified sand, silt, and clay. The general direction of groundwater flow in the alluvium is southeasterly.*

2.3.2 Bedrock Geology

Below is an excerpt of a description of the bedrock geology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

> *Based on some of the original assessment work conducted in 1991 and 1992, the bedrock surface below the Monofill is comprised of shale except at the southern edge of the Monofill where the bedrock surface is composed of sandstone (B-21,*

MW-22R, B-22/MW-12, B-25), siltstone (B-19), and interbedded conglomerate, sandstone and shale (B-24/MW-13, MW-14, and MW-15). In the area of borings B-1 through B-10 (south of the Monofill), alluvial sediments overlay shale.

Bedrock at the Monofill is composed of shale or interbedded sandstones, shales, and siltstones overlying limestone. Four borings are noted as extending into limestone: B-11, MW-21R, B-20, and B-24. At the northern edge of the Monofill, as defined by boring B-11 (MW-4, MW-5, MW-6) and MW-21R, approximately 41 to 50 feet of shale overlie limestone. At the southern edge of the Monofill, as defined by borings B-24 (MW-13, MW-14, MW-15) and B-20 (MW-9, MW-10, MW-11), approximately 28 to 62 feet of interbedded sandstones, shales, and siltstones overlie limestone. Bedrock overlying limestone thickens from the west to the east.

According to the IDNR's Open File Map 98-7, the surface bedrock at the Monofill is composed of the Pennsylvanian-aged Cherokee Group and Caseyville formation. Primary lithologies in the Cherokee Group and Caseyville formation are reported as gray shale and sandstone with secondary lithologies of black shale, siltstone, and coal and minor lithologies including conglomerate. Lithologies reported for the Cherokee Group and Caseyville formation correspond to lithologies described in site boring logs down to the top of limestone.

Limestone below the Monofill is likely from the Devonian-aged Cedar Valley Group, which is mined at the Linwood Mine and LaFarge Corporation's Davenport Cement Plant located approximately two to three miles southwest of the Monofill.

Below is an excerpt of the bedrock geology from the 1996 Annual Water Quality Summary Report dated December 1996, prepared by Foth & Van Dyke.

The uppermost bedrock beneath most of the site is shale ranging in thickness from 45 feet across the northern portion of the site to less than 10 feet across the southern portion. Interbedded sandstone and shale comprise the uppermost bedrock beneath the southern-most portion of the site. Underlying the shale and sandstone units is highly fractured limestone. The shale unit acts as an aquitard which separates the alluvial sediments from the underlying limestone across the northern two-thirds of the site. Across the southern one-third of the site, the alluvial, sandstone, and limestone units appear to be hydraulically connected. The general direction of groundwater flow in the limestone is northeasterly. A potential karst feature has been reported in the eastern portion of the site.

2.4 HYDROGEOLOGY OF THE SITE

The site hydrogeology is described as alluvial hydrogeology and bedrock hydrogeology. The subsections below contain descriptions of these two hydrogeologic units.

2.4.1 Alluvial Hydrogeology

Below is an excerpt of a description of the alluvial hydrogeology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

Groundwater levels in wells screened in the alluvial deposits were plotted to establish the water table surface in the alluvium. Groundwater measurements were

collected on October 5 and 6, 2004 from monitoring wells MW-2, MW-3, MW-4, MW-7 and MW-9 and were used to construct the water table surface illustrated in Figure 3. [Figure 3 from the referenced report is not included in this report.] *It may be significant to note that wells screening both the upper and the base of the alluvium were used to estimate the groundwater surface. Using the upper and basal wells may cause vertical gradients within the alluvium to influence the interpretation of the generalized hydraulic gradient of the alluvium.*

Groundwater in the alluvium generally moves to the southwest, which corresponds to surface topography, the intermittent stream flow, and the location of the Mississippi River. From boring logs, preferential pathways in the alluvium may be sand and gravel lenses with a thickness of one foot or less, such as those identified in boring logs for MW-4, MW-7, and MW-9.

Based on the water table surface in Figure 3, the estimated gradient of groundwater flow to the southwest in the alluvium is 0.01 ft./ft. Hydraulic conductivity testing was performed by others during the 1990-1991 studies and measured values for monitoring wells MW-4, MW-7, and MW-9 of 2.89 x 10^{-4}, 8.35 x 10^{-4} and 2.70 x 10^{-3} cm/sec, respectively, for a mean hydraulic conductivity value of 1.27 x 10^{-3} cm/sec. Applying Darcy's equation, groundwater is calculated to move through the alluvium beneath both Phase 1 and Phase 2 of the Monofill (a width of approximately 920 feet) at a rate of 3 gallons per minute.

2.4.2 Bedrock Hydrogeology

Below is an excerpt of a description of the bedrock hydrogeology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

Water levels in wells verifiably screened in limestone, i.e., wells with well logs and well construction information, were plotted to establish the potentiometric surface in the limestone bedrock. Wells verifiably screened in limestone included MW-6, MW-11, and MW-15 during the initial site assessments. Groundwater flow direction in the limestone for 1991 through 1992 is reported to be to the northeast, contrary to surface features and other apparent influencing factors, making MW-15 the original upgradient limestone well. Monitoring well MW-15 was abandoned due to construction of the newer lined cell and replaced with MW-106, believed to screen the shale or sandstone layer based on well depth.

Wells MW-1, MW-10, and MW-106 appear to screen the shale or sandstone zones and are assumed to represent a similar hydrogeologic zone. October 2004 groundwater elevations for the non-limestone bedrock (shale/sandstone) suggest that groundwater flow in this zone is to the southeast, as depicted in potentiometric surface presented in Figure 4. [Figure 4 from the referenced report is not included in this report.] *Monitoring well MW-10 screens much deeper than MW-1 or MW-106 and the groundwater elevation in MW-10, which is very similar to the groundwater elevation in MW-11, may be influenced by the deeper (limestone) groundwater regime. The hydraulic gradient in the non-limestone bedrock wells is estimated to be 0.049* [ft/ft]*. Sufficient data do not exist to estimate groundwater flow volumes through the shale or sandstone layers.*

Monitoring well MW-21R was installed in 1996, and boring and well construction information for the well were reviewed. Monitoring well MW-21R has a similar total depth and geology to MW-6 and MW-11 and is screened in limestone from approximately 75 to 85 feet below ground surface. A potentiometric surface for the limestone in October 2004 was constructed from groundwater levels collected from MW-6, MW-11, and MW-21R, as illustrated in Figure 5. [Figure 5 from the referenced report is not included in this report.] *Groundwater flow direction in the limestone is approximately west/southwest with a hydraulic gradient of 0.008* [ft/ft].

There is no obvious reason for the groundwater flow direction in 1991 to be to the northeast and the present flow direction to be generally to the southeast in shallow bedrock and west/southwest in the deeper limestone. [It should be noted that the discrepancy noted in the previous sentence is the result of a misinterpretation of the groundwater contour maps. The 1991 Shive-Hattery map and the 2004 CPI Environmental map are oriented 180^{o} opposite each other. The groundwater flow direction depicted on the 1991 map is in fact to the west/southwest in the deeper limestone, which is consistent with the 2004 deeper limestone groundwater flow direction.] *At present, the upgradient shallow bedrock well is MW-1, and the upgradient limestone well is MW-21R, both located near the eastern corner of Phase 1. Mean hydraulic conductivity values to the bedrock were measured by others in 1991 as 3.80 x 10^{-7} [cm/sec] for the shale, 2.93 x 10^{-4} [cm/sec] for the sandstone and 4.97 x 10^{-6} cm/sec for the limestone. Applying Darcy's equation, groundwater is calculated to move through the limestone beneath both Phase 1 and Phase 2 of the Monofill (a width of approximately 920 feet) at a rate of 0.009 gallons per minute.*

3.0 FIGURES DISCUSSION

The following figures are attached.

3.1 FIGURE 1 – APPROVED MONITORING NETWORK

The Landfill property and hydrologic monitoring system plan (HMSP) network are depicted in **Figure 1**. **Figure 1** indicates the locations of each monitoring well and its respective monitoring program as of the beginning of this reporting period.

3.2 FIGURE 2 – AQUIFER (ALLUVIAL) GROUNDWATER CONTOURS

A groundwater contour map based on water levels measured in the Alluvial Aquifer during the May 2025 annual groundwater sampling event is included as **Figure 2**. **Figure 2** indicates a generally southeasterly groundwater flow direction towards the Mississippi River. Leachate levels and elevations are discussed in the Leachate Control System Performance Evaluation Report in **Appendix F**.

3.3 FIGURE 3 – AQUIFER (BEDROCK) GROUNDWATER CONTOURS

A groundwater contour map based on water levels measured in the Bedrock Aquifer during the May 2025 annual groundwater sampling event is included as **Figure 3**. **Figure 3** indicates a generally easterly groundwater flow direction towards the Mississippi River.

4.0 QA/QC SUMMARY

Date indicates the date(s) of sampling.

4.1 MAY 14, 2025 (2025 ANNUAL SAMPLING EVENT)

Based on the QA review, no samples were rejected as unusable due to QC failures. In general, the quality of the analytical data for this reporting period does not appear to have been compromised by analytical irregularities and results affected by QC anomalies are qualified with the appropriate data flags, which are listed in the laboratory report in Appendix B-1. Data validation documentation can be found in Appendix B-2.

5.0 DATA EVALUATION

Statistical evaluation in accordance with the Groundwater Quality Assessment Report dated March 31, 2014 (Doc #79942) and approved by DNR in Permit Amendment #6 dated September 15, 2014 (Doc #81198) was conducted for the groundwater analytical data collected during the 2025 annual sampling event. The statistical evaluation for samples collected during the 2025 annual sampling event is located in **Appendix D** of this report.

5.1 DATA EVALUATION

Groundwater monitoring for the Monofill consists of samples from one monitoring well along the northeast side (MW-7R), one monitoring well along the east side (MW-8R), one monitoring well along the southeast side (MW-9), one monitoring well along the southwest side (MW-23), and three upgradient monitoring points are located along the northwest side (MW-3, MW-4, and MW-5) of the Monofill.

Six prediction limit exceedances were measured based on 2025 sampling results as listed in **Table 1** compared to twelve prediction limit exceedances based on 2024 sampling results reported in the 2024 AWQR. Four of the six prediction limit exceedances detected from 2025 sampling results were attributed to monitoring well MW-9.

The benzene concentration in monitoring well MW-9 was below the laboratory detection limit in the 2025 sample. The concentration of arsenic detected in monitoring well MW-9 in the 2025 sample was slightly higher than the concentration detected in the 2024 sample. The concentration of chloride detected in monitoring well MW-9 in the 2025 sample was slightly higher than the concentration detected in the 2024 sample.

Exceedances of the arsenic action level were measured in upgradient monitoring well MW-4 and downgradient monitoring well MW-9 in the 2025 sample. These two monitoring wells have regularly exceeded the action levels for arsenic since sampling for total arsenic began in 2017 and when sampling for dissolved arsenic was being conducted prior to 2017.

5.2 TRENDING IN MONITORING WELLS

Statistically significant decreasing trends at a 99% confidence level (α=0.01) using the most recent eight samples were identified in three monitoring well/constituent pairs by Mann-Kendall analysis during this reporting period. A statistically significant increasing trend at a 99% confidence level (α=0.01) was identified in a monitoring well/constituent pair by Mann-Kendall analysis during this reporting period. The trend analysis is included in Attachment E of **Appendix D** of this report. The statistically significant trends were as follows:

Monitoring Point	Constituent	Trend
MW-9	COD	Increasing

Although not necessarily statistically significant, the Mann-Kendall statistics can provide an indication of general trending in the data. Trend indications for wells in the monitoring program are shown in the table below. The statistics used to develop the general trending differ from the Mann-Kendall statistics used in the diagnostics section of the statistical evaluation in that a much lower trend threshold is applied for the general trending information (α=0.20 versus α=0.01). Trends classified as decreasing or increasing exhibited a statistically significant trend with 80% confidence using the most recent eight data points. Trends classified as stable did not exhibit a statistically

significant trend with 80% confidence using the eight most recent data points. A summary of Mann-Kendall statistics by constituent in each monitoring point is included in **Table 10** of this report.

Trending in Monitoring Wells				
Monitoring Well	**Decreasing Trends**	**Stable Trends**	**Increasing Trends**	**Number of Constituents Analyzed**
MW-3 (u)	12.50%	87.50%	0.00%	8
MW-4 (u)	12.50%	62.50%	25.00%	8
MW-5 (u)	42.86%	42.86%	14.29%	7
MW-7R	14.29%	71.43%	14.29%	7
MW-8R	0.00%	71.43%	28.57%	7
MW-9	11.11%	22.22%	66.67%	9
MW-23	14.29%	57.14%	28.57%	7
Site Wide	**15.09%**	**58.49%**	**26.42%**	**53**

(u) indicates an upgradient monitoring point.

Review of the Mann-Kendall statistics indicated that approximately 74% of the Mann-Kendall statistics were considered stable or decreasing following the 2025 annual statistical evaluation with three of the decreasing trends being pH. There were fourteen monitoring well/constituent pairs with generally increasing trends. The monitoring well/constituent pairs with increasing trends and decreasing pH trends are discussed in the following table.

Monitoring Well	Constituent Name	Comments
MW-3 (u)	pH (Decreasing)	Range of pH measurements between 6.57 and 7.44 S.U.
MW-4 (u)	Arsenic	Highest concentration of 0.206 mg/L measured in 2022.
MW-4 (u)	COD	Based on five actual detections, one J flag detection, and two non-detects. Highest concentration of 15 mg/L measured in 2022.
MW-5 (u)	COD	Based on two actual detections and six non-detects. Highest concentration of 48.8 mg/L measured in 2024.
MW-7R	Nitrogen, Ammonia	Based on two J flag detections and six non-detects. Highest concentration of 0.329 mg/L measured in 2024.
MW-8R	Chloride	Highest concentration of 236 mg/L measured in 2025.
MW-8R	Nitrogen, Ammonia	Based on two J flag detections and six non-detects. Highest concentration of 0.268 mg/L measured in 2024.
MW-9	Arsenic	Highest concentration in recent trend of 0.115 mg/L measured in 2025. These detections were below the historical maximum of 0.149 mg/L measured in 2018.
MW-9	COD	Highest concentration of 1270 mg/L measured in 2025. These detections were below the historical maximum of 1600 mg/L measured in 1996.

Monitoring Well	Constituent Name	Comments
MW-9	Iron	Highest concentration of 25.4 mg/L measured in 2025.
MW-9	Nitrogen, Ammonia	Highest concentration of 3.28 mg/L measured in 2023.
MW-9	pH (Decreasing)	Range of pH measurements between 6.79 and 7.38 S.U.
MW-9	Specific Conductance	Highest concentration of 6029 µS/cm measured in 2024.
MW-9	Total Organic Halogens	Highest concentration of 1.56 mg/L measured in 2024.
MW-23	Nitrogen, Ammonia	Highest concentration of 3.71 mg/L measured in 2024.
MW-23	COD	Highest concentration of 119 mg/L measured in 2024.
MW-23	pH (Decreasing)	Range of pH measurements between 6.39 and 7.40 S.U.

Of the 14 increasing trends at 80% confidence level and the three decreasing trends for pH at 80% confidence level, four of the monitoring well/constituent pair trends were associated with the upgradient monitoring wells. The pH values of the three monitoring well/constituent pairs found to be decreasing at an 80% confidence level were all neutral to circumneutral. Overall, a generally continued stability to improvement of groundwater quality at the site was noted, with the exception of monitoring well MW-9.

6.0 RECOMMENDATIONS

6.1 SITE IMPACT ON GROUNDWATER

Concentrations of the majority of analyzed parameters in groundwater at the Monofill remain stable to decreasing, with the partial exception of monitoring well MW-9. Overall, a generally continued stability of groundwater quality at the site was noted.

6.2 PROPOSED MONITORING

The groundwater monitoring program is summarized in Tables 1 through 3. No changes to the HMSP monitoring program as detailed in revision #14 to the site closure permit (Doc # 110352) are recommended at this time.

6.3 PROPOSED MONITORING WELL CHANGES

Monitoring well performance is summarized in Table 4. No proposed changes to the monitoring wells are recommended at this time. It is recommended to remove the obstruction in monitoring well MW-7R and re-develop the monitoring well prior to the 2026 annual sampling event.

Tables

Table 1
Monitoring Program Summary
2025 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Well	Formation[1]	Current Monitoring Program	Change for Next Sampling Event	Prediction Limit Exceedances	Total Number of Samples in Each Monitoring Program Since January 1, 2018		
					Routine	Supplemental	Remedial Action
MW-3	Lean Clay/Silty Lean Clay/Sandy Lean Clay	Background	None	N/A	9	-	-
MW-4	Sand/Clay	Background	None	N/A	9	-	-
MW-5	Sand/Clay/Gravel	Background	None	N/A	9	-	-
MW-7R	Sandy Silty Clay/Sand and Gravel	Detection	None	COD	9	-	-
MW-8R	Sandy Silty Clay/Sand	Detection	None	None	9	-	-
MW-9	Sand/Shale	Detection	None	COD, Chloride, Nitrogen-Ammonia, Specific Conductance	9	-	-
MW-23	Sandy Silty Clay/Sand	Detection	None	Nitrogen-Ammonia	9	-	-

Notes:
[1] Obtained from screened interval on boring logs.
[2] COD - Chemical Oxygen Demand

Table 2
Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Well	Recent Sampling Dates and Constituents 5/14/2025	Upcoming Sampling Dates and Constituents 2026 Annual Event
MW-3	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Benzene, Total Organic Halogens; Total Suspended Solids
MW-4	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Benzene, Total Organic Halogens; Total Suspended Solids
MW-5	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Benzene, Total Organic Halogens; Total Suspended Solids
MW-7R	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Total Organic Halogens; Total Suspended Solids
MW-8R	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Total Organic Halogens; Total Suspended Solids
MW-9	Ammonia-Nitrogen, Benzene, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Arsenic, Iron, Benzene, Total Organic Halogens; Total Suspended Solids
MW-23	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Total Organic Halogens; Total Suspended Solids

Notes: COD - Chemical Oxygen Demand

Table 3
Monitoring Well Maintenance and Performance Re-Evaluation Schedule
2025 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Compliance with:	2023	2024	2025	2026
567 IAC 114.21(2)"a" high and low water levels (annually)	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"c" well depths	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"d" well recharge rates [(1)]	Completed		Included	

Notes:
(1) In-situ permeability testing was replaced with biennial well recharge rate evaluation in DNR correspondence dated November 7, 2016 (Doc# 87656)

Table 4
Monitoring Well Performance and Maintenance Summary
2025 Annual Water Quality Report
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Well	Top of Casing	Top of Screen	Total Depth		Date of Measurement	Maximum Depth	Initial Flow Rate (L/min)*	Recent Flow Rate (L/min)	
					5/14/2025	Discrepancy (ft)	3/28/2017	5/14/2025	% Change
MW-3	573.30	566.10	21.0	Groundwater Level (ft)	7.07	0.7	0.150	0.183	22%
				Groundwater Elevation (Ft MSL)	566.23				
				Measured Well Depth (ft)	20.3				
				Submerged screen	Y				
MW-4	567.79	557.90	14.9	Groundwater Level (ft)	5.38	0.4	0.175	0.175	0%
				Groundwater Elevation (Ft MSL)	562.41				
				Measured Well Depth (ft)	14.5				
				Submerged screen	Y				
MW-5	567.74	548.20	24.5	Groundwater Level (ft)	4.45	2.6	0.200	0.167	-17%
				Groundwater Elevation (Ft MSL)	563.29				
				Measured Well Depth (ft)	21.9				
				Submerged screen	Y				
MW-7R	558.26	552.70	12.6	Groundwater Level (ft)	NM	NM	0.195	0.183	-6%
				Groundwater Elevation (Ft MSL)	NA				
				Measured Well Depth (ft)	NM				
				Submerged screen	NA				
MW-8R	557.94	552.20	12.8	Groundwater Level (ft)	5.57	0.8	0.200	0.167	-17%
				Groundwater Elevation (Ft MSL)	552.37				
				Measured Well Depth (ft)	12.0				
				Submerged screen	Y				
MW-9	556.50	549.50	12.0	Groundwater Level (ft)	4.22	0.0	0.165	0.167	1%
				Groundwater Elevation (Ft MSL)	552.28				
				Measured Well Depth (ft)	12.0				
				Submerged screen	Y				
MW-23	572.48	554.90	29.5	Groundwater Level (ft)	16.97	1.1	0.145	0.158	9%
				Groundwater Elevation (Ft MSL)	555.51				
				Measured Well Depth (ft)	28.4				
				Submerged screen	Y				

Comments:

1) Measured well depths were within 1.0 foot of the installed depth with the following exceptions:

MW-5 and MW-23: These monitoring wells were measured between 1.1 and 2.6 ft shallower than when originally installed, but they have measured shallow consistently over the last several years. In addition, since the monitoring wells produce sufficient groundwater for sampling it is likely that the wells are functioning properly.

MW-7R: Groundwater level and total well depth were unable to be measured due to soil packed in the well casing. Although a sample was able to be obtained from the previously installed dedicated sample collection tubing, a sample with a high amount of TSS was produced. It is recommended to remove the obstruction and re-develop the monitoring well prior to the 2026 annual sampling event.

Table 5
Background and GWPS Summary
2025 Annual Water Quality Report
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Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	Action Level	Source
Inorganics										
Arsenic	mg/L	33	22	0.000675	0.206	0.0194	0.206	PL (NP)	0.01 mg/L	MCL/SWS
Chemical Oxygen Demand	mg/L	178	92	2.5	48.8	7.37	48.8	PL (NP)	-	-
Chloride	mg/L	179	178	0.05	284.0	129.02	273.5	PL (P)	-	-
Iron	mg/L	33	32	0.121	95.75	8.35	116.4	PL (P)	-	-
Nitrogen, Ammonia	mg/L	179	75	0.086	0.909	0.185	0.909	PL (NP)	30.0 mg/L	HAL
pH	S.U.	171	171	6.38	8.91	7.26	8.268	PL (P)	-	-
Specific Conductance	µS/cm	171	171	600	2250	1158	1736	PL (NP)	-	-
Total Organic Halogens	mg/L	100	70	0.005	0.584	0.045	0.584	PL (NP)	-	-

Notes:

1) Background levels based on calculated prediction limits or reporting limit, as applicable.

Acronyms/Abbreviations:

RL = Reporting Limit
GWPS = Groundwater Protection Standard
SSS = Site-Specific GWPS
SWS = Statewide Standard
SD = Standard Deviation
MCL = EPA Maximum Contaminant Level
PL = Prediction Limits
HAL = Health Advisory Level
DWA = Drinking Water Advisory

Comments:

1) **Water quality results and effectiveness of the statistical data evaluation criteria**: Statistical evaluations consist of prediction limits.
2) **Changes to the previous statistical method during reporting period:** None.

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Prediction Limit Exceedances

2025 Annual Water Quality Report

Alter Highway 22 Monofill

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There were no prediction limit excedances with no immediately preceeding prediction limit exceedances.

Comments:

1) **Problems with the current HMSP network:** None.
2) **Schedule to implement remedies:** Not applicable.
3) **Alternative constituent or sample frequency changes:** None.
4) **Significant changes to prediction limits:** None.

Table 7
Summary Table of Ongoing and Newly Identified Prediction Limit Exceedances
2025 Annual Water Quality Report
Alter Highway 22 Monofill
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Key

	Denotes ongoing prediction limit exceedances or double quantifications (as applicable) that were identified as such during this reporting period and the previous reporting period.
	Denotes newly identified prediction limit exceedances or double quantifications (as applicable) in the 2025 reporting period. Newly identified is defined as occuring at least once in the current reporting period but not in the immediately preceeding reporting period.

Well	Constituent	Units	Most Recent Result	Background Standard	Action Level/ Statewide Standard
MW-7R	COD	mg/L	52.9	48.8	-
MW-9	COD	mg/L	1,270	48.8	-
	Chloride	mg/L	670	273.5	-
	Nitrogen-Ammonia	mg/L	2.53	0.909	30
	Specific Conductance	µS/cm	5,300	1,736	-
MW-23	Nitrogen-Ammonia	mg/L	2.17	0.909	30

Notes: COD - Chemical Oxygen Demand

Comments:

1) **Problems with the current HMSP network:** None.
2) **Proposed remedies:** None.
3) **Alternative constituent or sample frequency changes:** None.
4) **Plume delineation strategies:** Not applicable.
5) **Property owner notifications:** Not applicable.

Table 8
Summary of Groundwater Chemistry
2025 Annual Water Quality Report
Alter Highway 22 Monofill
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The Summary of Groundwater Chemistry is located in Appendix C.

Table 9
Historical Prediction Limit and Action Level Exceedances
2025 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Key

	Prediction Limit Exceedance/Double Quantification (as applicable)
X	Action Level Exceedance

Well	Constituent	2022	2023	2024	2025
MW-4 (u)	Arsenic	**X**	**X**	**X**	**X**
MW-7R	COD				
	Specific Conductance				
MW-8R	COD				
MW-9	Arsenic	**X**	**X**	**X**	**X**
	Benzene			**X**	
	Chloride				
	COD				
	Nitrogen-Ammonia				
	Specific Conductance				
	Total Organic Halogens				
MW-23	COD				
	Iron				
	Nitrogen-Ammonia				
	Specific Conductance				

Notes:

1) (u) denotes upgradient monitoring well
2) Table 9 does not include action level exceedances of supplemental parameters required by the DNR letter dated January 25, 2023
3) (Doc # 105590) for the 2023 and 2024 sampling events.
   COD - Chemical Oxygen Demand

Table 10
Groundwater Quality Assessment Plan Trend Analysis
2025 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-3	Arsenic		-5	
	Chemical Oxygen Demand		10	
	Chloride		-1	
	Iron		8	
	Nitrogen, Ammonia		10	
	pH	-14		
	Specific Conductance		0	
	Total Organic Halogens		6	
MW-4	Arsenic			14
	Chemical Oxygen Demand			16
	Chloride	-14		
	Iron		12	
	Nitrogen, Ammonia		10	
	pH		-11	
	Specific Conductance		0	
	Total Organic Halogens		12	
MW-5	Chemical Oxygen Demand			18
	Chloride	-20		
	Iron	-16		
	Nitrogen, Ammonia		9	
	pH		-4	
	Specific Conductance	-17		
	Total Organic Halogens		4	
MW-7R	Chemical Oxygen Demand		-12	
	Chloride	-14		
	Iron		10	
	Nitrogen, Ammonia			14
	pH		-5	
	Specific Conductance		-8	
	Total Organic Halogens		4	
MW-8R	Chemical Oxygen Demand		-8	
	Chloride			16
	Iron		-12	
	Nitrogen, Ammonia			16
	pH		-10	
	Specific Conductance		6	
	Total Organic Halogens		8	
MW-9	Arsenic			18
	Benzene		10	
	Chemical Oxygen Demand			22
	Chloride		12	
	Iron			20
	Nitrogen, Ammonia			15
	pH	-20		
	Specific Conductance			20
	Total Organic Halogens			18
MW-23	Chemical Oxygen Demand			14
	Chloride		-12	
	Iron		2	
	Nitrogen, Ammonia			20
	pH	-18		
	Specific Conductance		-4	
	Total Organic Halogens		-2	

Notes:
Trending was evaluated using Mann-Kendall analysis at 80% confidence (a = 0.2) based on the most recent eight detections.

Figures

HMSP Monitoring Points	
Monitoring Point	Monitoring Program
MW-3	Background
MW-4	Background
MW-5	Background
MW-7R	Detection
MW-8R	Detection
MW-9	Detection
MW-23	Detection
MW-101	Detection

Approved Monitoring Network

Figure 1

Legend

- HMSP Monitoring Point
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224677.00
Drawing Date: August 2025

N W E S

0 155 310 620 Feet

SCS ENGINEERS
environmental consultants and contractors

Aquifer (Alluvial) Groundwater Contours

Legend

- Alluvial Aquifer Groundwater Contours Based on Measurments Taken May 14, 2025
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224677.00
Drawing Date: August 2025

N
W
E
S

0 155 310 620
Feet

Figure 2

SCS ENGINEERS
environmental consultants and contractors

SCS ENGINEERS
environmental consultants and contractors

Aquifer (Bedrock) Groundwater Contours

Figure 3

Legend

- Bedrock Aquifer Groundwater Contours Based on Measurments Taken May 14, 2025
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224677.00
Drawing Date: August 2025

N
W E
S

0 155 310 620
Feet

Esri, TomTom, Garmin, FAO, METI/NASA, USGS, Esri, CGIAR, USGS, USDA NAIP, Iowa State University GIS Facility

Appendix A

Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-3**	Date:	**5/14/2025**
Gradient:	Up	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	20.3
Initial Static Water Level (feet):	7.07
Initial Groundwater Elevation (ft-amsl):	566.23
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
12:28 PM	Purging start time.						
12:31 PM	14.4	0.5	1350.4	6.82	-13.9	7.4	
12:34 PM	14.0	0.2	1348.8	6.83	-23.6	9.9	
12:37 PM	14.7	0.2	1346.2	6.83	-26.7	13.7	
12:40 PM	14.9	0.1	1346.7	6.83	-27.6	27.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color-Clear Odor-None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-4**	Date:	**5/14/2025**
Gradient:	Up	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	14.5
Initial Static Water Level (feet):	5.38
Initial Groundwater Elevation (ft-amsl):	562.41
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
1:01 PM	Purging start time.						
1:04 PM	14.0	0.5	1334.2	7.07	-72.0	441.4	
1:07 PM	13.8	0.3	1330.8	7.07	-77.8	210.3	
1:10 PM	13.7	0.2	1328.6	7.06	-79.4	110.5	
1:13 PM	13.4	0.2	1330.7	7.06	-80.5	129.0	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	175.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color-Orange Tint Odor-None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-5**	Date:	**5/14/2025**
Gradient:	Up	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	21.9
Initial Static Water Level (feet):	4.45
Initial Groundwater Elevation (ft-amsl):	563.29
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
1:33 PM	Purging start time.						
1:36 PM	13.8	5.9	957.8	7.44	112.5	6.8	
1:39 PM	13.5	5.6	953.6	7.43	154.9	5.9	
1:42 PM	13.3	5.0	956.0	7.39	177.0	5.6	
1:45 PM	13.8	4.9	955.4	7.38	189.4	6.7	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color-Clear Odor-None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-7R**	Date:	**5/14/2025**
Gradient:	Down	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	NM
Initial Groundwater Elevation (ft-amsl):	558.26
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
2:08 PM	Purging start time.						
2:11 PM	13.8	0.4	1670.5	7.10	218.0	11.9	
2:14 PM	13.9	0.2	1666.7	7.09	209.1	60.0	
2:17 PM	13.6	0.2	1665.1	7.08	199.4	112.5	
2:20 PM	13.6	0.2	1653.6	7.10	185.5	275.8	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Soil packed in well casing. Remove and re-develop well	

Additional Comments:	Color-Orange/Brown Odor-None Could not get SWL or TD.

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-8R**	Date:	**5/14/2025**
Gradient:	Down	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	12.0
Initial Static Water Level (feet):	5.57
Initial Groundwater Elevation (ft-amsl):	552.34
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:00 PM	Purging start time.						
3:03 PM	12.7	0.4	1636.0	6.70	221.7	3.1	
3:06 PM	13.0	0.2	1628.9	6.73	210.0	3.7	
3:09 PM	13.4	0.2	1628.6	6.73	159.8	4.4	
3:12 PM	13.4	0.1	1634.1	6.73	80.4	4.6	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color-Clear Odor-None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-9**	Date:	**5/14/2025**
Gradient:	Down	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	12.0
Initial Static Water Level (feet):	4.22
Initial Groundwater Elevation (ft-amsl):	552.28
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
4:32 PM	Purging start time.						
4:35 PM	13.7	0.4	5255.1	6.92	-107.9	44.4	
4:38 PM	13.6	0.2	5224.4	6.95	-113.6	49.6	
4:41 PM	13.9	0.2	5249.1	6.94	-117.0	38.5	
4:44 PM	13.8	0.1	5299.7	6.93	-118.7	58.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color-Dark Yellow/Orange Odor-Sulfur

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER HIGHWAY 22 MONOFILL**		
Monitoring Well/Piezometer ID:	**MW-23**	Date:	**5/14/2025**
Gradient:	Down	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	28.4
Initial Static Water Level (feet):	16.97
Initial Groundwater Elevation (ft-amsl):	555.51
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:35 PM	Purging start time.						
3:38 PM	15.3	0.3	1382.4	6.40	-73.9	5.8	
3:41 PM	15.2	0.2	1378.6	6.39	-80.5	10.1	
3:44 PM	15.3	0.1	1378.4	6.39	-84.2	15.0	
3:47 PM	14.9	0.1	1378.1	6.39	-86.0	21.1	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color-Clear Odor-Sulfur

Appendix B-1

Laboratory Analytical Data Sheets

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Jensen
SCS Engineers
1690 All State Court
Suite 100
West Des Moines, Iowa 50265

Generated 6/26/2025 10:02:36 AM Revision 1

JOB DESCRIPTION

Alter H22 Landfill 2025 GW Sampling
Iowa

JOB NUMBER

310-306686-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

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Authorization

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Table of Contents

Job ID: 310-306686-1 Eurofins Cedar Falls

Job Narrative
310-306686-1

REVISION

The report being provided is a revision of the original report sent on 5/30/2025. The report (revision 1) is being revised due to Removed TEH analysis from results.

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 5/16/2025 4:25 PM. 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 0.8°C and 5.8°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-9 (310-306686-8).

Method 8260D: The following volatiles sample was diluted due to foaming at the time of sample preparation during the original sample analysis: MW-9 (310-306686-8). Elevated reporting limits (RLs) are provided.

Method 8260D: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container: MW-9 (310-306686-8) and Trip Blank 2 (310-306686-10).

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
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 : MW-7R (310-306686-4) and MW-9 (310-306686-8). 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.

Sample Summary

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-306686-1	MW-3	Water	05/14/25 12:55	05/16/25 16:25
310-306686-2	MW-4	Water	05/14/25 13:29	05/16/25 16:25
310-306686-3	MW-5	Water	05/14/25 14:00	05/16/25 16:25
310-306686-4	MW-7R	Water	05/14/25 14:49	05/16/25 16:25
310-306686-5	MW-8R	Water	05/14/25 15:28	05/16/25 16:25
310-306686-6	MW-23	Water	05/14/25 16:04	05/16/25 16:25
310-306686-7	MW-D	Water	05/14/25 14:49	05/16/25 16:25
310-306686-8	MW-9	Water	05/14/25 17:00	05/16/25 16:25
310-306686-9	Trip Blank 1	Water	05/14/25 00:00	05/16/25 16:25
310-306686-10	Trip Blank 2	Water	05/14/25 00:00	05/16/25 16:25

Detection Summary

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-3 — Lab Sample ID: 310-306686-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	175		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.000997	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	0.939		0.100	0.0500	mg/L	1		6020B	Total/NA
Ammonia as N	0.606		0.500	0.210	mg/L	1		350.1	Total/NA
Total Suspended Solids	11.9		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 310-306686-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	171		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.0762		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	24.4		0.100	0.0500	mg/L	1		6020B	Total/NA
Total Suspended Solids	30.0		5.00	3.50	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-5 — Lab Sample ID: 310-306686-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	125		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	0.169		0.100	0.0500	mg/L	1		6020B	Total/NA
Total Suspended Solids	8.13		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7R — Lab Sample ID: 310-306686-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	29.0		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.000905	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	2.46		0.100	0.0500	mg/L	1		6020B	Total/NA
Total Suspended Solids	377		15.0	10.5	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	54.5		25.0	23.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-8R — Lab Sample ID: 310-306686-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	236		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.000685	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	0.613		0.100	0.0500	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.88		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-23 — Lab Sample ID: 310-306686-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	43.1		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.00649		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	31.7		0.100	0.0500	mg/L	1		6020B	Total/NA
Ammonia as N	2.17		0.500	0.210	mg/L	1		350.1	Total/NA
Total Suspended Solids	66.0		5.00	3.50	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	41.6		25.0	23.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-D — Lab Sample ID: 310-306686-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	28.6		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.000823	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	0.465		0.100	0.0500	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample ID: MW-D (Continued) — Lab Sample ID: 310-306686-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	71.7		5.00	3.50	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	51.3		25.0	23.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 310-306686-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	670		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.115		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	25.4		0.100	0.0500	mg/L	1		6020B	Total/NA
Ammonia as N	2.53		0.500	0.210	mg/L	1		350.1	Total/NA
Total Suspended Solids	60.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	1270		250	230	mg/L	50		SM 5220D	Total/NA

Client Sample ID: Trip Blank 1 — Lab Sample ID: 310-306686-9

No Detections.

Client Sample ID: Trip Blank 2 — Lab Sample ID: 310-306686-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-3

Date Collected: 05/14/25 12:55
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-1

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	175		10.0	4.50	mg/L			05/22/25 11:47	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000997	J	0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 19:40	1
Iron	0.939		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 19:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	0.606		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:41	1
Total Suspended Solids (USGS I-3765-85)	11.9		1.88	1.31	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0	23.0	mg/L			05/22/25 13:06	5

Client Sample Results

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-4

Date Collected: 05/14/25 13:29
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-2

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**171**		10.0	4.50	mg/L			05/22/25 12:34	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0762**		0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 19:45	1
Iron	**24.4**		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:41	1
Total Suspended Solids (USGS I-3765-85)	**30.0**		5.00	3.50	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0	23.0	mg/L			05/22/25 13:06	5

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-5

Date Collected: 05/14/25 14:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-3

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**125**		10.0	4.50	mg/L			05/22/25 12:49	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 19:47	1
Iron	**0.169**		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 19:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:41	1
Total Suspended Solids (USGS I-3765-85)	**8.13**		1.88	1.31	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0	23.0	mg/L			05/22/25 13:06	5

Client Sample Results

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-7R

Date Collected: 05/14/25 14:49
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-4

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.0		10.0	4.50	mg/L			05/22/25 13:05	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000905	J	0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 19:49	1
Iron	2.46		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 19:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:48	1
Total Suspended Solids (USGS I-3765-85)	377		15.0	10.5	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	54.5		25.0	23.0	mg/L			05/22/25 13:06	5

Client Sample Results

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-8R

Date Collected: 05/14/25 15:28
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-5

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**236**		10.0	4.50	mg/L			05/22/25 13:20	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.000685**	**J**	0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 19:57	1
Iron	**0.613**		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 19:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:38	1
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88	1.31	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0	23.0	mg/L			05/22/25 13:06	5

Client Sample Results

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-23

Date Collected: 05/14/25 16:04
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-6

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.1		10.0	4.50	mg/L			05/22/25 13:36	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00649		0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 19:59	1
Iron	31.7		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 19:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	2.17		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:46	1
Total Suspended Solids (USGS I-3765-85)	66.0		5.00	3.50	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	41.6		25.0	23.0	mg/L			05/22/25 13:06	5

Client Sample Results

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-D

Date Collected: 05/14/25 14:49
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-7

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28.6		10.0	4.50	mg/L			05/22/25 14:23	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000823	J	0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 20:02	1
Iron	0.465		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 20:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:43	1
Total Suspended Solids (USGS I-3765-85)	71.7		5.00	3.50	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	51.3		25.0	23.0	mg/L			05/22/25 13:06	5

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-9

Date Collected: 05/14/25 17:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-8

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.00		5.00	2.20	ug/L			05/19/25 19:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*05/19/25 19:05*	*10*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/19/25 19:05*	*10*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*05/19/25 19:05*	*10*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**670**		10.0	4.50	mg/L			05/22/25 14:38	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.115**		0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 20:04	1
Iron	**25.4**		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 20:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**2.53**		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:46	1
Total Suspended Solids (USGS I-3765-85)	**60.0**		15.0	10.5	mg/L			05/20/25 16:07	1
Chemical Oxygen Demand (SM 5220D)	**1270**		250	230	mg/L			05/22/25 13:06	50

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: Trip Blank 1

Date Collected: 05/14/25 00:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-9

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			05/19/25 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*108*		*76 - 130*		*05/19/25 14:01*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/19/25 14:01*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*05/19/25 14:01*	*1*

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: Trip Blank 2

Date Collected: 05/14/25 00:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-10

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			05/19/25 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*109*		*76 - 130*		*05/19/25 14:22*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/19/25 14:22*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*05/19/25 14:22*	*1*

Definitions/Glossary

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

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: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

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	(76-130)	(80-120)	(80-120)
310-306686-8	MW-9	117	97	102
310-306686-8 MS	MW-9	94	99	100
310-306686-8 MSD	MW-9	92	98	100
310-306686-9	Trip Blank 1	108	99	103
310-306686-10	Trip Blank 2	109	97	101
LCS 310-455067/7	Lab Control Sample	83	101	107
MB 310-455067/6	Method Blank	95	101	107

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 310-455067/6
Matrix: Water
Analysis Batch: 455067

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			05/19/25 11:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*95*		*76 - 130*		*05/19/25 11:07*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/19/25 11:07*	*1*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*		*05/19/25 11:07*	*1*

Lab Sample ID: LCS 310-455067/7
Matrix: Water
Analysis Batch: 455067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	21.21		ug/L		106	71 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*83*		*76 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*

Lab Sample ID: 310-306686-8 MS
Matrix: Water
Analysis Batch: 455067

Client Sample ID: MW-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<5.00		200	199.7		ug/L		100	48 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*76 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: 310-306686-8 MSD
Matrix: Water
Analysis Batch: 455067

Client Sample ID: MW-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<5.00		200	190.5		ug/L		95	48 - 125	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*92*		*76 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-455624/3
Matrix: Water
Analysis Batch: 455624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00	0.450	mg/L			05/22/25 11:16	1

Lab Sample ID: LCS 310-455624/4
Matrix: Water
Analysis Batch: 455624

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	10.13		mg/L		101	90 - 110		

Lab Sample ID: 310-306686-1 MS
Matrix: Water
Analysis Batch: 455624

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	175		50.0	222.2		mg/L		94	80 - 120		

Lab Sample ID: 310-306686-1 MSD
Matrix: Water
Analysis Batch: 455624

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	175		50.0	220.6		mg/L		91	80 - 120	1	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-455394/1-A
Matrix: Water
Analysis Batch: 455874

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 455394

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/21/25 15:12	05/27/25 18:59	1
Iron	<0.100		0.100	0.0500	mg/L		05/21/25 15:12	05/27/25 18:59	1

Lab Sample ID: LCS 310-455394/2-A
Matrix: Water
Analysis Batch: 455874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 455394

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			0.600	0.5953		mg/L		99	80 - 120		
Iron			0.600	0.6044		mg/L		101	80 - 120		

Lab Sample ID: 310-306686-1 DU
Matrix: Water
Analysis Batch: 455874

Client Sample ID: MW-3
Prep Type: Total/NA
Prep Batch: 455394

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	0.000997	J		0.0009910	J	mg/L				0.6	20
Iron	0.939			0.9436		mg/L				0.5	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-455614/1-A
Matrix: Water
Analysis Batch: 455691

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 455614

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.210	mg/L		05/23/25 10:50	05/23/25 23:36	1

Lab Sample ID: LCS 310-455614/2-A
Matrix: Water
Analysis Batch: 455691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 455614

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	3.767		mg/L		94	90 - 110

Lab Sample ID: 310-306686-5 MS
Matrix: Water
Analysis Batch: 455691

Client Sample ID: MW-8R
Prep Type: Total/NA
Prep Batch: 455614

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	<0.500		4.00	3.876		mg/L		97	90 - 110

Lab Sample ID: 310-306686-5 MSD
Matrix: Water
Analysis Batch: 455691

Client Sample ID: MW-8R
Prep Type: Total/NA
Prep Batch: 455614

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia as N	<0.500		4.00	3.891		mg/L		97	90 - 110	0	14

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-455262/1
Matrix: Water
Analysis Batch: 455262

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	<5.00		5.00	3.50	mg/L			05/20/25 16:07	1

Lab Sample ID: LCS 310-455262/2
Matrix: Water
Analysis Batch: 455262

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 5220D - COD

Lab Sample ID: MB 310-455486/32
Matrix: Water
Analysis Batch: 455486

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	<5.00		5.00	4.60	mg/L			05/22/25 13:06	1

Method: SM 5220D - COD (Continued)

Lab Sample ID: MB 310-455486/60
Matrix: Water
Analysis Batch: 455486

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	<5.00		5.00	4.60	mg/L			05/22/25 13:06	1

Lab Sample ID: LCS 310-455486/3
Matrix: Water
Analysis Batch: 455486

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	121.1		mg/L		97	85 - 110

Lab Sample ID: LCS 310-455486/33
Matrix: Water
Analysis Batch: 455486

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	121.4		mg/L		97	85 - 110

Lab Sample ID: LCS 310-455486/63
Matrix: Water
Analysis Batch: 455486

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	121.8		mg/L		97	85 - 110

Lab Sample ID: 310-306686-1 MS
Matrix: Water
Analysis Batch: 455486

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	<25.0		250	297.8		mg/L		119	83 - 145

Lab Sample ID: 310-306686-1 MSD
Matrix: Water
Analysis Batch: 455486

Client Sample ID: MW-3
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	<25.0		250	286.5		mg/L		115	83 - 145	4	16

GC/MS VOA

Analysis Batch: 455067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-8	MW-9	Total/NA	Water	8260D	
310-306686-9	Trip Blank 1	Total/NA	Water	8260D	
310-306686-10	Trip Blank 2	Total/NA	Water	8260D	
MB 310-455067/6	Method Blank	Total/NA	Water	8260D	
LCS 310-455067/7	Lab Control Sample	Total/NA	Water	8260D	
310-306686-8 MS	MW-9	Total/NA	Water	8260D	
310-306686-8 MSD	MW-9	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 455624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	9056A	
310-306686-2	MW-4	Total/NA	Water	9056A	
310-306686-3	MW-5	Total/NA	Water	9056A	
310-306686-4	MW-7R	Total/NA	Water	9056A	
310-306686-5	MW-8R	Total/NA	Water	9056A	
310-306686-6	MW-23	Total/NA	Water	9056A	
310-306686-7	MW-D	Total/NA	Water	9056A	
310-306686-8	MW-9	Total/NA	Water	9056A	
MB 310-455624/3	Method Blank	Total/NA	Water	9056A	
LCS 310-455624/4	Lab Control Sample	Total/NA	Water	9056A	
310-306686-1 MS	MW-3	Total/NA	Water	9056A	
310-306686-1 MSD	MW-3	Total/NA	Water	9056A	

Metals

Prep Batch: 455394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	3005A	
310-306686-2	MW-4	Total/NA	Water	3005A	
310-306686-3	MW-5	Total/NA	Water	3005A	
310-306686-4	MW-7R	Total/NA	Water	3005A	
310-306686-5	MW-8R	Total/NA	Water	3005A	
310-306686-6	MW-23	Total/NA	Water	3005A	
310-306686-7	MW-D	Total/NA	Water	3005A	
310-306686-8	MW-9	Total/NA	Water	3005A	
MB 310-455394/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-455394/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-306686-1 DU	MW-3	Total/NA	Water	3005A	

Analysis Batch: 455874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	6020B	455394
310-306686-2	MW-4	Total/NA	Water	6020B	455394
310-306686-3	MW-5	Total/NA	Water	6020B	455394
310-306686-4	MW-7R	Total/NA	Water	6020B	455394
310-306686-5	MW-8R	Total/NA	Water	6020B	455394
310-306686-6	MW-23	Total/NA	Water	6020B	455394
310-306686-7	MW-D	Total/NA	Water	6020B	455394
310-306686-8	MW-9	Total/NA	Water	6020B	455394
MB 310-455394/1-A	Method Blank	Total/NA	Water	6020B	455394

Metals (Continued)

Analysis Batch: 455874 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-455394/2-A	Lab Control Sample	Total/NA	Water	6020B	455394
310-306686-1 DU	MW-3	Total/NA	Water	6020B	455394

General Chemistry

Analysis Batch: 455262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	I-3765-85	
310-306686-2	MW-4	Total/NA	Water	I-3765-85	
310-306686-3	MW-5	Total/NA	Water	I-3765-85	
310-306686-4	MW-7R	Total/NA	Water	I-3765-85	
310-306686-5	MW-8R	Total/NA	Water	I-3765-85	
310-306686-6	MW-23	Total/NA	Water	I-3765-85	
310-306686-7	MW-D	Total/NA	Water	I-3765-85	
310-306686-8	MW-9	Total/NA	Water	I-3765-85	
MB 310-455262/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-455262/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 455486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	SM 5220D	
310-306686-2	MW-4	Total/NA	Water	SM 5220D	
310-306686-3	MW-5	Total/NA	Water	SM 5220D	
310-306686-4	MW-7R	Total/NA	Water	SM 5220D	
310-306686-5	MW-8R	Total/NA	Water	SM 5220D	
310-306686-6	MW-23	Total/NA	Water	SM 5220D	
310-306686-7	MW-D	Total/NA	Water	SM 5220D	
310-306686-8	MW-9	Total/NA	Water	SM 5220D	
MB 310-455486/32	Method Blank	Total/NA	Water	SM 5220D	
MB 310-455486/60	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-455486/3	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-455486/33	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-455486/63	Lab Control Sample	Total/NA	Water	SM 5220D	
310-306686-1 MS	MW-3	Total/NA	Water	SM 5220D	
310-306686-1 MSD	MW-3	Total/NA	Water	SM 5220D	

Prep Batch: 455614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	350.1	
310-306686-2	MW-4	Total/NA	Water	350.1	
310-306686-3	MW-5	Total/NA	Water	350.1	
310-306686-4	MW-7R	Total/NA	Water	350.1	
310-306686-5	MW-8R	Total/NA	Water	350.1	
310-306686-6	MW-23	Total/NA	Water	350.1	
310-306686-7	MW-D	Total/NA	Water	350.1	
310-306686-8	MW-9	Total/NA	Water	350.1	
MB 310-455614/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-455614/2-A	Lab Control Sample	Total/NA	Water	350.1	
310-306686-5 MS	MW-8R	Total/NA	Water	350.1	
310-306686-5 MSD	MW-8R	Total/NA	Water	350.1	

QC Association Summary

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

General Chemistry

Analysis Batch: 455691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-306686-1	MW-3	Total/NA	Water	350.1	455614
310-306686-2	MW-4	Total/NA	Water	350.1	455614
310-306686-3	MW-5	Total/NA	Water	350.1	455614
310-306686-4	MW-7R	Total/NA	Water	350.1	455614
310-306686-5	MW-8R	Total/NA	Water	350.1	455614
310-306686-6	MW-23	Total/NA	Water	350.1	455614
310-306686-7	MW-D	Total/NA	Water	350.1	455614
310-306686-8	MW-9	Total/NA	Water	350.1	455614
MB 310-455614/1-A	Method Blank	Total/NA	Water	350.1	455614
LCS 310-455614/2-A	Lab Control Sample	Total/NA	Water	350.1	455614
310-306686-5 MS	MW-8R	Total/NA	Water	350.1	455614
310-306686-5 MSD	MW-8R	Total/NA	Water	350.1	455614

Lab Chronicle

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-3
Date Collected: 05/14/25 12:55
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 11:47
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 19:40
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:41
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: MW-4
Date Collected: 05/14/25 13:29
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 12:34
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 19:45
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:41
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: MW-5
Date Collected: 05/14/25 14:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 12:49
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 19:47
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:41
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: MW-7R
Date Collected: 05/14/25 14:49
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 13:05
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 19:49
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:48

Lab Chronicle

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-7R
Date Collected: 05/14/25 14:49
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: MW-8R
Date Collected: 05/14/25 15:28
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 13:20
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 19:57
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:38
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: MW-23
Date Collected: 05/14/25 16:04
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 13:36
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 19:59
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:46
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: MW-D
Date Collected: 05/14/25 14:49
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 14:23
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 20:02
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:43
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		5	455486	ENB7	EET CF	05/22/25 13:06

Lab Chronicle

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Client Sample ID: MW-9
Date Collected: 05/14/25 17:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	455067	WSE8	EET CF	05/19/25 19:05
Total/NA	Analysis	9056A		10	455624	QTZ5	EET CF	05/22/25 14:38
Total/NA	Prep	3005A			455394	QTZ5	EET CF	05/21/25 15:12
Total/NA	Analysis	6020B		1	455874	NFT2	EET CF	05/27/25 20:04
Total/NA	Prep	350.1			455614	RLT9	EET CF	05/23/25 10:50
Total/NA	Analysis	350.1		1	455691	ZJX4	EET CF	05/23/25 23:46
Total/NA	Analysis	I-3765-85		1	455262	MDU9	EET CF	05/20/25 16:07
Total/NA	Analysis	SM 5220D		50	455486	ENB7	EET CF	05/22/25 13:06

Client Sample ID: Trip Blank 1
Date Collected: 05/14/25 00:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	455067	WSE8	EET CF	05/19/25 14:01

Client Sample ID: Trip Blank 2
Date Collected: 05/14/25 00:00
Date Received: 05/16/25 16:25

Lab Sample ID: 310-306686-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	455067	WSE8	EET CF	05/19/25 14:22

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-306686-1
Project/Site: Alter H22 Landfill 2025 GW Sampling
SDG: Iowa

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

Method Summary

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2025 GW Sampling

Job ID: 310-306686-1
SDG: Iowa

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 5220D	COD	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
350.1	Distillation, Ammonia	EPA	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

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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310-306686 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: SCS			
City/State: CITY W. Des Moines	STATE IA	Project:	
Receipt Information			
Date/Time Received: DATE 5.16.25	TIME 1625	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 # 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? ↓

MW-3, 4, 5, 7R — No HCl VOAs in Cooler

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID: AA | Correction Factor (°C): C

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.5 | Corrected Temp (°C): 0.8

• **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 | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY W. Des Moines STATE IA Project:

Receipt Information

Date/Time Received: DATE 5.16.25 TIME 1625 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 # 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? ↓

MW-8R, (9), 23, D (MW-9 only Sample with vials)

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID. AA 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): 5.8 Corrected Temp (°C): 5.8

• **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 Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone. 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

eurofins

Client Information	Sampler: Konner Roth	Lab PM: Miller, Samuel	Carrier Tracking No(s):	COC No: 310-104422-27806 1
Client Contact: Kevin Jensen	Phone:	E-Mail: Samuel Miller@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: SCS Engineers	PWSID:			Job #:
Address: 1690 All State Court Suite 100	Due Date Requested:			
City: West Des Moines	TAT Requested (days):			
State, Zip: IA, 50265	Compliance Project: Δ Yes Δ No			
Phone: 515-368-3155(Tel)	PO #: Purchase Order not required			
Email: kjensen@scsengineers.com	WO #:			
Project Name: Alter H22 Landfill 2025 GW Sampling	Project #: 31002934			
Site: Iowa	SSOW#:			

Analysis Requested

Preservation Codes:
N - None
S - H2SO4
D - HNO3
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9056A_ORGFM_28D - Chloride	350.1, 5220D	OA2 - OA2 Standard List	6020B - (MOD) Arsenic, Iron	I_3765_85 - Residue, Non-filterable (TSS)	8260D - Benzene	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	S	N	D	N	N		
MW-3	5-14-25	1255	G	Water										
MW-4	5-14-25	1329	G	Water										
MW-5	5-14-25	1400	G	Water										
MW-7R	5-14-25	1449	G	Water										
MW-8R	5-14-25	1528	G	Water										
MW-23	5-14-25	1604	G	Water										
MW-D	5-14-25	1449	G	Water										
MW-9	5-14-25	1700	G	Water										
Trip Blank				Water										

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

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

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

Special Instructions/QC Requirements.

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Konner Roth	5-16-25/1403	SCS		5-16-25 1625	
2						
3						

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

Ver: 10/10/2024

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-306686-1
SDG Number: Iowa

Login Number: 306686
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 B-2

Data Validation

Completed by: Semir Omerovic
Lab Report Date: 6/26/2025
Site Name: Alter Highway 22 Monofil
Lab Report Number: 310-306686-1

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation		X		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 : MW-7R and MW-9. The sample(s) was preserved to the appropriate pH in the laboratory. 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-9.
Condition		X		Method 8260D: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container: MW-9 and Trip Blank 2.
Reporting Limits		X		Method 8260D: The following volatiles sample was diluted due to foaming at the time of sample preparation during the original sample analysis: MW-9. Elevated reporting limits (RLs) are provided.
Case Narrative	X			
Holding Times	X			
Analytical Sensitivty and Blanks				
Method Blank Detections	X			
Trip Blank Detections	X			No Detections
Accuracy				
ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates	X			The duplicate was collected from MW-7R during the 2025 event. All parameters had <50% relative difference, with the exception of iron and TSS. Constituents with J flag concentrations were not considered for duplicate sample comparisons.

Appendix C

Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Total Metals Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Antimony, mg/L (CAS NO - 7440-36-0)	6/8/2023	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.00167*	< 0.002
	6/8/2023	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	6/13/2024	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A
Arsenic, mg/L (CAS NO - 7440-38-2)	3/28/2017	**0.00308**	**0.0656**	**0.00205**	N/A	N/A	**0.0644**	N/A
	8/24/2017	0.00139*	**0.0588**	< 0.002	N/A	N/A	**0.0754**	N/A
	5/2/2018	0.000926*	**0.0418**	0.000795*	N/A	N/A	**0.149**	N/A
	8/21/2018	0.00105*	**0.00802**	< 0.002	N/A	N/A	**0.0692**	N/A
	9/11/2019	**0.00289**	**0.0138**	< 0.002	N/A	N/A	**0.0831**	N/A
	3/4/2020	< 0.002	**0.0345**	< 0.002	N/A	N/A	**0.0551**	N/A
	6/2/2021	< 0.002	**0.0742**	< 0.002	N/A	N/A	**0.0711**	N/A
	7/13/2022	**0.00241**	**0.206**	< 0.002	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**0.0934**	N/A
	6/8/2023	0.000675*	**0.0188**	< 0.002	0.000889*	0.000794*	**0.0824**	**0.0336**
	6/8/2023	N/A	**0.00935**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.00443**	**0.0121**	< 0.002	0.000918*	0.000642*	**0.0975**	**0.0209**
	6/13/2024	N/A	**0.0196**	N/A	N/A	N/A	N/A	N/A
	5/14/2025	0.000997*	**0.0762**	< 0.002	0.000823*	0.000685*	**0.115**	**0.00649**
	5/14/2025	N/A	N/A	N/A	0.000905*	N/A	N/A	N/A
Barium, mg/L (CAS NO - 7440-39-3)	6/8/2023	**0.177**	**0.312**	**0.163**	**0.0986**	**0.147**	**0.457**	**0.37**
	6/8/2023	N/A	**0.307**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.177**	**0.305**	**0.16**	**0.0812**	**0.129**	**0.439**	**0.304**
	6/13/2024	N/A	**0.307**	N/A	N/A	N/A	N/A	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)	6/8/2023	< 0.001	< 0.001	< 0.001	0.000762*	< 0.001	< 0.001	< 0.001
	6/8/2023	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/13/2024	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
Cadmium, mg/L (CAS NO - 7440-43-9)	6/8/2023	< 0.0002	< 0.0002	< 0.0002	**0.000653**	< 0.0002	< 0.0002	< 0.0002
	6/8/2023	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.0002	< 0.0002	< 0.0002	**0.000206**	0.000109*	< 0.0002	< 0.0002
	6/13/2024	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)	6/8/2023	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	**0.00501**	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00483*	< 0.005
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Cobalt, mg/L (CAS NO - 7440-48-4)	6/8/2023	**0.00169**	**0.000981**	< 0.0005	**0.00182**	**0.00119**	**0.00295**	**0.000572**
	6/8/2023	N/A	**0.000971**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.0024**	**0.000965**	< 0.0005	**0.00258**	**0.000941**	**0.00228**	**0.000814**
	6/13/2024	N/A	**0.00093**	N/A	N/A	N/A	N/A	N/A
Copper, mg/L (CAS NO - 7440-50-8)	6/8/2023	< 0.005	< 0.005	< 0.005	**0.0136**	< 0.005	< 0.005	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	**0.00832**	< 0.005	< 0.005	< 0.005
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Lead, mg/L (CAS NO - 7439-92-1)	6/8/2023	< 0.0005	< 0.0005	< 0.0005	**0.00221**	< 0.0005	0.000423*	< 0.0005
	6/8/2023	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.00264**	< 0.0005	< 0.0005	**0.00183**	< 0.0005	0.000341*	0.00027*
	6/13/2024	N/A	0.000289*	N/A	N/A	N/A	N/A	N/A
Iron, mg/L (CAS NO - 7439-89-6)	3/28/2017	**4.53**	**14.5**	**26.9**	**0.414**	**2.27**	**18**	**64.1**
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	**69.3**
	8/24/2017	**0.955**	**9.91**	**6.39**	**0.359**	**2.35**	**12.3**	**55.4**
	5/2/2018	**0.645**	**21.9**	**3.88**	**0.686**	**5.37**	**22.2**	**67.9**
	5/2/2018	N/A	N/A	N/A	0.403*	N/A	N/A	N/A
	8/21/2018	**0.572**	**3.34**	**1.29**	0.224*	**2.19**	**9.56**	**48.2**
	8/21/2018	N/A	**3.07**	N/A	N/A	N/A	N/A	N/A
	9/11/2019	**2.07**	**4.29**	**2.25**	**0.538**	**3.99**	**6.3**	**56.2**
	9/11/2019	N/A	**3.91**	N/A	N/A	N/A	N/A	N/A
	3/4/2020	0.339*	**16.4**	**0.864**	**0.692**	**1.66**	**9.12**	**66.2**
	3/4/2020	N/A	N/A	**0.503**	N/A	N/A	N/A	N/A
	6/2/2021	**0.931**	**20.5**	**0.651**	**2.25**	**0.268**	**14.1**	**61.5**
	6/2/2021	N/A	**8.93**	N/A	N/A	N/A	N/A	N/A
	7/13/2022	**2.28**	**121**	< 0.5	**8.53**	**0.533**	N/A	**64.4**
	7/13/2022	N/A	**70.5**	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**19.8**	N/A
	6/8/2023	**0.515**	**4.44**	**0.121**	**2.2**	**0.432**	**20.8**	**66.4**
	6/8/2023	N/A	**6.39**	N/A	N/A	N/A	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Total Metals Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Iron, mg/L (CAS NO - 7439-89-6)	6/13/2024	**2.35**	**4.83**	**0.931**	**1.68**	**0.388**	**18.1**	**59.1**
	6/13/2024	N/A	**6.44**	N/A	N/A	N/A	N/A	N/A
	5/14/2025	**0.939**	**24.4**	**0.169**	**0.465**	**0.613**	**25.4**	**31.7**
	5/14/2025	N/A	N/A	N/A	**2.46**	N/A	N/A	N/A
Nickel, mg/L (CAS NO - 7440-02-0)	6/8/2023	< 0.005	< 0.005	< 0.005	**0.00916**	0.00416*	**0.0715**	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	**0.0155**	**0.0057**	**0.0643**	0.00347*
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Selenium, mg/L (CAS NO - 7782-49-2)	6/8/2023	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00155*	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Silver, mg/L (CAS NO - 7440-22-4)	6/8/2023	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/8/2023	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/13/2024	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
Thallium, mg/L (CAS NO - 7440-28-0)	6/8/2023	**0.00468**	< 0.001	0.000688*	0.000288*	< 0.001	< 0.001	< 0.001
	6/8/2023	N/A	**0.00631**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/13/2024	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
Vanadium, mg/L (CAS NO - 7440-62-2)	6/8/2023	< 0.005	< 0.005	< 0.005	0.00148*	< 0.005	0.0043*	0.00177*
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00441*	0.00265*
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Zinc, mg/L (CAS NO - 7440-66-6)	6/8/2023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	6/8/2023	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	6/13/2024	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A
Total Suspended Solids, mg/L (CAS NO - TSS)	6/13/2024	**4.5**	**12**	**7**	**685**	**6.75**	**50**	**146**
	6/13/2024	N/A	**10.7**	N/A	N/A	N/A	N/A	N/A
	5/14/2025	**11.9**	**30**	**8.13**	**71.7**	**1.88**	**60**	**66**
	5/14/2025	N/A	N/A	N/A	**377**	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Appendix I VOC Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Benzene, ug/L (CAS NO - 71-43-2)	4/1/2003	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	9/1/2003	N/A	N/A	N/A	N/A	N/A	**10**	N/A
	4/1/2004	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	10/1/2004	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	4/1/2005	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	10/1/2005	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	4/1/2006	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	9/1/2006	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	4/1/2007	N/A	N/A	N/A	N/A	N/A	**3**	N/A
	10/1/2007	20000	N/A	N/A	N/A	N/A	< 2.5	N/A
	4/1/2008	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/1/2008	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	4/1/2009	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	10/1/2009	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	4/1/2010	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/1/2010	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/1/2011	N/A	N/A	N/A	N/A	N/A	< 12.5	N/A
	4/26/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	9/27/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	4/10/2013	N/A	N/A	N/A	N/A	N/A	**1.44**	N/A
	10/24/2013	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/21/2014	N/A	N/A	N/A	< 0.5	< 0.5	1.1*	< 0.5
	3/25/2015	N/A	N/A	N/A	< 0.5	< 0.5	N/A	< 0.5
	4/28/2015	N/A	N/A	N/A	< 0.5	< 0.5	2.72*	< 0.5
	8/24/2015	N/A	N/A	N/A	< 0.5	< 0.5	N/A	< 0.5
	10/8/2015	N/A	N/A	N/A	< 0.5	< 0.5	2.85*	< 0.5
	4/8/2016	N/A	N/A	N/A	N/A	N/A	2.85*	N/A
	8/30/2016	N/A	N/A	N/A	N/A	N/A	3.46*	N/A
	3/28/2017	N/A	N/A	N/A	N/A	N/A	**3.34**	N/A
	8/24/2017	N/A	N/A	N/A	N/A	N/A	2.06*	N/A
	5/2/2018	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	8/21/2018	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	9/11/2019	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/4/2020	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/2/2021	N/A	N/A	N/A	N/A	N/A	**1.15**	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**2.95**	N/A
	6/8/2023	N/A	N/A	N/A	N/A	N/A	4.7*	N/A
	6/13/2024	N/A	N/A	N/A	N/A	N/A	**6.48**	N/A
	5/14/2025	N/A	N/A	N/A	N/A	N/A	< 5	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Chemical Oxygen Demand, mg/L (CAS NO - COD)	7/1/1991	N/A	19	13	N/A	N/A	920	N/A
	11/1/1991	10	8	16	N/A	N/A	1000	N/A
	1/1/1992	12	< 5	12	N/A	N/A	1200	N/A
	4/1/1992	5	10	< 5	N/A	N/A	1200	N/A
	10/1/1992	< 5	< 5	< 5	N/A	N/A	1400	N/A
	5/1/1993	13	19	11	N/A	N/A	1200	N/A
	10/1/1993	29	11	8	N/A	N/A	870	N/A
	4/1/1994	19	6.3	7.7	N/A	N/A	1000	N/A
	10/1/1994	5.2	< 5	< 5	N/A	N/A	1100	N/A
	5/1/1995	N/A	< 5	< 5	N/A	N/A	1000	N/A
	9/1/1995	< 5	< 5	< 5	N/A	N/A	1500	N/A
	4/1/1996	< 5	7.6	< 5	N/A	N/A	1300	N/A
	10/1/1996	15	N/A	N/A	N/A	N/A	1600	N/A
	10/1/1997	< 5	28	< 5	N/A	N/A	700	N/A
	5/1/1998	11	15	< 5	N/A	N/A	910	N/A
	10/1/1998	< 5	16	< 5	N/A	N/A	60	N/A
	4/1/1999	< 5	5.3	< 5	N/A	N/A	1200	N/A
	10/1/1999	< 5	< 5	5.8	N/A	N/A	1300	N/A
	4/1/2000	5	6.1	5	N/A	N/A	1300	N/A
	10/1/2000	< 5	< 5	< 5	N/A	N/A	1400	N/A
	4/1/2001	< 5	7.3	< 5	N/A	N/A	N/A	N/A
	10/1/2001	6.2	7.2	< 5	N/A	N/A	640	N/A
	4/1/2002	9.8	5.7	17	N/A	N/A	900	N/A
	10/1/2002	10	13	9.4	N/A	N/A	840	N/A
	4/1/2003	5.3	< 5	5.8	N/A	N/A	1100	N/A
	9/1/2003	< 5	< 5	< 5	N/A	N/A	1190	N/A
	4/1/2004	8.1	6.4	< 5	N/A	N/A	1320	N/A
	10/1/2004	< 5	< 5	< 5	N/A	N/A	830	N/A
	4/1/2005	< 5	< 5	< 5	N/A	N/A	1100	N/A
	10/1/2005	N/A	< 5	< 5	N/A	N/A	1240	N/A
	4/1/2006	< 5	6.7	6.5	N/A	N/A	1240	N/A
	9/1/2006	< 5	< 5	< 5	N/A	N/A	1470	N/A
	4/1/2007	13.8	9.4	6.9	N/A	N/A	951	N/A
	10/1/2007	N/A	5.6	< 5	N/A	N/A	1260	N/A
	4/1/2008	9.3	9.5	< 5	N/A	N/A	1220	N/A
	10/1/2008	8.6	8	5	N/A	N/A	742	N/A
	4/1/2009	< 5	< 5	< 5	N/A	N/A	496	N/A
	10/1/2009	5.3	< 5	< 5	N/A	N/A	N/A	N/A
	4/1/2010	5.8	< 5	< 5	N/A	N/A	1160	N/A
	10/1/2010	13.4	9.1	7	N/A	N/A	714	N/A
	4/1/2011	6.1	23.2	8.4	N/A	N/A	N/A	N/A
	10/1/2011	< 5	< 5	< 5	N/A	N/A	1460	N/A
	4/26/2012	< 5	< 5	< 5	N/A	N/A	869	N/A
	9/27/2012	N/A	6	< 5	N/A	N/A	772	N/A
	4/10/2013	6.9	5.9	< 5	N/A	N/A	753	N/A
	10/24/2013	N/A	< 5	< 5	N/A	N/A	343	N/A
	10/21/2014	11.2	3.5*	8.2	120	29.5	356	71.9
	10/21/2014	N/A	N/A	< 5	N/A	N/A	N/A	N/A
	3/25/2015	N/A	N/A	N/A	115	19.8	N/A	47.6
	4/28/2015	33.7	20.7	< 5	102	16.5	885	42.7
	8/24/2015	N/A	N/A	N/A	37.2	110	N/A	45.4
	10/8/2015	8.08	9.11	13.9	117	24.2	985	43.1
	4/8/2016	6.22	11.1	4.61*	93.8	112	938	77.1
	4/8/2016	N/A	N/A	N/A	91.6	N/A	N/A	N/A
	8/30/2016	12.9	10.9	8.17	103	14.3	83.8	75.7
	8/30/2016	N/A	N/A	N/A	N/A	21.3	N/A	N/A
	3/28/2017	< 5	< 5	< 5	77.8	15.4	693	56.9
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	54.7
	8/24/2017	16.3	32.5	38	112	43.4	601	68.8
	5/2/2018	< 5	< 5	< 5	86.8	13.9	484	63.6
	5/2/2018	N/A	N/A	N/A	90.6	N/A	N/A	N/A
	8/21/2018	< 5	< 5	< 5	71.3	20.9	462	56.1
	8/21/2018	N/A	< 5	N/A	N/A	N/A	N/A	N/A
	9/11/2019	11.4	10.1	< 10	87.8	23.2	267	62.6
	9/11/2019	N/A	10.1	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Chemical Oxygen Demand, mg/L (CAS NO - COD)	3/4/2020	4.87*	4.87*	< 5	68.4	20	312	63.8
	3/4/2020	N/A	N/A	< 5	N/A	N/A	N/A	N/A
	6/2/2021	< 5	6.02	< 10	69.7	22.6	387	67.3
	6/2/2021	N/A	10.6	N/A	N/A	N/A	N/A	N/A
	7/13/2022	11.2	15	10.9	57.7	17.3	N/A	72
	7/13/2022	N/A	7.8	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	493	N/A
	6/8/2023	< 5	< 10	< 10	54.2	< 10	1160	85.9
	6/8/2023	N/A	< 5	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 25	27.7	48.8	112	69.9	1220	119
	6/13/2024	N/A	29.3	N/A	N/A	N/A	N/A	N/A
	5/14/2025	< 25	< 25	< 25	51.3	< 25	1270	41.6
	5/14/2025	N/A	N/A	N/A	54.5	N/A	N/A	N/A
Chloride, mg/L (CAS NO - 16887-00-6)	7/1/1991	N/A	51	83	N/A	N/A	1000	N/A
	11/1/1991	110	47	82	N/A	N/A	1000	N/A
	1/1/1992	100	53	88	N/A	N/A	1100	N/A
	4/1/1992	92	44	89	N/A	N/A	930	N/A
	10/1/1992	79	51	85	N/A	N/A	1100	N/A
	5/1/1993	67	53	90	N/A	N/A	1300	N/A
	10/1/1993	70	55	90	N/A	N/A	1200	N/A
	4/1/1994	73	61	90	N/A	N/A	1000	N/A
	10/1/1994	63	56	86	N/A	N/A	780	N/A
	5/1/1995	N/A	64	95	N/A	N/A	760	N/A
	9/1/1995	66	63	92	N/A	N/A	1100	N/A
	4/1/1996	84	72	98	N/A	N/A	810	N/A
	10/1/1996	67	N/A	N/A	N/A	N/A	1200	N/A
	10/1/1997	76	66	130	N/A	N/A	450	N/A
	5/1/1998	61	69	100	N/A	N/A	530	N/A
	10/1/1998	100	70	110	N/A	N/A	630	N/A
	4/1/1999	63	74	120	N/A	N/A	650	N/A
	10/1/1999	73	80	120	N/A	N/A	700	N/A
	4/1/2000	61.3	81	111	N/A	N/A	907	N/A
	10/1/2000	117	94.3	136	N/A	N/A	1470	N/A
	4/1/2001	79.7	96.6	126	N/A	N/A	946	N/A
	10/1/2001	150	96	120	N/A	N/A	110	N/A
	4/1/2002	88.1	92.8	110	N/A	N/A	584	N/A
	10/1/2002	106	101	115	N/A	N/A	777	N/A
	4/1/2003	101	95.8	107	N/A	N/A	741	N/A
	9/1/2003	93.5	107	116	N/A	N/A	800	N/A
	4/1/2004	130	109	114	N/A	N/A	863	N/A
	10/1/2004	126	113	105	N/A	N/A	966	N/A
	4/1/2005	165	133	111	N/A	N/A	688	N/A
	10/1/2005	N/A	136	109	N/A	N/A	788	N/A
	4/1/2006	184	147	109	N/A	N/A	861	N/A
	9/1/2006	103	157	106	N/A	N/A	943	N/A
	4/1/2007	204	162	106	N/A	N/A	821	N/A
	10/1/2007	< 0.1	166	99.9	N/A	N/A	861	N/A
	4/1/2008	243	184	106	N/A	N/A	730	N/A
	10/1/2008	284	185	106	N/A	N/A	514	N/A
	4/1/2009	185	211	107	N/A	N/A	747	N/A
	10/1/2009	120	194	111	N/A	N/A	379	N/A
	4/1/2010	123	232	107	N/A	N/A	616	N/A
	10/1/2010	98.4	235	111	N/A	N/A	595	N/A
	4/1/2011	181	222	109	N/A	N/A	N/A	N/A
	10/1/2011	126	234	122	N/A	N/A	704	N/A
	4/26/2012	134	218	106	N/A	N/A	465	N/A
	9/27/2012	N/A	232	109	N/A	N/A	475	N/A
	4/10/2013	189	213	106	N/A	N/A	454	N/A
	10/24/2013	N/A	217	113	N/A	N/A	406	N/A
	10/21/2014	232	185	115	105	175	277	132
	10/21/2014	N/A	N/A	107	N/A	N/A	N/A	N/A
	3/25/2015	N/A	N/A	N/A	64.3	237	N/A	145
	4/28/2015	218	199	167	64	237	469	146
	8/24/2015	N/A	N/A	N/A	46.2	174	N/A	171
	10/8/2015	186	192	189	55.9	163	532	145

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Chloride, mg/L (CAS NO - 16887-00-6)	4/8/2016	150	188	207	45.8	153	483	217
	4/8/2016	N/A	N/A	N/A	48.9	N/A	N/A	N/A
	8/30/2016	136	177	223	46.9	100	586	230
	8/30/2016	N/A	N/A	N/A	N/A	98.5	N/A	N/A
	3/28/2017	171	225	236	90.9	164	478	211
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	214
	8/24/2017	154	207	211	56.8	146	276	168
	5/2/2018	150	196	204	66.4	123	242	192
	5/2/2018	N/A	N/A	N/A	67.5	N/A	N/A	N/A
	8/21/2018	151	185	200	70.6	163	242	162
	8/21/2018	N/A	187	N/A	N/A	N/A	N/A	N/A
	9/11/2019	148	175	185	51.4	143	131	96.4
	9/11/2019	N/A	174	N/A	N/A	N/A	N/A	N/A
	3/4/2020	150	169	182	41.1	162	185	71
	3/4/2020	N/A	N/A	189	N/A	N/A	N/A	N/A
	6/2/2021	146	161	158	24.8	153	228	83.5
	6/2/2021	N/A	163	N/A	N/A	N/A	N/A	N/A
	7/13/2022	149	144	129	23	206	N/A	88.3
	7/13/2022	N/A	146	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	654	N/A
	6/8/2023	150	158	61.5	23.7	209	171	51.8
	6/8/2023	N/A	159	N/A	N/A	N/A	N/A	N/A
	6/13/2024	141	156	113	30.9	181	640	99.1
	6/13/2024	N/A	158	N/A	N/A	N/A	N/A	N/A
	5/14/2025	175	171	125	28.6	236	670	43.1
	5/14/2025	N/A	N/A	N/A	29	N/A	N/A	N/A
Nitrogen, Ammonia, mg/L (CAS NO - 7664-41-7)	7/1/1991	N/A	< 0.2	< 0.2	N/A	N/A	0.9	N/A
	11/1/1991	< 0.2	< 0.2	< 0.2	N/A	N/A	0.9	N/A
	1/1/1992	< 0.2	< 0.2	< 0.2	N/A	N/A	18	N/A
	4/1/1992	< 0.2	< 0.2	< 0.2	N/A	N/A	2.2	N/A
	10/1/1992	< 0.2	< 0.2	< 0.2	N/A	N/A	0.55	N/A
	5/1/1993	< 0.2	< 0.2	0.23	N/A	N/A	0.94	N/A
	10/1/1993	< 0.2	0.56	0.37	N/A	N/A	0.43	N/A
	4/1/1994	0.32	< 0.2	0.2	N/A	N/A	1	N/A
	10/1/1994	< 0.2	< 0.2	< 0.2	N/A	N/A	0.37	N/A
	5/1/1995	N/A	< 0.2	0.2	N/A	N/A	1.4	N/A
	9/1/1995	0.36	< 0.2	0.25	N/A	N/A	2	N/A
	4/1/1996	< 0.2	< 0.2	0.24	N/A	N/A	12	N/A
	10/1/1996	0.27	N/A	N/A	N/A	N/A	1.1	N/A
	10/1/1997	< 0.2	< 0.2	0.35	N/A	N/A	1.3	N/A
	5/1/1998	< 0.2	< 0.2	< 0.2	N/A	N/A	0.64	N/A
	10/1/1998	< 0.2	< 0.2	0.22	N/A	N/A	1.7	N/A
	4/1/1999	< 0.2	< 0.2	0.2	N/A	N/A	1.4	N/A
	10/1/1999	0.23	< 0.2	0.34	N/A	N/A	0.66	N/A
	4/1/2000	0.2	< 0.2	0.37	N/A	N/A	1.55	N/A
	10/1/2000	< 0.2	< 0.2	0.24	N/A	N/A	1.61	N/A
	4/1/2001	< 0.2	< 0.2	< 0.2	N/A	N/A	0.82	N/A
	10/1/2001	< 0.2	< 0.2	< 0.2	N/A	N/A	1.29	N/A
	4/1/2002	< 0.2	< 0.2	0.21	N/A	N/A	1.28	N/A
	10/1/2002	< 0.2	< 0.2	< 0.2	N/A	N/A	1.4	N/A
	4/1/2003	< 0.2	< 0.2	0.25	N/A	N/A	1.26	N/A
	9/1/2003	0.39	< 0.2	0.32	N/A	N/A	3.03	N/A
	4/1/2004	< 0.2	< 0.2	0.25	N/A	N/A	1.54	N/A
	10/1/2004	< 0.2	< 0.2	< 0.2	N/A	N/A	< 0.2	N/A
	4/1/2005	< 0.2	< 0.2	0.28	N/A	N/A	1.37	N/A
	10/1/2005	N/A	< 0.2	< 0.2	N/A	N/A	1.79	N/A
	4/1/2006	< 0.2	< 0.2	0.29	N/A	N/A	3.03	N/A
	9/1/2006	0.55	< 0.2	0.32	N/A	N/A	2.06	N/A
	4/1/2007	< 0.2	< 0.2	0.219	N/A	N/A	1.6	N/A
	10/1/2007	0.31	< 0.2	0.33	N/A	N/A	0.21	N/A
	4/1/2008	< 0.2	< 0.2	0.328	N/A	N/A	1.59	N/A
	10/1/2008	< 0.2	< 0.2	< 0.2	N/A	N/A	1.08	N/A
	4/1/2009	< 0.2	< 0.2	0.232	N/A	N/A	1.41	N/A
	10/1/2009	< 0.2	< 0.2	0.268	N/A	N/A	1.8	N/A
	4/1/2010	< 0.2	< 0.2	< 0.2	N/A	N/A	1.48	N/A
	10/1/2010	< 0.2	< 0.2	< 0.2	N/A	N/A	1.4	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Nitrogen, Ammonia, mg/L (CAS NO - 7664-41-7)	4/1/2011	< 0.2	< 0.2	**0.23**	N/A	N/A	N/A	N/A
	10/1/2011	**0.276**	< 0.2	**0.256**	N/A	N/A	**1.63**	N/A
	4/26/2012	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.45**	N/A
	9/27/2012	N/A	< 0.2	**0.336**	N/A	N/A	**1.63**	N/A
	4/10/2013	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.11**	N/A
	10/24/2013	N/A	**0.131**	**0.309**	N/A	N/A	**2.08**	N/A
	10/21/2014	0.152*	**0.201**	0.089*	0.1*	0.083*	**1.22**	**1.23**
	10/21/2014	N/A	N/A	**0.332**	N/A	N/A	N/A	N/A
	3/25/2015	N/A	N/A	N/A	**0.22**	< 0.2	N/A	**1.13**
	4/28/2015	0.102*	**0.2**	**0.401**	< 0.2	< 0.2	**0.853**	**1.1**
	8/24/2015	N/A	N/A	N/A	< 0.2	**0.223**	N/A	**1.2**
	10/8/2015	0.086*	0.154*	**0.474**	< 0.2	0.089*	**1.63**	**1.15**
	4/8/2016	< 0.2	0.174*	**0.363**	< 0.2	< 0.2	**1.57**	**1.41**
	4/8/2016	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A
	8/30/2016	0.109*	0.186*	**0.291**	< 0.2	< 0.2	**2.06**	**1.52**
	8/30/2016	N/A	N/A	N/A	N/A	< 0.2	N/A	N/A
	3/28/2017	**0.511**	0.142*	< 0.2	< 0.2	< 0.2	**1.24**	**1.36**
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	**1.47**
	8/24/2017	**0.677**	0.177*	**0.3**	< 0.2	< 0.2	**1.48**	**1.42**
	5/2/2018	0.163*	< 0.2	< 0.2	< 0.2	< 0.2	**1.31**	**1.26**
	5/2/2018	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A
	8/21/2018	**0.215**	0.176*	< 0.2	< 0.2	< 0.2	**1.57**	**1.41**
	8/21/2018	N/A	**0.215**	N/A	N/A	N/A	N/A	N/A
	9/11/2019	**0.63**	0.151*	0.173*	< 0.2	< 0.2	**1.38**	**2**
	9/11/2019	N/A	0.135*	N/A	N/A	N/A	N/A	N/A
	3/4/2020	0.127*	0.118*	< 0.2	< 0.2	< 0.2	**1.38**	**1.57**
	3/4/2020	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	6/2/2021	**0.596**	0.181*	< 0.2	< 0.2	< 0.2	**1.66**	**2.01**
	6/2/2021	N/A	0.171*	N/A	N/A	N/A	N/A	N/A
	7/13/2022	**0.469**	**0.515**	< 0.2	0.122*	< 0.2	N/A	**3.39**
	7/13/2022	N/A	**0.311**	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**2.59**	N/A
	6/8/2023	**0.614**	**0.3**	< 0.2	< 0.2	0.101*	**3.28**	**3.71**
	6/8/2023	N/A	**0.233**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.909**	0.216*	< 0.5	0.329*	0.268*	**2.89**	**4**
	6/13/2024	N/A	0.239*	N/A	N/A	N/A	N/A	N/A
	5/14/2025	**0.606**	< 0.5	< 0.5	< 0.5	< 0.5	**2.53**	**2.17**
	5/14/2025	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A
pH, S.U. (CAS NO - PH)	7/1/1991	N/A	**7.3**	**7.1**	N/A	N/A	**6.8**	N/A
	11/1/1991	**6.8**	**7.2**	**6.9**	N/A	N/A	**6.7**	N/A
	1/1/1992	**6.9**	**6.9**	**6.9**	N/A	N/A	**6.5**	N/A
	4/1/1992	**7**	**6.8**	**6.8**	N/A	N/A	**6.9**	N/A
	10/1/1992	**7.5**	**7.6**	**8.1**	N/A	N/A	**6.9**	N/A
	5/1/1993	**7**	**7**	**7**	N/A	N/A	N/A	N/A
	4/1/1994	**7.4**	**7.5**	**8.2**	N/A	N/A	**7.2**	N/A
	10/1/1994	**7.4**	**7.7**	**7.5**	N/A	N/A	**6.9**	N/A
	5/1/1995	**7.8**	**7.7**	**7.7**	N/A	N/A	**6.8**	N/A
	9/1/1995	**7.5**	**7.5**	**7.6**	N/A	N/A	**7**	N/A
	1/1/1996	**6.98**	N/A	N/A	N/A	N/A	N/A	N/A
	4/1/1996	**7.1**	**7.6**	**7.32**	N/A	N/A	**6.88**	N/A
	10/1/1996	**7.05**	N/A	N/A	N/A	N/A	**6.74**	N/A
	10/1/1997	**6.9**	**7.02**	**7.01**	N/A	N/A	**6.76**	N/A
	10/1/1998	**7.3**	**7.2**	**7.2**	N/A	N/A	**6.9**	N/A
	4/1/1999	**7.15**	**7.37**	**7.52**	N/A	N/A	**7.08**	N/A
	10/1/1999	**6.91**	**7.08**	**7.07**	N/A	N/A	**6.73**	N/A
	4/1/2000	**7.01**	**7.01**	**6.99**	N/A	N/A	**7.06**	N/A
	10/1/2000	**6.89**	**7.05**	**7.13**	N/A	N/A	**6.7**	N/A
	4/1/2001	**6.81**	**6.85**	**6.83**	N/A	N/A	**6.76**	N/A
	10/1/2001	**6.96**	**7.1**	**7.14**	N/A	N/A	**6.98**	N/A
	4/1/2002	**6.61**	**7.24**	**7.34**	N/A	N/A	**6.88**	N/A
	10/1/2002	**6.95**	**7.02**	**7.13**	N/A	N/A	**6.89**	N/A
	4/1/2003	**7.09**	**7.22**	**7.11**	N/A	N/A	**7.28**	N/A
	9/1/2003	**6.64**	**7.3**	**6.98**	N/A	N/A	**6.94**	N/A
	4/1/2004	**7.13**	**7.35**	**7.35**	N/A	N/A	**6.85**	N/A
	10/1/2004	**6.38**	**6.65**	**6.41**	N/A	N/A	**6**	N/A
	4/1/2005	**6.84**	**7.17**	**7.64**	N/A	N/A	**6.78**	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
pH, S.U. (CAS NO - PH)	10/1/2005	N/A	7.03	7.38	N/A	N/A	7.01	N/A
	4/1/2006	7.02	7.38	7.17	N/A	N/A	6.95	N/A
	9/1/2006	7.78	7.35	7.54	N/A	N/A	7.31	N/A
	4/1/2007	7.03	7.26	7.21	N/A	N/A	6.38	N/A
	10/1/2007	16.44	7.11	7.15	N/A	N/A	6.67	N/A
	4/1/2008	7.28	7.52	7.49	N/A	N/A	6.96	N/A
	10/1/2008	7.08	7.37	7.45	N/A	N/A	7.18	N/A
	4/1/2009	7.1	7.5	7.38	N/A	N/A	6.9	N/A
	10/1/2009	N/A	12.8	N/A	N/A	N/A	6.99	N/A
	4/1/2010	6.51	7.23	7.74	N/A	N/A	7.59	N/A
	10/1/2010	6.98	7.26	7.24	N/A	N/A	6.88	N/A
	4/1/2011	7.1	7.22	7.54	N/A	N/A	N/A	N/A
	10/1/2011	7.5	7.26	8.05	N/A	N/A	6.99	N/A
	4/26/2012	6.62	6.74	7.7	N/A	N/A	6.75	N/A
	9/27/2012	N/A	7.8	7.9	N/A	N/A	7.93	N/A
	4/10/2013	7.95	7.8	7.99	N/A	N/A	8	N/A
	10/24/2013	N/A	7.8	7.95	N/A	N/A	8.1	N/A
	10/21/2014	8.51	8.73	8.91	8.35	9.05	8.2	9.75
	3/25/2015	N/A	N/A	N/A	7.83	7.8	N/A	7.4
	4/28/2015	7.17	7.32	7.09	7.47	7.15	7.631	6.81
	8/24/2015	N/A	N/A	N/A	7.45	7.13	N/A	7.35
	10/8/2015	7.29	7.48	7.31	7.43	7.08	7.33	7
	4/8/2016	7.25	7.32	7.25	7.34	7.29	7.13	6.73
	8/30/2016	7.11	7.26	7.18	7.31	6.85	6.99	6.9
	3/28/2017	7.08	7.28	7.47	7.35	6.99	7.23	6.79
	8/24/2017	7.01	7.17	7.48	7.21	7.19	7.17	6.71
	5/2/2018	7.52	7.95	7.74	7.61	7.01	7.36	6.7
	8/21/2018	7.44	7.58	7.52	7.35	7.41	7.32	7.4
	9/11/2019	7.03	7.22	7.51	7.07	6.74	7.38	6.67
	3/4/2020	6.89	7.06	7.66	7.02	6.78	7.24	6.56
	6/2/2021	6.84	7.07	7.23	7.14	6.7	7.13	6.56
	7/13/2022	6.57	6.87	7.2	7.05	6.6	N/A	6.42
	8/18/2022	N/A	N/A	N/A	N/A	N/A	6.83	N/A
	6/8/2023	7.13	7.37	7.8	7.35	6.95	7.09	6.82
	6/13/2024	6.69	6.93	7.26	6.96	6.67	6.79	6.42
	5/14/2025	6.83	7.06	7.38	7.1	6.73	6.93	6.39
Specific Conductance, umhos/cm (CAS NO - SC)	7/1/1991	N/A	840	860	N/A	N/A	N/A	N/A
	11/1/1991	800	610	670	N/A	N/A	N/A	N/A
	1/1/1992	820	610	670	N/A	N/A	N/A	N/A
	4/1/1992	1100	820	870	N/A	N/A	N/A	N/A
	10/1/1992	1200	1000	910	N/A	N/A	N/A	N/A
	5/1/1993	1100	900	1000	N/A	N/A	N/A	N/A
	4/1/1994	700	N/A	N/A	N/A	N/A	N/A	N/A
	10/1/1994	1000	900	800	N/A	N/A	N/A	N/A
	5/1/1995	600	700	700	N/A	N/A	N/A	N/A
	9/1/1995	1120	1070	1080	N/A	N/A	N/A	N/A
	1/1/1996	1040	N/A	N/A	N/A	N/A	N/A	N/A
	4/1/1996	1050	1020	960	N/A	N/A	N/A	N/A
	10/1/1996	1060	N/A	N/A	N/A	N/A	N/A	N/A
	10/1/1997	1080	980	970	N/A	N/A	N/A	N/A
	5/1/1998	800	900	900	N/A	N/A	N/A	N/A
	10/1/1998	2250	1450	2050	N/A	N/A	N/A	N/A
	4/1/1999	1140	1240	1260	N/A	N/A	N/A	N/A
	10/1/1999	1120	1090	1100	N/A	N/A	N/A	N/A
	4/1/2000	1050	1035	1110	N/A	N/A	N/A	N/A
	10/1/2000	1120	1000	1160	N/A	N/A	10	N/A
	4/1/2001	1050	1140	1110	N/A	N/A	N/A	N/A
	10/1/2001	1030	1060	1010	N/A	N/A	N/A	N/A
	4/1/2002	1040	1120	10.8	N/A	N/A	4060	N/A
	10/1/2002	1370	1240	1130	N/A	N/A	4640	N/A
	4/1/2003	1590	1170	1110	N/A	N/A	5610	N/A
	9/1/2003	1210	1160	1120	N/A	N/A	4660	N/A
	4/1/2004	1270	1080	1010	N/A	N/A	5560	N/A
	10/1/2004	1220	1050	980	N/A	N/A	4480	N/A
	4/1/2005	1240	1190	1000	N/A	N/A	5020	N/A
	10/1/2005	N/A	1340	1120	N/A	N/A	5760	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Specific Conductance, umhos/cm (CAS NO - SC)	4/1/2006	1440	1340	1113	N/A	N/A	6130	N/A
	9/1/2006	10.61	1510	1060	N/A	N/A	6900	N/A
	4/1/2007	1080	970	780	N/A	N/A	5640	N/A
	10/1/2007	N/A	1240	980	N/A	N/A	5170	N/A
	4/1/2008	1620	1440	1120	N/A	N/A	5450	N/A
	10/1/2008	1650	1310	1010	N/A	N/A	4230	N/A
	4/1/2009	1250	1350	1020	N/A	N/A	5070	N/A
	10/1/2009	1010	N/A	900	N/A	N/A	2910	N/A
	4/1/2010	950	1190	740	N/A	N/A	3450	N/A
	10/1/2010	1070	1430	990	N/A	N/A	3870	N/A
	4/1/2011	220	1940	1070	N/A	N/A	N/A	N/A
	10/1/2011	1200	1550	1080	N/A	N/A	6120	N/A
	4/26/2012	1226	1527	970	N/A	N/A	5610	N/A
	9/27/2012	N/A	1450	1010	N/A	N/A	4960	N/A
	4/10/2013	1015	1430	1020	N/A	N/A	500	N/A
	10/24/2013	N/A	1423	1015	N/A	N/A	499	N/A
	10/21/2014	1550	1454	1100	1020	1750	800	1623
	3/25/2015	N/A	N/A	N/A	2656	1739	N/A	1765
	4/28/2015	1289	1317	1234	2366	1559	2640	1772
	8/24/2015	N/A	N/A	N/A	2314	1331	N/A	1636
	10/8/2015	1183	1215	1168	2360	1384	1874	1562
	4/8/2016	1217	1498	1458	2223	1305	4936	2660
	8/30/2016	1276	1457	1593	2635	1390	5948	2444
	3/28/2017	999	1113	1047	1586	1027	3559	2033
	8/24/2017	1382	1514	1367	2677	2481	3387	2455
	5/2/2018	1523	1586	1337	2422	1013	3322	2727
	8/21/2018	1423	1394	1216	1857	1583	3179	2092
	9/11/2019	1132.6	1200	1132.4	2233.5	1601.8	2212.1	1906.8
	3/4/2020	1354	1367	1216	1984	1642	2988	2341
	6/2/2021	1330.1	1328.7	1192	1747.9	1499.3	3162.4	2201.5
	7/13/2022	1257	1258.2	1043	1612	1621.4	N/A	2001.3
	8/18/2022	N/A	N/A	N/A	N/A	N/A	5097.6	N/A
	6/8/2023	1246.4	1250.4	1023.3	1579.8	1427.7	5226.9	2014.3
	6/13/2024	1492.7	1510.1	1163.4	2383.4	1722.3	6028.9	2320.7
	5/14/2025	1346.7	1330.7	955.4	1653.6	1634.1	5299.7	1378.1
Total Extractable Hydrocarbons, mg/L (CAS NO - TEH)	6/8/2023	0.104*	0.0835*	0.104*	0.73	0.123*	15.6	0.143*
	6/8/2023	N/A	0.0961*	N/A	N/A	N/A	N/A	N/A
	6/13/2024	0.159*	0.145*	0.17*	<0.543	0.148*	<0.49	<0.5
	6/13/2024	N/A	0.148*	N/A	N/A	N/A	N/A	N/A
Total Organic Halogens, mg/L (CAS NO - TOX)	7/1/1991	N/A	0.09	0.01	N/A	N/A	0.06	N/A
	11/1/1991	N/A	0.1	N/A	N/A	N/A	N/A	N/A
	1/1/1992	N/A	0.11	N/A	N/A	N/A	N/A	N/A
	4/1/1992	N/A	0.12	N/A	N/A	N/A	N/A	N/A
	10/1/1992	< 0.01	0.13	0.03	N/A	N/A	0.02	N/A
	5/1/1993	N/A	0.14	N/A	N/A	N/A	N/A	N/A
	10/1/1993	0.01	0.15	< 0.01	N/A	N/A	0.42	N/A
	4/1/1994	0.03	0.16	0.02	N/A	N/A	N/A	N/A
	10/1/1994	N/A	0.17	N/A	N/A	N/A	1.26	N/A
	9/1/1995	< 0.01	< 0.01	< 0.01	N/A	N/A	0.74	N/A
	10/1/1996	0.02	N/A	N/A	N/A	N/A	2.06	N/A
	10/1/1997	< 0.01	< 0.01	< 0.01	N/A	N/A	0.73	N/A
	10/1/1998	0.02	< 0.01	< 0.01	N/A	N/A	1.68	N/A
	10/1/1999	< 0.01	< 0.01	< 0.01	N/A	N/A	1.51	N/A
	10/1/2000	0.03	< 0.01	0.02	N/A	N/A	0.82	N/A
	10/1/2001	0.02	< 0.01	< 0.01	N/A	N/A	0.64	N/A
	10/1/2002	0.05	0.03	0.02	N/A	N/A	1.3	N/A
	9/1/2003	0.03	< 0.01	< 0.01	N/A	N/A	1.32	N/A
	10/1/2004	0.04	0.02	0.02	N/A	N/A	1.3	N/A
	4/1/2005	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
	10/1/2005	N/A	< 0.01	< 0.01	N/A	N/A	1.57	N/A
	4/1/2006	N/A	N/A	N/A	N/A	N/A	1.68	N/A
	9/1/2006	0.1	0.01	< 0.01	N/A	N/A	1.74	N/A
	10/1/2007	6.88	< 0.01	< 0.01	N/A	N/A	1.58	N/A
	10/1/2008	0.0264	< 0.01	< 0.01	N/A	N/A	0.728	N/A
	10/1/2009	0.0219	N/A	< 0.01	N/A	N/A	0.962	N/A
	10/1/2010	0.0238	0.0197	0.0238	N/A	N/A	6.82	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Total Organic Halogens, mg/L (CAS NO - TOX)	10/1/2011	**0.0125**	**0.0105**	< 0.01	N/A	N/A	**1.48**	N/A
	9/27/2012	N/A	**0.584**	**0.019**	N/A	N/A	**0.682**	N/A
	10/24/2013	N/A	**0.125**	**0.0206**	N/A	N/A	**0.481**	N/A
	10/21/2014	**0.147**	**0.124**	**0.0429**	**0.143**	**0.109**	**0.669**	**0.0836**
	10/21/2014	N/A	N/A	**0.0798**	N/A	N/A	N/A	N/A
	10/8/2015	**0.0969**	**0.0761**	0.017*	**0.0738**	**0.0951**	**0.964**	**0.194**
	8/30/2016	0.0193*	0.0196*	0.0229*	**0.0708**	**0.11**	**0.92**	**0.22**
	8/30/2016	N/A	N/A	N/A	N/A	**0.0763**	N/A	N/A
	8/24/2017	0.015*	< 0.03	0.0212*	0.0178*	**0.0506**	**0.125**	N/A
	8/21/2018	0.0212*	0.0199*	0.0145*	**0.055**	**0.0557**	**0.201**	**0.248**
	8/21/2018	N/A	0.018*	N/A	N/A	N/A	N/A	N/A
	9/11/2019	**0.0123**	**0.042**	**0.0503**	**0.137**	**0.206**	**0.127**	**0.488**
	9/11/2019	N/A	**0.107**	N/A	N/A	N/A	N/A	N/A
	3/4/2020	0.0353*	0.0392*	**0.127**	**0.103**	**0.0953**	**0.102**	**0.132**
	3/4/2020	N/A	N/A	**0.124**	N/A	N/A	N/A	N/A
	6/2/2021	**0.0918**	**0.105**	**0.0454**	**0.0792**	**0.149**	**0.467**	**0.301**
	6/2/2021	N/A	**0.184**	N/A	N/A	N/A	N/A	N/A
	7/13/2022	**0.0702**	**0.0743**	**0.0555**	**0.0769**	**0.131**	N/A	**0.384**
	7/13/2022	N/A	**0.125**	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**1.34**	N/A
	6/8/2023	0.0193*	**0.152**	0.0282*	**0.0561**	**0.123**	**1.24**	**0.271**
	6/8/2023	N/A	0.0245*	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.04	**0.0936**	0.0294*	**0.0881**	**0.126**	**1.56**	**0.0882**
	6/13/2024	N/A	0.0257*	N/A	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

Appendix D

Statistical Report

STATISTICAL METHODOLOGY

Statistical Method

The approved Groundwater Assessment Plan Update (Doc #79942) proposed the use of parametric and non-parametric prediction limits for statistical evaluation in lieu of the control limits required by Iowa Administrative Code 567-115. Prediction limits are the recommended approach of the "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Unified Guidance," as published by the United States Environmental Protection Agency. Prediction limits were used for the statistical evaluation during this reporting period.

Diagnostic and Exploratory Evaluations and Tests of Assumptions

The statistical program includes diagnostic and exploratory evaluations and statistical tests of assumptions, as appropriate, including the following:

- Time series plots
- Shapiro-Wilk test for normality
- Ohio EPA Method for Outliers

Management of Non-Detect Data

Non-detect values in the dataset are managed using simple substitution or the Kaplan-Meier estimator. If less than 15% of the data are non-detects, simple substitution is used, where non-detect values are assigned a concentration of one-half (½) of the practical quantification limit (PQL). If greater than 15% but less than 50% of the data are non-detects, the Kaplan-Meier estimator is used to define the distribution for the dataset. If non-detects comprise greater than 50% of the available data, non-parametric statistical methods are used.

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method as included in the statistical software program Sanitas™ and described below, which included the use of Dixon's, Rosner's, and Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets containing less than 75% of the measured concentrations below the practical quantification limit (PQL).

Management of Data (ND data < 75%)

If less than 75% of the background dataset is below the PQL, outliers are statistically evaluated using the following guidelines.

- Parametric datasets with $n < 20$ are evaluated using Dixon's outlier test.
- Parametric datasets with $n \geq 20$ are evaluated using Rosner's outlier test.
- Non-parametric datasets are evaluated using Tukey's outlier test.

In accordance with the Ohio EPA Method, if a statistically significant outlier is not found using the above tests, but the highest value data point exceeds the second highest data point by an order of magnitude, the highest point is considered an outlier.

Management of Data (ND data ≥ 75%)

If greater than or equal to 75% of the background dataset is less than the PQL, outliers are statistically evaluated using the following guidelines.

- Single detection ≥ PQL:
  - If ≥ 50% of the background dataset has detections ≥ method detection limit (MDL), any value ≥ two times PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ MDL, any value ≥ PQL of background is considered an outlier.
- Two or more detections ≥ PQL:
  - If ≥ 50% of the background dataset has detections ≥ MDL, any value ≥ three times PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ MDL, any value ≥ two times the PQL of background is considered an outlier.

Interwell Prediction Limits

Interwell prediction limits were selected as the appropriate statistical method for the determination of constituents statistically above background. Prediction limits are established using the process below. Data from the most recent sampling events is compared to the prediction limits for the determination of constituents above background.

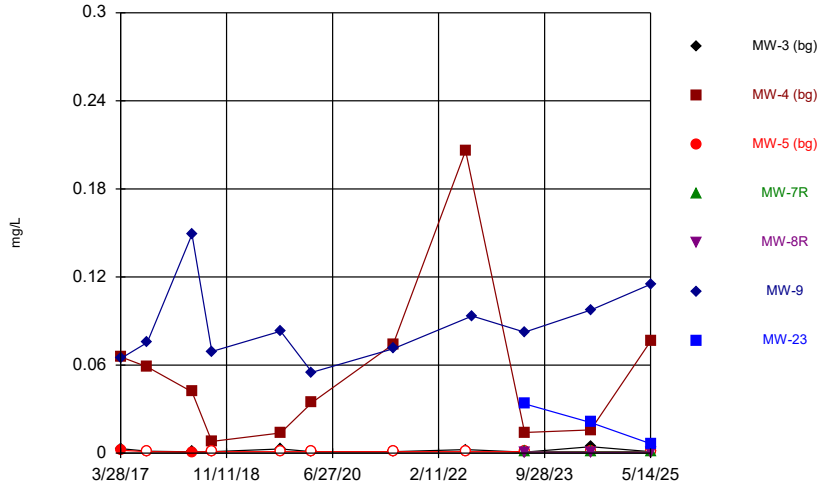
- If the dataset has a normal distribution (or can be transformed to a normal distribution using Ladder of Powers) and has less than 50% non-detects, parametric interwell prediction limits are calculated if at least five data sets have been collected.
- If the dataset does not have a normal distribution (and cannot be transformed to a normal distribution using Ladder of Powers) or has greater than 50% non-detects, non-parametric interwell prediction limits are calculated if at least five data sets have been collected.

Attachment A

Time Series Graphs

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

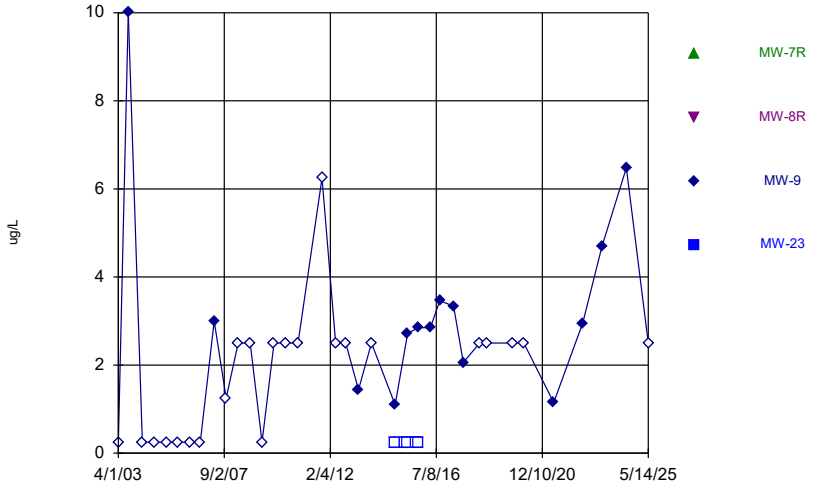
Time Series



Constituent: Arsenic Analysis Run 6/26/2025 12:52 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

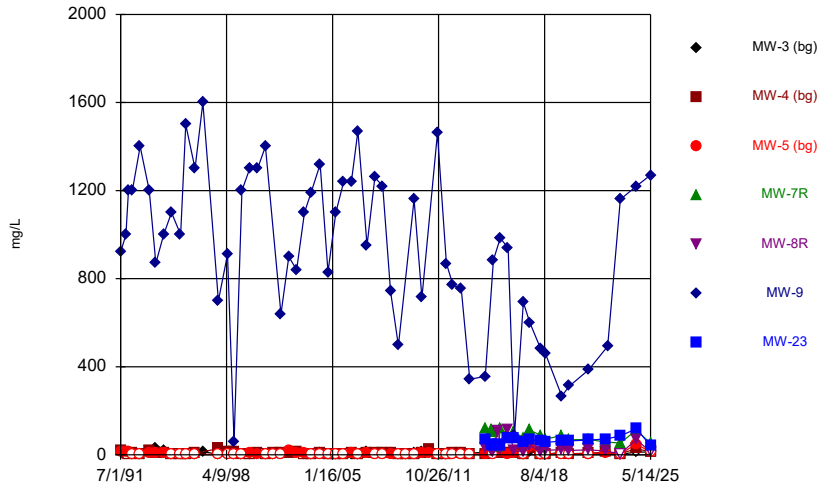
Time Series



Constituent: Benzene Analysis Run 6/26/2025 12:52 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

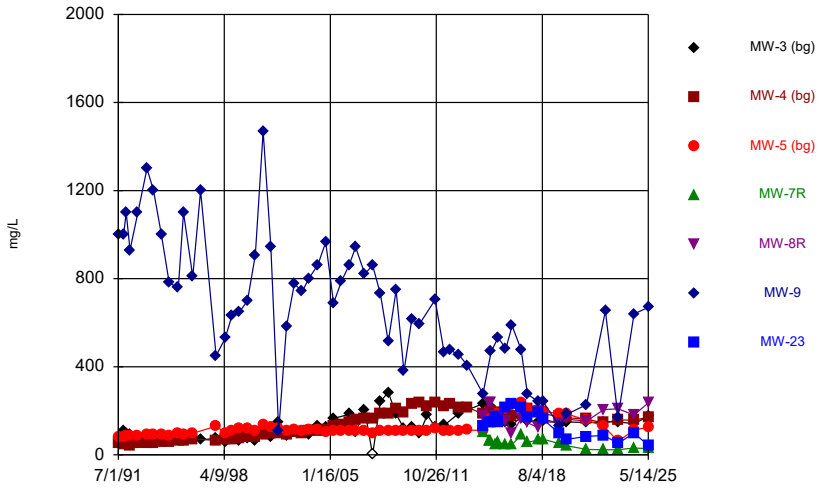
Time Series



Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 12:52 PM View: 2025AWQR - Time Serie
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

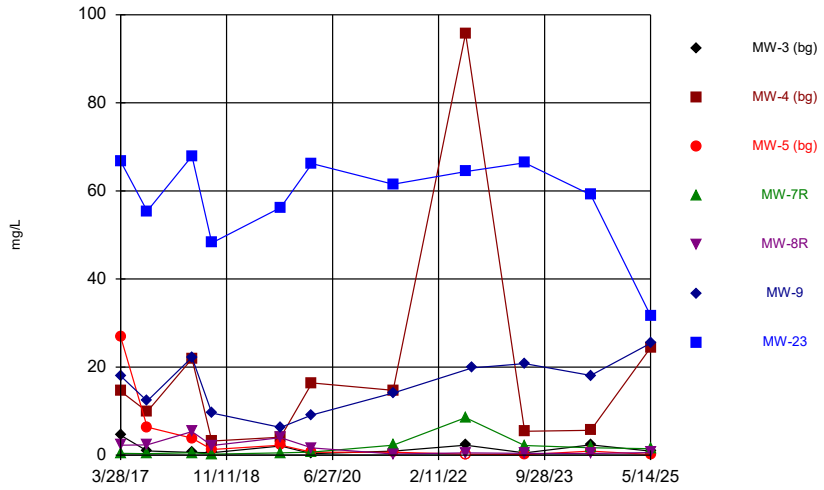
Time Series



Constituent: Chloride Analysis Run 6/26/2025 12:52 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

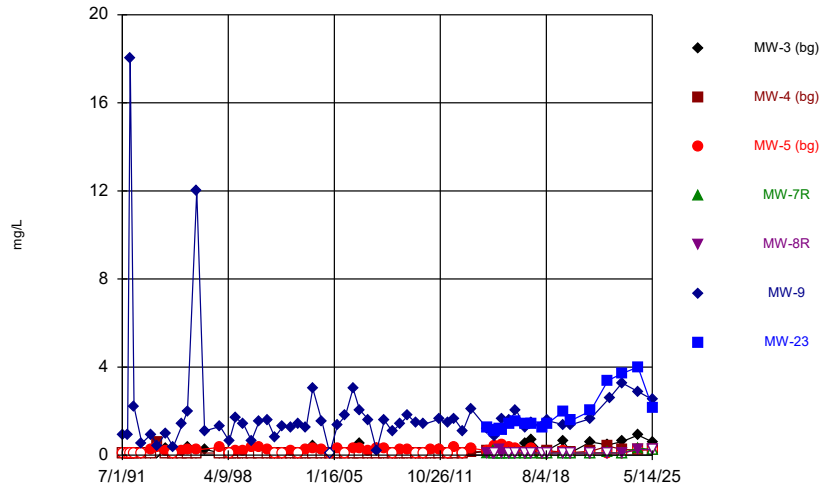
Time Series



Constituent: Iron Analysis Run 6/26/2025 12:53 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

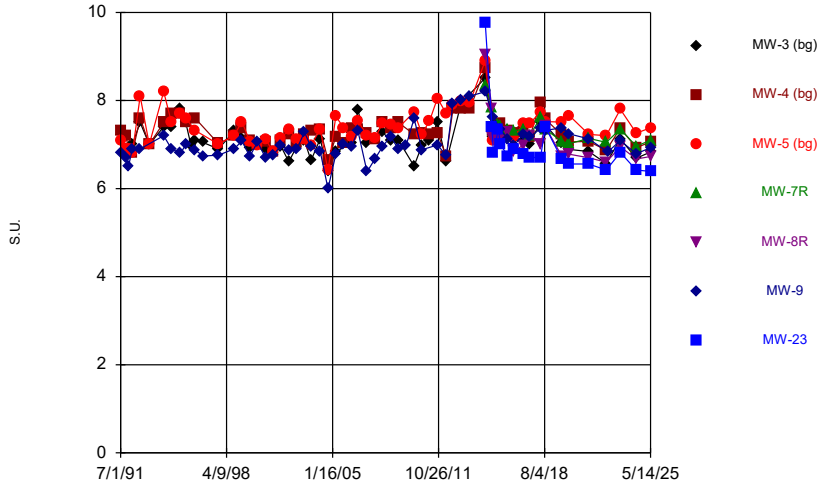
Time Series



Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 12:53 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

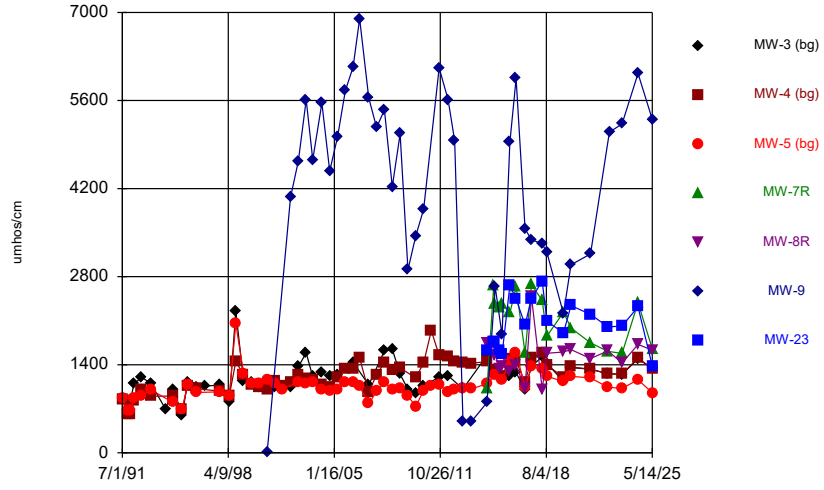
Time Series



Constituent: pH Analysis Run 6/26/2025 12:53 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

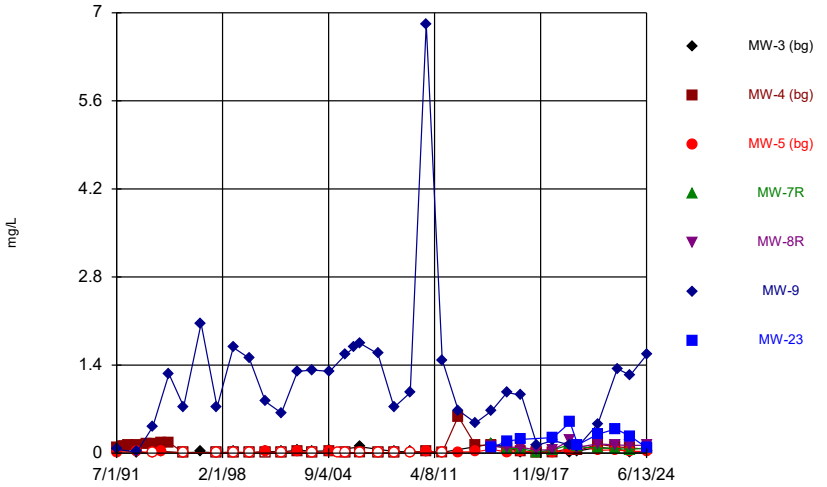
Time Series



Constituent: Specific Conductance Analysis Run 6/26/2025 12:53 PM View: 2025AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Hollow symbols indicate censored values.

Time Series



Constituent: Total Organic Halogens Analysis Run 6/26/2025 12:53 PM View: 2025AWQR - Time Series

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Attachment B

Normality Test

Shapiro-Wilk Normality Test

Constituent: Arsenic Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 11, alpha = 0.01)				
	no	0.8153	0.792	Yes
	square root	0.8524	0.792	Yes
	square	0.723	0.792	No
	cube root	0.8631	0.792	Yes
	cube	0.6233	0.792	No
	natural log	0.882	0.792	Yes
	x^4	0.5382	0.792	No
	x^5	0.4756	0.792	No
	x^6	0.4326	0.792	No
MW-4 (bg) (n = 11, alpha = 0.01)				
	no	0.7537	0.792	No
	square root	0.8965	0.792	Yes
	square	0.5006	0.792	No
	cube root	0.9269	0.792	Yes
	cube	0.3985	0.792	No
	natural log	0.9496	0.792	Yes
	x^4	0.3637	0.792	No
	x^5	0.3516	0.792	No
	x^6	0.3474	0.792	No
MW-5 (bg) (n = 11, alpha = 0.01)				
	no	0.4577	0.792	No
	square root	0.4851	0.792	No
	square	0.414	0.792	No
	cube root	0.495	0.792	No
	cube	0.385	0.792	No
	natural log	0.5153	0.792	No
	x^4	0.3673	0.792	No
	x^5	0.3571	0.792	No
	x^6	0.3514	0.792	No
Pooled Background (bg) (n = 33, alpha = 0.01)				
	no	0.5281	0.906	No
	square root	0.697	0.906	No
	square	0.2927	0.906	No
	cube root	0.7422	0.906	No
	cube	0.2146	0.906	No
	natural log	0.8007	0.906	No
	x^4	0.1903	0.906	No
	x^5	0.1823	0.906	No
	x^6	0.1796	0.906	No

Shapiro-Wilk Normality Test

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 56 - Shapiro-Francia used, alpha = 0.01)				
	no	0.7641	0.942	No
	square root	0.861	0.942	No
	square	0.4709	0.942	No
	cube root	0.8756	0.942	No
	cube	0.2901	0.942	No
	natural log	0.881	0.942	No
	x^4	0.212	0.942	No
	x^5	0.1766	0.942	No
	x^6	0.158	0.942	No
MW-4 (bg) (n = 61 - Shapiro-Francia used, alpha = 0.01)				
	no	0.7808	0.946	No
	square root	0.8734	0.946	No
	square	0.552	0.946	No
	cube root	0.8909	0.946	No
	cube	0.4029	0.946	No
	natural log	0.9025	0.946	No
	x^4	0.32	0.946	No
	x^5	0.2697	0.946	No
	x^6	0.2359	0.946	No
MW-5 (bg) (n = 61 - Shapiro-Francia used, alpha = 0.01)				
	no	0.5006	0.946	No
	square root	0.6711	0.946	No
	square	0.251	0.946	No
	cube root	0.7148	0.946	No
	cube	0.1698	0.946	No
	natural log	0.7694	0.946	No
	x^4	0.142	0.946	No
	x^5	0.1284	0.946	No
	x^6	0.1194	0.946	No
Pooled Background (bg) (n = 178: Chi-Squared used, alpha = 0.05)				
	no	256.5	14.07	No
	square root	255.6	14.07	No
	square	545	14.07	No
	cube root	256.2	14.07	No
	cube	1231	14.07	No
	natural log	263.1	14.07	No
	x^4	1355	14.07	No
	x^5	1428	14.07	No
	x^6	1447	14.07	No

Shapiro-Wilk Normality Test

Constituent: Chloride Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 57 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9635	0.944	Yes
	square root	0.9123	0.944	No
	square	0.8437	0.944	No
	cube root	0.8066	0.944	No
	cube	0.6816	0.944	No
	natural log	0.3862	0.944	No
	x^4	0.5316	0.944	No
	x^5	0.414	0.944	No
	x^6	0.3287	0.944	No
MW-4 (bg) (n = 61 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9376	0.946	No
	square root	0.9334	0.946	No
	square	0.9207	0.946	No
	cube root	0.9298	0.946	No
	cube	0.8822	0.946	No
	natural log	0.9188	0.946	No
	x^4	0.8341	0.946	No
	x^5	0.7839	0.946	No
	x^6	0.736	0.946	No
MW-5 (bg) (n = 61 - Shapiro-Francia used, alpha = 0.01)				
	no	0.7992	0.946	No
	square root	0.8457	0.946	No
	square	0.7042	0.946	No
	cube root	0.86	0.946	No
	cube	0.6209	0.946	No
	natural log	0.8856	0.946	No
	x^4	0.5535	0.946	No
	x^5	0.4992	0.946	No
	x^6	0.4546	0.946	No
Pooled Background (bg) (n = 179: Chi-Squared used, alpha = 0.05)				
	no	27.42	14.07	No
	square root	13.35	14.07	Yes
	square	80.61	14.07	No
	cube root	11.34	14.07	Yes
	cube	242.7	14.07	No
	natural log	71.56	14.07	No
	x^4	257.1	14.07	No
	x^5	268.5	14.07	No
	x^6	631	14.07	No

Shapiro-Wilk Normality Test

Constituent: Iron Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 11, alpha = 0.01)				
	no	0.8029	0.792	Yes
	square root	0.8921	0.792	Yes
	square	0.6121	0.792	No
	cube root	0.9156	0.792	Yes
	cube	0.4828	0.792	No
	natural log	0.9485	0.792	Yes
	x^4	0.4139	0.792	No
	x^5	0.3795	0.792	No
	x^6	0.3624	0.792	No
MW-4 (bg) (n = 11, alpha = 0.01)				
	no	0.5978	0.792	No
	square root	0.7894	0.792	No
	square	0.406	0.792	No
	cube root	0.8529	0.792	Yes
	cube	0.3591	0.792	No
	natural log	0.9419	0.792	Yes
	x^4	0.3484	0.792	No
	x^5	0.3459	0.792	No
	x^6	0.3453	0.792	No
MW-5 (bg) (n = 11, alpha = 0.01)				
	no	0.535	0.792	No
	square root	0.7572	0.792	No
	square	0.3814	0.792	No
	cube root	0.8472	0.792	Yes
	cube	0.3527	0.792	No
	natural log	0.9695	0.792	Yes
	x^4	0.3468	0.792	No
	x^5	0.3455	0.792	No
	x^6	0.3452	0.792	No
Pooled Background (bg) (n = 33, alpha = 0.01)				
	no	0.4862	0.906	No
	square root	0.7826	0.906	No
	square	0.24	0.906	No
	cube root	0.8777	0.906	No
	cube	0.1921	0.906	No
	natural log	0.979	0.906	Yes
	x^4	0.1815	0.906	No
	x^5	0.179	0.906	No
	x^6	0.1783	0.906	No

Shapiro-Wilk Normality Test

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 57 - Shapiro-Francia used, alpha = 0.01)				
	no	0.6513	0.944	No
	square root	0.692	0.944	No
	square	0.5354	0.944	No
	cube root	0.7019	0.944	No
	cube	0.412	0.944	No
	natural log	0.7164	0.944	No
	x^4	0.3101	0.944	No
	x^5	0.2367	0.944	No
	x^6	0.1875	0.944	No
MW-4 (bg) (n = 61 - Shapiro-Francia used, alpha = 0.01)				
	no	0.4622	0.946	No
	square root	0.5332	0.946	No
	square	0.309	0.946	No
	cube root	0.5526	0.946	No
	cube	0.207	0.946	No
	natural log	0.5837	0.946	No
	x^4	0.1553	0.946	No
	x^5	0.1294	0.946	No
	x^6	0.1153	0.946	No
MW-5 (bg) (n = 61 - Shapiro-Francia used, alpha = 0.01)				
	no	0.8859	0.946	No
	square root	0.8731	0.946	No
	square	0.8525	0.946	No
	cube root	0.8655	0.946	No
	cube	0.7482	0.946	No
	natural log	0.8467	0.946	No
	x^4	0.6151	0.946	No
	x^5	0.4895	0.946	No
	x^6	0.3867	0.946	No
Pooled Background (bg) (n = 179: Chi-Squared used, alpha = 0.05)				
	no	476.5	14.07	No
	square root	472.6	14.07	No
	square	572.8	14.07	No
	cube root	474.1	14.07	No
	cube	609.2	14.07	No
	natural log	483.2	14.07	No
	x^4	1224	14.07	No
	x^5	1345	14.07	No
	x^6	1399	14.07	No

Shapiro-Wilk Normality Test

Constituent: pH Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 55 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9068	0.94	No
	square root	0.9179	0.94	No
	square	0.8815	0.94	No
	cube root	0.9214	0.94	No
	cube	0.8523	0.94	No
	natural log	0.9279	0.94	No
	x^4	0.8196	0.94	No
	x^5	0.7838	0.94	No
	x^6	0.7457	0.94	No
MW-4 (bg) (n = 58 - Shapiro-Francia used, alpha = 0.01)				
	no	0.8977	0.944	No
	square root	0.9102	0.944	No
	square	0.8694	0.944	No
	cube root	0.9141	0.944	No
	cube	0.8368	0.944	No
	natural log	0.9215	0.944	No
	x^4	0.8004	0.944	No
	x^5	0.7605	0.944	No
	x^6	0.7179	0.944	No
MW-5 (bg) (n = 58 - Shapiro-Francia used, alpha = 0.01)				
	no	0.934	0.944	No
	square root	0.9427	0.944	No
	square	0.9125	0.944	No
	cube root	0.9453	0.944	Yes
	cube	0.8859	0.944	No
	natural log	0.95	0.944	Yes
	x^4	0.8544	0.944	No
	x^5	0.8187	0.944	No
	x^6	0.7793	0.944	No
Pooled Background (bg) (n = 171: Chi-Squared used, alpha = 0.05)				
	no	15.26	14.07	No
	square root	12.33	14.07	Yes
	square	21.34	14.07	No
	cube root	12.33	14.07	Yes
	cube	23.68	14.07	No
	natural log	10.58	14.07	Yes
	x^4	23.21	14.07	No
	x^5	40.17	14.07	No
	x^6	49.06	14.07	No

Shapiro-Wilk Normality Test

Constituent: Specific Conductance Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 55 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9079	0.94	No
	square root	0.937	0.94	No
	square	0.7857	0.94	No
	cube root	0.941	0.94	Yes
	cube	0.6198	0.94	No
	natural log	0.9403	0.94	Yes
	x^4	0.4616	0.94	No
	x^5	0.3388	0.94	No
	x^6	0.254	0.94	No
MW-4 (bg) (n = 58 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9725	0.944	Yes
	square root	0.9595	0.944	Yes
	square	0.956	0.944	Yes
	cube root	0.9519	0.944	Yes
	cube	0.8903	0.944	No
	natural log	0.932	0.944	No
	x^4	0.7892	0.944	No
	x^5	0.6701	0.944	No
	x^6	0.551	0.944	No
MW-5 (bg) (n = 58 - Shapiro-Francia used, alpha = 0.01)				
	no	0.8446	0.944	No
	square root	0.8936	0.944	No
	square	0.6966	0.944	No
	cube root	0.9052	0.944	No
	cube	0.5281	0.944	No
	natural log	0.9207	0.944	No
	x^4	0.3854	0.944	No
	x^5	0.2834	0.944	No
	x^6	0.2164	0.944	No
Pooled Background (bg) (n = 171: Chi-Squared used, alpha = 0.05)				
	no	13.97	14.07	Yes
	square root	15.61	14.07	No
	square	28.71	14.07	No
	cube root	15.96	14.07	No
	cube	70.58	14.07	No
	natural log	15.49	14.07	No
	x^4	178.1	14.07	No
	x^5	310	14.07	No
	x^6	409.1	14.07	No

Shapiro-Wilk Normality Test

Constituent: Total Organic Halogens Analysis Run 6/26/2025 1:09 PM View: 2025AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 29, alpha = 0.01)				
	no	0.7509	0.898	No
	square root	0.8825	0.898	No
	square	0.5405	0.898	No
	cube root	0.9166	0.898	Yes
	cube	0.4173	0.898	No
	natural log	0.945	0.898	Yes
	x^4	0.3383	0.898	No
	x^5	0.2865	0.898	No
	x^6	0.253	0.898	No
MW-4 (bg) (n = 37, alpha = 0.01)				
	no	0.6344	0.914	No
	square root	0.8523	0.914	No
	square	0.277	0.914	No
	cube root	0.8795	0.914	No
	cube	0.1927	0.914	No
	natural log	0.8696	0.914	No
	x^4	0.1739	0.914	No
	x^5	0.1693	0.914	No
	x^6	0.1682	0.914	No
MW-5 (bg) (n = 34, alpha = 0.01)				
	no	0.6838	0.908	No
	square root	0.8244	0.908	No
	square	0.3835	0.908	No
	cube root	0.8465	0.908	No
	cube	0.2555	0.908	No
	natural log	0.8502	0.908	No
	x^4	0.2084	0.908	No
	x^5	0.1898	0.908	No
	x^6	0.1818	0.908	No
Pooled Background (bg) (n = 100: Chi-Squared used, alpha = 0.05)				
	no	115.2	14.07	No
	square root	74.4	14.07	No
	square	555.4	14.07	No
	cube root	57.6	14.07	No
	cube	768.6	14.07	No
	natural log	61.4	14.07	No
	x^4	880.2	14.07	No
	x^5	880.2	14.07	No
	x^6	880.2	14.07	No

Attachment C

Outliers

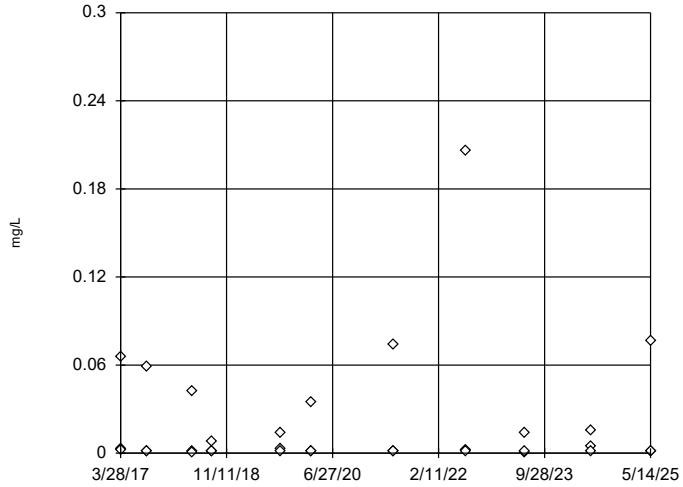
BG Outlier Analysis

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master Printed 6/26/2025, 1:24 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Arsenic (mg/L)	MW-3,MW-4,MW-5	No	n/a	n/a w/combined bg	NP (nrm)	NaN	33	0.01941	0.04061	unknown	ShapiroWilk
Chemical Oxygen Demand (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**13,13,13,29,19,15,15,13.8,13.4,33.7,1...**	**n/a w/combined bg**	**NP (n)**	**NaN**	**178**	**7.377**	**7.197**	**unknown**	**ChiSquared**
Chloride (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**243,284,232,232,232,218,218,235,222,2...**	**n/a w/combined bg**	**NP (n)**	**NaN**	**179**	**129**	**52.49**	**unknown**	**ChiSquared**
Iron (mg/L)	MW-3,MW-4,MW-5	No	n/a	n/a w/combined bg	EPA 1989	0.05	33	8.351	17.37	ln(x)	ShapiroWilk
Nitrogen, Ammonia (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**0.32,0.32,0.32,0.36,0.39,0.55,0.31,0....**	**n/a w/combined bg**	**NP (n)**	**NaN**	**179**	**0.1846**	**0.1383**	**unknown**	**ChiSquared**
pH (S.U.)	**MW-3,MW-4,MW-5**	**Yes**	**8.51,8.73,8.91**	**n/a w/combined bg**	**NP (n)**	**NaN**	**171**	**7.262**	**0.3907**	**unknown**	**ChiSquared**
Specific Conductance (umhos/cm)	**MW-3,MW-4,MW-5**	**Yes**	**2250,1620,1650,1940,2050**	**n/a w/combined bg**	**NP (n)**	**NaN**	**171**	**1158**	**254.7**	**unknown**	**ChiSquared**
Total Organic Halogens (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**0.1,0.1,0.147,0.0969,0.0918,0.09,0.11...**	**n/a w/combined bg**	**NP (nrm)**	**NaN**	**100**	**0.04506**	**0.07018**	**unknown**	**ChiSquared**

Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 33

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 49.77, low cutoff = 3.0e-7, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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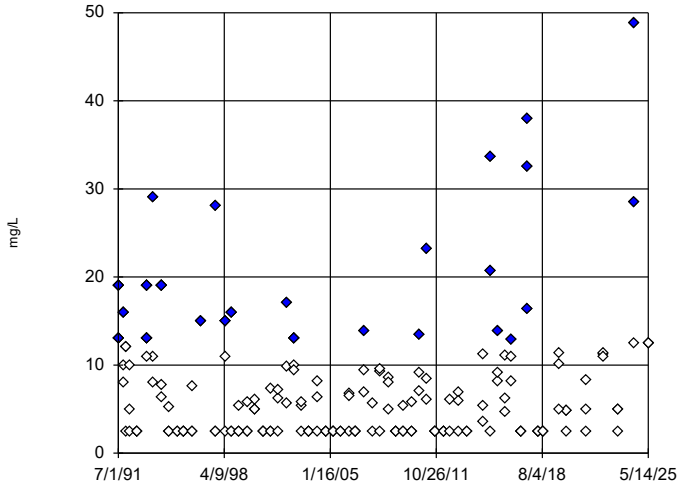
Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 178

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 12.6, low cutoff = -12.01, based on IQR multiplier of 3.

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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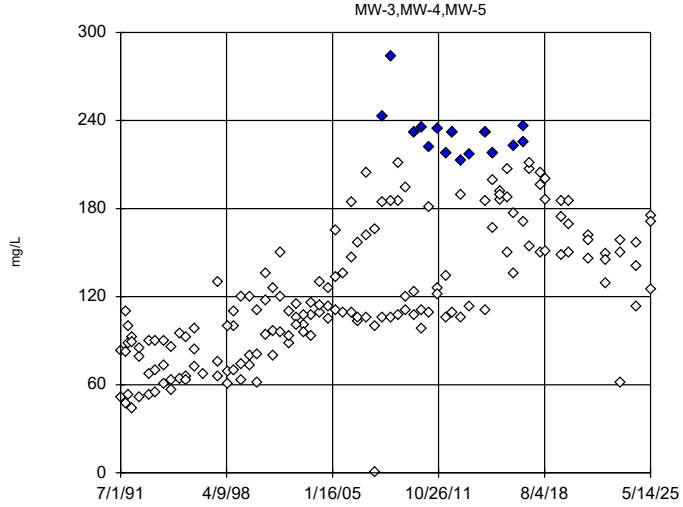
Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 179

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 212.2, low cutoff = -201.8, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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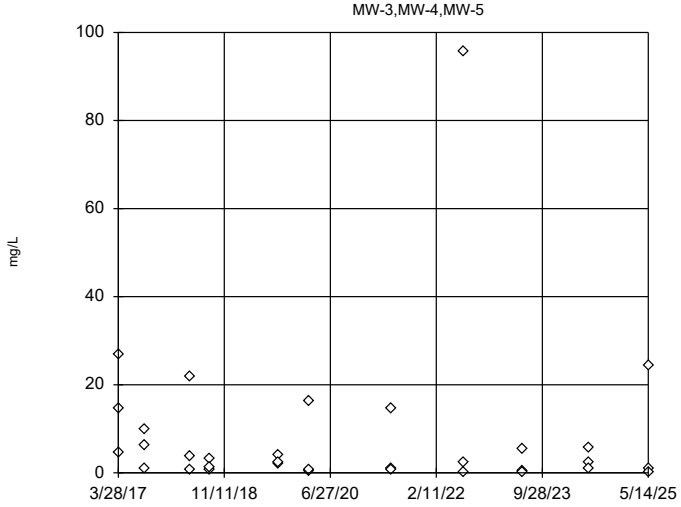
EPA 1989 Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 33

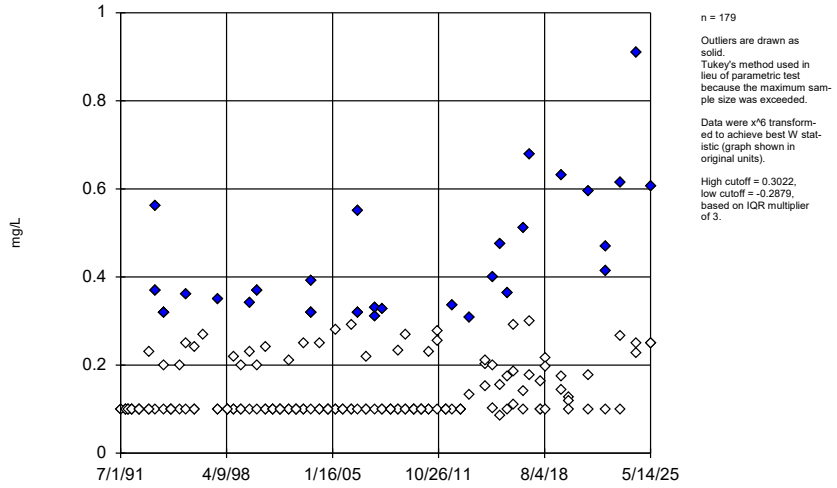
No statistical outliers.
Mean 8.351, std. dev. 17.37, critical Tn 2.786

Normality test used:
Shapiro Wilk@alpha = 0.05
Calculated = 0.979
Critical = 0.931 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Iron Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 179

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

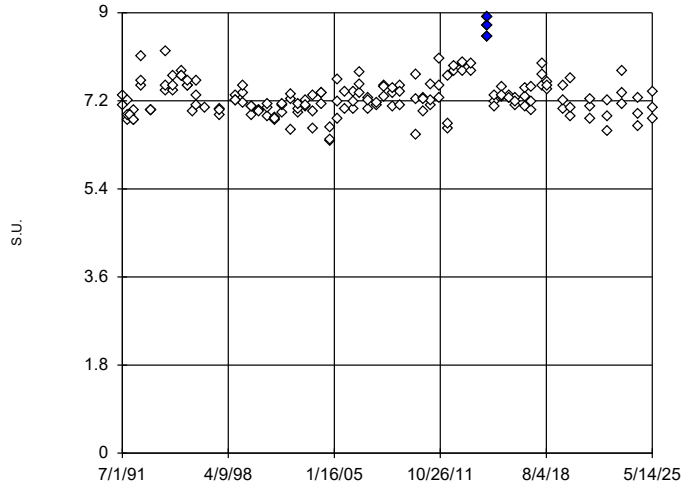
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3022, low cutoff = -0.2879, based on IQR multiplier of 3.

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 171

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

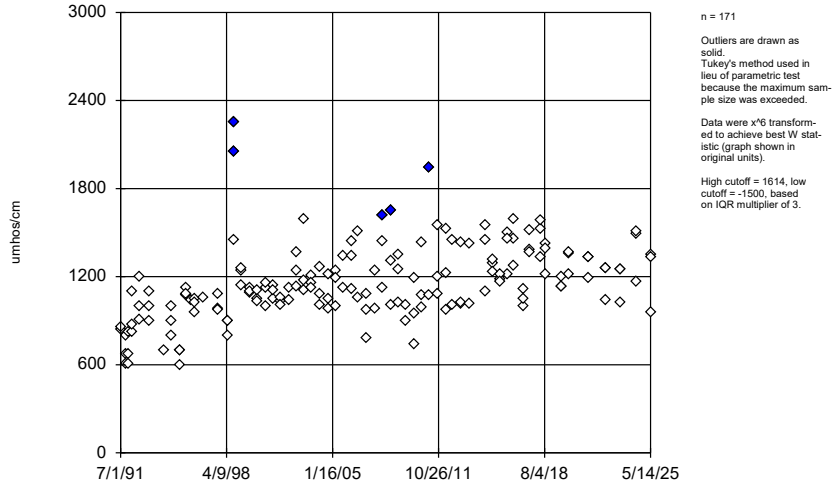
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.418, low cutoff = -6.245, based on IQR multiplier of 3.

Constituent: pH Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 171

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

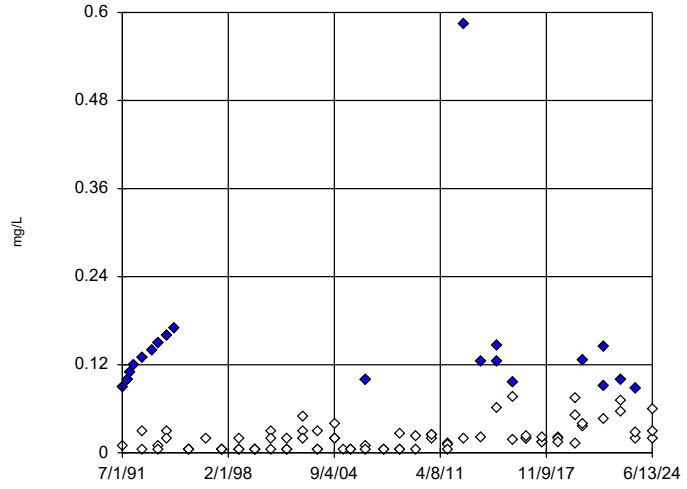
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1614, low cutoff = -1500, based on IQR multiplier of 3.

Constituent: Specific Conductance Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Tukey's Outlier Screening, Pooled Background

MW-3,MW-4,MW-5



n = 100

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Chi Squared normality test failed at the 0.05 alpha level.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.08158, low cutoff = -0.07592, based on IQR multiplier of 3.

Constituent: Total Organic Halogens Analysis Run 6/26/2025 1:21 PM View: 2025AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Attachment D

Prediction Limits

Prediction Limit

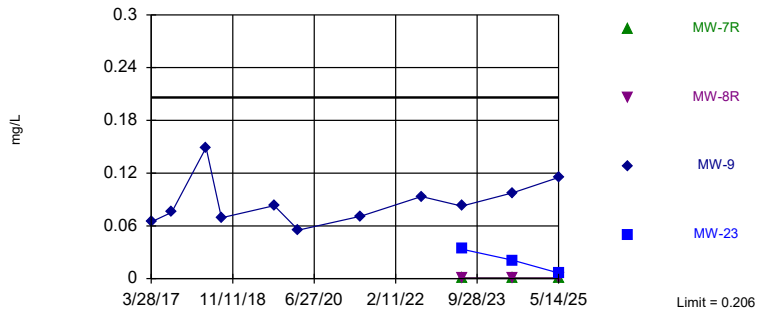
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master Printed 6/26/2025, 3:23 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs
Arsenic (mg/L)	MW-7R	0.206	n/a	5/14/2025	0.000864J	No	33	MW-3,MW-5,MW-4	n/a	n/a	33.33
Arsenic (mg/L)	MW-8R	0.206	n/a	5/14/2025	0.000685J	No	33	MW-3,MW-5,MW-4	n/a	n/a	33.33
Arsenic (mg/L)	MW-9	0.206	n/a	5/14/2025	0.115	No	33	MW-3,MW-5,MW-4	n/a	n/a	33.33
Arsenic (mg/L)	MW-23	0.206	n/a	5/14/2025	0.00649	No	33	MW-3,MW-5,MW-4	n/a	n/a	33.33
Chemical Oxygen Demand (mg/L)	**MW-7R**	**48.8**	**n/a**	**5/14/2025**	**52.9**	**Yes**	**178**	**MW-4,MW-5,MW-3**	**n/a**	**n/a**	**48.31**
Chemical Oxygen Demand (mg/L)	**MW-9**	**48.8**	**n/a**	**5/14/2025**	**1270**	**Yes**	**178**	**MW-4,MW-5,MW-3**	**n/a**	**n/a**	**48.31**
Chemical Oxygen Demand (mg/L)	MW-23	48.8	n/a	5/14/2025	41.6	No	178	MW-4,MW-5,MW-3	n/a	n/a	48.31
Chloride (mg/L)	MW-7R	273.5	n/a	5/14/2025	28.8	No	179	MW-3,MW-4,MW-5	11.1	2.396	0.5587
Chloride (mg/L)	MW-8R	273.5	n/a	5/14/2025	236	No	179	MW-3,MW-4,MW-5	11.1	2.396	0.5587
Chloride (mg/L)	**MW-9**	**273.5**	**n/a**	**5/14/2025**	**670**	**Yes**	**179**	**MW-3,MW-4,MW-5**	**11.1**	**2.396**	**0.5587**
Chloride (mg/L)	MW-23	273.5	n/a	5/14/2025	43.1	No	179	MW-3,MW-4,MW-5	11.1	2.396	0.5587
Iron (mg/L)	MW-7R	116.4	n/a	5/14/2025	1.463	No	33	MW-3,MW-4,MW-5	0.8999	1.616	3.03
Iron (mg/L)	MW-8R	116.4	n/a	5/14/2025	0.613	No	33	MW-3,MW-4,MW-5	0.8999	1.616	3.03
Iron (mg/L)	MW-9	116.4	n/a	5/14/2025	25.4	No	33	MW-3,MW-4,MW-5	0.8999	1.616	3.03
Iron (mg/L)	MW-23	116.4	n/a	5/14/2025	31.7	No	33	MW-3,MW-4,MW-5	0.8999	1.616	3.03
Nitrogen, Ammonia (mg/L)	**MW-9**	**0.909**	**n/a**	**5/14/2025**	**2.53**	**Yes**	**179**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**58.1**
Nitrogen, Ammonia (mg/L)	**MW-23**	**0.909**	**n/a**	**5/14/2025**	**2.17**	**Yes**	**179**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**58.1**
pH (S.U.)	MW-7R	8.268	6.313	5/14/2025	7.1	No	171	MW-3,MW-4,MW-5	2.694	0.07167	0
pH (S.U.)	MW-8R	8.268	6.313	5/14/2025	6.73	No	171	MW-3,MW-4,MW-5	2.694	0.07167	0
pH (S.U.)	MW-9	8.268	6.313	5/14/2025	6.93	No	171	MW-3,MW-4,MW-5	2.694	0.07167	0
pH (S.U.)	MW-23	8.268	6.313	5/14/2025	6.39	No	171	MW-3,MW-4,MW-5	2.694	0.07167	0
Specific Conductance (umhos/cm)	MW-7R	1736	n/a	5/14/2025	1654	No	171	MW-3,MW-4,MW-5	1158	254.7	0
Specific Conductance (umhos/cm)	MW-8R	1736	n/a	5/14/2025	1634	No	171	MW-3,MW-4,MW-5	1158	254.7	0
Specific Conductance (umhos/cm)	**MW-9**	**1736**	**n/a**	**5/14/2025**	**5300**	**Yes**	**171**	**MW-3,MW-4,MW-5**	**1158**	**254.7**	**0**
Specific Conductance (umhos/cm)	MW-23	1736	n/a	5/14/2025	1378	No	171	MW-3,MW-4,MW-5	1158	254.7	0

Within Limit

Prediction Limit

Interwell Non-parametric



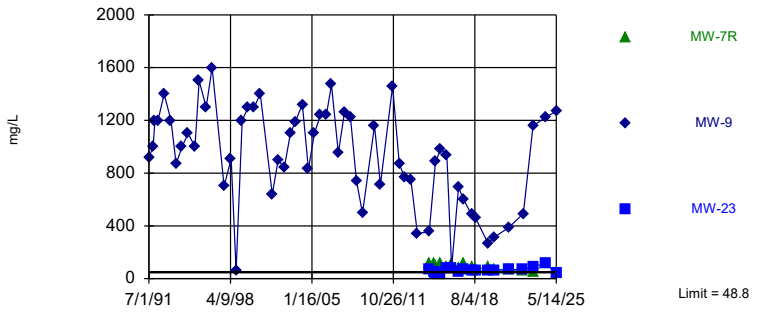
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 33 background values. 33.33% NDs. Report alpha = 0.1081. Individual comparison alpha = 0.0282. Most recent point for each compliance well compared to limit.

Constituent: Arsenic Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction Limit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Exceeds Limit: MW-7R, MW-9

Prediction Limit

Interwell Non-parametric



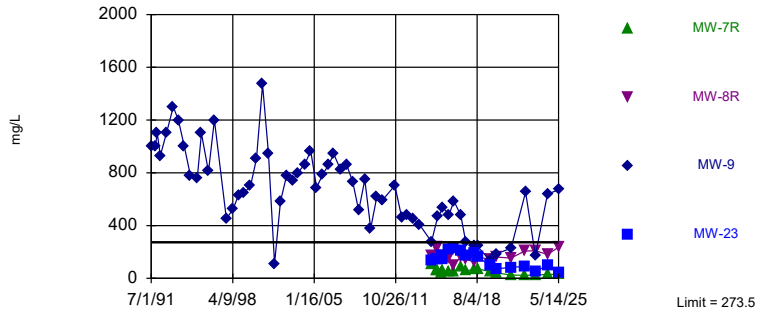
Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 178 background values. 48.31% NDs. Report alpha = 0.02198. Individual comparison alpha = 0.00554. Based on user-set k of 4 (assumes 1 future value).

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction L
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Exceeds Limit: MW-9

Prediction Limit

Interwell Parametric



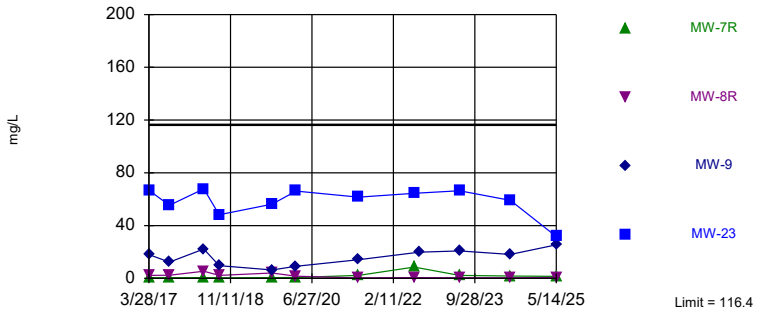
Background Data Summary (based on square root transformation): Mean=11.1, Std. Dev.=2.396, n=179, 0.5587% NDs. Normality test: Chi Squared @alpha = 0.05, calculated = 13.35, critical = 14.07. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Constituent: Chloride Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction Limit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=0.8999, Std. Dev.=1.616, n=33, 3.03% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.979, critical = 0.931. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

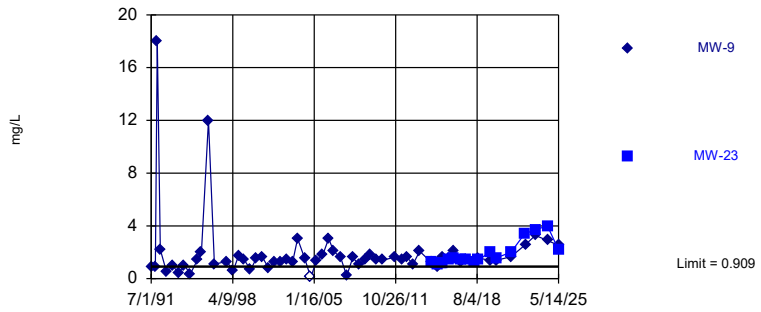
Constituent: Iron Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction Limit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Hollow symbols indicate censored values.

Exceeds Limit: MW-9, MW-23

Prediction Limit

Interwell Non-parametric



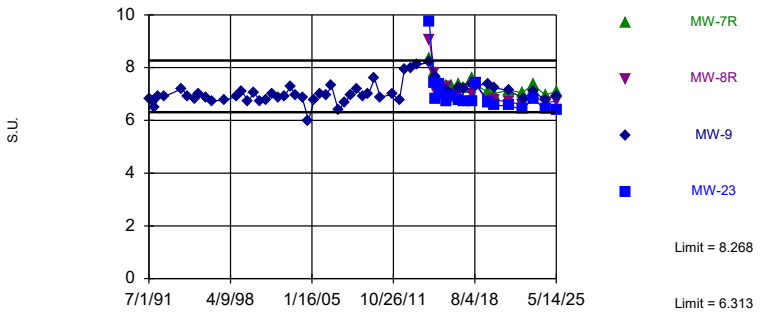
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 179 background values. 58.1% NDs. Report alpha = 0.02186. Individual comparison alpha = 0.00551. Based on user-set k of 4 (assumes 2 future values).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction Limit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Within Limits

Prediction Limit

Interwell Parametric



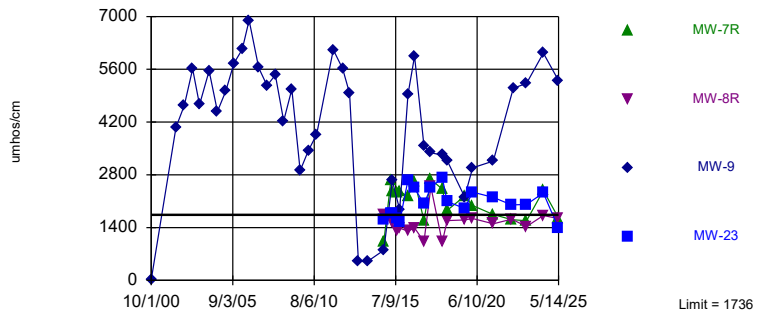
Background Data Summary (based on square root transformation): Mean=2.694, Std. Dev.=0.07167, n=171. Normality test: Chi Squared @alpha = 0.05, calculated = 12.33, critical = 14.07. Report alpha = 0.05. Individual comparison alpha = 0.00625. Most recent point for each compliance well compared to limit.

Constituent: pH Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction Limit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Exceeds Limit: MW-9

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=1158, Std. Dev.=254.7, n=171. Normality test: Chi Squared @alpha = 0.05, calculated = 13.97, critical = 14.07. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Constituent: Specific Conductance Analysis Run 6/26/2025 3:21 PM View: 2025AWQR - Prediction Limit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Attachment E

Trend Test (α=0.01)

Trend Test

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM Printed 6/26/2025, 5:55 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	MW-3 (bg)	-0.000004315	-5	-21	No	8	25	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-4 (bg)	0.006745	14	21	No	8	0	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-9	0.00643	18	21	No	8	0	n/a	n/a	0.01	NP
Benzene (ug/L)	MW-9	0.1682	10	21	No	8	50	n/a	n/a	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-3 (bg)	0.5675	10	21	No	8	62.5	n/a	n/a	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-4 (bg)	1.513	16	21	No	8	37.5	n/a	n/a	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-5 (bg)	1.911	18	21	No	8	75	n/a	n/a	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-7R	-3.237	-12	-21	No	8	0	n/a	n/a	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-8R	-1.196	-8	-21	No	8	25	n/a	n/a	0.01	NP
Chemical Oxygen Demand (mg/L)	**MW-9**	**125.2**	**22**	**21**	**Yes**	**8**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chemical Oxygen Demand (mg/L)	MW-23	4.153	14	21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-3 (bg)	-0.1042	-1	-21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-4 (bg)	-3.448	-14	-21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-5 (bg)	-15.02	-20	-21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-7R	-4.82	-14	-21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-8R	10.7	16	21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-9	65.99	12	21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-23	-9.808	-12	-21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-3 (bg)	0.05667	8	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-4 (bg)	1.193	12	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-5 (bg)	-0.1781	-16	-21	No	8	12.5	n/a	n/a	0.01	NP
Iron (mg/L)	MW-7R	0.2451	10	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-8R	-0.3035	-12	-21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-9	2.522	20	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-23	0.3353	2	21	No	8	0	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-3 (bg)	0.06191	10	21	No	8	0	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-4 (bg)	0.01824	10	21	No	8	12.5	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-5 (bg)	0	9	21	No	8	87.5	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-7R	0.008539	14	21	No	8	75	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-8R	0.0004012	16	21	No	8	75	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-9	0.2229	15	21	No	8	0	n/a	n/a	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-23	0.3535	20	21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-3 (bg)	-0.06801	-14	-21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-4 (bg)	-0.05355	-11	-21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-5 (bg)	-0.02184	-4	-21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-7R	-0.01207	-5	-21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-8R	-0.02444	-10	-21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-9	-0.07838	-20	-21	No	8	0	n/a	n/a	0.01	NP
pH (S.U.)	MW-23	-0.05594	-18	-21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-3 (bg)	1.399	0	21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-4 (bg)	-3.239	0	21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-5 (bg)	-31.02	-17	-21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-7R	-48.47	-8	-21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-8R	7.247	6	21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-9	526.1	20	21	No	8	0	n/a	n/a	0.01	NP
Specific Conductance (umhos/cm)	MW-23	-19.73	-4	-21	No	8	0	n/a	n/a	0.01	NP
Total Organic Halogens (mg/L)	MW-3 (bg)	0.00118	6	21	No	8	12.5	n/a	n/a	0.01	NP
Total Organic Halogens (mg/L)	MW-4 (bg)	0.009215	12	21	No	8	12.5	n/a	n/a	0.01	NP
Total Organic Halogens (mg/L)	MW-5 (bg)	0.001207	4	21	No	8	0	n/a	n/a	0.01	NP
Total Organic Halogens (mg/L)	MW-7R	0.004278	4	21	No	8	0	n/a	n/a	0.01	NP

Trend Test

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM Printed 6/26/2025, 5:55 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Total Organic Halogens (mg/L)	MW-8R	0.009782	8	21	No	8	0	n/a	n/a	0.01	NP
Total Organic Halogens (mg/L)	MW-9	0.2251	18	21	No	8	0	n/a	n/a	0.01	NP
Total Organic Halogens (mg/L)	MW-23	-0.01256	-2	-21	No	8	0	n/a	n/a	0.01	NP

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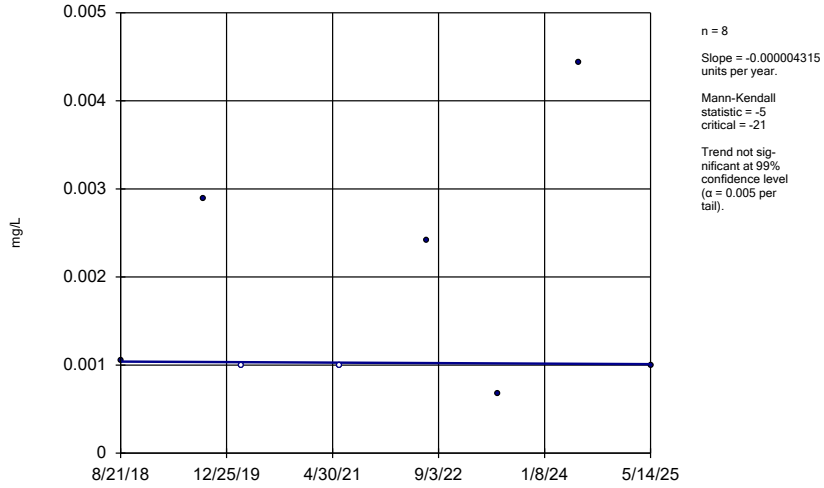
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = -0.000004315 units per year.

Mann-Kendall statistic = -5
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 6/26/2025 5:51 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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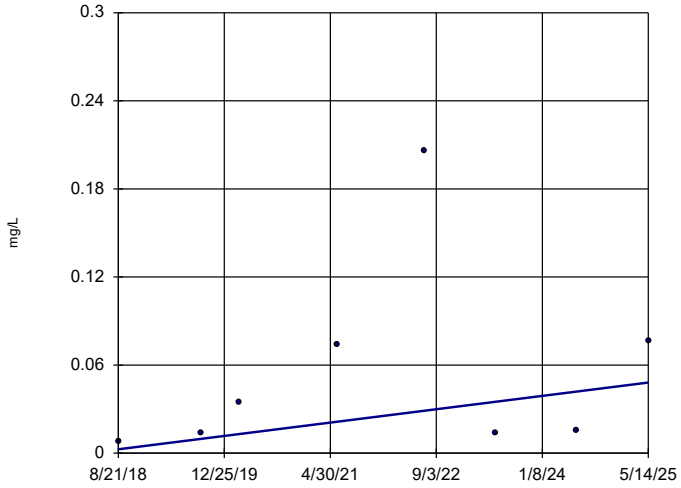
Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.006745 units per year.

Mann-Kendall statistic = 14
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 6/26/2025 5:51 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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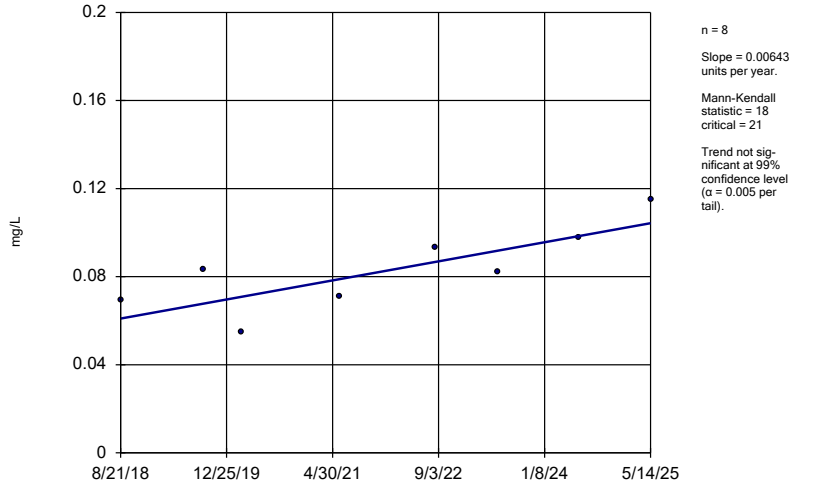
Sen's Slope Estimator

MW-9



n = 8

Slope = 0.00643 units per year.

Mann-Kendall statistic = 18
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 6/26/2025 5:51 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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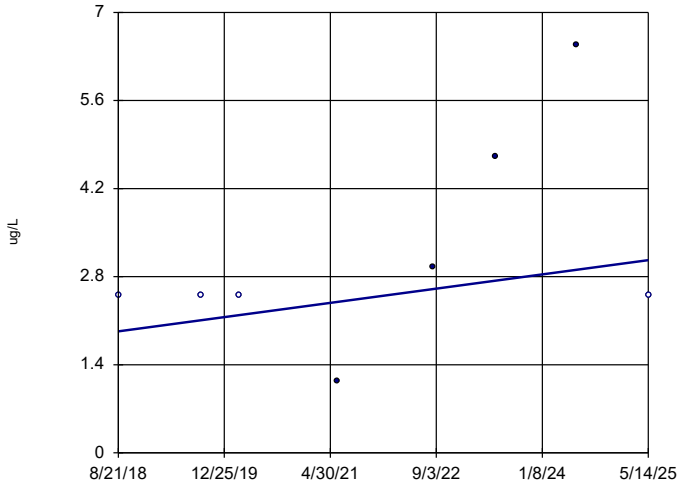
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 8

Slope = 0.1682 units per year.

Mann-Kendall statistic = 10
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 6/26/2025 5:51 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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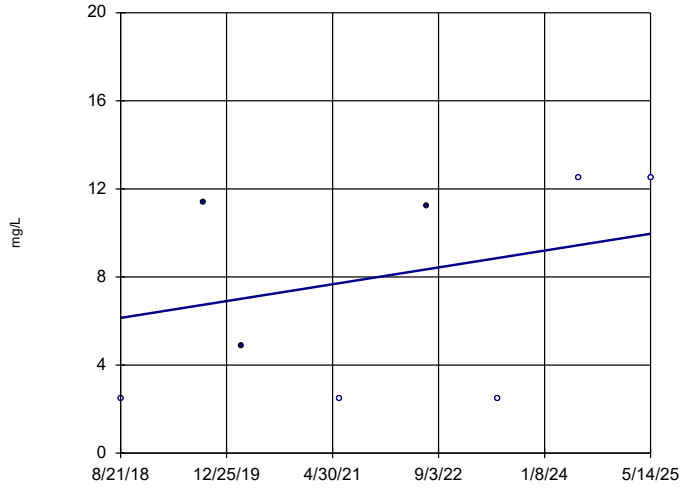
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 0.5675 units per year.

Mann-Kendall statistic = 10
critical = 21

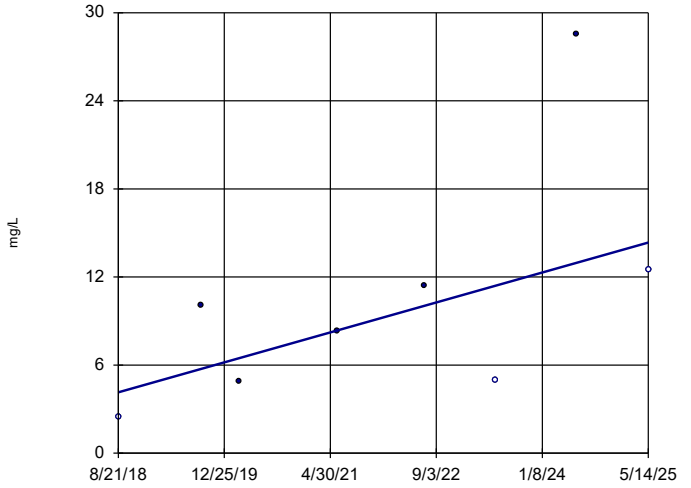
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 1.513 units per year.

Mann-Kendall statistic = 16
critical = 21

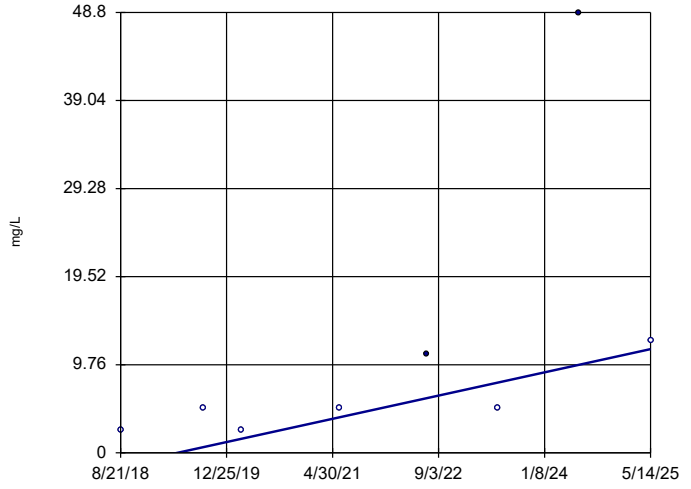
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 1.911 units per year.

Mann-Kendall statistic = 18
critical = 21

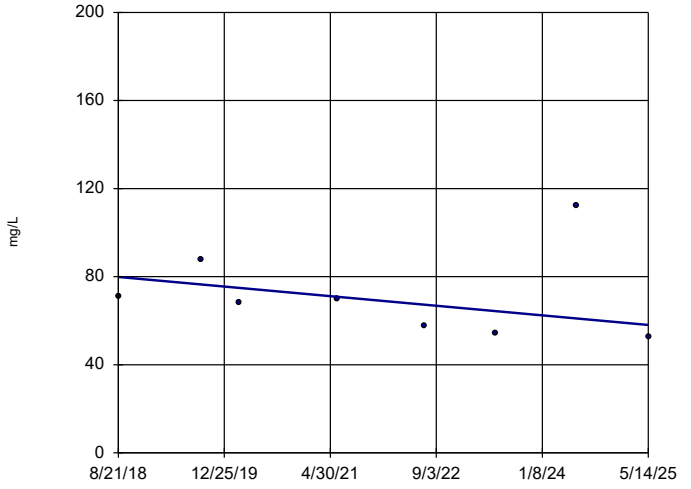
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-7R



n = 8

Slope = -3.237 units per year.

Mann-Kendall statistic = -12
critical = -21

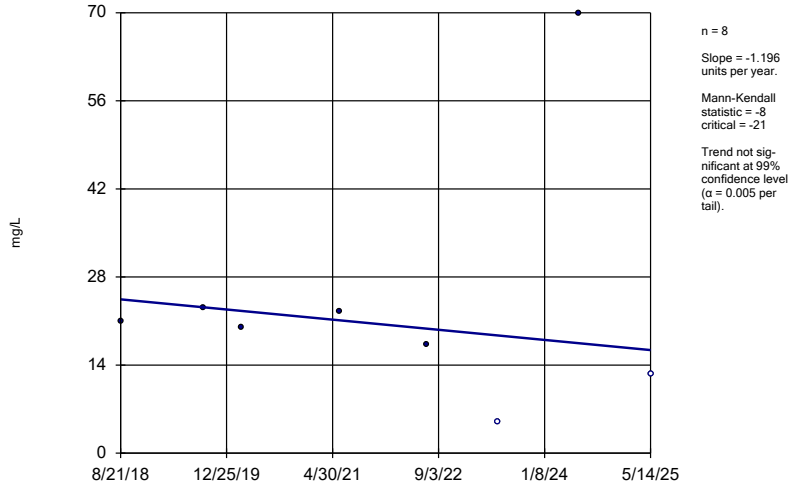
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

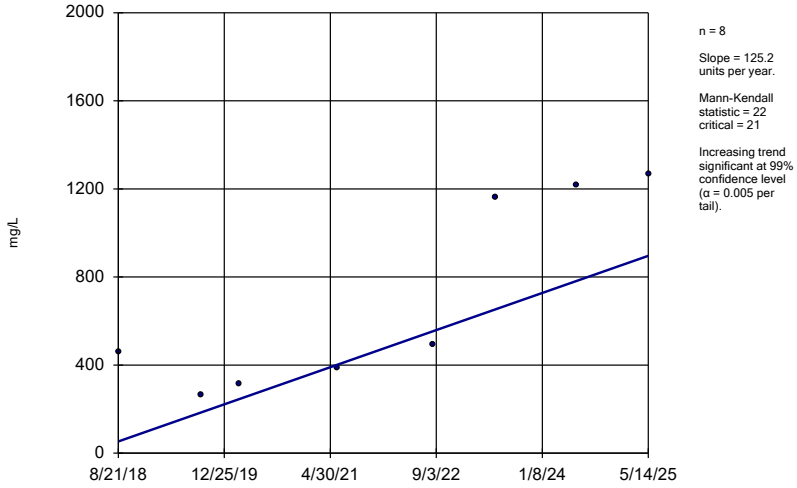
MW-8R



Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

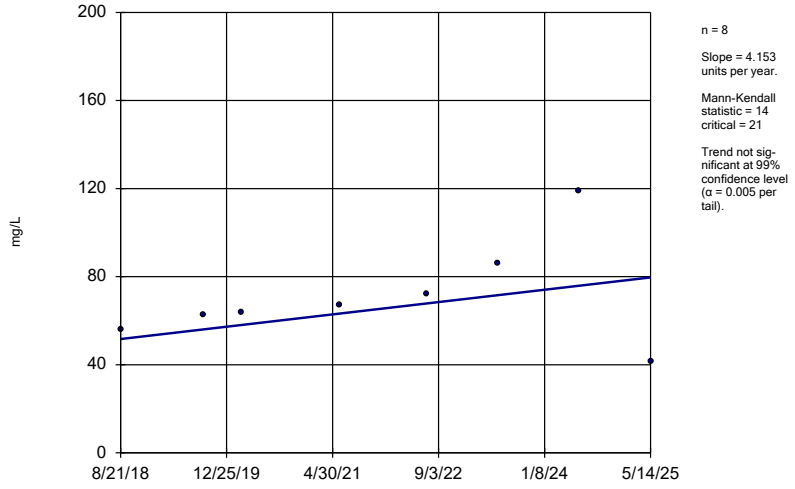
MW-9



Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

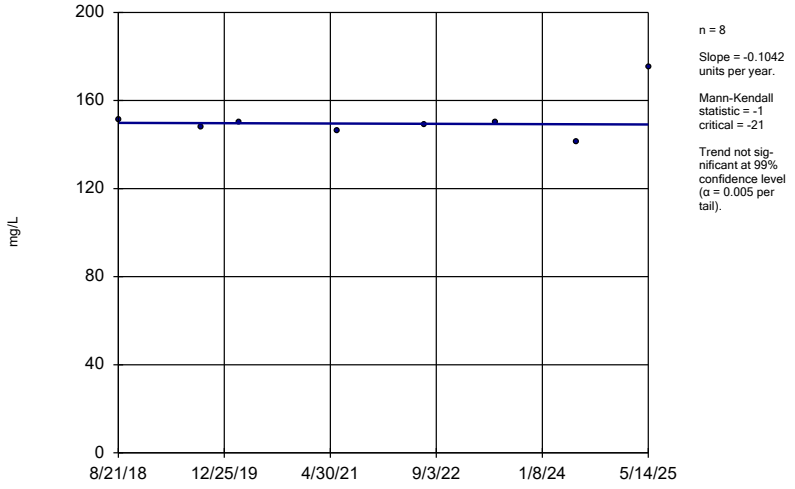
MW-23



Constituent: Chemical Oxygen Demand Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendal
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

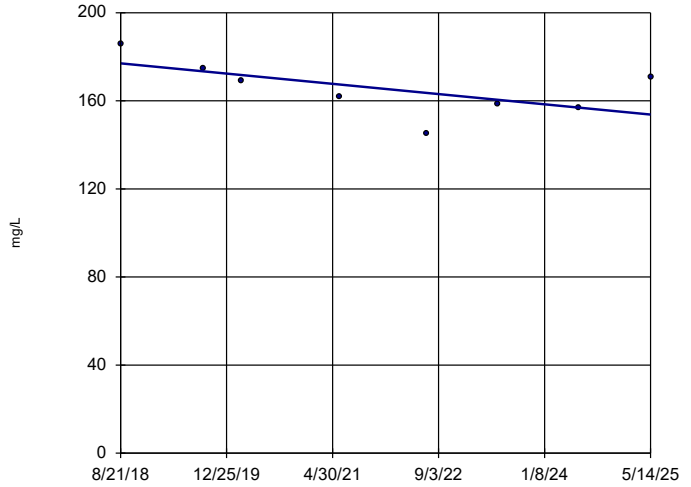
MW-3 (bg)



Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = -3.448 units per year.

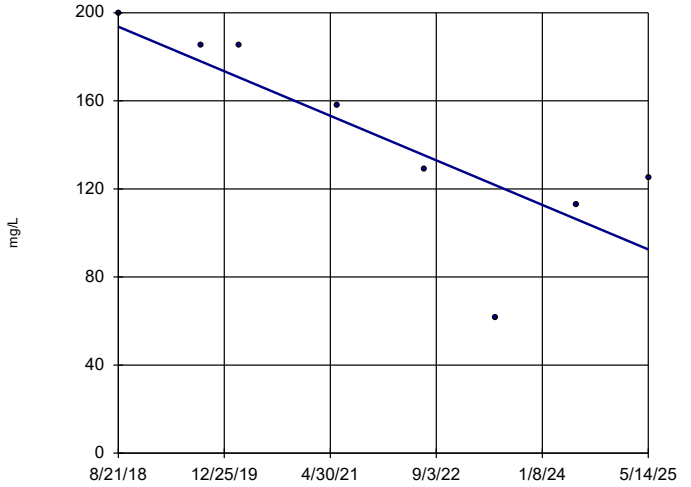
Mann-Kendall statistic = -14 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = -15.02 units per year.

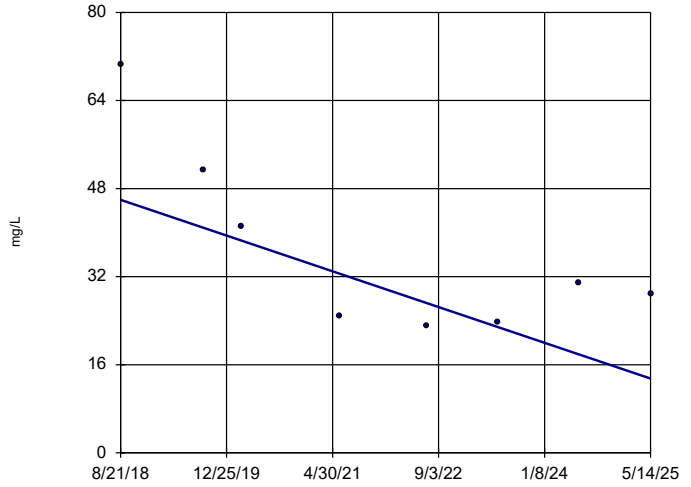
Mann-Kendall statistic = -20 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-7R



n = 8

Slope = -4.82 units per year.

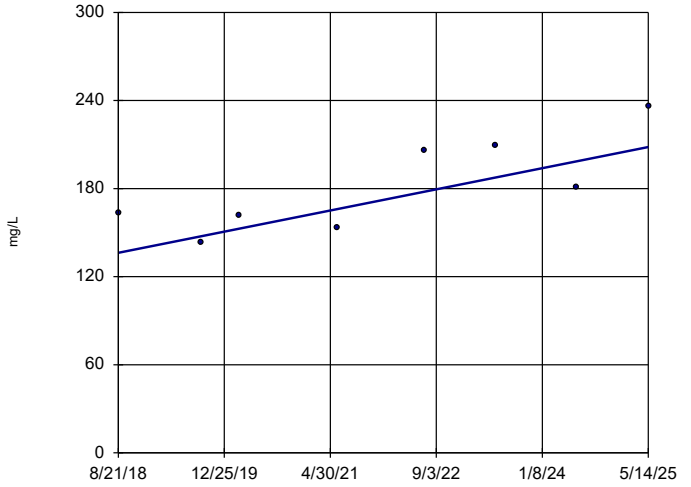
Mann-Kendall statistic = -14 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-8R



n = 8

Slope = 10.7 units per year.

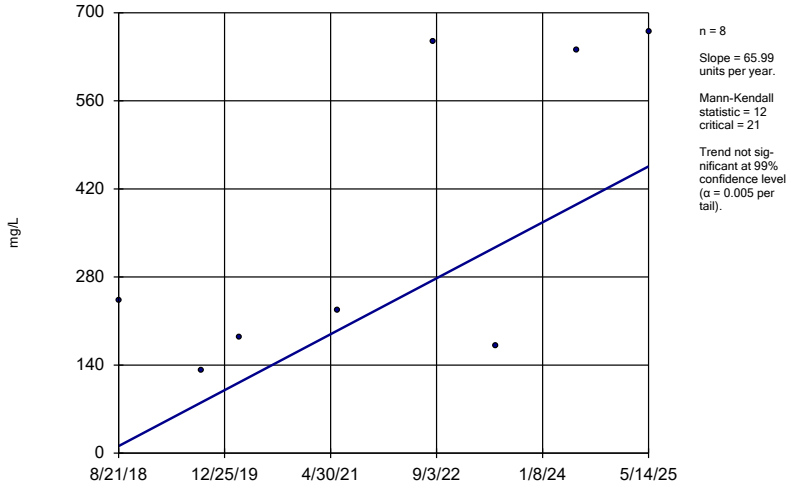
Mann-Kendall statistic = 16 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-9



Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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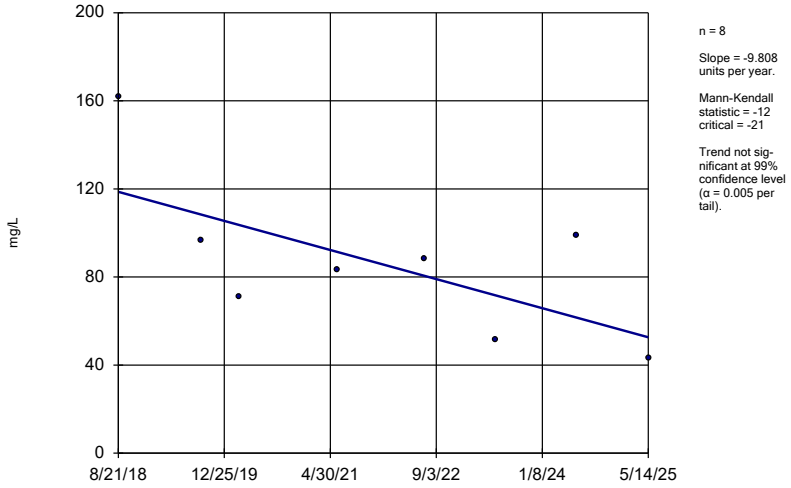
Sen's Slope Estimator

MW-23

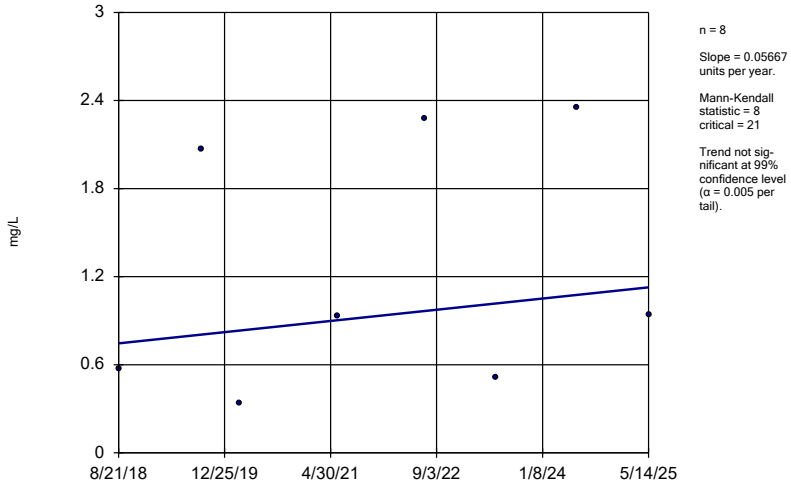


Constituent: Chloride Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-3 (bg)

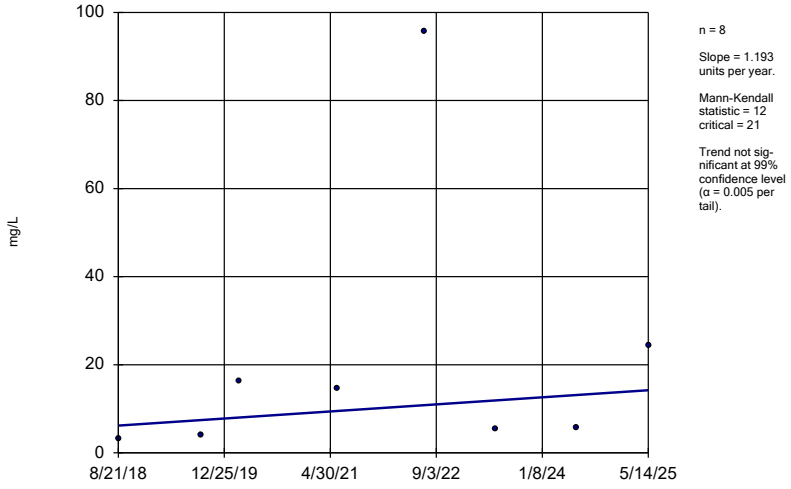


Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-4 (bg)

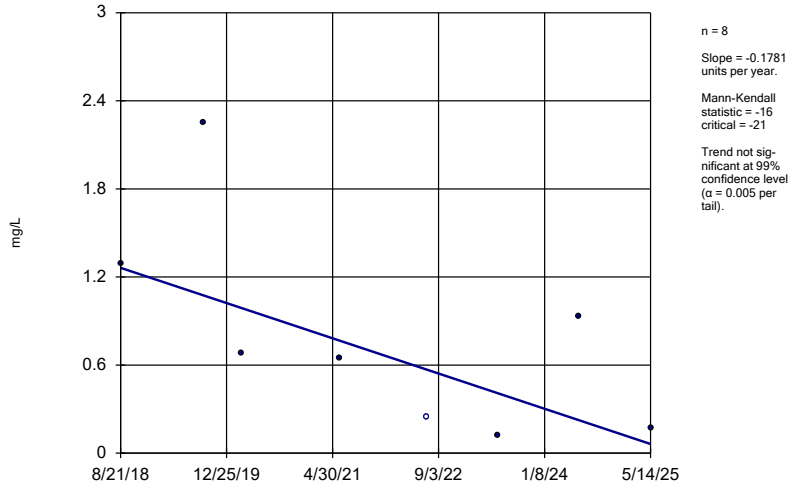


Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = -0.1781 units per year.

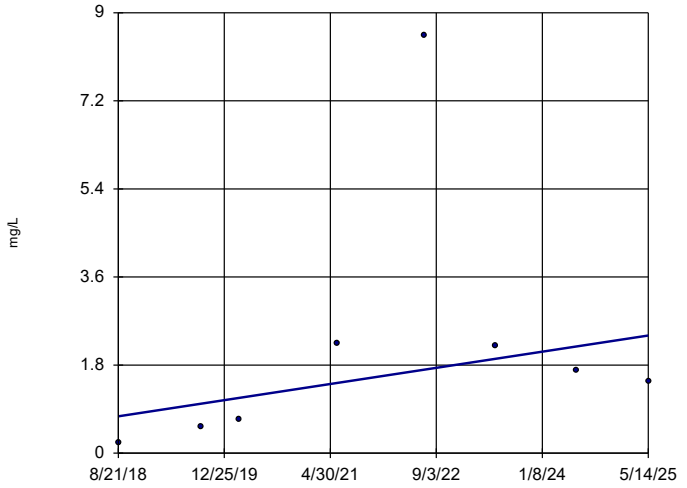
Mann-Kendall statistic = -16
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-7R



n = 8

Slope = 0.2451 units per year.

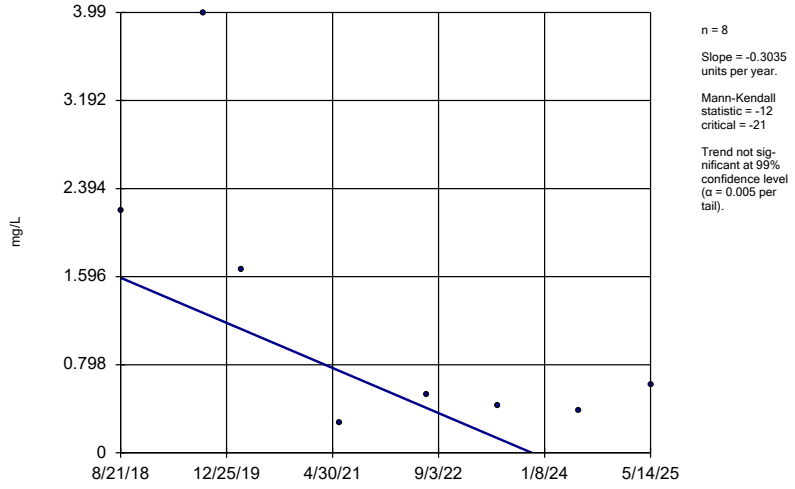
Mann-Kendall statistic = 10
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-8R



n = 8

Slope = -0.3035 units per year.

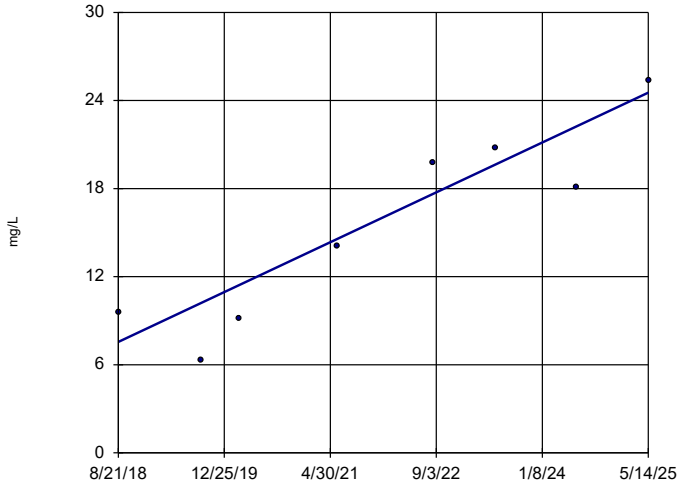
Mann-Kendall statistic = -12
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-9



n = 8

Slope = 2.522 units per year.

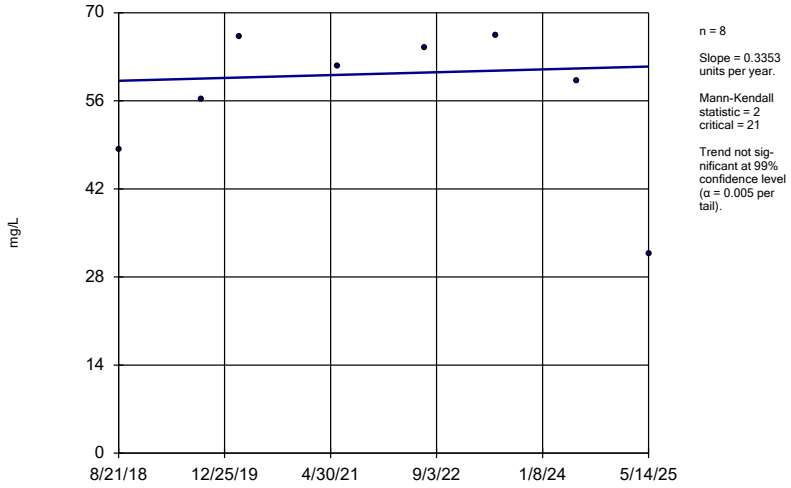
Mann-Kendall statistic = 20
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-23



n = 8

Slope = 0.3353 units per year.

Mann-Kendall statistic = 2 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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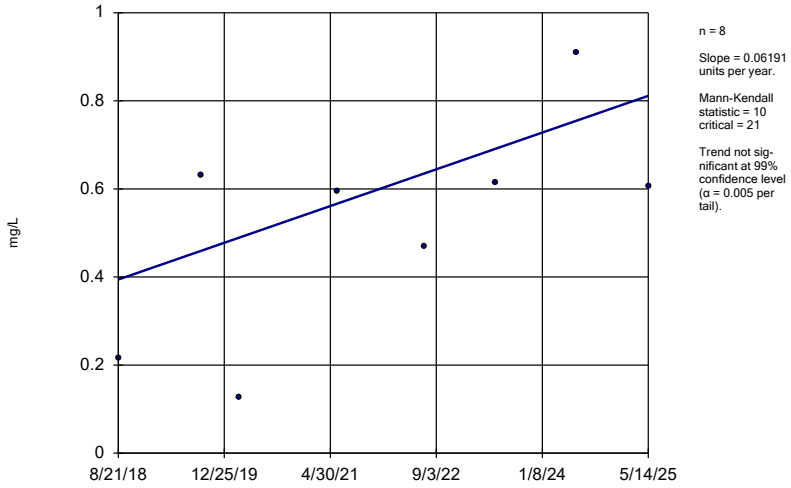
Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 0.06191 units per year.

Mann-Kendall statistic = 10 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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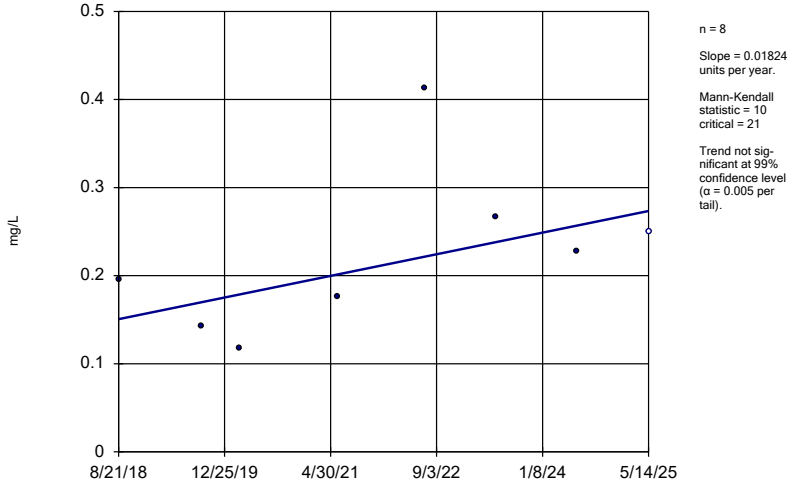
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.01824 units per year.

Mann-Kendall statistic = 10 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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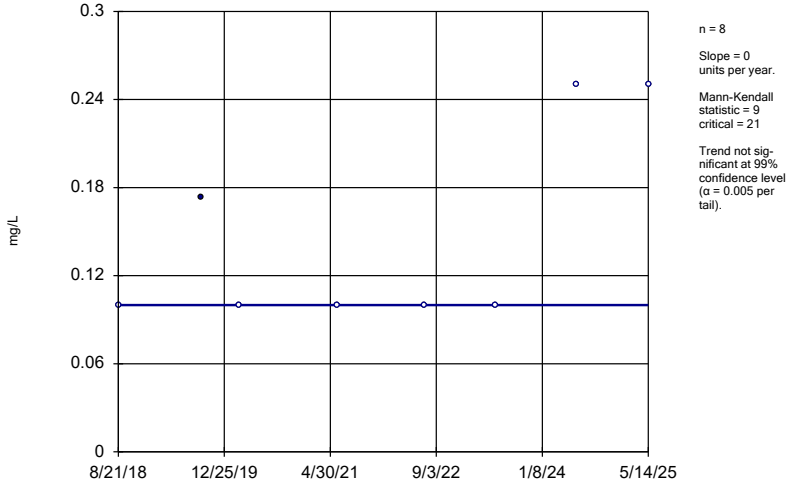
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 9 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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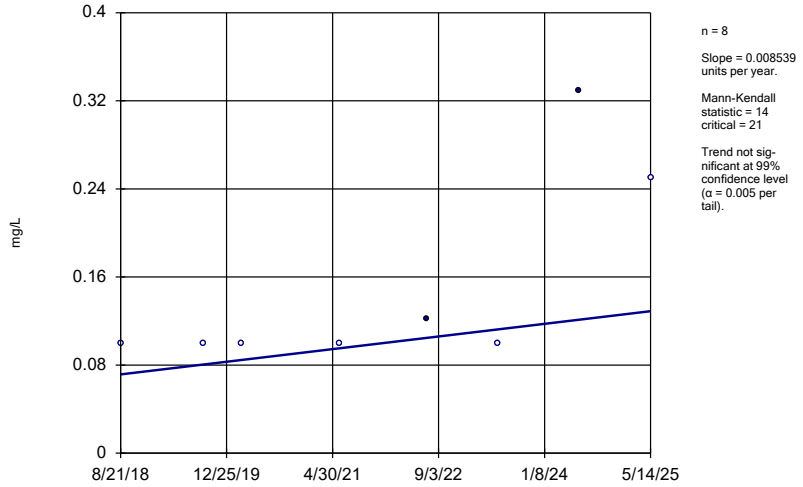
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-7R



n = 8

Slope = 0.008539 units per year.

Mann-Kendall statistic = 14
critical = 21

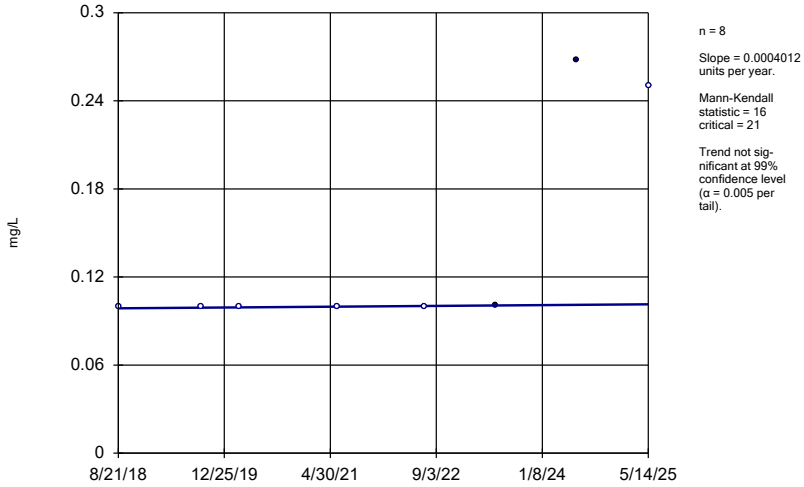
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8R



n = 8

Slope = 0.0004012 units per year.

Mann-Kendall statistic = 16
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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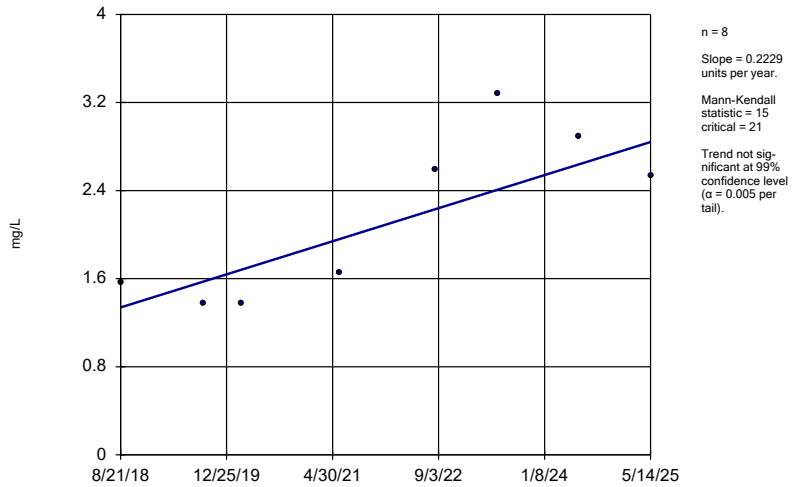
Sen's Slope Estimator

MW-9



n = 8

Slope = 0.2229 units per year.

Mann-Kendall statistic = 15
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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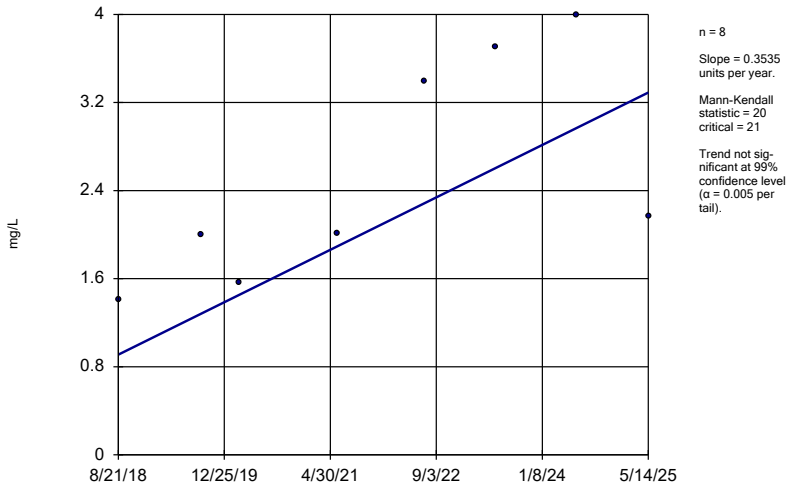
Sen's Slope Estimator

MW-23



n = 8

Slope = 0.3535 units per year.

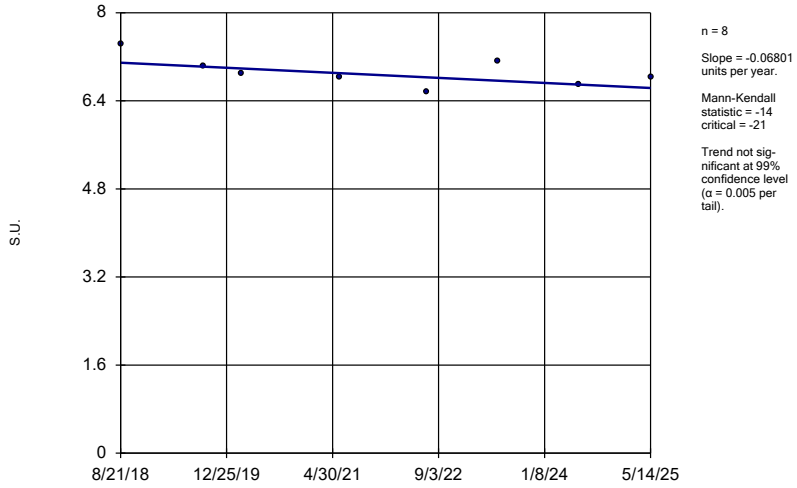
Mann-Kendall statistic = 20
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 6/26/2025 5:52 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = -0.06801 units per year.

Mann-Kendall statistic = -14
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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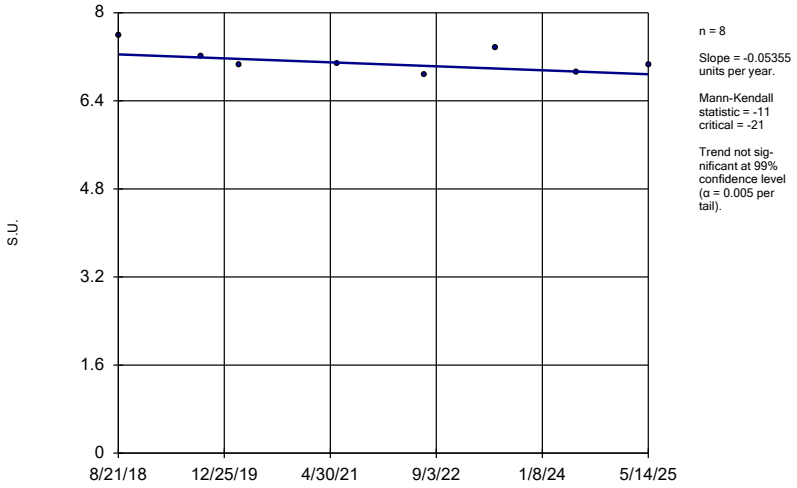
Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = -0.05355 units per year.

Mann-Kendall statistic = -11
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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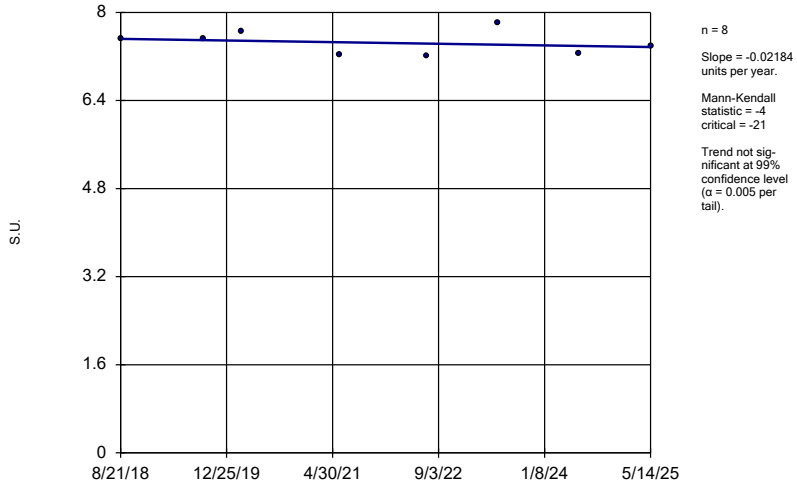
Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = -0.02184 units per year.

Mann-Kendall statistic = -4
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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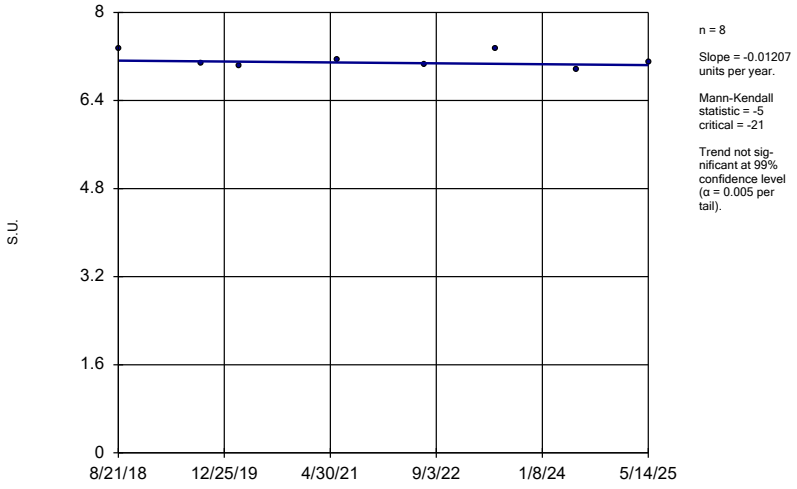
Sen's Slope Estimator

MW-7R



n = 8

Slope = -0.01207 units per year.

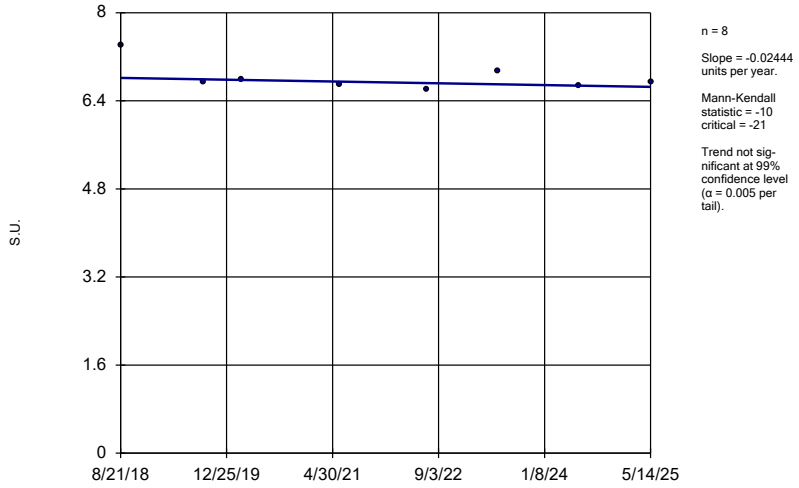
Mann-Kendall statistic = -5
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-8R



n = 8

Slope = -0.02444 units per year.

Mann-Kendall statistic = -10 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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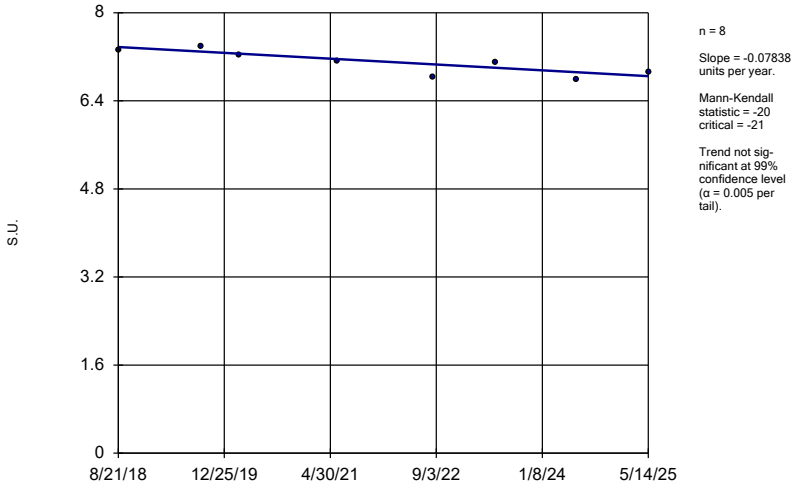
Sen's Slope Estimator

MW-9



n = 8

Slope = -0.07838 units per year.

Mann-Kendall statistic = -20 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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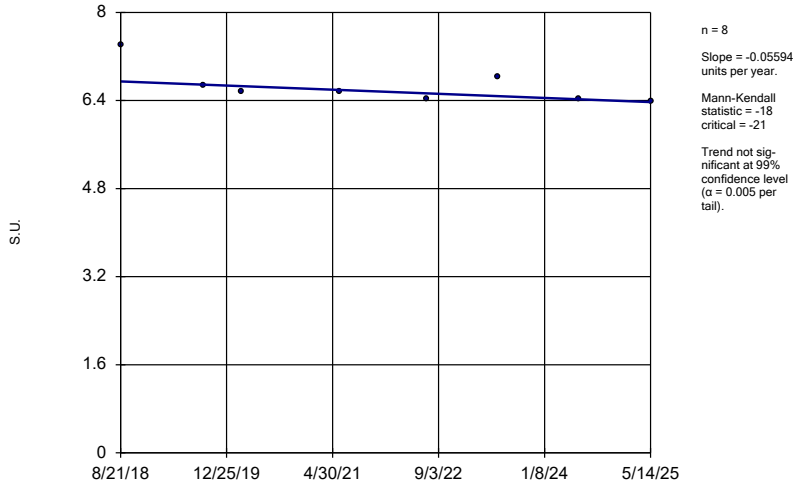
Sen's Slope Estimator

MW-23



n = 8

Slope = -0.05594 units per year.

Mann-Kendall statistic = -18 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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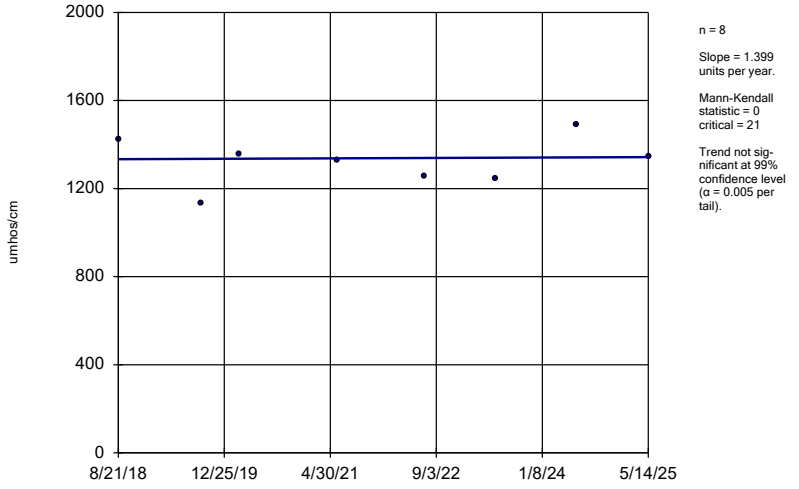
Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 1.399 units per year.

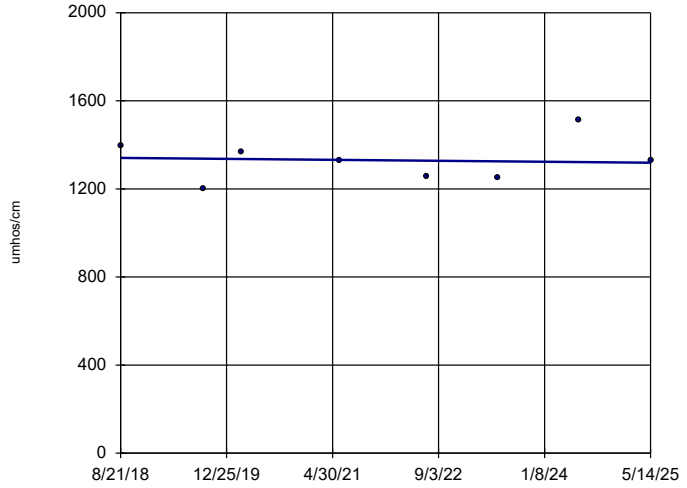
Mann-Kendall statistic = 0 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = -3.239 units per year.

Mann-Kendall statistic = 0 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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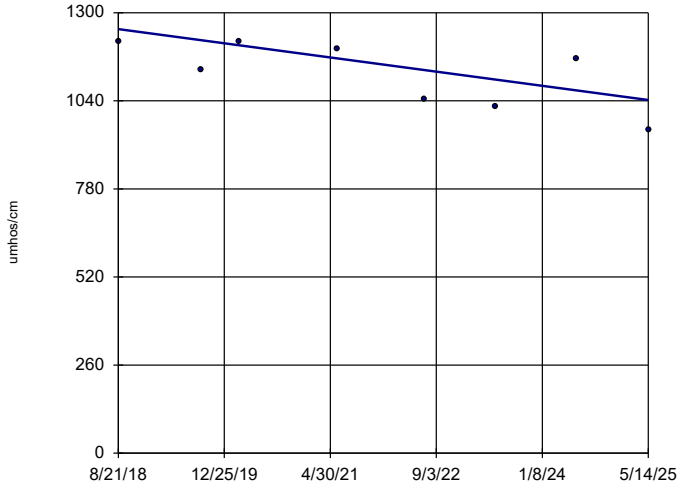
Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = -31.02 units per year.

Mann-Kendall statistic = -17 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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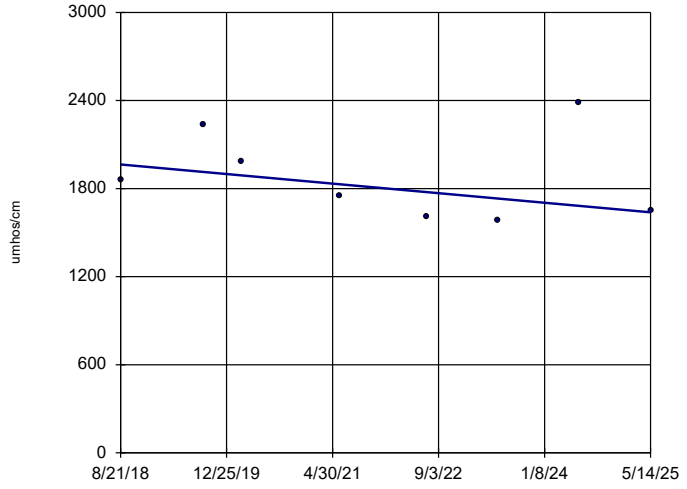
Sen's Slope Estimator

MW-7R



n = 8

Slope = -48.47 units per year.

Mann-Kendall statistic = -8 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

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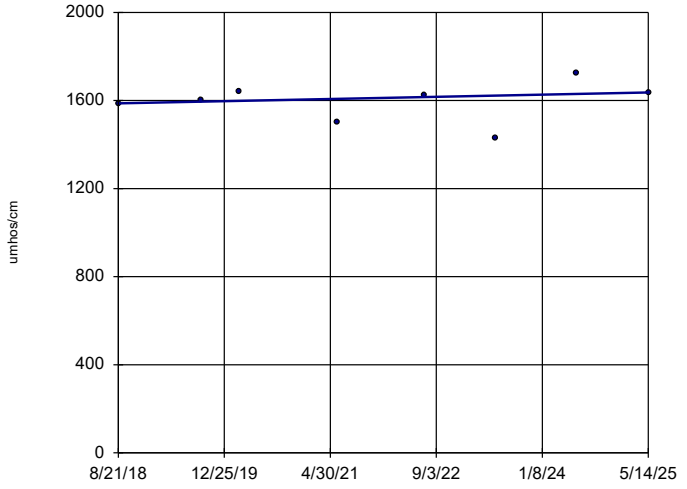
Sen's Slope Estimator

MW-8R



n = 8

Slope = 7.247 units per year.

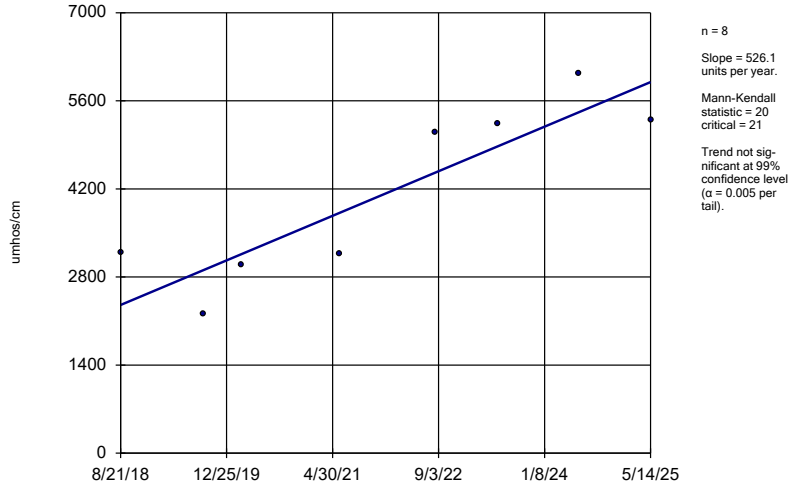
Mann-Kendall statistic = 6 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-9



n = 8

Slope = 526.1 units per year.

Mann-Kendall statistic = 20 critical = 21

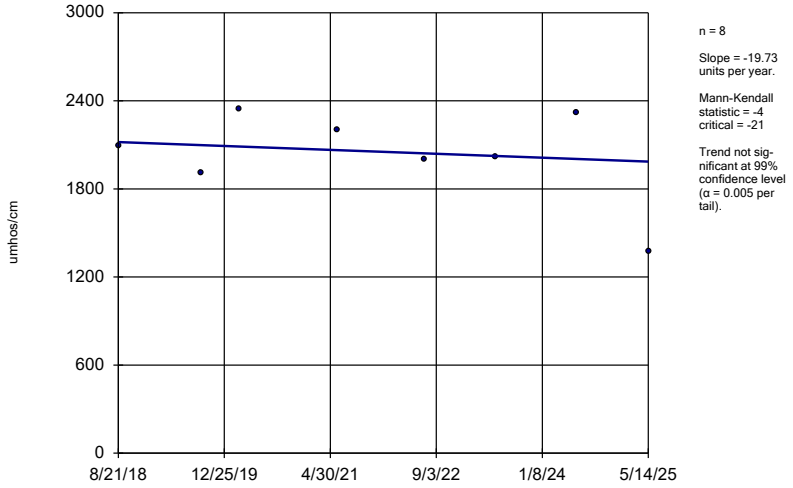
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-23



n = 8

Slope = -19.73 units per year.

Mann-Kendall statistic = -4 critical = -21

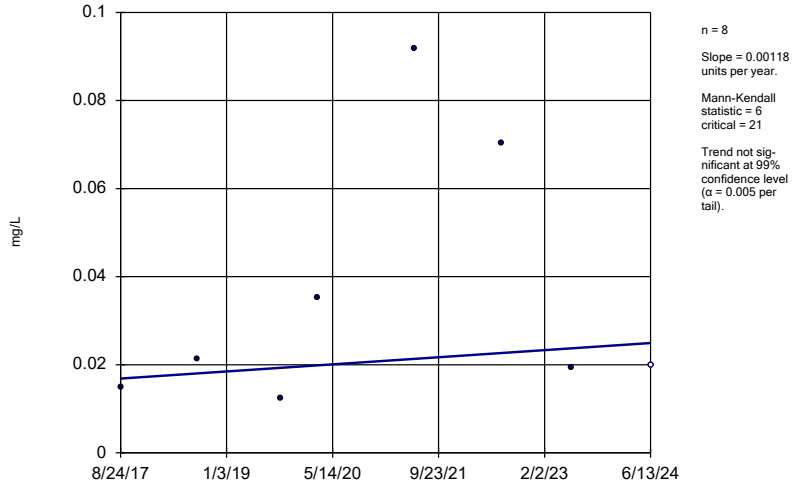
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 0.00118 units per year.

Mann-Kendall statistic = 6 critical = 21

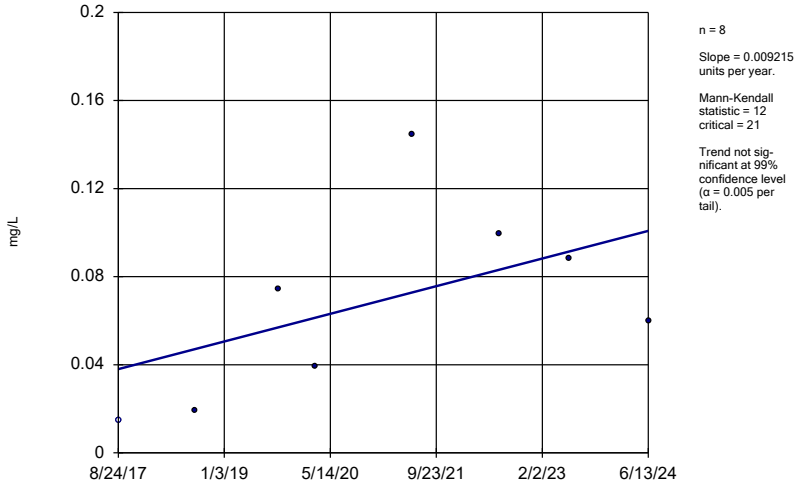
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.009215 units per year.

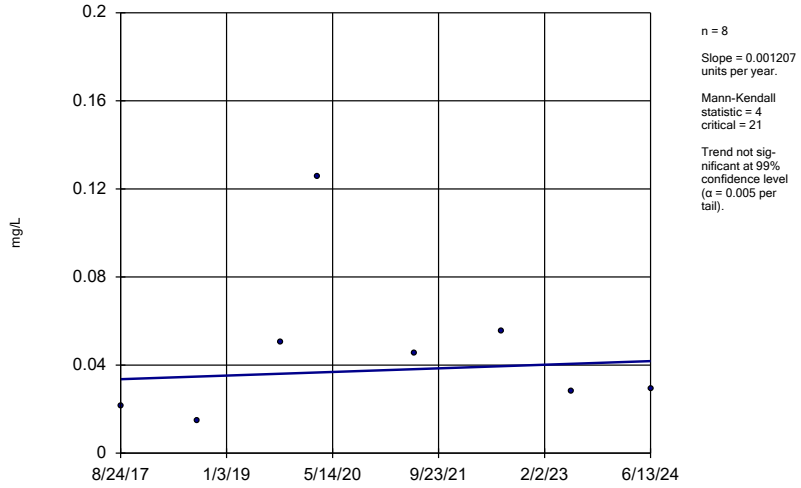
Mann-Kendall statistic = 12 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 0.001207 units per year.

Mann-Kendall statistic = 4 critical = 21

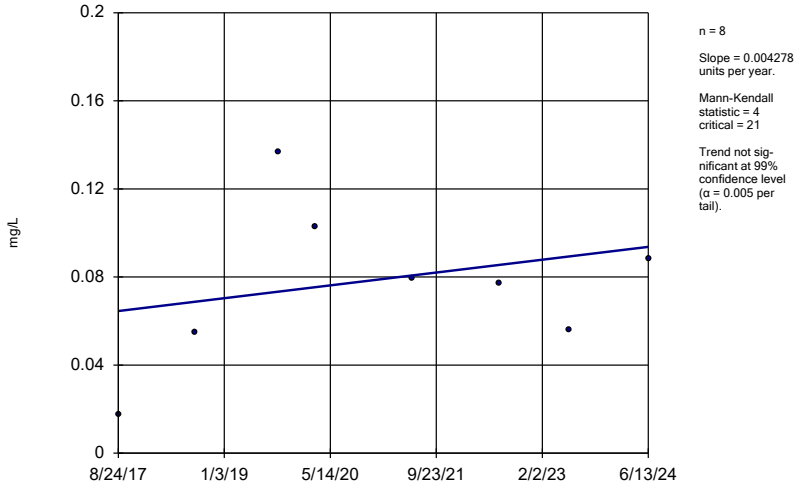
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-7R



n = 8

Slope = 0.004278 units per year.

Mann-Kendall statistic = 4 critical = 21

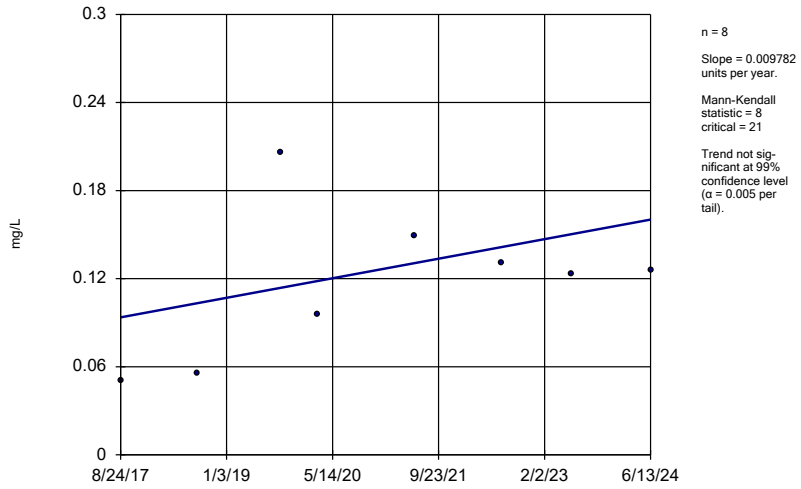
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-8R



n = 8

Slope = 0.009782 units per year.

Mann-Kendall statistic = 8 critical = 21

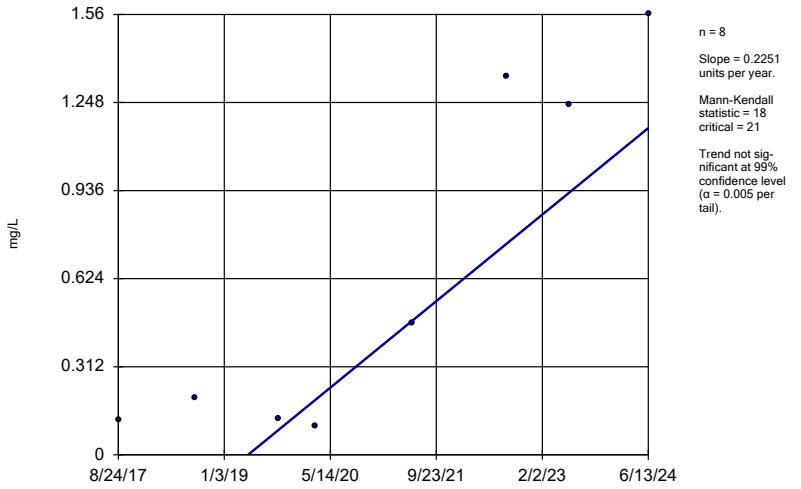
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sanitas™ v.10.0.27 Software licensed to SCS Engineers. EPA

Sen's Slope Estimator

MW-9



n = 8

Slope = 0.2251 units per year.

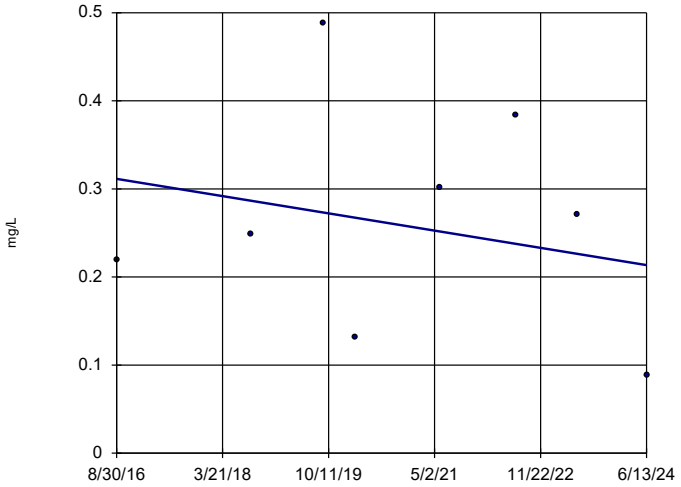
Mann-Kendall statistic = 18 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Sen's Slope Estimator

MW-23



n = 8

Slope = -0.01256 units per year.

Mann-Kendall statistic = -2
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 6/26/2025 5:53 PM View: 2025AWQR-Mann Kendall

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-2025_AWQR-AM

Appendix E

Mann-Kendall Trend Table

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-3	Arsenic		-5	
	Chemical Oxygen Demand		10	
	Chloride		-1	
	Iron		8	
	Nitrogen, Ammonia		10	
	pH	-14		
	Specific Conductance		0	
	Total Organic Halogens		6	
MW-4	Arsenic			14
	Chemical Oxygen Demand			16
	Chloride	-14		
	Iron		12	
	Nitrogen, Ammonia		10	
	pH		-11	
	Specific Conductance		0	
	Total Organic Halogens		12	
MW-5	Chemical Oxygen Demand			18
	Chloride	-20		
	Iron	-16		
	Nitrogen, Ammonia		9	
	pH		-4	
	Specific Conductance	-17		
	Total Organic Halogens		4	
MW-7R	Chemical Oxygen Demand		-12	
	Chloride	-14		
	Iron		10	
	Nitrogen, Ammonia			14
	pH		-5	
	Specific Conductance		-8	
	Total Organic Halogens		4	
MW-8R	Chemical Oxygen Demand		-8	
	Chloride			16
	Iron		-12	
	Nitrogen, Ammonia			16
	pH		-10	
	Specific Conductance		6	
	Total Organic Halogens		8	
MW-9	Arsenic			18
	Benzene		10	
	Chemical Oxygen Demand			**22**
	Chloride		12	
	Iron			20
	Nitrogen, Ammonia			15
	pH	-20		
	Specific Conductance			20
	Total Organic Halogens			18
MW-23	Chemical Oxygen Demand			14
	Chloride		-12	
	Iron		2	
	Nitrogen, Ammonia			20
	pH	-18		
	Specific Conductance		-4	
	Total Organic Halogens		-2	

Appendix F

Leachate Control System Performance Evaluation Report

Table F1
Leachate Management Summary
2025 Leachate Control System Performance Evaluation Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Date of Measurement	Column in Piezometer (ft)							Reporting Month	Discharge to POTW (gal)	Precipitation (in)
	EW-2	EW-3	EW-4	EW-5	EW-6	EW-7	EW-8			
10/1/2024	3.17	3.68	3.10	3.22	1.89	2.40	2.61	Sept. 2024	30,673	0.37
10/31/2024	3.16	3.81	3.10	3.30	1.71	2.51	2.60	Oct. 2024	18,739	1.79
12/2/2024	3.09	3.80	3.10	3.08	1.75	2.38	2.30	Nov. 2024	21,632	2.33
1/2/2025	3.22	3.84	3.11	3.16	1.84	2.36	2.31	Dec. 2024	21,606	1.67
1/31/2025	3.15	3.84	3.13	3.12	1.79	2.45	2.46	Jan. 2025	18,353	0.50
2/28/2025	3.22	3.85	2.93	3.28	1.79	2.43	2.60	Feb. 2025	18,427	1.17
4/1/2025	3.21	3.79	2.92	3.18	1.89	2.38	2.37	Mar. 2025	30,915	2.50
4/30/2025	3.20	3.80	3.03	3.29	1.78	2.52	2.32	Apr. 2025	37,959	2.49
6/2/2025	3.14	3.78	3.11	3.07	1.73	2.10	2.50	May 2025	40,980	4.53
7/1/2025	3.18	3.80	3.10	3.18	1.97	2.40	2.47	Jun. 2025	39,078	4.37
7/31/2025	3.19	3.81	2.90	3.18	1.87	2.28	2.59	Jul. 2025	47,310	10.93
Reporting Period Total									325,672	32.65

Notes:

1) Leachate column thicknesses for the reporting period generally remained consistent with historical measurements.
2) Historical leachate levels and graphs are provided in Attachment A.
3) Precipitation data for September 2024 - July 2025 obtained from ncdc.noaa.gov.
4) NA - Not Available

Comments:

Reporting Period: September 2024 - July 2025.
Approved Changes to Leachate Collection System: None.
Proposed Changes to Leachate Collection System: None.
Maintenance Performed on Leachate Collection System: None.
Last Date of Cleaning and Inspection: None
Date of Next Cleaning and Inspection: None.
Volume of Leachate Recirculated: Not Applicable.
Volume of Leachate Treated Off-Site: 325,672 gallons were pumped to the City of Davenport during the reporting period.
Leachate Quality Testing Results: Leachate quality testing results for the reporting period are provided in Attachment B.

SCS ENGINEERS
environmental consultants and contractors

Leachate Control System

Figure 1

Legend

- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Leachate Extraction Well
- Leachate Pipe
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

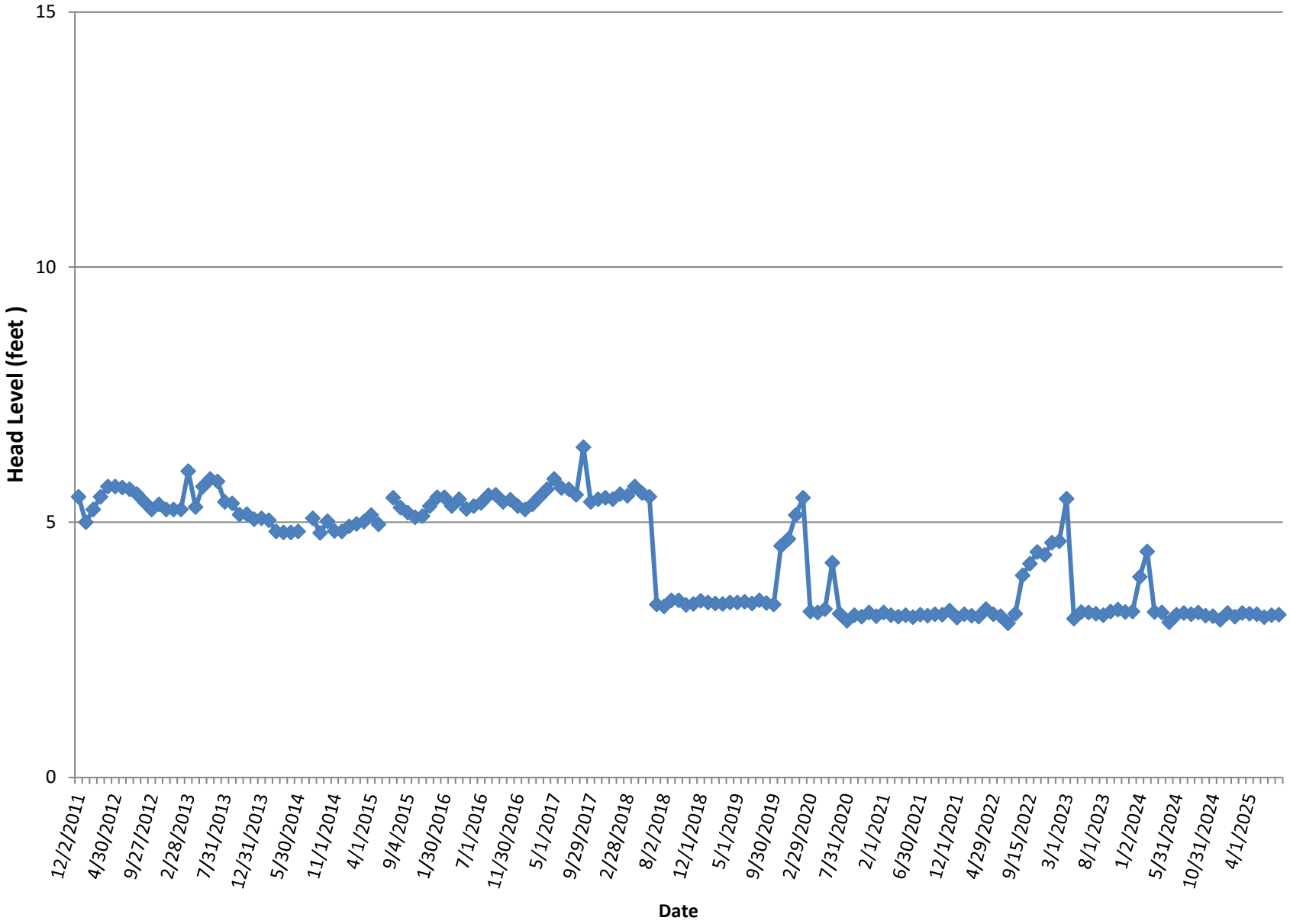
Alter Trading Corporation
Davenport, Iowa
Project No: 27224677.00
Drawing Date: August 2025

N
W E
S

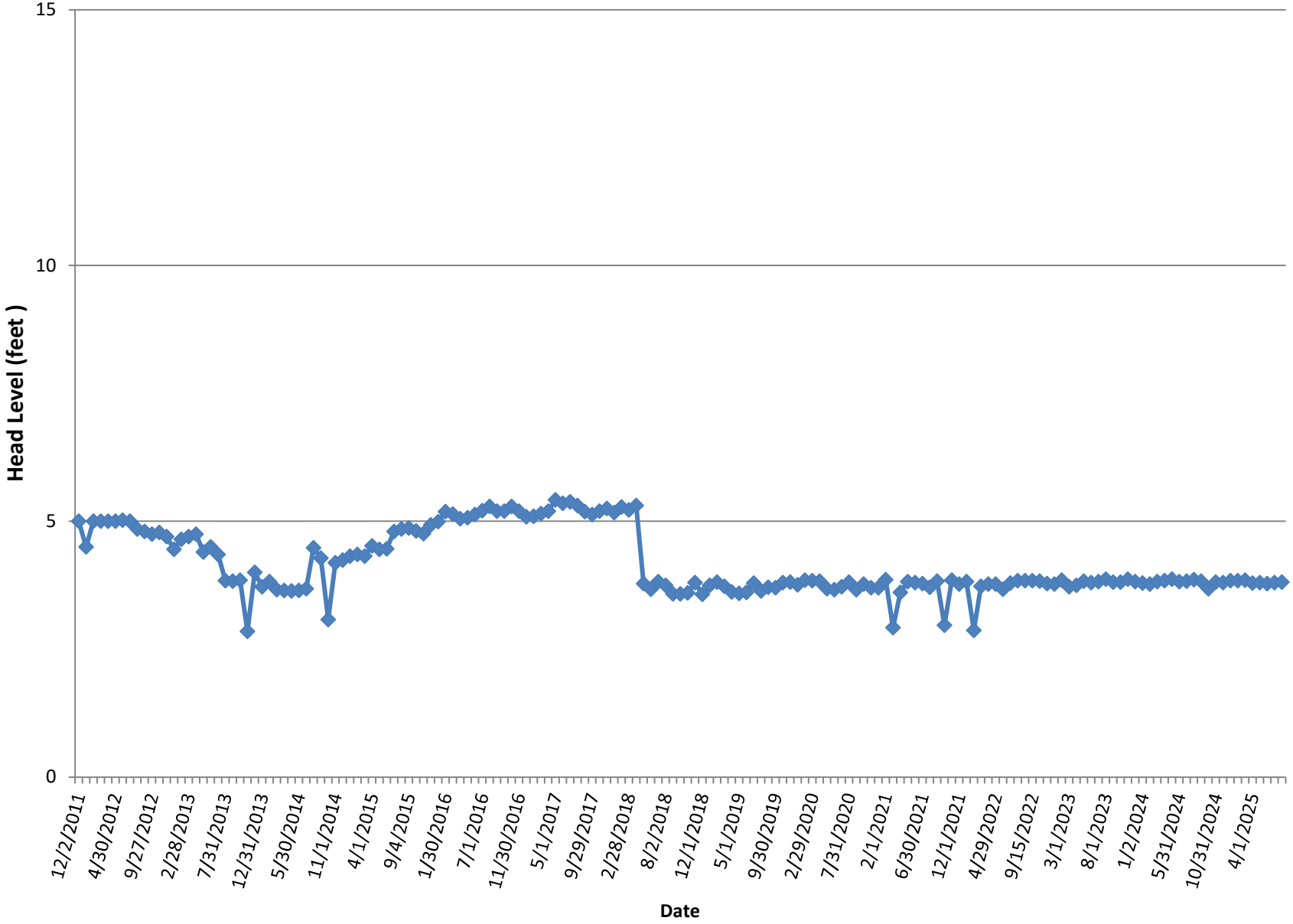
0 155 310 620
Feet

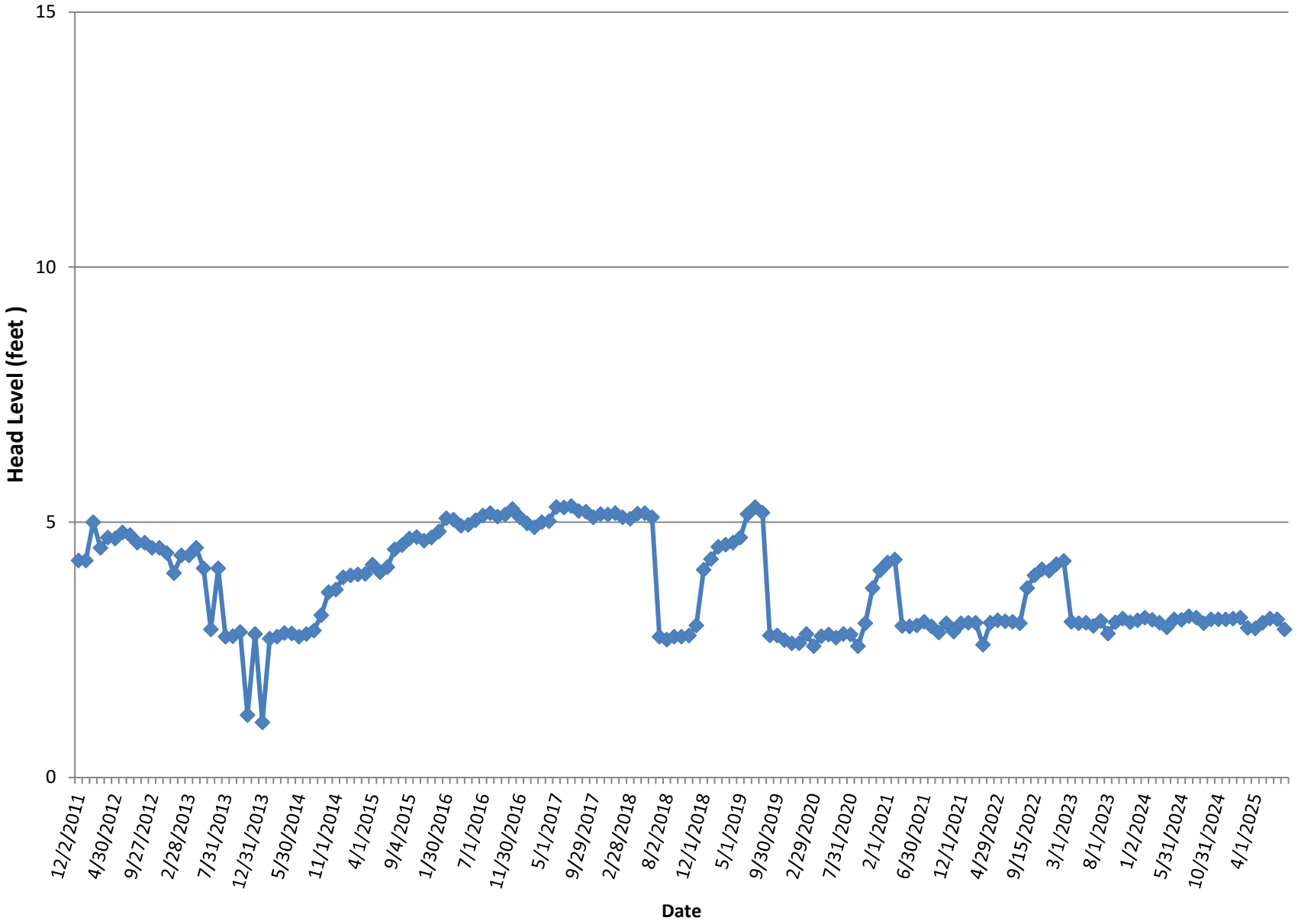
Attachment A

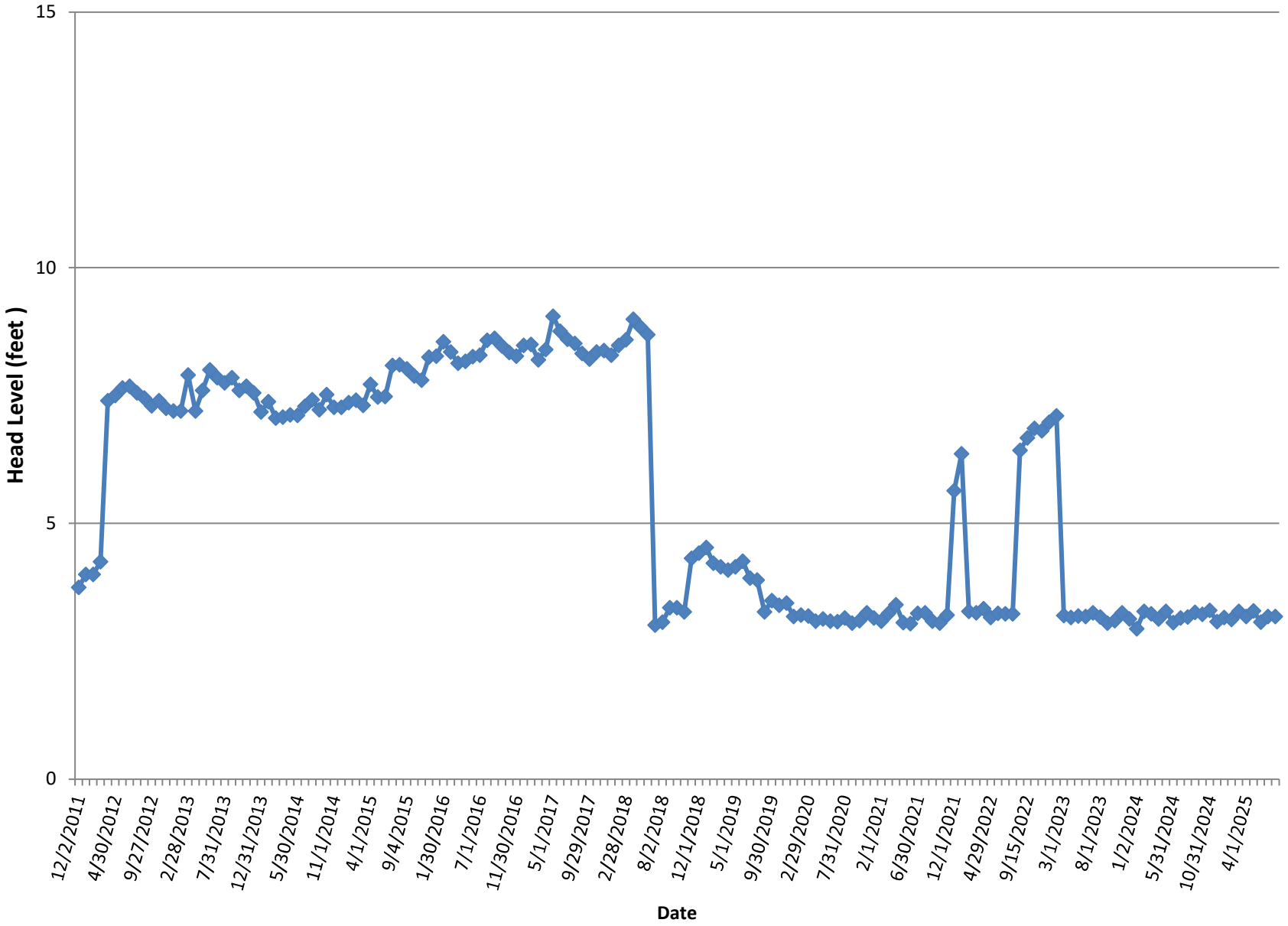
Historical Leachate Level Graphs

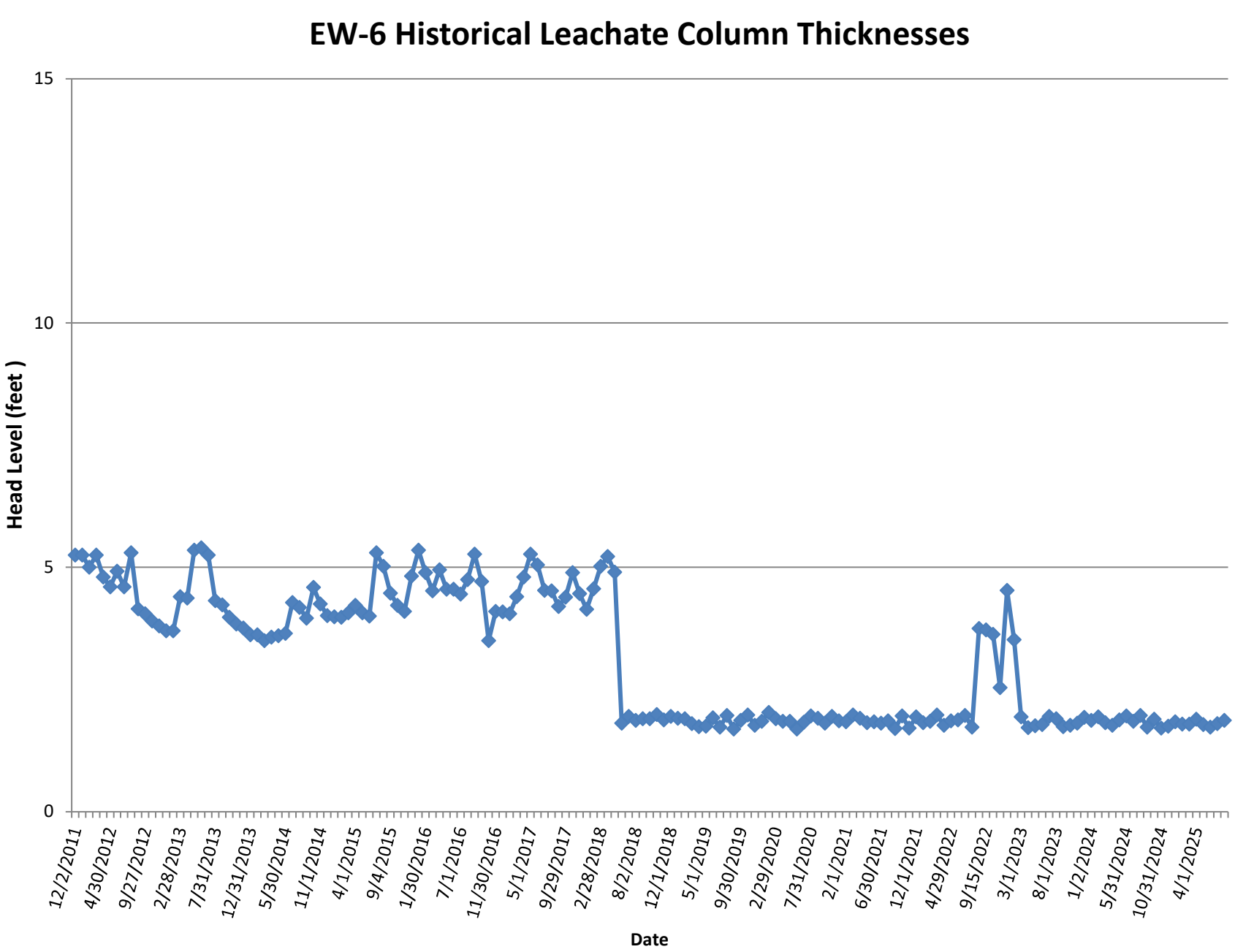

EW-2 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
10/31/2024
4/1/2025
Date

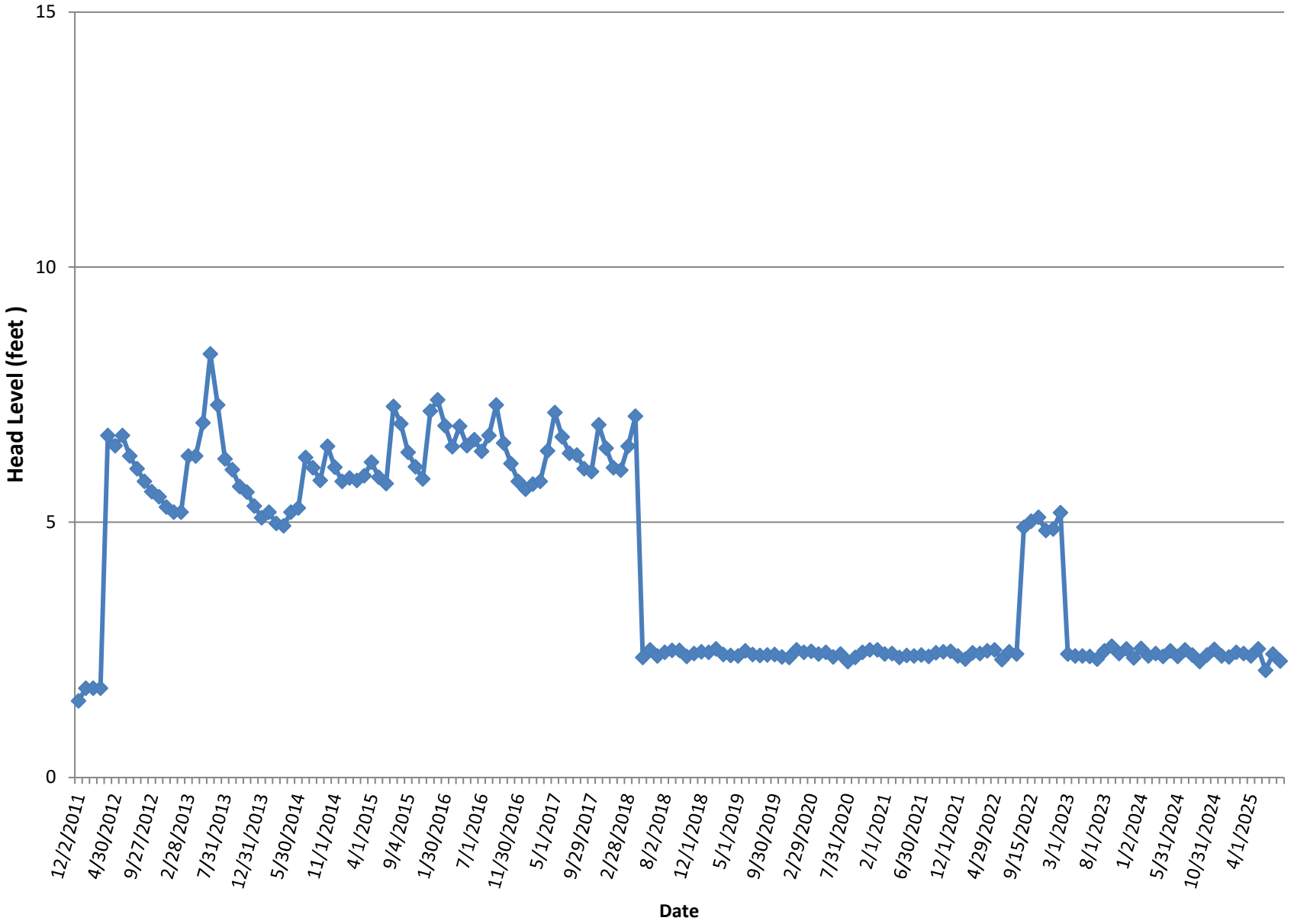
EW-3 Historical Leachate Column Thicknesses

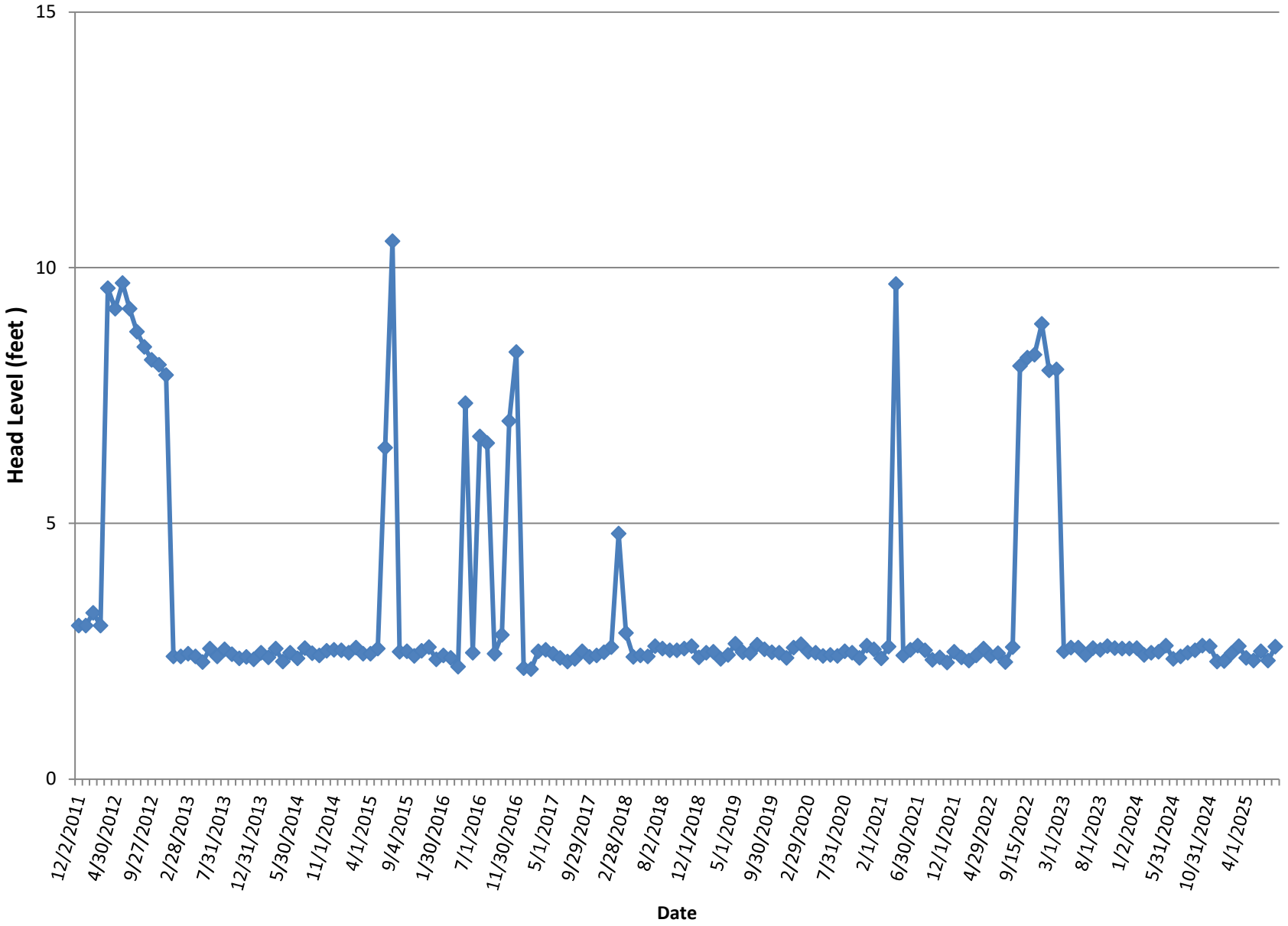



EW-4 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
10/31/2024
4/1/2025
Date


EW-5 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
10/31/2024
4/1/2025
Date


EW-6 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
10/31/2024
4/1/2025
Date


EW-7 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
10/31/2024
4/1/2025
Date


EW-8 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
10/31/2024
4/1/2025
Date

Attachment B

Leachate Quality Testing Results

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

Analytical Report

REPORT TO

Alter Trading Corporation
5200 Wisconsin Avenue
Davenport, IA 52802
Patrick.Kohlmeier@altertrading.com

Sample ID **AB11034**

Outfall # **1**

Sample Collection Date 10/1/2024

Sample Collector : NF

Sample Type : Grab

Sample Report Date : 11/4/2024

Analyte Name	Result	Units	Analysis Method	Analyst	Analysis Date	Qualifier
TSS	16	mg/L	SM 2540D	JDC	10/1/24	
Grab pH	7.63	S.U.	SM 4500H+ B	NF	10/1/24	
Oil and Grease	<5	mg/L	EPA 1664B	JKA	10/11/24	
Total Cyanide	<0.01	mg/l	SM 4500-CN C,E	JKA	10/4/24	
BOD	73	mg/L	SM 5210B	JDC	10/2/24	
Aluminum	0.2703	mg/l	EPA 200.7	MA	10/17/24	
Arsenic	<0.02	mg/l	EPA 200.7	MA	10/17/24	
Cadmium	<0.01	mg/l	EPA 200.7	MA	10/17/24	
Chromium	0.0203	mg/l	EPA 200.7	MA	10/17/24	
Copper	0.0121	mg/l	EPA 200.7	MA	10/17/24	
Lead	0.0111	mg/l	EPA 200.7	MA	10/17/24	
Molybdenum	0.3816	mg/l	EPA 200.7	MA	10/17/24	
Nickel	0.0966	mg/l	EPA 200.7	MA	10/17/24	
Selenium	<0.01	mg/l	EPA 200.7	MA	10/17/24	
Silver	<0.005	mg/l	EPA 200.7	MA	10/17/24	
Zinc	0.0542	mg/l	EPA 200.7	MA	10/17/24	

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

Analytical Report

REPORT TO

Alter Trading Corporation
5200 Wisconsin Avenue
Davenport, IA 52802
Patrick.Kohlmeier@altertrading.com

Sample ID **AB12682**

Outfall # **1**

Sample Collection Date/Time : 1/13/2025 1200:00

Sample Collector : NF

Sample Type : Grab

Sample Report Date : 2/3/2025

Analyte Name	Result	Units	Analysis Method	Analyst	Analysis Date	Qualifier
TSS	8	mg/L	SM 2540D	MA	1/13/25	
Grab pH	7.87	S.U.	SM 4500H+ B	NF	1/13/25	
Total Phenol	<0.02	mg/l	EPA 420.1	JDC	1/27/25	
Oil and Grease	<5	mg/L	EPA 1664B	JDC	1/14/25	
Total Cyanide	<0.01	mg/l	SM 4500-CN C,E	JDC	1/15/25	
BOD	21	mg/L	SM 5210B	JV	1/14/25	
Aluminum	0.0686	mg/l	EPA 200.7	JM	1/22/25	
Arsenic	<0.02	mg/l	EPA 200.7	JM	1/22/25	
Cadmium	<0.01	mg/l	EPA 200.7	JM	1/22/25	
Chromium	0.0111	mg/l	EPA 200.7	JM	1/22/25	
Copper	0.0154	mg/l	EPA 200.7	JM	1/22/25	
Lead	<0.01	mg/l	EPA 200.7	JM	1/22/25	
Molybdenum	0.02564	mg/l	EPA 200.7	JM	1/22/25	
Nickel	0.0495	mg/l	EPA 200.7	JM	1/22/25	
Selenium	<0.01	mg/l	EPA 200.7	JM	1/22/25	
Silver	<0.005	mg/l	EPA 200.7	JM	1/22/25	
Zinc	0.0143	mg/l	EPA 200.7	JM	1/22/25	

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

DAVENPORT
PUBLIC WORKS

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

Analytical Report

REPORT TO

Alter Trading Corporation
5200 Wisconsin Avenue
Davenport, IA 52802
Patrick.Kohlmeier@altertrading.com

Sample ID **AB13979**

Outfall # **1**

Sample Collection Date/Time : 4/1/2025 12

Sample Collector : NF

Sample Type : Grab

Sample Report Date : 5/7/2025

Analyte Name	Result	Units	Analysis Method	Analyst	Analysis Date	Qualifier
TSS	8	mg/L	SM 2540D	JKA	4/1/25	
Grab pH	7.61	S.U.	SM 4500H+ B	NF	4/1/25	
Oil and Grease	<5	mg/L	EPA 1664B	JV	4/3/25	
Total Cyanide	<0.01	mg/l	SM 4500-CN C,E	JV	4/4/25	
BOD	21	mg/L	SM 5210B	JKA	4/2/25	
Aluminum	0.0469	mg/l	EPA 200.7	JDC	4/4/25	
Arsenic	<0.02	mg/l	EPA 200.7	JDC	4/4/25	
Cadmium	<0.01	mg/l	EPA 200.7	JDC	4/4/25	
Chromium	<0.01	mg/l	EPA 200.7	JDC	4/4/25	
Copper	<0.01	mg/l	EPA 200.7	JDC	4/4/25	
Lead	<0.01	mg/l	EPA 200.7	JDC	4/4/25	
Molybdenum	0.1647	mg/l	EPA 200.7	JDC	4/4/25	
Nickel	0.0385	mg/l	EPA 200.7	JDC	4/4/25	
Selenium	<0.01	mg/l	EPA 200.7	JDC	4/4/25	
Silver	<0.005	mg/l	EPA 200.7	JDC	4/4/25	
Zinc	0.0202	mg/l	EPA 200.7	JDC	4/4/25	

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

Appendix G

Landfill Gas Annual Report

Table G1
Landfill Gas Monitoring Summary
2025 Landfill Gas Monitoring Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Points			Methane Results (% LEL)	
Name	**Type**	**Description**	**5/14/2025**	**S (Y/N)**
#1	Outdoor	North side of Phase 1	0%	
#2	Outdoor	Near MW-21	0%	
#3	Outdoor	Near MW-8	0%	
#4	Outdoor	South of EW-7	0%	
#5	Outdoor	South of EW-6	0%	
#6	Outdoor	Northwest corner of Phase 2	0%	
#7	Outdoor	South of EW-5	0%	
#8	Outdoor	Between EW-4 and EW-3	0%	
#9	Outdoor	South of EW-3	0%	
#10	Outdoor	Southwest edge of Phase 2	0%	
#11	Outdoor	South of MW-9	0%	
#12	Outdoor	Approximately 150 feet south of #13	0%	
#13	Outdoor	South edge of Phase 2	0%	
#14	Outdoor	West edge of Phase 2	0%	

S(Y/N) - Was screen submerged, yes or no.

Methane Monitoring Points	
Monitoring Point	**Location Description**
#1	North side of Phase 1
#2	Near MW-21
#3	Near MW-8
#4	South of EW-7
#5	South of EW-6
#6	Northwest corner of Phase 2
#7	South of EW-5
#8	Between EW-4 and EW-3
#9	South of EW-3
#10	Southwest edge of Phase 2
#11	Between MW-11 and SW-3
#12	Approximately 150 feet south of #13
#13	South edge of Phase 2
#14	West edge of Phase 2

SCS ENGINEERS
environmental consultants and contractors

Methane Monitoring Network

Legend

- Methane Monitoring Point
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224677.00
Drawing Date: August 2025

Figure 1

N
W E
S

0 155 310 620
Feet