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2025 Annual Water Quality Report

Leversee Road Ash Disposal Site

Cedar Falls Utilities

Cedar Falls, Iowa

Permit Number: 07-SDP-11-89P

Final

November 2025

CEDAR FALLS UTILITIES

The Power of Service

Deliverable: 2025 Annual Water Quality Report
Project: Leversee Road Ash Disposal Site
Client: Cedar Falls Utilities
Location: Cedar Falls, Iowa
Permit Number: 07-SDP-11-89P

Date: November 2025

Prepared by: **Stanley Consultants**

I hereby certify that this report was prepared by me or under my direct personal supervision and that I am duly registered under the laws of the State of Iowa.

Trenton Shilling Humphrey		
Name	Signature	
11/19/2025	P27585	December 31, 2025
Date	Registration Number	Expiration Date

Professional Seal:

Stanley Consultants

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1.0 Facility Information and Sampling Approach

1.1 Introduction

This report has been prepared to comply with Permit Number 07-SDP-11-89P-CCR - Cedar Falls Utilities (CFU) Leversee Road Ash Disposal Site Section X., Special Provisions, Subsection 6. It has been prepared in accordance with Iowa Administrative Code (IAC) Chapter 567, Sections 103.1(2) f, 103.1(4) d, and 103.1(4) e. The IAC requires that an Annual Water Quality Report (AWQR) summarizing the effects the facility is having on groundwater and surface water quality be submitted to the Iowa Department of Natural Resources (DNR) by November 30 each year. This report fulfills that requirement.

1.2 Background

The Leversee Road Ash Disposal Site (site) is located in the northeast corner of the City of Cedar Falls immediately west of the Waterloo Municipal Airport. The site is located in the southeast quarter of the southeast quarter of Section 6, Township 89 North, and Range 13 West in Black Hawk County. The site is between two Canadian National Railroad Right-of-Ways. The site is owned by the City of Cedar Falls and governed by the Board of Trustees of the Municipal Electric Utility of the City of Cedar Falls. A Site Location Map is provided on Figure 1 in Appendix A.

The site covers approximately nine acres and has been in use for coal combustion residue (chiefly ash) disposal since 1976. The source of the ash is the Streeter Station Power Plant in Cedar Falls. Fill dirt and concrete rubble have also been disposed at the site. Approximately 112,000 tons of wastes have been disposed at the site during its lifetime.

The Sanitary Disposal Project Permit number for the site is 07-SDP-11-89P-CCR. The operating permit for the facility was issued on August 11, 2010. The facility permit was applicable for ten years (April 11, 2020). Because the site is a coal combustion residue (CCR) disposal facility, it is subject to the rules specific to such facilities as delineated in IAC 567-103. The permit for the facility includes provisions specific to CCR facilities as outlined in 567-103. Five permit amendments were issued by DNR for this operating permit:

- Amendment #1, dated January 5, 2011, revised the maximum waste elevation of the site to 884 feet (consistent with the 2006 Stanley Consultants design described in Section 2.2);
- Amendment #2, dated June 10, 2011, authorized planting of a test plot of Ecolotrees in accordance with the May 7, 2010, request submitted by CFU, and the supporting documentation from Dr. Lou Licht, with Ecolotree;
- Amendment #3, dated October 17, 2011, increased the approved maximum waste elevation of the site to 894.26 feet (consistent with the 2012 Closure Plan described in Section 2.2);
- An unnumbered amendment, dated May 22, 2013, deleted two special provisions from the groundwater monitoring section of the permit; and
- Amendment #4, dated July 30, 2015, modified the groundwater monitoring program by adding new sampling parameters and required that collected samples should not be filtered prior to analyses.

On October 3, 2015, CFU sent notice of closure of the site to the DNR. As such, the DNR issued a Sanitary Disposal Project Closure Permit for Coal Combustion Residue Monofills for the site on April 11, 2016 (revised on August 17, 2016). The site was closed according to the Closure and Post-Closure Plan (dated August 2016) approved by the DNR on August 19, 2016.

The monitoring system at the site consists of five monitoring wells in accordance with the conditions of the operating and closure permit. It previously included six shallow and three deep wells and one surface water monitoring point. There were also three leachate piezometers within the waste disposal footprint. These leachate piezometers were removed, in accordance with the previous permit, during December 1999. The active well locations are shown on Figure 2.

While active the facility had a stormwater NPDES permit. As it is now closed that permit is no longer necessary. Cedar Falls Utilities filed a stormwater NPDES Notice of Termination during September 2020.

1.3 Site Geology

Geology in the site area consists of 60 to 75 feet of alluvial sand and gravel deposits overlying silty clay glacial till. Beneath the till is Cedar Valley limestone, which is Devonian in age. Both the alluvial deposits and the underlying limestone are aquifers. The glacial till unit, with an approximate thickness of 20 feet, acts as an aquitard effectively separating the alluvial aquifer from the limestone aquifer. Accordingly, only the alluvial aquifer is monitored at the site.

Groundwater flow beneath the site is directly affected by fluctuations in the stage of the Cedar River, which is in direct hydraulic communication with the alluvial aquifer. Comparison of historic water levels in the deep and shallow wells at the site indicates there is generally little or no measurable vertical hydraulic gradient in the alluvial aquifer, although this can vary depending on river stage. Based on pump tests conducted during the 1992 hydrogeologic evaluation of the site, the hydraulic conductivity of the alluvial aquifer is approximately 0.01 to 0.02 centimeters per second (cm/sec).

While the site meets the definition of a protected groundwater source (IAC 567-137.2) due to the approximated hydraulic conductivity (at least 0.44 meters per day) and total dissolved solids concentration (less than 2,500 milligrams per liter), the Iowa Statewide Standards for Non-Protected Groundwater Sources are a more appropriate comparison for the site. Covenant restrictions have been placed on the site and properties adjacent to the site to prohibit installation of drinking water wells. Due to these restrictions, the groundwater under the site and the surrounding area will not be a usable groundwater source. Therefore, both of the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources will be used in this report.

1.4 Special Waste Disposal

During its operation, the site was authorized to accept coal combustion residue and non-regulated waste concrete, sand, clay, and topsoil. The site did not accept special wastes as defined in the IAC.

1.5 Groundwater Monitoring Analyses

Quarterly sampling of the site was begun by Shive-Hattery Engineers in April 1995 and completed in March 1996. This data has previously been submitted to the DNR. Stanley Environmental, Inc. conducted subsequent semi-annual sampling, through fall 1998. Annual testing required under the current permit was begun in the fall of 1999 by Stanley Environmental, Inc. and that report was also submitted to the DNR. Annual sampling and reporting has been conducted by several different entities since that time (mainly Stanley Consultants).

Groundwater levels were determined concurrent with each of the quarterly sampling events and were determined monthly beginning with the first semi-annual sampling event (October 1996) and continuing through the end of 1998. This information was included in the 1998 Annual Report. Figures showing the groundwater potentiometric surface were submitted with each of the previous sampling reports. Water level measurements have been taken concurrent with the required annual monitoring events and reported as required since that time.

In accordance with Exception #1 in the 2013 AWQR response letter from the DNR, dated December 27, 2013, CFU performed additional sampling in 2014 by adding aluminum, antimony, bicarbonate, boron, cadmium, calcium, chromium, fluoride, lithium, mercury, molybdenum, nickel, potassium, sodium, strontium, thallium, and vanadium to the list of parameters specified in IAC 567 – 103.1(2)(f). The results for these additional parameters were provided to DNR in previous annual reports. In its December 18, 2020 review of the 2020 AWQR DNR stated that repetition of those results is no longer necessary in subsequent reporting.

CFU performed unfiltered laboratory testing of the 2014 samples in accordance with Mr. Michael Leat's e-mail with the subject of "Leversee Rd landfill CFU" and dated September 20, 2014. These results are shown on Tables B-1 through B-6. For comparison purposes some of the parameters were also determined using filtered samples. Where the unfiltered results were below detection limits, no filtered testing was performed (e.g. arsenic, beryllium, and selenium).

Summary tables of the sampling results, from April 1995 through October 2014, for each of the five wells were provided to DNR in previous annual reports and are not repeated here. Graphs for the same time period were provided to DNR in previous annual reports and are not repeated here.

Quarterly sampling data were evaluated in accordance with IAC 567-103 to calculate control limits for the site. These results were presented in the 1996 Annual Groundwater Monitoring Report, which has previously been provided to DNR. Control limits were determined as described in that report for each parameter with at least one positive detection. In 2013 and 2014, the control limits for Well MW-3 were recalculated using quarterly sampling data from the 1996 Annual Groundwater Monitoring Report and each of the annual sampling data up to the 2013 and 2014 events, respectively.

For the past control limit calculations, one half of the laboratory reporting limit was substituted for values reported as less than the laboratory reporting limit. Values reporting as not determined (ND) were not taken into consideration for these calculations. For constituents that were not detected in any of the upgradient wells in any of the quarterly events, the control limit was set by default at the reporting limit. A copy of the calculations and background analytical information used in determination of the historical control limits

for all of the up gradient wells at the facility were provided to DNR in previous annual reports and are not repeated here.

CFU started a new sampling procedure for the 2015 sampling event involving low flow sampling and unfiltered samples to comply with Amendment #4 as well as Items #5 and #6 in the response letter from DNR, both dated July 30, 2015. The current control limits are calculated using the 2015-2016 quarterly sampling data, and data from all of the subsequent annual sampling events (see Appendix D). The results of the sampling conducted since October 2015 are discussed in Sections 2 and 3 of this AWQR.

2.0 Sampling Results

2.1 Groundwater Analysis

Water level measurements were taken during the October 15, 2025, sampling event. The results are summarized in Table 2-1. The potentiometric surface observed during the October 15, 2025, sampling event is shown on Figure 2 in Appendix A. Based on evaluation of the water level observations, groundwater flow on October 30, 2024, was generally toward the south, generally consistent with previous observations. Thus, Well MW-3 is considered the up gradient well, Wells MW-1 and MW-4 are down gradient wells, and Wells MW-2 and MW-5 are cross gradient wells at the facility.

The October 2025 measured groundwater elevations were approximately 2.0 feet higher than the 2024 measurements. Groundwater levels at the site fluctuate in response to water levels in the Cedar River. River levels this year were generally higher than those observed during 2024.

Table 2-1: Groundwater Levels

Well Identification Number	Gradient Function	Top of Casing Elevation	Well Depth	Water Level	Groundwater Elevation
		Feet	Feet	Feet	Feet
MW-1	Down	858.41	20.45	8.42	849.99
MW-2	Cross	861.12	23.45	10.85	850.27
MW-3S	Up	868.55	32.28	18.15	850.40
MW-3D	-	868.80	58.90	18.35	850.45
MW-4S	Down	858.98	20.11	8.91	850.07
MW-4D	-	859.19	72.00	9.15	850.04
MW-5S	Cross	868.10	20.10	18.00	850.10
MW-5D	-	868.72	54.45	18.62	850.10
MW-6	-	868.49	25.32	18.18	850.31

Note: Original MW-5 was damaged during closure construction in 2017. A new well was constructed to replace it at the same location.

Given the new sampling strategy employed since 2015, the control limits for Well MW-3 have been recalculated using the sampling events from the October 2015 sampling event to present. For calculation purposes, one half of the laboratory detection limit was substituted for values reported as below detection. A copy of the calculations and background analytical information used in determination of the current control limits for Well MW-3 at the facility is included in Appendix D. These control limits are also included in Table 2-2 for comparison purposes when applicable.

The control limits for some of the parameters changed as a result of the inclusion of the data from the most recent sampling. Most of the changes were minor, resulting in small increases to control limits.

A summary of the available groundwater monitoring information from 2015 to present for the five wells currently included in the monitoring network is included in Tables E-1 through E-5 in Appendix E and shown on the graphs in Appendix F. Field and laboratory reports for the 2025 sampling event are included in Appendix G.

When available, health-based values including the Primary Maximum Contaminant Level (MCL), or aesthetic values including the Secondary MCL (as appropriate) for these constituents are included in the Tables 2-2 and E-1 through E-5 for use in evaluating the analytical results. Additionally, as available, the State of Iowa Statewide Standards for a Protected and Non-Protected Groundwater Source are included in these tables.

The laboratory results were obtained in compliance with the State of Iowa Laboratory Certification Program according to 567 IAC Chapter 83. The reporting limits, control limits, MCLs, and sampling results are listed in milligrams per liter (mg/L), except for pH that is listed in standard pH units.

2.2 Groundwater Parameters

For the 2025 sampling event, the results for each parameter are discussed in the following paragraphs. Only the parameters specified under IAC 567 – 103.1(2)(f), Special Provisions X.6.e of the Site's Permit, and pH are discussed below for the results listed in Table 2-2. A summary of the available groundwater monitoring information from 2015 to present for the five wells currently included in the monitoring network is included in Tables E-1 through E-5 in Appendix E and shown on the graphs in Appendix F.

A statistical analysis was also completed to determine potential outliers from the 2025 event as well as trends in groundwater concentrations. The statistical analysis was completed using ProUCL Version 5.1. ProUCL is a statistical program developed by the Environmental Protection Agency. Outlier analysis was completed using the Dixon Outlier Test to determine whether any results from 2025 were outliers at a 95% confidence interval while the Mann-Kendall test was used to determine if there are increasing or decreasing trends at a 95% confidence interval for each well-constituent pair. Statistical analysis was not completed on any well-constituent pair in which at least 50% of the results were not detected above reporting limits.

2.2.1 Chloride

Chloride was observed in all five wells during the 2025 sampling event. In all cases the chloride levels were less than the Secondary MCL of 250 mg/L. None of the observed levels of chloride exceeded the 2025 Control Limit of 74.963 mg/L. Sampling wells MW-1, MW-3S, and MW-5S expressed slightly higher chloride levels in 2025 than 2024 results, while well MW-2 and MW-4S was slightly lower in 2025 compared to 2024. Trends will continue to be monitored in 2026.

2.2.2 Sulfate

Sulfate was observed in all five wells during the 2025 sampling event. The results were all below the Secondary MCL of 250 mg/L. The observed levels of sulfate exceeded the Control Limit of 27.24 mg/L in sampling wells MW-1, MW-2, MW-4S, and MW-5S, while MW-3S was below the Control Limit. This represents one less exceedance than last year.

Sulfate has been observed in all of the wells during past sampling events.

The results from the wells will continue to be evaluated over the next several sampling events to determine if they are indicative of a trend of consistent exceedances. If future sampling events continue to demonstrate an upward trend, the effects will be evaluated at that time.

2.2.3 pH

For the 2025 sampling event, the field and laboratory pH measurements for all of the wells were within the Secondary MCL range of 6.5 to 8.5. The field measured pH values for all of the wells were within Control Limit ranges. The laboratory measured pH in in all five sampling wells were within the Control Limit range of 7.23-7.74 in 2025, compared to only one (MW-3S) in 2024. Trends will continue to be monitored in 2026.

Table 2
Monitoring Program Summary 2025 Annual Water Quality Report
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Monitoring Well	Formation	Current Monitoring Program	Change for next sampling event	Control Limit Exceedances	Total # of Samples in each monitoring program since January 1, 2018		
					Routine	Supplemental	Remedial Action
MW-1	Aluvial Sand and Gravel	Routine	NC	SO4,Al,Ba,B,Co,Fe,Li,Mo	8	0	0
MW-2	Aluvial Sand and Gravel	Routine	NC	SO4,B,Co,Fe,Mn,Mo	8	0	0
MW-3S	Aluvial Sand and Gravel	Background	NC	None	8	0	0
MW-3D	Aluvial Sand and Gravel	Water Level Only	NC	N/A	0	0	0
MW-4S	Aluvial Sand and Gravel	Routine	NC	SO4,B,Ca,Co,Li,Mn,Mo,	8	0	0
MW-4D	Aluvial Sand and Gravel	Water Level Only	NC	N/A	0	0	0
MW-5S	Aluvial Sand and Gravel	Routine	NC	SO4,Ba,B,Ca,Li,Mn,Mo	9	0	0
MW-5D	Aluvial Sand and Gravel	Water Level Only	NC	N/A	0	0	0
MW-6	Aluvial Sand and Gravel	Water Level Only	NC	N/A	0	0	0

Comments: A slight decrease in control limit exceedanses was observed from the 2025 sampling event results. No Exceedanses were observed in the up-gradient well (MW-3S) during the 2025 sampling.

This worksheet;
1) Provides a summary of the monitoring points and in which phase of monitoring they are in,
2) Verifies conformance with the approved HMSP network,
3) Gives a summary of the monitored aquifer,
4) Provides the size of the dataset,
5) Provides a summary of current contaminants above background and whether they exceed a Control Limit
6) States the phase for the next sampling event,
7) Mentions additional site sampling that may be occurring on a temporary basis to achieve a delineation or remedial action goal, and
8) Provides any deviations to current HMSP.

Table 3
Monitoring Program Implementation Schedule 2025 Annual Water Quality Report
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	Recent Sampling Dates and Constituents									Planned
Monitoring Well	**3/8/2018**	**10/26/2018**	**10/23/2019**	**10/22/2020**	**10/26/2021**	**10/13/2022**	**10/31/2023**	**10/30/2024**	**10/15/2025**	**October 2026**
MW-1		List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B
MW-2		List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B
MW-3S		List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B
MW-3D		None	None	None	None	None	None	None	None	None
MW-4S		List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B
MW-4D		None	None	None	None	None	None	None	None	None
MW-5S	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B	List A, List B
MW-5D		None	None	None	None	None	None	None	None	None
MW-6		None	None	None	None	None	None	None	None	None

List A: Chloride, Sulfate, pH (Field), pH (laboratory), Specific Conductance, Temperature
List B: Aluminum, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Sodium, Zinc

This worksheet tracks compliance with permitted sampling frequencies and required parameters and to aid in scheduling.

Table 4
Monitoring Well Maintenance and Performance Revaluation Schedule 2025 Annual Water Quality Report
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Compliance with:	Monitoring Calendar Years								
	2018	2019	2020	2021	2022	2023	2024	2025	2026
567 IAC 114.21(2)"a" high and low water levels (add required frequency)	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 114.21(2)"c" well depths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 114.21(2)"d" in-situ permeability tests	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Comments: Monitoring wells MW-1, MW-2, MW-4S, and MW-S were bailed by Cedar Falls Utilities (CFU) employess on October 2, 2025 and MW-3S on October 13, 2025. Bi-annual inspections were completed by CFU over March 04, 2025 and March 12, 2025 and September 25, 2025. Prior to sampling on October 15, 2025 Terracon cleaned MW-2 and MW-4S using a stiff-bristled brush attached to a 1-inch polyvinyl chloride (PVC) casing.

This worksheet;
1) Summarizes compliance, and
2) Aids in scheduling future tasks.

Table 5
Monitoring Well Maintenance and Performance Summary 2025 Annual Water Quality Report
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Well	Top of Casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Permeablitv (cm/s/date)
					10/30/2024	10/15/2025		
MW-1	858.41	848.1	20.45	Groundwater Level (ft)	9.90	8.42	0.25	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.51	849.99		
				Measured Well Depth (ft)	20.20	20.45		
				Submerged screen	Y	Y		
MW-2	861.13	847.8	23.45	Groundwater Level (ft)	12.35	10.85	0.03	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.78	850.28		
				Measured Well Depth (ft)	23.42	23.45		
				Submerged screen	Y	Y		
MW-3S	868.55	846.5	32.28	Groundwater Level (ft)	19.65	18.15	0.21	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.90	850.40		
				Measured Well Depth (ft)	32.07	32.28		
				Submerged screen	Y	Y		
MW-3D	868.8	819.5	58.90	Groundwater Level (ft)	19.90	18.35	0.00	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.90	850.45		
				Measured Well Depth (ft)	58.90	58.90		
				Submerged screen	Y	Y		
MW-4S	858.98	848.68	20.11	Groundwater Level (ft)	10.00	8.91	0.01	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.98	850.07		
				Measured Well Depth (ft)	20.10	20.11		
				Submerged screen	Y	Y		
MW-4D	859.19	798.3	72.00	Groundwater Level (ft)	10.60	9.15	0.67	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.59	850.04		
				Measured Well Depth (ft)	71.33	72.00		
				Submerged screen	Y	Y		
MW-5S	868.1	850.5	20.10	Groundwater Level (ft)	19.47	18.00	-7.50	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.63	850.1		
				Measured Well Depth (ft)	27.60	20.10		
				Submerged screen	N	N		
MW-5D	868.72	824.62	54.45	Groundwater Level (ft)	21.10	18.62	0.43	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	847.62	850.1		
				Measured Well Depth (ft)	54.02	54.45		
				Submerged screen	Y	Y		
MW-6	868.49	853.19	25.32	Groundwater Level (ft)	19.65	18.18	-0.08	0.01 - 0.02 6/1/1992
				Groundwater Elevation (Ft MSL)	848.84	850.31		
				Measured Well Depth (ft)	25.4	25.32		
				Submerged screen	N	N		

All wells were constructed with 10 ft. screens. Acccordingly the top of the screens in the shallower wells (those not anotated with a "D") will be at or near the water table elevation during most conditions. Water level elevations for 2025 were between 1.09-2.48 feet higher than those of 2024. The direction of groundwater flow was more southeasterly than 2024, but has not changed significantly compared with past evaluations, and was generally toward the Cedar River. Based on a comparison of deep versus shallow wells, there is a slight upward gradient at the site.

This worksheet;
1) Summarizes data used to evaluate Monitoring Well Maintenance and Performance, and
2) Identifies monitoring wells that have submerged screens.

Table 6
Background Summary Well MW-3S 2025 Annual Water Quality Report
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Parameter	Reporting Limits and Units	Sampling Date													Mean	Standard Deviation	Control Limit	
		10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025			Upper	Lower
Chloride	5 mg/L	6.22	4.83	6.23	4.95	5.34	21.7	45.5	88.4	31.9	9.4	12.0	52.4	44.0	25.608	24.677	**74.963**	
Sulfate	2-20 mg/L	16.30	16.10	19.70	16.90	17.2	26.4	19.3	20.3	13.5	10.4	21.2	26.3	13.9	18.269	4.487	**27.244**	
pH (Field)	0.1 SU		7.43	7.53	7.12	6.47	6.9	7.29	7.28	7.37	7.37	7.42	7.41	7.35	7.245	0.282	**7.809**	**6.681**
pH (Laboratory)	0.1 SU	7.55	7.68	7.60	7.50	7.6	7.2	7.4	7.4	7.5	7.5	7.6	7.3	7.5	7.487	0.128	**7.743**	**7.231**
Specific Conductance	5 µS/cm		1,390.0	540.0	1,120.0	680	718	560	629	466	434	521	560	620	686.500	271.544	**1,229.6**	
Temperature	0.5 °C		13.10	12.70	14.80	12.38	13	9.93	11.97	9.82	11.62	10.6	13.00	12.50	12.118	1.382	**14.882**	**9.355**
Aluminum	0.0500-0.100 mg/L	0.0408	0.0104	0.0766	0.0884	0.02500	0.01350	0.01350	0.00600	0.00850	0.03300	0.07710	0.02500	0.02500	0.03406	0.02739	**0.08884**	
Arsenic	0.00100-0.00200 mg/L	0.001030	0.000680	0.001070	0.000884	0.00100	0.00029	0.000866	0.000440	0.000984	0.000836	0.001170	0.001000	0.001000	0.0008650	0.0002455	**0.0013560**	
Barium	0.00200-0.00250 mg/L	0.0344	0.0319	0.0311	0.0384	0.0491	0.0487	0.0526	0.0560	0.0495	0.0430	0.0424	0.0486	0.0505	0.04432	0.00784	**0.06000**	
Beryllium	0.00100 mg/L	0.000020	0.000111	0.000118	0.000111	0.00050	0.00010	0.000135	0.000135	0.000135	0.000135	0.000165	0.000500	0.000500	0.0002045	0.0001651	**0.0005346**	
Boron	0.0500-1.00 mg/L	0.0677	0.0497	0.0454	0.0519	0.1000	0.130	0.119	0.040	0.029	0.0290	0.0824	0.0500	0.1060	0.06924	0.03323	**0.13570**	
Calcium	0.200-2.00 mg/L	70.80	76.80	69.20	90.00	110.00	104	117	111	78	63.0	60.4	89.8	103.0	87.900	18.831	**125.561**	
Cobalt	0.000500-0.00100 mg/L	0.000443	0.000079	0.000516	0.000230	0.00025	0.000088	0.0000455	0.0000455	0.0004010	0.000232	0.000331	0.000250	0.000250	0.0002432	0.0001459	**0.0005349**	
Copper	0.00200-0.00500 mg/L	0.000243	0.000610	0.001050	0.000061	0.0025	0.00080	0.00100	0.00075	0.00070	0.00090	0.00226	0.00250	0.00250	0.0012210	0.0008555	**0.0029321**	
Iron	0.100 mg/L	0.1800	0.0197	0.1950	0.0781	0.0500	0.0330	0.0330	0.0250	0.0180	0.0735	0.1430	0.1150	0.0500	0.07795	0.05892	**0.19579**	
Lead	0.000500 mg/L	0.000296	0.000106	0.000502	0.000106	0.00025	0.000125	0.000135	0.000055	0.000356	0.000120	0.000317	0.000250	0.000250	0.0002205	0.0001227	**0.0004659**	
Lithium	0.0100 mg/L	0.166000	0.003275	0.003275	0.003275	0.0250	0.0014	0.00135	0.00125	0.00125	0.00271	0.00125	0.00500	0.00500	0.0045029	0.0072114	**0.0189256**	
Magnesium	0.0500-0.200 mg/L	20.40	18.50	20.80	21.60	27.2	26.8	29.5	27.0	18.9	14.7	15.6	20.6	25.2	22.062	4.504	**31.070**	
Manganese	0.00250-0.0100 mg/L	0.0456	0.0055	0.0401	0.0217	0.0126	0.00651	0.00407	0.00200	0.01130	0.0234	0.0338	0.0456	0.0050	0.01978	0.01580	**0.05138**	
Molybdenum	0.00200-0.0100 mg/L	0.000106	0.000107	0.002635	0.000053	0.0010	0.0003	0.00055	0.00055	0.00065	0.00060	0.00046	0.00100	0.0010	0.0006958	0.0006436	**0.0019830**	
Selenium	0.00250-0.00500 mg/L	0.001670	0.000565	0.000428	0.000895	0.0025	0.00045	0.00050	0.00050	0.00048	0.00048	0.00070	0.00250	0.00250	0.0010898	0.0008346	**0.0027590**	
Sodium	0.200-0.500 mg/L	2.08	2.24	2.54	2.42	2.69	4.52	4.68	19.20	43.90	43.9	39.1	25.4	14.9	15.967	16.115	**48.197**	
Zinc	0.0100-0.0200 mg/L	0.00348	0.00261	0.00136	0.00261	0.0100	0.0050	0.0050	0.0050	0.0050	0.0050	0.0032	0.0100	0.0100	0.005249	0.002835	**0.010920**	

Comments: Control limits are mean plus (or minus as noted) two standard deviations for all data 2015 to present, except lithium. Lithium result from 10/09/2015 is assumed to be an outlier and has not been included in the calculations. Only very minor changes in the control limits were obtained by including the 2025 data in the calculations, although the control limit did increase.

This worksheet;
1) Summarizes the size and quality of the data record of the background data,
2) Summarizes the current statistical method,
3) Examines how background levels were determined,
4) Examines whether background levels are reasonable,
5) Identifies background water quality that is impacted.

Table 7
Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances 2025 Annual Water Quality Report
Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Well	Constituent	Units	Most Recent Result	Control Limit
MW-1	Sulfate	mg/L	85.4	27.24
	Aluminum	mg/L	0.0892	0.08884
	Barium	mg/L	0.0714	0.0600
	Boron	mg/L	2.41	0.136
	Iron	mg/L	0.343	0.196
	Lithium	mg/L	0.0875	0.0189
	Molybdenum	mg/L	0.148	0.002
MW-2	Sulfate	mg/L	29	27.24
	Barium	mg/L	0.0618	0.0600
	Boron	mg/L	0.298	0.136
	Cobalt	mg/L	0.000556	0.000535
	Iron	mg/L	0.521	0.196
	Manganese	mg/L	0.313	0.051
	Molybdenum	mg/L	0.0542	0.002
MW-3S	None	-	-	-
MW-4S	Sulfate	mg/L	106	27.24
	Boron	mg/L	2.78	0.136
	Cobalt	mg/L	0.000885	0.000535
	Lithium	mg/L	0.033	0.0189
	Manganese	mg/L	0.485	0.051
	Molybdenum	mg/L	0.0527	0.002
MW-5S	Sulfate	mg/L	105	27.24
	Barium	mg/L	0.0869	0.0600
	Boron	mg/L	2.76	0.136
	Calcium	mg/L	138	125.56
	Cobalt	mg/L	0.00101	0.000535
	Lithium	mg/L	0.0561	0.0189
	Manganese	mg/L	0.365	0.051
	Molybdenum	mg/L	0.1	0.002

This worksheet presents a summary of background comparisons for well constituents pairs that are in the routine monitoring program. If exceedances are confirmed an investigation of a new release is necessary.

Table 8
Summary of Ongoing and Newly Identified Control Limit Exceedances 2025 Annual Water Quality Report
Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Number of Exceedances (2025)		
	Control Limit	Statewide Standards for a Protected Groundwater Source	Statewide Standards for a Non-Protected Groundwater Source
Chloride	0	0	0
Sulfate	4	0	0
pH (Field)	0	0	0
pH (Laboratory)	4	0	0
Specific Conductance	0	0	0
Temperature	0	0	0
Aluminum	1	0	0
Arsenic	0	0	0
Barium	3	0	0
Beryllium	0	0	0
Boron	4	0	0
Calcium	1	0	0
Cobalt	4	0	0
Copper	0	0	0
Iron	2	0	0
Lead	0	0	0
Lithium	3	3	1
Magnesium	0	0	0
Manganese	3	3	0
Molybdenum	4	4	0
Selenium	0	0	0
Sodium	0	0	0
Zinc	0	0	0

Table 9
2025 Annual Water Quality Report Groundwater Sampling Results
Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Reporting Limits and Units	Control Limits (mg/L)**		Primary MCL (mg/L)**	Secondary MCL (mg/L)**	Iowa Statewide Standard for a Protected Groundwater Source (mg/L)	Iowa Statewide Standard for a Non-Protected Groundwater Source (mg/L)	Well Identification Number				
								Up Gradient	Down and Cross Gradient			
		Upper	Lower					MW-3S	MW-1	MW-2	MW-4S	MW-5S
Chloride	5 mg/L	74.96			250			44.0	29.4	10.4	15.4	28
Sulfate	2 – 20 mg/L	27.2			250			13.9	**85.4**	**29**	**106**	**105**
pH (Field)	0.1 SU	7.81	6.68		6.5 – 8.5			7.35	7.3	7.24	7.09	7.02
pH (Laboratory)	0.1 SU	7.74	7.23		6.5 – 8.5			7.5	7.5	7.4	7.3	7.3
Specific Conductance	5 µS/cm	1230						620	701.0	557	734	751
Temperature	0.5 °C	14.88	9.35					12.50	13.6	13.6	13.73	12.52
Aluminum	0.05 – 0.1 mg/L	0.0888			0.05 to 2.0			<0.0500	**0.0892**	<0.0500	<0.0500	<0.0500
Arsenic	0.001 – 0.002 mg/L	0.00136		0.01		0.01	0.05	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Barium	0.002 – 0.0250 mg/L	0.0600		2		2	10	0.0505	**0.0714**	**0.0618**	0.0548	**0.0869**
Beryllium	0.001 mg/L	0.00053		0.004		0.004	0.07	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Boron	0.2 – 5 mg/L	0.136				6	30	0.106	**2.410**	**0.298**	**2.78**	**2.760**
Calcium	0.2 – 4 mg/L	125.6						103.0	101.0	105	123	**138**
Cobalt	0.0005 – 0.001 mg/L	0.000535				0.0028	0.014	<0.000500	**<0.000500**	**0.000556**	**0.000885**	**0.00101**
Copper	0.002 – 0.005 mg/L	0.00293		1.3*	1	1.3	6.6	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iron	0.1 – 1 mg/L	0.196			0.3			<0.100	**0.343**	**0.521**	0.124	0.135
Lead	0.0005 mg/L	0.000466		0.015 H		0.015	0.075	<0.000500	0.000653	<0.000500	<0.000500	<0.000500
Lithium	0.0100 mg/L	0.0189				0.014	0.07	<0.0100	**0.0875**	0.0117	**0.033**	**0.0561**
Magnesium	0.05 – 0.2 mg/L	31.1						25.2	20.6	20.5	27.7	28.7
Manganese	0.0025 – 0.01 mg/L	0.0514			0.05	0.3	4.9	<0.0100	0.0347	**0.313**	**0.485**	**0.365**
Molybdenum	0.002 – 0.01 mg/L	0.00198				0.04	0.2	<0.00200	**0.1480**	**0.0542**	**0.0527**	**0.0837**
Selenium	0.0025 – 0.005 mg/L	0.0028		0.05		0.05	0.25	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Sodium	0.2 – 1.0 mg/L	48.197			20***			14.9	45.6	9.71	28.8	17
Zinc	0.01 – 0.02 mg/L	0.0109			5	2	10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200

Notes: Control limits are those calculated after the current sampling event
Laboratory results and reporting limits as reported by TestAmerica Inc., Cedar Falls, Iowa
Bold results exceed the current Control Limit, Primary MCL, Secondary MCL, and/or Statewide Standards
*** = Action level for corrosion control**
**** = mg/L except for pH, Specific Conductance, and Temperature**
***** = USEPA Health Advisory Level**
Blanks Indicate None
H = Lifetime Health Advisory Level

Table 10-1
Groundwater Monitoring Data Summary for MW-1
Cedar Falls Utilities Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Reporting Limits and Units	Control Limits (mg/L)**		Primary MCL (mg/L)**	Secondary MCL (mg/L)**	Iowa Statewide Standard for a Protected	Iowa Statewide Standard for a Non-Protected	Sampling Date												
		Upper	Lower					10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
Chloride	5 mg/L	74.96			250			9.58	9.92	9.43	5.39	14.1	33.3	31.9	24.4	30.8	25.0	34.5	27.0	29.4
Sulfate	2 -20 mg/L	27.2			250			**247**	**416**	**184**	7.19	**234**	**387**	**165**	**63.5**	**92.3**	**220**	**139**	**199**	**85.4**
pH (Field)	0.1 SU	7.81	6.68		6.5 - 8.5			NA	7.02	7.43	NA	**6.23**	6.64	7.06	7.21	7.23	7.31	7.1	7.02	7.25
pH (Laboratory)	0.1 SU	7.74	7.23		6.5 - 8.5			**7.14**	**6.96**	7.33	**7.2**	7.6	**6.8**	**7.2**	7.2	7.3	**7.0**	7.3	**7.1**	7.5
Specific Conductance	5 µS/cm	1230						ND	**1,920**	880	180	994	1462	869	617	594	1042	918	888	701
Temperature	0.5 °C	14.88	9.35					ND	12.3	14.4	**18.2**	13.6	14.3	11.6	12.47	11.14	12.13	12.2	14.6	13.58
Aluminum	0.0500-0.100 mg/L	0.089			0.05 to 0.2			0.0395	**0.130**	**0.139**	0.0395	<0.0500	<0.0270	<0.0270	0.0308	0.0567	0.0398	0.0666	<0.0500	**0.0892**
Arsenic	0.00100-0.00200 mg/L	0.00136		0.010		0.01	0.05	0.00123	0.000952	0.00111	**0.00139**	<0.00200	0.00128	0.00114	<0.000880	0.00103	0.000918	0.00117	<0.00200	<0.00200
Barium	0.00200-0.00250 mg/L	0.0600		2.0		2	10	**0.0822**	**0.0875**	0.0500	0.0444	**0.0673**	**0.227**	**0.0902**	**0.0802**	**0.0958**	**0.138**	**0.0902**	**0.0939**	**0.0714**
Beryllium	0.00100 mg/L	0.00053		0.004		0.004	0.07	<0.0000390	<0.000221	<0.000235	<0.000221	<0.00100	<0.000190	<0.000270	<0.000270	<0.000270	<0.000270	<0.000330	<0.00100	<0.00100
Boron	0.200-2.00 mg/L	0.136				6	30	**6.82**	**9.85**	**8.69**	**0.416**	**8.18**	**12.4**	**6.14**	**2.33**	**3.31**	**5.66**	**5.66**	**4.14**	**2.41**
Calcium	0.200-2.00 mg/L	125.6						**134**	**166**	99.6	51.9	115	**205**	125	116	109	**177**	97.5	**128**	101
Cobalt	0.000500-0.00100 mg/L	0.000535				0.0028	0.014	0.000167	0.000603	0.000405	0.000578	<0.000500	0.000428	0.000139	0.000535	0.000298	0.000470	0.000214	<0.000500	<0.000500
Copper	0.00200-0.00500 mg/L	0.00293		1.3*	1.0	1.3	6.6	<0.000485	0.00181	0.00118	0.00140	<0.00500	<0.00160	<0.00200	<0.00150	<0.00140	<0.00180	<0.00180	<0.00500	<0.00500
Iron	0.100 mg/L	0.196			0.3			0.0885	0.167	**0.224**	0.0428	<0.100	<0.0660	<0.0660	0.0654	0.0778	0.107	0.118	0.162	**0.343**
Lead	0.000500 mg/L	0.000466		0.015 H		0.015	0.075	0.000434	**0.00106**	**0.000613**	<0.000211	**0.00128**	<0.000250	<0.000270	0.000168	0.00109	<0.000240	<0.000240	<0.000500	0.000653
Lithium	0.0100 mg/L	0.0189				0.014	0.07	0.0175	**0.227**	**0.202**	**0.0317**	**0.231**	**0.282**	**0.191**	**0.0517**	**0.0605**	**0.153**	**0.137**	**0.161**	**0.0875**
Magnesium	0.0500-0.200 mg/L	31.1						31.2	24.9	22.8	5.91	21.6	**41.0**	31.2	27.8	24.6	**33.5**	20.8	24.8	20.6
Manganese	0.00250-0.0100 mg/L	0.0514			0.05	0.3	4.9	0.0111	0.0390	0.0156	**0.0799**	0.0103	0.0286	0.00833	0.0326	0.0175	0.0446	0.0141	0.0347	0.0347
Molybdenum	0.00200-0.0100 mg/L	0.00198				0.04	0.2	**0.248**	**0.196**	**0.207**	**0.254**	**0.373**	**0.350**	**0.412**	**0.187**	**0.192**	**0.176**	**0.163**	**0.243**	**0.148**
Selenium	0.00250-0.00500 mg/L	0.0028		0.05		0.05	0.25	<0.00334	**0.00505**	0.00126	<0.000630	<0.00500	**0.00378**	<0.00100	<0.00100	<0.000960	**0.0335**	**0.00276**	<0.00500	<0.00500
Sodium	0.200-0.500 mg/L	48.197						35.4	43.5	40.7	3.84	**50.9**	**65.0**	**59.3**	8.38	27.8	**59.2**	**83.2**	**65.9**	45.6
Zinc	0.0100-0.0200 mg/L	0.0109			5.0	2	10	<0.00695	0.00606	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.0200	<0.0200

Control limits are those calculated after the current sampling event

ND means Not Determined

Laboratory Results as reported by Test America, Cedar Falls, Iowa

Bold results exceed the current Control Limit, Primary MCL, Secondary MCL, or Statewide Standards

* = Action Level for Corrosion Control

** = mg/L except for pH, Specific Conductance, and Temperature

Blanks Indicate None

H = Lifetime Health Advisory Level

Table 10-2
2025 Groundwater Monitoring Data Summary for MW-2
Cedar Falls Utilities Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Reporting Limits and Units	Control Limits (mg/L)**		Primary MCL (mg/L)**	Secondary MCL (mg/L)**	Iowa Statewide Standard for a Protected Groundwater Source (mg/L)	Iowa Statewide Standard for a Non-Protected Groundwater Source (mg/L)	Sampling Date												
		Upper	Lower					10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
Chloride	5 mg/L	74.96			250			5.65	2.70	3.72	5.77	5.84	**25.9**	12.6	10.8	8.76	7.84	11.1	17.3	10.4
Sulfate	2 -20 mg/L	27.2			250			**32.1**	**61.9**	**89.9**	13.1	**99.9**	**104**	**145**	**37.7**	**11.8**	**27.6**	**26.1**	**205**	**29.0**
pH (Field)	0.1 SU	7.81	6.68		6.5 - 8.5			NA	7.24	7.49	6.92	**6.17**	6.82	6.98	7.18	7.48	7.43	7.27	7.30	7.24
pH (Laboratory)	0.1 SU	7.74	7.23		6.5 - 8.5			7.43	7.45	7.51	7.2	7.3	7.2	**7.1**	7.3	7.5	7.4	7.6	**7.1**	7.4
Specific Conductance	5 µS/cm	1230						ND	**2,850**	660	810	779	873	826	491	308	316	524	532	557
Temperature	0.5 °C	14.88	9.35					ND	12.1	14.8	**17.2**	13.82	15.1	12.5	13.46	10.71	11.66	11.6	**16.25**	13.60
Aluminum	0.0500-0.100 mg/L	0.089			0.05 to 0.2			0.0467	0.0572	0.0907	0.0369	<0.0500	<0.0270	<0.0270	<0.0120	<0.0170	0.0173	<0.0170	**0.0995**	<0.0500
Arsenic	0.00100-0.00200 mg/L	0.00136		0.010		0.01	0.05	<0.000945	0.000871	0.000839	0.00118	<0.00200	<0.000570	<0.000750	<0.000880	<0.000750	<0.000750	0.000675	**0.00241**	<0.00200
Barium	0.00200-0.00250 mg/L	0.0600		2.0		2	10	0.0561	**0.0697**	0.0584	**0.0628**	**0.0887**	**0.0919**	**0.118**	0.0580	0.0399	**0.0703**	0.0497	**0.0801**	**0.0618**
Beryllium	0.00100 mg/L	0.00053		0.004		0.004	0.07	<0.0000390	<0.000221	<0.000235	<0.000221	<0.00100	<0.000190	<0.000270	<0.000270	<0.000270	<0.000270	<0.000330	<0.00100	<0.00100
Boron	0.0500-1.00 mg/L	0.136				6	30	**0.472**	**0.996**	**1.24**	**1.41**	**1.8**	**1.31**	**3.13**	**1.11**	**0.0823**	**0.417**	**0.151**	<0.100	0.298
Calcium	0.200-2.00 mg/L	125.6						78.4	96.2	94.6	90.2	129	121	**167**	99.1	68.5	96.7	78.2	93.4	105
Cobalt	0.000500-0.00100 mg/L	0.000535				0.0028	0.014	0.000360	**0.000706**	0.000465	0.000533	<0.000500	0.000173	0.000124	<0.0000910	<0.000190	<0.000190	<0.000170	**0.00223**	**0.000556**
Copper	0.00200-0.00500 mg/L	0.00293		1.3*	1.0	1.3	6.6	<0.000485	0.00146	0.00100	<0.00122	<0.00500	<0.00160	<0.00200	<0.00150	<0.00140	<0.00180	<0.00180	<0.00500	<0.00500
Iron	0.100-0.200 mg/L	0.196			0.3			0.175	**0.504**	**0.264**	0.247	0.108	0.136	0.127	<0.0500	<0.0360	0.0378	0.138	**2.12**	**0.521**
Lead	0.000500 mg/L	0.000466		0.015 H		0.015	0.075	0.000494	**0.000799**	0.000571	<0.000211	<0.000500	<0.000250	<0.000270	<0.000110	0.000929	<0.000240	<0.000240	**0.00172**	<0.000500
Lithium	0.0100 mg/L	0.0189				0.014	0.07	<0.00881	**0.0254**	0.0136	**0.0207**	<0.0500	**0.0191**	**0.0197**	0.0131	0.00779	0.0127	0.0111	0.0132	0.0117
Magnesium	0.0500-0.200 mg/L	31.1						17.4	17.7	24.0	13.2	25.1	19.8	**32.8**	19.8	12.8	18.7	18.2	18.4	20.5
Manganese	0.00250-0.0100 mg/L	0.0514			0.05	0.3	4.9	0.0471	**0.0948**	0.0411	**0.248**	0.0143	**0.0921**	**0.136**	**0.0889**	**0.0411**	**0.0932**	0.0402	**1.29**	**0.313**
Molybdenum	0.00200-0.0100 mg/L	0.00198				0.04	0.2	**0.0702**	**0.100**	**0.0429**	**0.154**	**0.047**	**0.108**	**0.0503**	**0.0867**	**0.0755**	**0.0495**	**0.0563**	**0.0539**	**0.0542**
Selenium	0.00250-0.00500 mg/L	0.0028		0.05		0.05	0.25	<0.00334	0.00120	0.00119	<0.000630	<0.00500	<0.000900	<0.00100	<0.00100	<0.000960	**0.00784**	0.00147	<0.00500	<0.00500
Sodium	0.200-0.500 mg/L	48.197						2.44	2.86	2.41	4.74	4.36	27.0	11.3	9.38	7.5	9.23	9.35	11.00	9.71
Zinc	0.0100-0.0200 mg/L	0.0109			5.0	2	10	<0.00695	0.00550	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	**0.0415**	<0.0200

Control limits are those calculated after the current sampling event

ND means Not Determined

Laboratory Results as reported by Test America, Cedar Falls, Iowa

Bold results exceed the current Control Limit, Primary MCL, Secondary MCL, or Statewide Standards

* = Action Level for Corrosion Control

** = mg/L except for pH, Specific Conductance, and Temperature

Blanks Indicate None

H = Lifetime Health Advisory Level

Table 10-3
2025 Groundwater Monitoring Data Summary for MW-3S
Cedar Falls Utilities Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Reporting Limits and Units	Control Limits (mg/L)**		Primary MCL (mg/L)**	Secondary MCL (mg/L)**	Iowa Statewide Standard for a Protected Groundwater Source (mg/L)	Iowa Statewide Standard for a Non-Protected Groundwater Source (mg/L)	Sampling Date											
		Upper	Lower					10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31.2023	10/30/2024	10/15/2025
Chloride	5 mg/L	74.96			250			6.22	4.83	6.23	4.95	5.34	21.7	45.5	**88.4**	31.9	9.44	12.0	34.5	44.0
Sulfate	2 -20 mg/L	27.2			250			16.3	16.1	19.7	16.9	17.2	**26.4**	19.3	20.3	13.5	10.4	21.2	**139**	13.9
pH (Field)	0.1 SU	7.81	6.68		6.5 - 8.5			NA	7.43	7.53	7.12	6.47	6.90	7.29	7.28	7.37	7.37	7.42	7.41	7.35
pH (Laboratory)	0.1 SU	7.74	7.23		6.5 - 8.5			7.55	7.68	7.60	7.5	7.6	7.2	7.4	7.4	7.5	7.5	7.6	7.3	7.5
Specific Conductance	5 µS/cm	1230						ND	1,390	540	1,120	680	718	560	629	466	434	512	560	620
Temperature	0.5 °C	14.88	9.35					ND	13.1	12.7	14.8	12.38	13.0	9.93	11.97	9.82	11.62	10.6	13.00	12.50
Aluminum	0.0500-0.100 mg/L	0.089			0.05 to 0.2			0.0408	<0.0208	0.0766	0.0884	<0.0500	<0.0270	<0.0270	<0.0120	<0.0170	0.033	0.0771	0.0666	<0.0500
Arsenic	0.00100-0.00200 mg/L	0.00136		0.010		0.01	0.05	0.00103	0.000680	0.00107	0.000884	<0.00200	<0.000570	0.000866	<0.000880	0.000984	0.000836	0.00117	0.00117	<0.00200
Barium	0.00200-0.00250 mg/L	0.0600		2.0		2	10	0.0344	0.0319	0.0311	0.0384	0.0491	0.0487	0.0526	0.0560	0.0495	0.043	0.0424	**0.0902**	0.0505
Beryllium	0.00100 mg/L	0.00053		0.004		0.004	0.07	<0.0000390	<0.000221	<0.000235	<0.000221	<0.00100	<0.000190	<0.000270	<0.000270	<0.000270	<0.000270	<0.000330	<0.000330	<0.00100
Boron	0.0500-1.00 mg/L	0.136				6	30	0.0677	0.0497	0.0454	0.0519	<0.200	0.130	0.119	<0.0800	<0.0580	<0.0580	0.0824	<0.100	0.106
Calcium	0.200-2.00 mg/L	125.6						70.8	76.8	69.2	90.0	110	104	117	111	77.7	63	60.4	97.5	103
Cobalt	0.000500-0.00100 mg/L	0.000535				0.0028	0.014	0.000443	0.0000790	0.000516	0.000230	<0.000500	0.0000880	<0.0000910	<0.0000910	0.000401	0.000232	0.000331	0.000214	<0.000500
Copper	0.00200-0.00500 mg/L	0.00293		1.3*	1.0	1.3	6.6	<0.000485	<0.00122	0.00105	<0.000122	<0.00500	<0.00160	<0.00200	<0.00150	<0.00140	<0.00180	0.00226	<0.00180	<0.00500
Iron	0.100 mg/L	0.196			0.3			0.180	<0.0394	0.195	0.0781	<0.100	<0.0660	<0.0660	<0.0500	<0.0360	0.0735	0.143	0.118	<0.100
Lead	0.000500 mg/L	0.000466		0.015 H		0.015	0.075	0.000296	<0.000211	0.000502	<0.000211	<0.000500	<0.000250	<0.000270	<0.000110	0.000356	<0.000240	0.000317	<0.000240	<0.000500
Lithium	0.0100 mg/L	0.0189				0.014	0.07	**0.166**	<0.00655	<0.00655	<0.00655	<0.0500	<0.00280	<0.00270	<0.00250	<0.00250	0.00271	<0.00250	**0.137**	<0.0100
Magnesium	0.0500-0.200 mg/L	31.1						20.4	18.5	20.8	21.6	27.2	26.8	29.5	27.0	18.9	14.7	15.6	20.8	25.2
Manganese	0.00250-0.0100 mg/L	0.0514			0.05	0.3	4.9	0.0456	0.00550	0.0401	0.0217	0.0126	0.00651	0.00407	<0.00400	0.0113	0.0234	0.0338	0.0141	<0.0100
Molybdenum	0.00200-0.0100 mg/L	0.00198				0.04	0.2	0.000106	0.000107	<0.00527	<0.000105	<0.00200	<0.000680	<0.00110	<0.00110	<0.00103	<0.00120	<0.000910	**0.163**	<0.00200
Selenium	0.00250-0.00500 mg/L	0.0028		0.05		0.05	0.25	<0.00334	0.00113	<0.000856	0.000895	<0.00500	<0.000900	<0.00100	<0.00100	<0.000960	<0.000960	<0.00140	**0.00276**	<0.00500
Sodium	0.200-0.500 mg/L	48.197						2.08	2.24	2.54	2.42	2.69	4.52	4.68	19.2	43.9	43.9	39.1	**83.2**	14.9
Zinc	0.0100-0.0200 mg/L	0.0109			5.0	2	10	<0.00695	<0.00521	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.00640	<0.0200

Control limits are those calculated after the current sampling event

ND means Not Determined

Laboratory Results as reported by Test America, Cedar Falls, Iowa

Bold results exceed the current Control Limit, Primary MCL, Secondary MCL, or Statewide Standards

* = Action Level for Corrosion Control

** = mg/L except for pH, Specific Conductance, and Temperature

Blanks Indicate None

H = Lifetime Health Advisory Level

Table 10-4
2025 Groundwater Monitoring Data Summary for MW-4S
Cedar Falls Utilities Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Reporting Limits and Units	Control Limits (mg/L)**		Primary MCL (mg/L)**	Secondary MCL (mg/L)**	Iowa Statewide Standard for a Protected Groundwater Source (mg/L)	Iowa Statewide Standard for a Non-Protected Groundwater Source (mg/L)	Sampling Date											
		Upper	Lower					10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
Chloride	5-20 mg/L	74.96			250			9.20	**281**	11.5	6.29	6.81	9.38	18.3	17.5	9.72	9.63	12.2	17.6	15.4
Sulfate	2-20 mg/L	27.2			250			**191**	**428**	**322**	**38.8**	**92**	**242**	**86**	**209**	**84.4**	**70.9**	**81.7**	**185**	**106**
pH (Field)	0.1 SU	7.81	6.68		6.5 - 8.5			NA	7.12	7.41	NA	6.68	6.92	7.13	7.10	7.16	7.06	7.08	6.93	7.09
pH (Laboratory)	0.1 SU	7.74	7.23		6.5 - 8.5			**6.96**	**7.04**	**7.11**	**7.1**	7.5	**7.1**	7.3	7.2	7.2	7.2	7.3	**7.0**	7.3
Specific Conductance	5 µS/cm	1230						ND	**3,010**	1,210	**6,730**	690	1192	705	936	590	611	691	905	734
Temperature	0.5 °C	14.88	9.35					ND	12.4	15.3	**18.0**	14.2	13.8	11.93	12.62	11.58	12.95	12	13.68	13.73
Aluminum	0.0500-0.100 mg/L	0.089			0.05 to 0.2			<0.00846	0.0404	<0.0497	0.0208	<0.0500	<0.135	<0.0270	<0.0120	<0.0170	0.0231	<0.0170	<0.0500	<0.0500
Arsenic	0.00100-0.00200 mg/L	0.00136		0.010		0.01	0.05	<0.000945	<0.000672	0.000506	0.000678	<0.00200	<0.000570	0.000795	<0.000880	<0.000750	<0.000750	0.000712	<0.00200	<0.00200
Barium	0.00200-0.00250 mg/L	0.0600		2.0		2	10	**0.0923**	**0.119**	**0.0773**	0.0364	0.0362	**0.101**	0.0594	**0.0781**	**0.0696**	0.0579	0.0493	**0.0996**	0.0548
Beryllium	0.00100 mg/L	0.00053		0.004		0.004	0.07	<0.0000390	<0.000221	<0.000235	<0.000221	<0.00100	<0.000190	<0.000270	<0.000270	<0.000270	<0.000270	<0.000330	<0.00100	<0.00100
Boron	0.200-5.00 mg/L	0.136				6	30	0.0677	0.0497	0.0454	0.0519	<0.200	0.130	0.119	<0.0800	<0.0580	<0.0580	0.0824	**5.66**	**2.78**
Calcium	0.200-4.00 mg/L	125.6						**162**	**187**	120	93.0	88.2	**139**	115	**148**	115	107	103	**148**	123
Cobalt	0.000500-0.00100 mg/L	0.000535				0.0028	0.014	0.000409	**0.000949**	0.000595	0.000371	<0.000500	0.000135	0.000099	0.000175	<0.000190	0.000318	<0.000170	**0.00222**	**0.000885**
Copper	0.00200-0.00500 mg/L	0.00293		1.3*	1.0	1.3	6.6	<0.000485	<0.00122	0.00101	<0.000122	<0.00500	<0.00160	<0.00200	<0.00150	<0.00140	<0.00180	<0.00180	<0.00500	<0.00500
Iron	0.100-1.0 mg/L	0.196			0.3			<0.0511	<0.394	0.176	0.0746	<0.100	<0.0660	<0.0660	<0.0500	<0.0360	0.0622	**0.218**	**0.886**	0.124
Lead	0.000500 mg/L	0.000466		0.015 H		0.015	0.075	<0.0000967	0.000439	0.000411	<0.000211	<0.000500	<0.000250	<0.000270	<0.000110	0.00038	<0.000240	<0.000240	<0.000500	<0.000500
Lithium	0.0100 mg/L	0.0189				0.014	0.07	**0.0930**	**0.183**	**0.283**	**0.0575**	**0.128**	**0.286**	**0.0715**	**0.203**	**0.0585**	**0.0427**	**0.0259**	**0.0808**	**0.0330**
Magnesium	0.0500-0.200 mg/L	31.1						21.7	27.1	22.7	10.8	17.6	27.9	24.1	30.8	28.1	24.3	27.2	**32.0**	27.7
Manganese	0.00250-0.0100 mg/L	0.0514			0.05	0.3	4.9	**0.651**	**0.145**	**0.122**	**0.111**	0.0369	0.0403	0.0219	0.0298	0.02	**0.0925**	0.0196	**1.32**	**0.485**
Molybdenum	0.00200-0.0100 mg/L	0.00198				0.04	0.2	**0.0213**	**0.00705**	**0.0237**	**0.0281**	**0.0264**	**0.0397**	**0.0228**	**0.0268**	**0.0525**	**0.0461**	**0.054**	**0.0431**	**0.0527**
Selenium	0.00250-0.00500 mg/L	0.0028		0.05		0.05	0.25	<0.00334	**0.00775**	**0.00265**	0.00113	<0.00500	<0.000900	<0.00100	<0.00100	<0.000960	<0.000960	<0.00140	<0.00500	<0.00500
Sodium	0.200-0.500 mg/L	48.197						32.4	43.5	**105**	11.5	36.2	**57.5**	20.1	**73.5**	15.8	13.6	10.7	**55.0**	28.8
Zinc	0.0100-0.0200 mg/L	0.0109			5.0	2	10	<0.00695	<0.00521	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.0200	<0.0200

Control limits are those calculated after the current sampling event

ND means Not Determined

Laboratory Results as reported by Test America, Cedar Falls, Iowa

Bold results exceed the current Control Limit, Primary MCL, Secondary MCL, or Statewide Standards

* = Action Level for Corrosion Control

** = mg/L except for pH, Specific Conductance, and Temperature

Blanks Indicate None

H = Lifetime Health Advisory Level

Table 10-5
2025 Groundwater Monitoring Data Summary for MW-5S
Cedar Falls Utilities Leversee Road Ash Disposal Site
Permit No. 07-SDP-11-89P

Parameter	Reporting Limits and Units	Control Limits (mg/L)**		Primary MCL (mg/L)**	Secondary MCL (mg/L)**	Iowa Statewide Standard for a Protected Groundwater Source (mg/L)	Iowa Statewide Standard for a Non-Protected Groundwater Source (mg/L)	Sampling Date												
		Upper	Lower					10/9/2015	3/16/2016	6/23/2016	10/10/2016	3/8/2018	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
Chloride	5 mg/L	74.96			250			4.12	4.07	5.61	3.31	7.34	4.34	19.3	12.5	15.5	8.82	16.8	26.7	28.0
Sulfate	2 -20 mg/L	27.2			250			**32.0**	**32.7**	**154**	**149**	**53**	**57.4**	**71.9**	**205**	14.3	**39.7**	**80.6**	**230**	**105**
pH (Field)	0.1 SU	7.81	6.68		6.5 - 8.5			NA	6.9	7.02	6.99	ND	6.74	7.13	6.96	6.88	7.07	7.12	7.08	7.02
pH (Laboratiory)	0.1 SU	7.74	7.23		6.5 - 8.5			**7.18**	7.38	**7.12**	**7.0**	**7.1**	7.3	7.3	**7.1**	**7.3**	7.3	7.3	**7.2**	7.3
Specific Conductance	5 µS/cm	1230						ND	**3,120**	1,260	**2,910**	ND	702	676	816	502	543	724	860	751
Temperature	0.5 °C	14.88	9.35					ND	11.7	13.2	15.2	ND	11.8	**9.36**	11.35	9.76	11.56	10.4	13.20	12.52
Aluminum	0.0500-0.100 mg/L	0.089			0.05 to 0.2			<0.00846	<0.0208	<0.0497	0.0704	**0.115**	0.0564	0.0393	<0.0120	0.0235	0.0419	<0.0170	<0.0500	<0.0500
Arsenic	0.00100-0.00200 mg/L	0.00136		0.01		0.01	0.05	0.00101	<0.000672	0.000581	<0.000672	**0.00138**	<0.000570	0.00085	<0.000880	<0.000750	<0.000750	0.000653	<0.00200	<0.00200
Barium	0.00200-0.00250 mg/L	0.0600		2.0		2	10	**0.0705**	0.0573	**0.0898**	**0.0803**	**0.108**	**0.110**	**0.0847**	**0.0922**	**0.07**	**0.0794**	**0.0722**	**0.1080**	**0.0869**
Beryllium	0.00100 mg/L	0.00053		0.004		0.004	0.07	<0.0000390	<0.000221	<0.000235	<0.000221	<0.000125	<0.000190	<0.000270	<0.000270	<0.000270	<0.000270	<0.000330	<0.00100	<0.00100
Boron	0.200-1.00 mg/L	0.136				6	30	**2.66**	**0.933**	**3.68**	**3.47**	**7.10**	**2.42**	**4.37**	**22.3**	**0.14**	**0.329**	**1.04**	**1.77**	**2.76**
Calcium	0.200-2.00 mg/L	125.6						91.5	93.5	**132**	**176**	120	108	**150**	**195**	122	119	118	**175**	**138**
Cobalt	0.000500-0.00100 mg/L	0.000535				0.0028	0.014	0.000388	0.000164	**0.000609**	**0.000996**	**0.00101**	0.000324	0.000308	0.000153	0.000471	0.000359	0.000181	**0.000624**	**0.00101**
Copper	0.00200-0.00500 mg/L	0.00293		1.3*	1.0	1.3	6.6	<0.000485	<0.00122	0.000691	<0.00122	<0.00219	<0.00160	<0.00200	<0.00150	0.00142	<0.00180	<0.00180	<0.00500	<0.00500
Iron	0.100-0.200 mg/L	0.196			0.3			**0.875**	<0.0788	0.0762	<0.0394	**0.375**	**0.253**	0.117	0.0564	0.112	**0.24**	0.0786	**0.228**	0.135
Lead	0.000500 mg/L	0.000466		0.015 H		0.015	0.075	<0.0000967	<0.000211	0.000356	<0.000211	**0.000826**	**0.000665**	0.000347	0.000210	**0.000946**	**0.000719**	0.000253	<0.000500	<0.000500
Lithium	0.0100 mg/L	0.0189				0.014	0.07	**0.0933**	**0.0589**	**0.0469**	**0.0309**	**0.138**	**0.0591**	**0.0176**	**0.198**	**0.0277**	**0.0255**	**0.0496**	**0.0234**	**0.0561**
Magnesium	0.0500-0.200 mg/L	31.1						15.4	15.3	26.5	27.3	17.7	15.7	28.7	**34.5**	**24.7**	23.2	27.8	**38.0**	28.7
Manganese	0.00250-0.0100 mg/L	0.0514			0.05	0.3	4.9	**0.227**	**0.109**	**0.0714**	**0.240**	**0.0801**	0.0324	0.0222	0.0130	0.0228	0.0325	0.0170	**0.343**	**0.365**
Molybdenum	0.00200-0.0100 mg/L	0.00198				0.04	0.2	**0.154**	**0.139**	**0.105**	**0.0488**	**0.426**	**0.264**	**0.0806**	**0.182**	**0.0778**	**0.0938**	**0.0621**	**0.0327**	**0.0837**
Selenium	0.00250-0.00500 mg/L	0.0028		0.05		0.05	0.25	<0.00334	0.00111	<0.000856	0.00127	0.00148	<0.000900	0.00183	0.00180	<0.000960	0.00130	<0.00140	<0.00500	<0.00500
Sodium	0.200-0.500 mg/L	48.197						7.73	6.54	5.76	10.5	5.52	3.62	4.82	7.02	5.01	4.91	5.72	10.8	17.0
Zinc	0.0100-0.0200 mg/L	0.0109			5.0	2	10	<0.00695	<0.00521	0.00426	<0.00521	<0.0115	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.0200	<0.0200

Control limits are those calculated after the current sampling event

ND means Not Determined

Laboratory Results as reported by Test America, Cedar Falls, Iowa

Bold results exceed the current Control Limit, Primary MCL, Secondary MCL, or Statewide Standards

* = Action Level for Corrosion Control

** = mg/L except for pH, Specific Conductance, and Temperature

Blanks Indicate None

H = Lifetime Health Advisory Level

2.2.4 Aluminum

Aluminum was identified above the laboratory detection limit of 0.050 mg/L in sampling well MW-1 during the 2025 sampling event, compared to being below the detection limit in 2024. No other samples were observed above the laboratory detection limit, decreasing from two detections in 2024. The observed level of aluminum in well MW-1 fell within the Secondary MCL range of 0.05 to 2.0 mg/L, while being slightly over the Control Limit of 0.089 mg/L. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.5 Arsenic

Arsenic was not observed in any of the five of the wells during the 2025 sampling event above the laboratory detection limit of 0.0020 mg/L, a decrease from two detections in 2025. Overall trends continue to show minimal detections above the laboratory detection limits. Trends will continue to be monitored in 2026.

2.2.6 Barium

Barium was observed in all of the sampling wells during the 2025 sampling event. While the barium levels in sampling wells MW-1, MW-2, and MW-5S exceeded the current Control Limit of 0.0600 mg/L, the measured levels in all of the wells were less than the Primary MCL of 2 mg/L as well as the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources of 2 mg/L and 10 mg/L, respectively.

Barium has been observed in all of the wells at various times but always at levels that were less than the Primary MCL of 2 mg/L as well as the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources of 2 mg/L and 10 mg/L, respectively.

Since the measured levels of barium were one to two significant figures less than the MCL and Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources, the barium levels measured since the October 9, 2015, sampling event are not considered significant.

2.2.7 Beryllium

Beryllium was not identified above the laboratory detection limits in any of the sampling wells during the 2025 sampling event. The 2025 laboratory detection limits for beryllium did not exceed the Primary MCL of 0.004 mg/L or the Iowa Statewide Standards for Protected and Non-Protected Groundwater Source of 0.004 mg/L and 0.07 mg/L, respectively.

Since the measured levels of beryllium have been less than the Control Limit, MCL, and Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources, the beryllium levels measured since the October 9, 2015, sampling event are not considered significant.

2.2.8 Boron

Boron was observed at levels exceeding the Control Limit in four of the sampling wells during the 2025 sampling event. Sampling well MW-3S did not exceed the current Control Limit. The observed levels in MW-1, MW-2, MW-4S, and MW-5 did not exceed the Iowa Statewide Standards for Protected Groundwater Sources.

The 2025 results are express similar trends in sampling wells MW-2 and MW-3S, while MW-1 and MW-4S returned towards their previously consistent trends after elevated levels in 2024. MW-5S continues to express a slightly increasing trend dating back to the 2021 sampling event, though still well below the Iowa Statewide Standards for Protected Groundwater Sources

The results will continue to be evaluated over the next sampling events to determine if they are indicative of a trend in boron levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.9 Calcium

Calcium was observed in all of the sampling wells during the 2025 sampling event. One of the observed wells, MW-5S, exceeded the Control Limit of 125.6 mg/L. 2025 results represented a moderate decrease of calcium across sampling wells MW-1, MW-4S, and MW-5S, while a slight increase in MW-2 and MW-3S.

Because calcium is naturally occurring in native Iowa soils and groundwater, it is not clear where the calcium is coming from. It is possible that the calcium observed is coming from substrate soils. Calcium is a component of water hardness and does not have health-based standards or guidelines. Its presence at the levels observed at the site is not considered significant. Despite this, the results from the wells will continue to be evaluated during the future sampling events to determine if they are indicative of a trend of consistent exceedances or steady increases of calcium levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.10 Cobalt

Cobalt was identified above the laboratory detection limit of 0.00050 mg/L in three of the wells during the 2025 sampling event. The detected levels of cobalt exceeded the Control Limit of 0.000535 mg/L in wells MW-2 and MW-4, and MW-5S. None of the sampling wells exceeded the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources of 0.0028 mg/L and 0.014 mg/L, respectively.

Cobalt has historically been observed in all of the wells at various times depending on the laboratory reporting limit, but not at levels of significant concern, and always less than the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources.

Since the measured levels of cobalt were less than the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources, the cobalt levels measured since the October 9, 2015, sampling event are not considered significant at this time. If future sampling events demonstrate an upward trend, the effects will be evaluated at that time.

2.2.11 Copper

Copper was not identified above the laboratory detection limit in any of the five sampling wells during the 2025 sampling event. These results reflected a continuing trend in copper concentrations over past events. Past measured levels of copper did not exceed the Primary and Secondary MCLs of 1.3 mg/L and 1.0 mg/L or the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources of 1.3 mg/L and 6.6 mg/L, respectively.

Because there is not a history of copper exceedances at the site and the past measured levels were at least three significant figures less than the MCLs and Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources, the copper levels measured since October 9, 2015, sampling event are not considered significant.

2.2.12 Iron

Iron was observed in four of the sampling wells during the 2025 sampling event. The levels observed were greater than the Control Limit in wells MW-1 and MW-2, while MW-4S and MW-5S were below the Control Limit. Wells MW-1 and MW-2 also exceeded the Secondary MCL for the parameter. The statistical analysis indicated no trend at MW-2, MW-4S, and MW-5S. The iron concentration of 0.343 mg/L is an upper tail statistical outlier.

There is not a consistent trend of iron exceedances at the site, and iron is naturally occurring in native Iowa soils. It is possible that the iron observed is coming from substrate soils. These results are not considered a concern at this time. If future sampling events demonstrate an upward trend, the effects will be evaluated at that time.

2.2.13 Lead

Lead was observed above the laboratory detection limit in one of the sampling wells, MW-1, during the 2025 sampling event. The lead levels observed in MW-1 exceeded the Control Limit but were well below the Primary MCL of 0.015 mg/L, and Statewide Standards for Protected and Non-Protected Groundwater Source of 0.015 mg/L and 0.075 mg/L, respectively. The statistical analysis indicated no trend at MW-1, and MW-5S.

Because there is not a history of lead exceedances at the site and the measured levels were one to two significant figures less than the MCL and Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources, the lead levels measured since the October 9, 2015, sampling event are not considered significant.

2.2.14 Lithium

Lithium was observed in four of the sampling wells during the 2025 sampling event. Lithium exceeded the Control Limit in wells MW-1, MW-4S, and MW-5S. MW-2 was detected below the Control Limit. The observed levels in wells MW-1, MW-4S, and MW-5S were also greater than the Iowa Statewide Standard for Protected Groundwater Sources of 0.014 mg/L. The levels observed in well MW-1 also exceeded the Iowa Statewide Standard for Non-Protected Groundwater Sources of 0.07 mg/L.

These results are generally consistent with previous sampling events, with overall trends have shown a slow decline in sample concentrations across the sampling wells.

The control limit for lithium for this event was calculated without including the value measured in October 2015 for the up gradient well, MW-3, which was likely an outlier. That value will be excluded in future calculations.

Because of the exceedances of the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources since October 9, 2015, the results from the wells will continue to be evaluated over the next several sampling events to determine if they are indicative of a trend of consistent exceedances or steady increases of lithium levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.15 Magnesium

Magnesium was observed in all of the sampling wells during the 2025 sampling event. None of the observed levels from the wells exceeded the Control Limit of 31.1 mg/L.

Historically, magnesium has been observed in all of the wells during each sampling event.

Magnesium is naturally occurring in native Iowa soils. It is possible that the magnesium observed is coming from substrate soils. Magnesium is a naturally occurring substance in groundwater. It is a component of water hardness and does not have health-based standards or guidelines. Its presence at the levels observed at the site is not considered significant. Despite this, the results from the wells will continue to be evaluated during future sampling events to determine if they are indicative of a trend of consistent exceedances or steady increases of magnesium levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.16 Manganese

Manganese was observed in four of the sampling wells during the 2025 sampling event. Three of the wells, MW-2, MW-4S, and MW-5S, observed levels that exceeded the Control Limit and the Secondary MCL. These three wells also exceeded the Iowa Statewide Standards for Protected Groundwater Sources of 0.3 mg/L. None of the wells exceeded the Iowa Statewide Standards for Non-Protected Groundwater Sources.

Sample results from wells MW-1 and MW-3S are consistent with past observations, while wells MW-2, MW-4S, and MW-5S remained elevated when compared to previous sampling events.

Manganese can be found in Iowa soils. It is possible that the manganese is coming from substrate soils. As such, the results from the wells will continue to be evaluated over the future sampling events to determine if they are indicative of a trend of consistent exceedances or steady increases of manganese levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.17 Molybdenum

Molybdenum was observed in four of the sampling wells during the 2025 sampling event, with each of the wells exceeding the Control Limit of 0.00198 mg/L. Sampling wells, MW-1, MW-2, MW-4S, and MW-5S also exceeded the Iowa Statewide Standards for Protected Groundwater Sources of 0.04 mg/L. None of the wells exceeded the Iowa Statewide Standards for Non-Protected Groundwater Sources of 0.2 mg/L. These results are consistent with past observations, with results at MW-3S returning to the consistent trend observed prior to 2024.

Because of the exceedances of the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources since October 9, 2015, the results from the wells will continue to be evaluated during future

sampling events to determine if they are indicative of a trend of consistent exceedances or steady increases of molybdenum levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.18 Selenium

Selenium was not observed in any of the sampling wells, above the laboratory detection limit during the 2025 sampling event. These results are consistent with past observations predominantly expressing concentrations below laboratory detection limits.

Because there is not a history of selenium exceedances at the site and the measured levels were one to two significant figures less than the MCL and Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources, the selenium levels measured since the October 9, 2015, are not considered significant.

2.2.19 Sodium

Sodium was observed in all five of the sampling wells during the 2025 sampling event. None of the sampling wells exceeded the 2025 Control Limit of 48.197 mg/L.

Sodium does not have a Primary or Secondary MCL. However, USEPA has established a Health Advisory Level for sodium in drinking water of 20 mg/L. The values for wells MW-1 and MW-4S exceeded the Health Advisory Level.

Accordingly, the results from the wells will continue to be evaluated over future sampling events to determine if they are indicative of a trend of consistent exceedances or steady increases of sodium levels at the site. If future sampling events demonstrate a trend, the effects will be evaluated at that time.

2.2.20 Zinc

Zinc was not identified above the laboratory detection limit of 0.0100 mg/L in any of the sampling wells during the 2025 sampling event. These results are consistent with past observations predominantly expressing concentrations below laboratory detection limits.

All of the zinc measurements since the October 9, 2015, sampling event have been below the Secondary MCL of 5 mg/L as well as the Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources of 2 mg/L and 10 mg/L, respectively. Since the measured levels of zinc were two to three significant figures less than the MCL and Statewide Standards, the zinc levels measured since the October 9, 2015, sampling event are not considered significant.

2.2.21 ProUCL Trends

Trends were determined using the Mann-Kendall test in ProUCL. The Mann-Kendall test has three potential trends: 1) an increasing trend that signifies that the concentrations are increasing at a significance level was above 95%, 2) a decreasing trend that signifies that the concentrations are decreasing at a significance level of 95% and, 3) no trend if the Mann-Kendall statistic is 0 or the confidence level is below 95%. Similar to the outlier analysis, statistical analysis was not performed for well-constituent pairs that

had at least 50% non-detects in the data set. Table 2-1 summarizes the 2025 trends for applicable well-constituent pairs with an additional discussion for each parameter that trend analysis could be completed for.

Table 2-11: Summary of Cedar Falls Utilities Leversee Road Ash Disposal Site 2015 through 2025 Groundwater Trends

Chemical Constituent	Upgradient	Downgradient and Crossgradient			
	MW-3	MW-1	MW-2	MW-4	MW-5
Aluminum	NA	NT	NA	NA	NA
Arsenic	NT	NT	NA	NA	NA
Barium	↑	NT	NT	NT	NT
Beryllium	NA	NA	NA	NA	NA
Boron	NT	↓	NT	↑	NT
Calcium	NT	NT	NT	NT	NT
Chloride	↑	↑	↑	NT	↑
Cobalt	NT	NT	NT	NT	NT
Copper	NA	NA	NA	NA	NA
Iron	NA	NA	NT	NT	NT
Lead	NA	NT	NA	NA	NT
Lithium	NA	NT	NT	↓	NT
Magnesium	NT	NT	NT	↑	↑
Manganese	NT	NT	NT	NT	NT
Molybdenum	NA	↓	NT	↑	↓
Selenium	NA	NA	NA	NA	NA
Sodium	↑	NT	↑	NT	NT
Sulfate	NT	NT	NT	NT	NT
Zinc	NA	NA	NA	NA	NA

Notes:
NA – Not analyzed due to at least 50% non-detects in the data set from 2015-2025
NT – No trend from 2015-2025
↑ – An increasing trend at the 95% confidence interval from 2015-2025
↓ – A decreasing trend at the 95% confidence interval from 2015-2025

2.3 Monitoring Well Maintenance and Performance Evaluation

Based on observations of water levels at the site as summarized in Table 2-1 of this report, the current well locations and screened intervals are appropriate to adequately monitor the site. The up-gradient monitoring point, MW-3, is functioning as a valid background and up gradient sampling point.

A comparison of the 2025 water levels and flow paths with past years indicates that waste disposal activities and/or well operations have not resulted in changes in the hydrologic setting and resultant flow paths at the site.

Wells MW-1, MW-2, MW-3, MW-4 and MW-5 at the site appear to be functioning as required and are appropriately placed both horizontally and vertically to effectively and reliably monitor the site. MW-2 was damaged during the closure construction in 2017 but was repaired and is able to produce water. MW-5 was damaged during the closure construction in 2017. A new MW-5 was constructed and has been sampled annually since the 2018 event. MW-5 sampling during 2025 was recorded to a depth of 20.10 feet. In 2024 the well depth was 27.60 feet. Terracon and Stanley Consultants field staff tried two different measuring probes to see if a false bottom had been created. CFU had been informed of the nearly seven and a half feet difference. CFU will need to televise this well and determine if it had filled with sediment or collapsed.

Prior to sampling on October 15, 2025 Terracon cleaned MW-2 and MW-4S using a stiff-bristled brush attached to a 1-inch polyvinyl chloride (PVC) casing. During the 2010 sampling event, the wells were cleaned before taking any samples. During the 2012 sampling event, root hair masses were noted at a depth of 23 feet for Well MW-3 and 21 feet from Well MW-5. Due to the low water table and the root hair mass, no samples were collected for Well MW-5 in 2012. During the summer of 2013, cleaning was conducted on Wells MW-3 and MW-5 before the sampling event. Root hairs were encountered in Well MW-2 during the 2013 sampling event. Well depth measurements for Wells MW-1, MW-2, MW-3, and MW-4 show no indication of significant sediment accumulation in these wells, however cleaning to remove accumulated biomass has been recommended in the past. Based on this, in August 2014, CFU had the wells cleaned. After cleaning, the wells were pumped or baled until the removed water was clear and devoid of root debris. Root hairs were encountered in Well MW-2. No root hairs were observed in Wells MW-1 and MW-4. Light amounts of root hairs were encountered in Wells MW-3 and MW-5. In 2015 the wells were cleaned as needed before the sampling event.

Three leachate piezometers were removed from the site during 1999. Prior to their removal these were monitored for evidence of groundwater presence in the waste. No evidence of groundwater mounding was observed at the site. The nature of the waste materials and disposal methods are such that the potential for groundwater mounding is considered very low.

All of the wells are water table wells. Accordingly, some portion of the screened interval in each is exposed to the atmosphere by design. This generally does not adversely affect the performance or utility of the wells, although it may contribute to the observed root growth.

All of the casing elevations were surveyed previously. The current elevations are shown in Table 2-1 and Appendix A.

3.0 Summary

The results of the sampling for 2025 of the designated monitoring wells as detailed in this report indicate the site is having a minor effect on the groundwater quality surrounding the site. There were no exceedances of Primary MCLs. Sample wells MW-1 and MW-2 exceeded the Secondary MCL for iron. Wells MS-2, MW-4S, and MW-5S exceeded the Secondary MCL for manganese. The HAL for sodium was exceeded in Wells MW-1 and MW-4S.

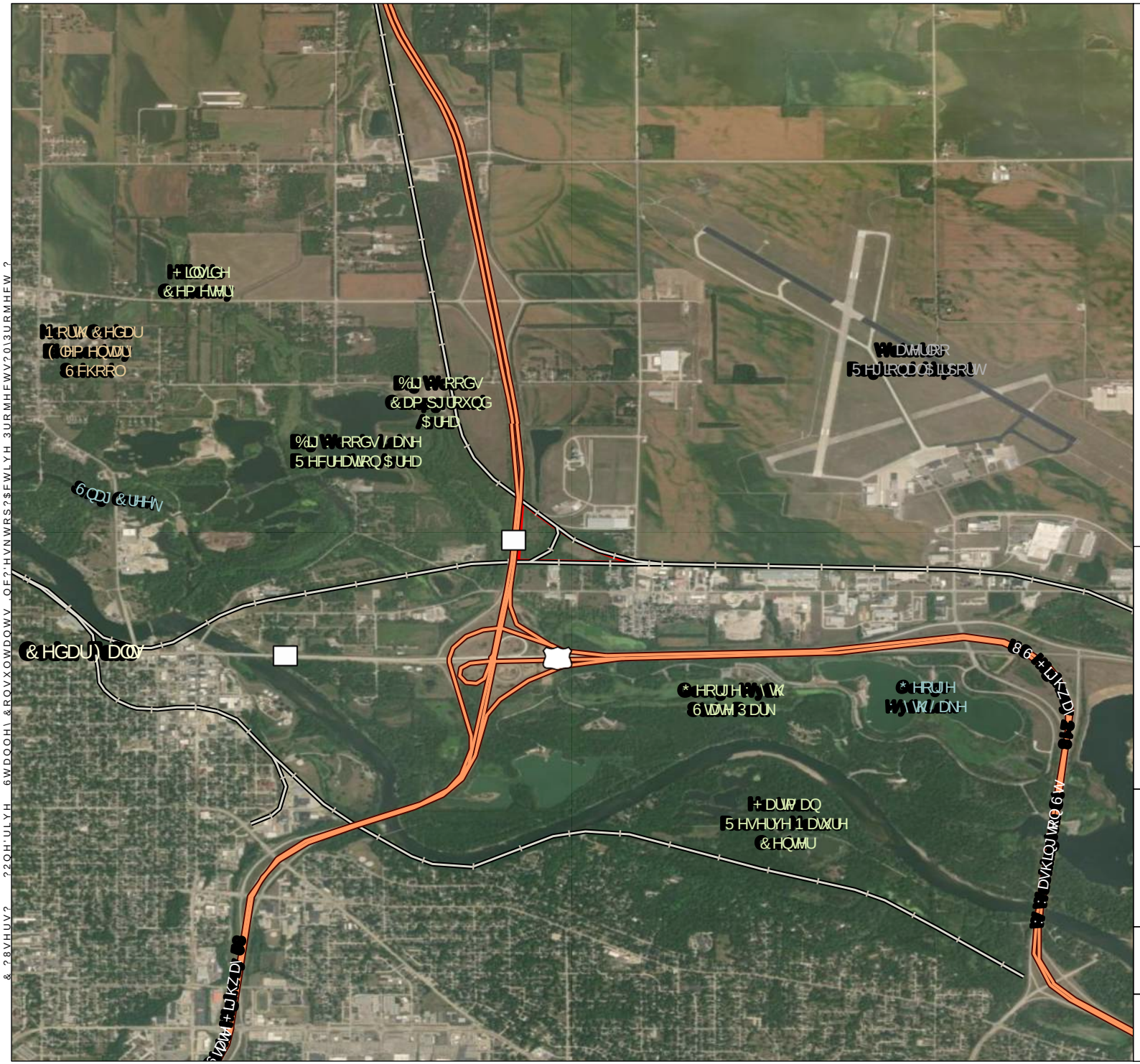
In comparison to the Iowa Statewide Standards for Protected Groundwater Sources, there were three exceedances (MW-1, MW-4S, MW-5S) for lithium, three exceedances (MW-2, MW-4S, MW-5S) for manganese, and four exceedances (MW-1, MW-2, MW-4S, MW-5S) for molybdenum. There were three exceedances (MW-1, MW-4S, MW-5S) for lithium of the Iowa Statewide Standards for Non-Protected Groundwater Sources. Other constituent levels observed in the monitoring wells were below their respective health-based standards and guidelines.

The number of control limit exceedances for the 2025 sampling event is generally consistent with past events, and expressing a noticeable decrease in exceedances compared to the 2024 event. This return to trend is observable across all five sampling wells. If future sampling events demonstrate an increasing trend in exceedances , the effects will be evaluated at that time.

Surface runoff is adequately controlled at the site and the closure cover has been constructed over the fill materials. As such, the site is not having an adverse effect on surface water quality.

Well MW-5 was replaced during 2018 and was included in that years and all subsequent sampling activities. No changes in the monitoring program or onsite management practices are recommended at this time. Continued cleaning and purging of the wells to remove accumulated root growth prior to or concurrent with each sampling event is recommended as needed. Well MW-5 will need to be televised and or scoped to determine the difference in well depth. Since MW-5 location is still functioning and within the groundwater zone, Stanley Consultants at this time does not recommend a replacement well for this location.

Appendix A Figures



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Stanley Consultants

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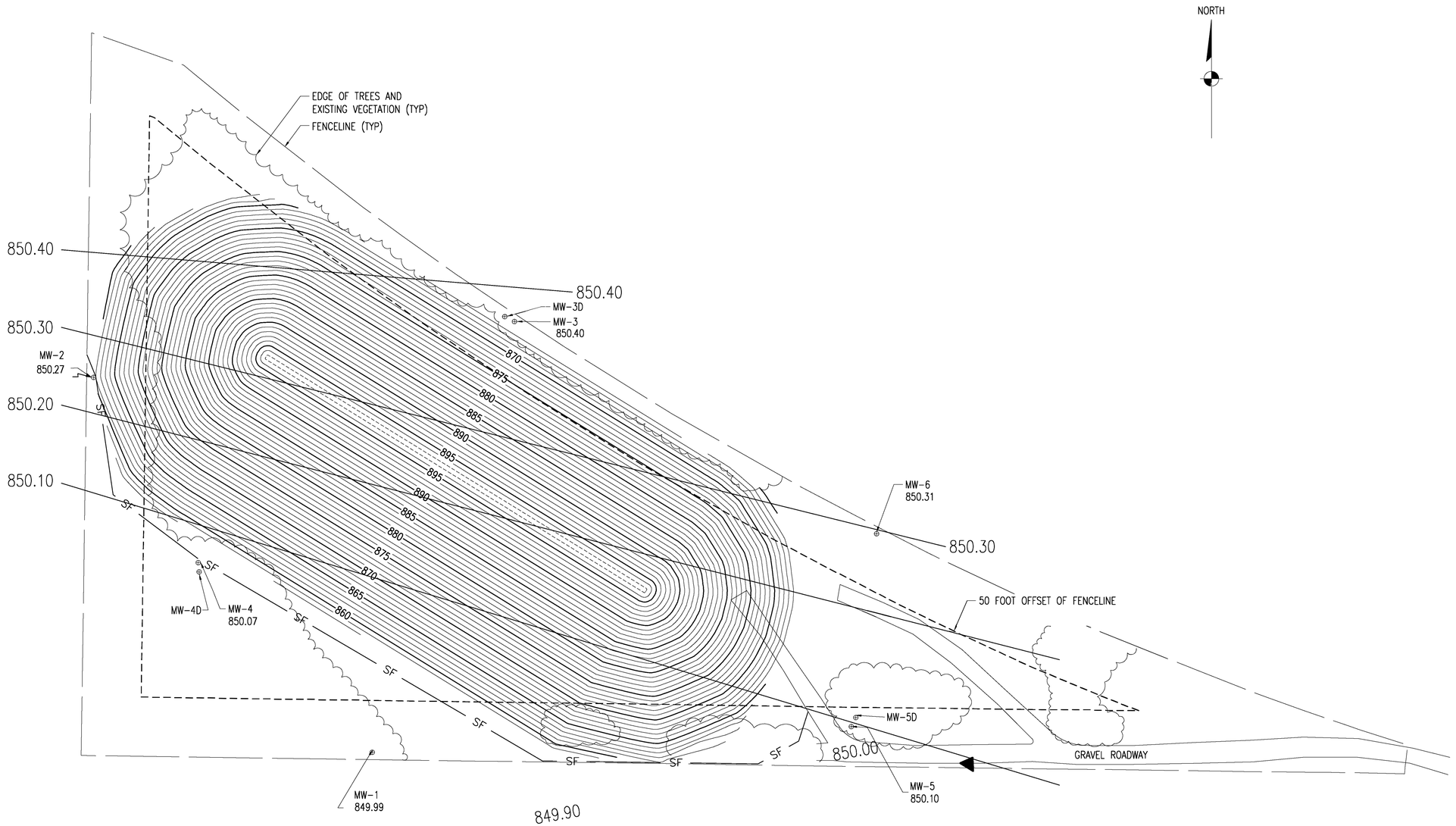

SYMBOL LEGEND:

- 1081 — MINOR EXISTING GRADE CONTOUR
- 1080 — MAJOR EXISTING GRADE CONTOUR
- 1081 — MINOR GROUNDWATER CONTOUR
- 1080 — MAJOR GROUNDWATER CONTOUR
- 50 FOOT OFFSET OF FENCELINE
- EDGE OF TREE AND VEGETATION
- EXISTING FEATURE
- FENCELINE
- ROADWAY
- WELLS

NOTES:

1. THE CONTOURS SHOWN ARE FORM A TOPOGRAPHIC SURVEY DRAWING CREATED BY CLAPSADDLE-GARBER ASSOCIATES, INC. PERFORMED AND DATED 16 AUGUST 2017.
2. GROUNDWATER ELEVATIONS SHOWN WERE TAKEN BY TERRACON CONSULTANTS, INC., ON OCTOBER 13, 2022.
3. GROUNDWATER ELEVATIONS SHOWN WERE TAKEN BY TERRACON CONSULTANTS, INC., ON OCTOBER 31, 2023.

GROUNDWATER LEVELS 2025

WELL NUMBER	GRADIENT FUNCTION	TOP OF CASING ELEVATION	WELL DEPTH	WATER LEVEL	GROUNDWATER ELEVATION
		FEET	FEET	FEET	FEET
MW-1	DOWN	858.41	20.45	8.42	849.99
MW-2	CROSS	861.12	23.45	10.85	850.27
MW-3	UP	868.55	32.28	18.15	850.40
MW-4	DOWN	858.98	20.11	8.91	850.07
MW-5	CROSS	868.10	20.10	18.00	850.10

AT FULL SIZE

0 1 2 3 IN

0 1 2 3 4 5 6 7 8 cm

NO.	REVISIONS	DWN	APVD	APVD	DATE
7	ISSUED WITH REPORT	TSH	HSB	HSB	DEC 2025
6	ISSUED WITH REPORT	TSH	HSB	HSB	DEC 2024
5	ISSUED WITH REPORT	TSH	HSB	HSB	DEC 2023
4	ISSUED WITH REPORT	TSH	HSB	HSB	DEC 2022
3	ISSUED WITH REPORT	TLO	HSB	HSB	NOV 2021
2	ISSUED WITH REPORT	TLO	HSB	HSB	NOV 2020
1	ISSUED WITH REPORT	HSB	HSB	TJM	NOV 2018

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CEDAR FALLS UTILITIES (CFU)
ANNUAL WATER QUALITY REPORT (AQWR)
CEDAR FALLS, IA

2025 AWQR
LEVERSEE ROAD AS DISPOSAL SITE
GROUNDWATER SURFACE MAP

DESIGNED HSB
DRAWN TS Humphrey
CHECKED T Schley
APPROVED HSB
APPROVED
DATE NOVEMBER 19, 2025

SCALE 1" = 50':

NO. FIGURE 2

REV. 6

CADD D3-R3

Appendix B Historical Sampling Results, 1995 – 2014

Refer to previous submissions for this information.

Appendix C Historical Calculations and Graphs, 1995 – 2014

Refer to previous submissions for this information.

Appendix D 2015 – 2024 Sample Data Graphs

The following section includes graphical representations of the analytical results for the five wells in the current monitoring network for the sampling events since October 2015. These graphs show the samples recorded below the laboratory detection limit as half the detection limit with a range to indicate the minimum and maximum values (zero and the detection limit).

Parameters with levels testing below the laboratory detection/reporting limits for since 2015 are not included in the graphs attached. Parameters not graphed include:

- Beryllium

Chloride

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	9.58	9.92	9.43	5.39	14.1	33.30	31.9	24.4	30.8	25	34.5	27	29.4
MW-2	5.65	2.7	3.72	5.77	5.84	25.9	12.6	10.8	8.76	7.84	11.1	17.3	10.4
MW-3S	6.22	4.83	6.23	4.95	5.34	21.7	45.5	88.4	31.9	9.44	12	34.5	44
MW-4S	9.2		11.5	6.29	6.81	9.38	18.3	17.5	9.72	9.63	12.2	17.6	15.4
MW-5S	4.12	4.07	5.61	3.31	7.34	4.34	19.3	12.5	15.5	8.82	16.8	26.7	28
Control Limit	6.895	6.895	6.895	6.895	6.72307237	20.3	41.9	79.09	77.18	73.7	70.77	74.243	74.963
Secondary MCL	250	250	250	250	250	250	250	250	250	250	250	250	250

FIELD pH

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1		7.02	7.43		6.23	6.64	7.06	7.21	7.23	7.31	7.1	7.02	7.25
MW-2		7.24	7.49	6.92	6.17	6.82	6.98	7.18	7.48	7.43	7.27	7.3	7.24
MW-3S		7.43	7.53	7.12	6.47	6.90	7.29	7.28	7.37	7.37	7.42	7.41	7.35
MW-4S		7.12	7.41		6.68	6.92	7.13	7.10	7.16	7.06	7.08	6.93	7.09
MW-5S		6.90	7.02	6.99		6.74	7.13	6.96	6.88	7.07	7.12	7.08	7.02
Min. Control Limit		6.31	6.31	6.31	6.31	6.33	6.41	6.48	6.53	6.60	6.62	6.65	6.68
Max. Control Limit		7.97	7.97	7.97	7.97	7.86	7.83	7.82	7.82	7.80	7.82	7.82	7.81

LABORATORY pH

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	7.14	6.96	7.33	7.20	7.60	6.80	7.20	7.20	7.30	7.00	7.3	7.1	7.5
MW-2	7.43	7.45	7.51	7.20	7.30	7.20	7.10	7.30	7.50	7.40	7.6	7.1	7.40
MW-3S	7.55	7.68	7.60	7.50	7.60	7.20	7.40	7.40	7.50	7.50	7.6	7.3	7.5
MW-4S	6.96	7.04	7.11	7.10	7.50	7.10	7.30	7.20	7.20	7.20	7.3	7	7.3
MW-5S	7.18	7.38	7.12	7.00	7.1	7.30	7.30	7.10	7.30	7.30	7.3	7.2	7.3
Min. Control Limit	7.45	7.45	7.45	7.45	7.47	7.21	7.21	7.20	7.22	7.20	7.25	7.22	7.23
Max. Control Limit	7.72	7.72	7.72	7.72	7.71	7.86	7.80	7.78	7.76	7.70	7.75	7.75	7.74

Sulfate

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	247	416	184	7.19	234	387	165	63.5	92.3	220	139	199	85.4
MW-2	32.1	61.9	89.9	13.1	99.9	104	145	37.7	11.8	27.6	26.1	205	29.00
MW-3S	16.3	16.1	19.7	16.9	17.2	26.4	19.3	20.3	13.5	10.4	21.2	139	13.9
MW-4S	191	428	322	38.8	92	242	86	209	84.4	70.9	81.7	185	106
MW-5S	32	32.7	154	149	53	57.4	71.9	205	14.3	39.7	80.6	230	105
Control Limit	20.140	20.140	20.140	20.140	19.8248791	26.000	25.500	25.400	25.300	25.700	26	27.598	27.24
Secondary MCL	250	250	250	250	250	250	250	250	250	250	250	250	250

Barium

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.0822	0.0875	0.05	0.0444	0.0673	0.227	0.0902	0.0802	0.0958	0.138	0.0902	0.0939	0.0714
MW-2	0.0561	0.0697	0.0584	0.0628	0.0887	0.0919	0.118	0.058	0.0399	0.0703	0.0497	0.0801	0.06
MW-3S	0.0344	0.0319	0.0311	0.0384	0.0491	0.0487	0.0526	0.056	0.0495	0.043	0.0424	0.0902	0.0505
MW-4S	0.0923	0.119	0.0773	0.0364	0.0362	0.101	0.0594	0.0781	0.0696	0.0579	0.0493	0.0996	0.0548
MW-5S	0.0705	0.0573	0.0898	0.0803	0.108	0.11	0.0847	0.0922	0.07	0.0794	0.0722	0.108	0.0869
Control Limit	0.03964	0.03964	0.03964	0.03964	0.05012376	0.0538	0.0576	0.0614	0.0615	0.0606	0.0597	0.05969	0.0600
Primary MCL	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2	2

Boron

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	6.82	9.85	8.69	0.416	8.18	12.4	6.14	2.33	3.31	5.66	5.66	4.14	2.41
MW-2	0.472	0.996	1.24	1.41	1.8	1.31	3.13	1.11	0.0823	0.417	0.151	<0.100	0.30
MW-3S	0.0677	0.0497	0.0454	0.0519	0.1	0.13	0.119	0.04	0.029	0.029	0.0824	5.66	0.106
MW-4S	5.98	10.6	14.2	3.62	3.95	10.8	2.3	13.3	2.13	2.15	1.9	6.01	2.78
MW-5S	2.66	0.933	3.68	3.47	7.1	2.42	4.37	22.3	0.14	0.329	1.04	1.77	2.76
Control Limit	0.0705	0.0705	0.0705	0.0705	0.10294932	0.136	0.146	0.142	0.14	0.137	0.135	0.13173	0.136
Statewide Standard Protected GW	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6	6	6
Statewide Standard Non-Protected GW	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30	30	30

Calcium

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	134	166	99.6	51.9	115	205	125	116	109	177	97.5	128	101
MW-2	78.4	96.2	94.6	90.2	129	121	167	99.1	68.5	96.7	78.2	93.4	105.00
MW-3S	70.8	76.8	69.2	90	110	104	117	111	77.7	63	60.4	97.5	103
MW-4S	162	187	120	93	88.2	139	115	148	115	107	103	148	123.00
MW-5S	91.5	93.5	132	176	120	108	150	195	122	119	118	175	138.00
Control Limit	93.1	93.1	93.1	93.1	113.758316	118.5	127.3	129.9	127.5	127	126.1	124.776	125.561

Cobalt

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.000167	0.000603	0.000405	0.000578	0.00025	0.000428	0.000139	0.000535	0.000298	0.00047	0.000214	<0.000500	<0.000500
MW-2	0.00036	0.000706	0.000465	0.000533	0.00025	0.000173	0.000124	0.0000455	0.000095	0.000095	0.000085	0.00223	0.000556
MW-3S	0.000443	0.000079	0.000516	0.00023	0.00025	0.000088	0.0000455	0.0000455	0.0000455	0.000232	0.000331	0.000214	<0.000500
MW-4S	0.000409	0.000949	0.000595	0.000371	0.00025	0.000135	0.000099	0.000175	0.000401	0.000318	0.000085	0.00222	0.000885
MW-5S	0.000388	0.000164	0.000609	0.000996	0.00101	0.000324	0.000308	0.000153	0.000471	0.000359	0.000181	0.000624	0.001010
Control Limit	0.000663	0.000663	0.000663	0.000663	0.00061765	0.0006	0.000578	0.000556	0.000578	0.00056	0.000559	0.0005462	0.000535
Statewide Standard Protected GW	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.00280
Statewide Standard Non-Protected GW	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014

Magnesium

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	31.2	24.9	22.8	5.91	21.6	41	31.2	27.8	24.6	33.5	20.8	24.8	20.60
MW-2	17.4	17.7	24	13.2	25.1	19.8	32.8	19.8	12.8	18.7	18.2	18.4	20.50
MW-3S	20.4	18.5	20.8	21.6	27.2	26.8	29.5	27	18.9	14.7	15.6	20.8	25.2
MW-4S	21.7	27.1	22.7	10.8	17.6	27.9	24.1	30.8	28.1	24.3	27.2	32	27.70
MW-5S	15.4	15.3	26.5	27.3	17.7	15.7	28.7	34.5	24.7	23.2	27.8	38	28.70
Control Limit	22.603	22.603	22.603	22.603	27.5651513	29.1	31.3	31.6	31.3	31.7	31.5	30.985	31.07

Manganese

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.0111	0.039	0.0156	0.0799	0.0103	0.35	0.00833	0.0326	0.0175	0.0446	0.0141	0.0347	0.0347

MW-2	0.0471	0.0948	0.0411	0.248	0.0143	0.0921	0.136	0.0889	0.0411	0.0932	0.0402	1.29	0.3130
MW-3S	0.0456	0.0055	0.0401	0.0217	0.0126	0.00651	0.00407	0.002	0.0113	0.0234	0.0338	0.0141	<0.0100
MW-4S	0.651	0.145	0.122	0.111	0.0369	0.0403	0.0219	0.0298	0.02	0.0925	0.0196	1.32	0.4850
MW-5S	0.227	0.109	0.0714	0.24	0.0801	0.0324	0.0222	0.013	0.0228	0.0325	0.017	0.343	0.3650
Secondary MCL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.0500
Control Limit	0.05988	0.05988	0.05988	0.05988	0.05604796	0.0535	0.0512	0.0491	0.0468	0.0463	0.048	0.05268	0.0514
Statewide Standard Protected GW	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Sodium

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	35.4	43.5	40.7	3.84	50.9	65	59.3	8.38	27.8	59.2	83.2	65.9	45.6
MW-2	2.44	2.86	2.41	4.74	4.36	27	11.3	9.38	7.5	9.23	9.35	11	9.71
MW-3S	2.08	2.24	2.54	2.42	2.69	4.52	4.68	19.2	43.9	43.9	39.1	83.2	14.9
MW-4S	32.4	43.5	105	11.5	36.2	57.5	20.1	73.5	15.8	13.6	10.7	55	28.8
MW-5S	7.73	6.54	5.76	10.5	5.52	3.62	4.82	7.02	5.01	4.91	5.72	10.8	17.0
Control Limit	2.67	2.67	2.67	2.67	2.8247389	4.38	5.05	15.91	35.85	45.38	49.7	49.596	48.197

Aluminum

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.0395	0.1300	0.1390	0.0395	0.0250	0.0135	0.0135	0.0308	0.0567	0.0398	0.0666	<0.0500	0.0892
MW-2	0.0467	0.0572	0.0907	0.0369	0.0250	0.0135	0.0135	0.0060	0.0850	0.0173	0.0085	0.0995	<0.0500
MW-3S	0.0408	0.0104	0.0766	0.0884	0.0250	0.0135	0.0135	0.0060	0.0850	0.0330	0.0771	0.0666	<0.0500
MW-4S	0.00423	0.04040	0.02485	0.02080	0.0250	0.0675	0.0135	0.0060	0.0850	0.0231	0.0085	<0.0500	<0.0500
MW-5S	0.00423	0.01040	0.02485	0.0704	0.1150	0.0564	0.0393	0.0060	0.0235	0.0419	0.0085	<0.0500	<0.0500
Control Limit	0.11544	0.11544	0.11544	0.11544	0.1078684	0.1079	0.0980	0.0940	0.0900	0.0870	0.095	0.09158	0.0888

Arsenic

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.00123	0.000952	0.00111	0.00139	0.001	0.00128	0.00114	0.00044	0.00103	0.000918	0.00117	<0.00200	<0.00200
MW-2	0.0004725	0.000871	0.000839	0.00118	0.001	0.00029	0.000375	0.00044	0.000375	0.000375	0.000675	0.00241	<0.00200
MW-3S	0.00103	0.00068	0.00107	0.000884	0.001	0.00029	0.000866	0.00044	0.000984	0.000836	0.00117	0.00117	<0.00200
MW-4S	0.0004725	0.000336	0.000506	0.000678	0.001	0.00029	0.000795	0.00044	0.000375	0.000375	0.000712	<0.00200	<0.00200
MW-5S	0.00101	0.00034	0.000581	0.000442	0.00138	0.00029	0.00085	0.00044	0.000375	0.000375	0.000653	<0.00200	<0.00200
Control Limit	0.0012217	0.0012217	0.0012217	0.0012217	0.00121433	0.00137	0.00134	0.00132	0.00133	0.00131	0.00136	0.0013583	0.0014
Primary MCL													0.010

Copper

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.0002425	0.00181	0.00118	0.00140	0.0025	0.0008	0.001	0.00075	0.0007	0.0009	0.0009	<0.00500	<0.00500
MW-2	0.0002425	0.00146	0.001	0.00061	0.0025	0.0008	0.001	0.00075	0.0007	0.0009	0.0009	<0.00500	<0.00500
MW-3S	0.0002425	0.00061	0.00105	0.0007	0.0025	0.0008	0.001	0.00075	0.0007	0.0009	0.00226	<0.00180	<0.00500
MW-4S	0.0002425	0.00061	0.00101	0.00061	0.0025	0.0008	0.001	0.00075	0.0007	0.0009	0.0009	<0.00500	<0.00500
MW-5S	0.0002425	0.00061	0.000691	0.00061	0.0011	0.0008	0.001	0.00075	0.00142	0.0009	0.0009	<0.00500	<0.00500
Control Limit	0.001248	0.001248	0.001248	0.001248	0.00263685	0.00247	0.00237	0.00226	0.00217	0.00211	0.00242	0.002721	0.00293

Iron

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.0885	0.167	0.224	0.0428	0.05	0.033	0.033	0.0654	0.0778	0.107	0.008	0.162	0.343
MW-2	0.175	0.504	0.264	0.247	0.108	0.136	0.127	0.025	0.018	0.0378	0.138	2.12	0.521
MW-3S	0.18	0.0835	0.195	0.0781	0.05	0.033	0.033	0.025	0.018	0.0735	0.143	0.118	0.343
MW-4S	0.0875	0.252	0.176	0.0746	0.05	0.033	0.033	0.025	0.018	0.0622	0.0218	0.886	0.124
MW-5S	0.875	0.04175	0.0762	0.03905	0.375	0.253	0.117	0.0564	0.112	0.24	0.0786	0.228	0.135
Control Limit	0.2632	0.2632	0.2632	0.2632	0.24526887	0.232	0.219	0.209	0.2	0.194	0.202	0.20178	0.19579

Lead

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.000434	0.00106	0.000613	0.0001055	0.00128	0.00013	0.000135	0.000168	0.00109	0.00012	0.00012	<0.000500	0.000653
MW-2	0.000494	0.000799	0.000571	0.0001055	0.00025	0.00013	0.000135	0.000055	0.000929	0.00012	0.00012	0.00172	<0.000500
MW-3S	0.000296	0.0001055	0.000502	0.0001055	0.00025	0.00013	0.000135	0.000055	0.000356	0.00012	0.000317	<0.000240	<0.000500
MW-4S	0.00004835	0.000439	0.000411	0.0001055	0.00025	0.00013	0.000135	0.000055	0.00038	0.00012	0.00012	<0.000500	<0.000500
MW-5S	0.00004835	0.0001055	0.000356	0.0001055	0.000826	0.000665	0.000347	0.00021	0.000946	0.000719	0.000253	<0.000500	<0.000500
Control Limit	0.00058	0.00058	0.00058	0.00058	0.00054487	0.00051	0.000488	0.000472	0.000493	0.000475	0.00048	0.0004728	0.000466

Lithium

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.0175	0.227	0.202	0.0317	0.231	0.282	0.191	0.0517	0.0605	0.153	0.137	0.161	0.0875
MW-2	0.004405	0.0254	0.0136	0.0207	0.025	0.0191	0.0197	0.0131	0.00779	0.0127	0.0111	0.0132	0.0117
MW-3S	0.166	0.003275	0.003275	0.003275	0.025	0.0014	0.00135	0.00125	0.00125	0.00271	0.00125	0.137	<0.0100
MW-4S	0.093	0.183	0.283	0.0575	0.128	0.286	0.0715	0.203	0.0585	0.0427	0.0259	0.0808	0.0330
MW-5S	0.0933	0.0589	0.0469	0.0309	0.138	0.0591	0.0176	0.198	0.0277	0.0255	0.0496	0.0234	0.0561
Control Limit	0.18488	0.18488	0.18488	0.18488	0.16712024	0.153	0.142	0.022	0.02	0.019	0.0188	0.0188804	0.0189

Molybdenum

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/22/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.248	0.196	0.207	0.254	0.373	0.35	0.412	0.187	0.192	0.176	0.163	0.243	0.14800
MW-2	0.0702	0.1	0.0429	0.154	0.047	0.108	0.0503	0.0867	0.0755	0.0495	0.0563	0.0539	0.05420
MW-3S	0.000106	0.000107	0.002635	0.0000525	0.001	0.00034	0.00055	0.00055	0.0005	0.0006	0.000455	0.163	<0.00200
MW-4S	0.0213	0.00705	0.0237	0.0281	0.0264	0.0397	0.0228	0.0268	0.0525	0.0461	0.054	0.0431	0.05270
MW-5S	0.154	0.139	0.105	0.0488	0.426	0.264	0.0806	0.182	0.0778	0.0938	0.0621	0.0327	0.08370
Control Limit	0.002931	0.002931	0.002931	0.002931	0.00276522	0.00255	0.00239	0.00227	0.00217	0.0209	0.00201	0.0019977	0.00198

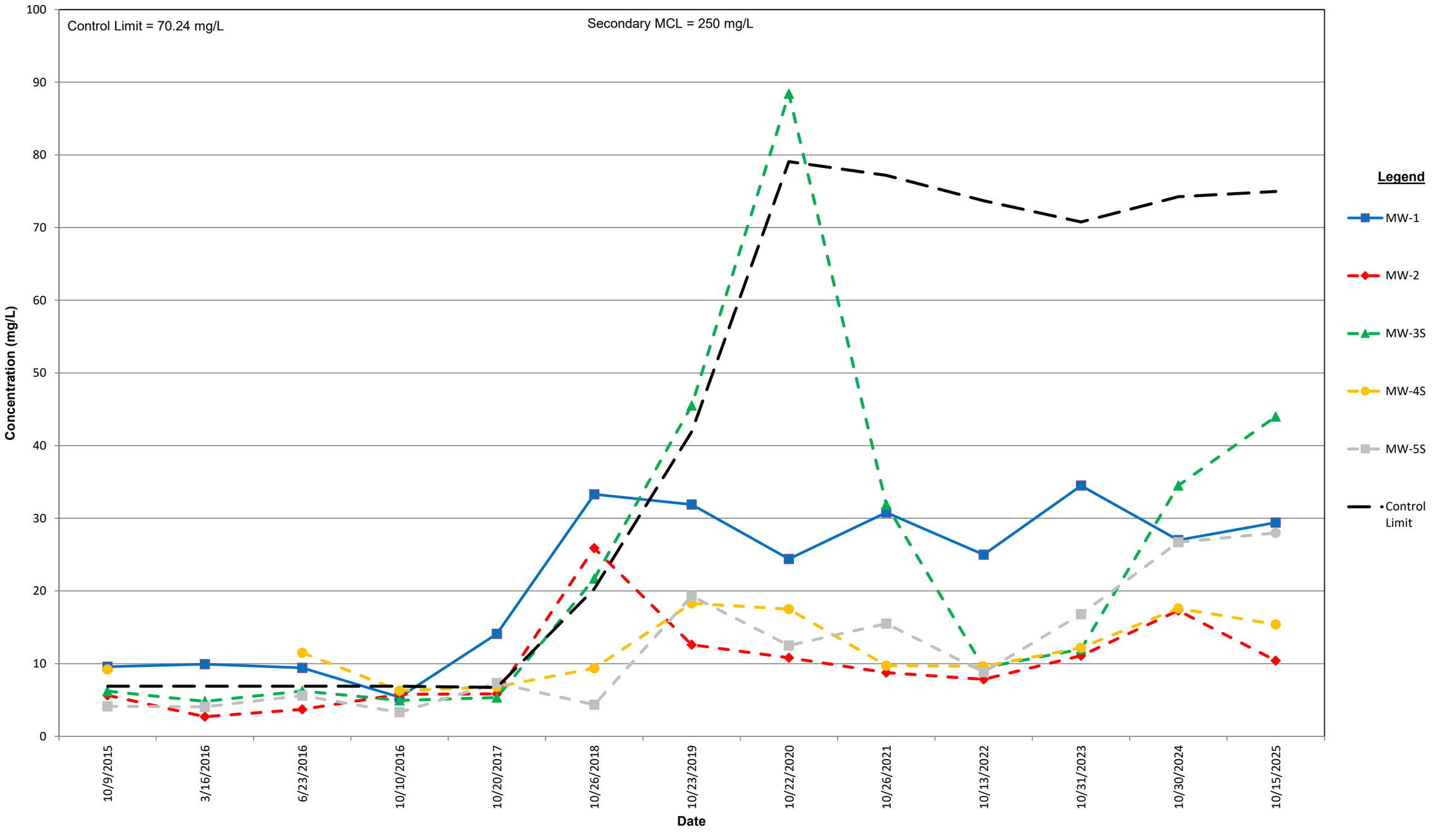
Selenium

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	0.00167	0.00505	0.00126	0.000315	0.0025	0.00378	0.0005	0.0005	0.00048	0.0335	0.00276	<0.00500	<0.00500
MW-2	0.00167	0.0012	0.00119	0.000315	0.0025	0.00045	0.0005	0.0005	0.00048	0.00784	0.00147	<0.00500	<0.00500
MW-3S	0.00167	0.00113	0.000428	0.000895	0.0025	0.00045	0.0005	0.0005	0.00048	0.00048	0.0007	0.00276	<0.00500
MW-4S	0.00167	0.00775	0.00265	0.00113	0.0025	0.00045	0.0005	0.0005	0.00048	0.00048	0.0007	<0.00500	<0.00500
MW-5S	0.00167	0.00111	0.000428	0.00127	0.00148	0.00045	0.00183	0.0018	0.00048	0.0013	0.0007	<0.00500	<0.00500
Control Limit	0.001853	0.001853	0.001853	0.001853	0.00276143	0.00255	0.00247	0.00235	0.00225	0.00216	0.00209	0.002489	0.00276

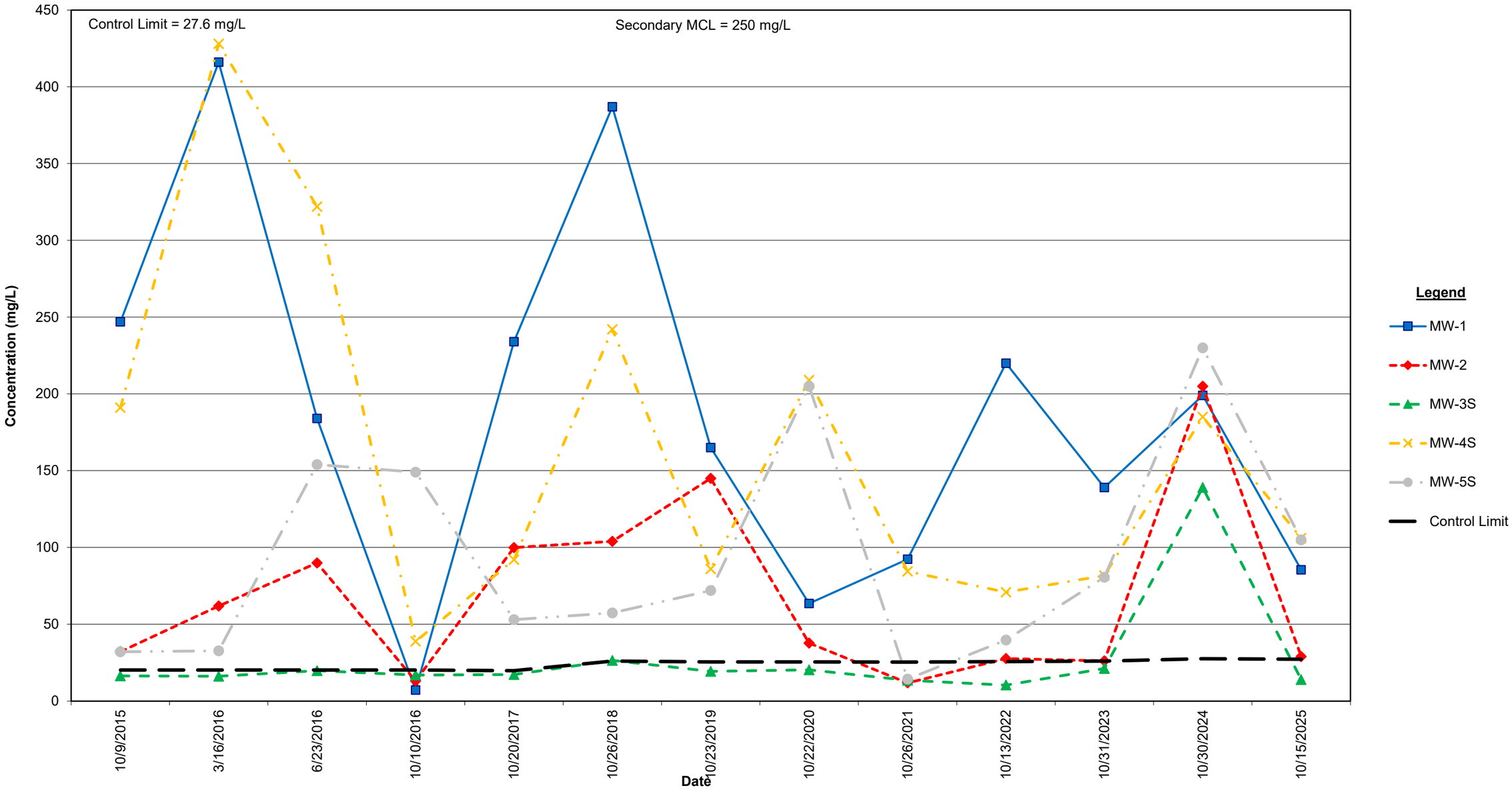
Zinc

	10/9/2015	3/16/2016	6/23/2016	10/10/2016	10/20/2017	10/26/2018	10/23/2019	10/22/2020	10/26/2021	10/13/2022	10/31/2023	10/30/2024	10/15/2025
MW-1	<0.00695	0.00606	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.0200	<0.0200
MW-2	<0.00695	0.00550	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	0.0415	<0.0200
MW-3S	<0.00695	<0.00521	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.00640	<0.0200
MW-4S	<0.00695	<0.00521	<0.00271	<0.00521	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.0200	<0.0200
MW-5S	<0.00695	<0.00521	0.00426	<0.00521	<0.0115	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.00640	<0.0200	<0.0200
Control Limit	0.01	0.00402	0.00402	0.00402	0.0102	0.00983	0.0096	0.0093	0.009132	0.008959	0.0087	0.001	0.01092

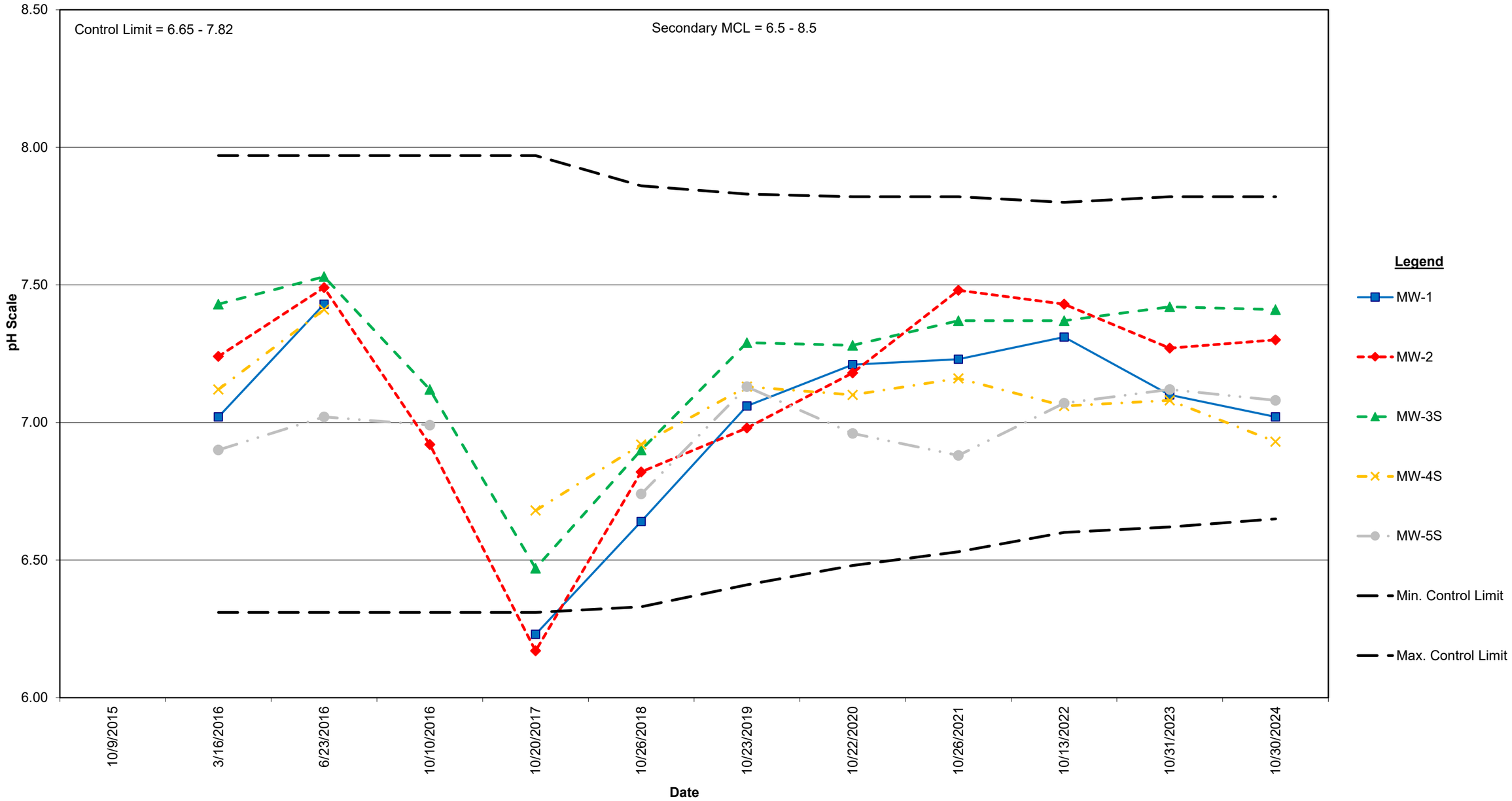
Chloride


Control Limit = 70.24 mg/L
Secondary MCL = 250 mg/L
Concentration (mg/L)
100
90
80
70
60
50
40
30
20
10
0
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

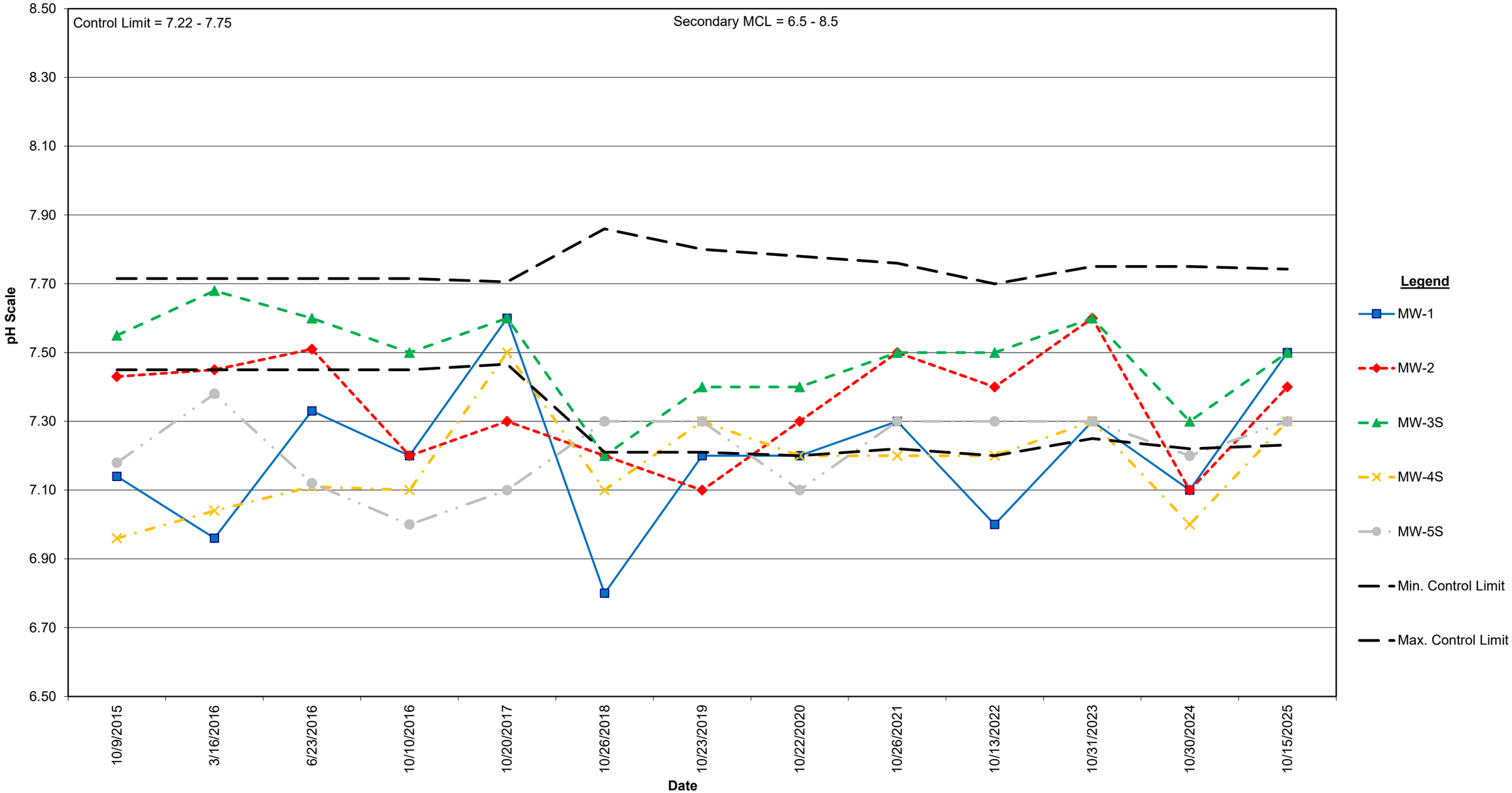
Sulfate


Control Limit = 27.6 mg/L
Secondary MCL = 250 mg/L
Concentration (mg/L)
450
400
350
300
250
200
150
100
50
0
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

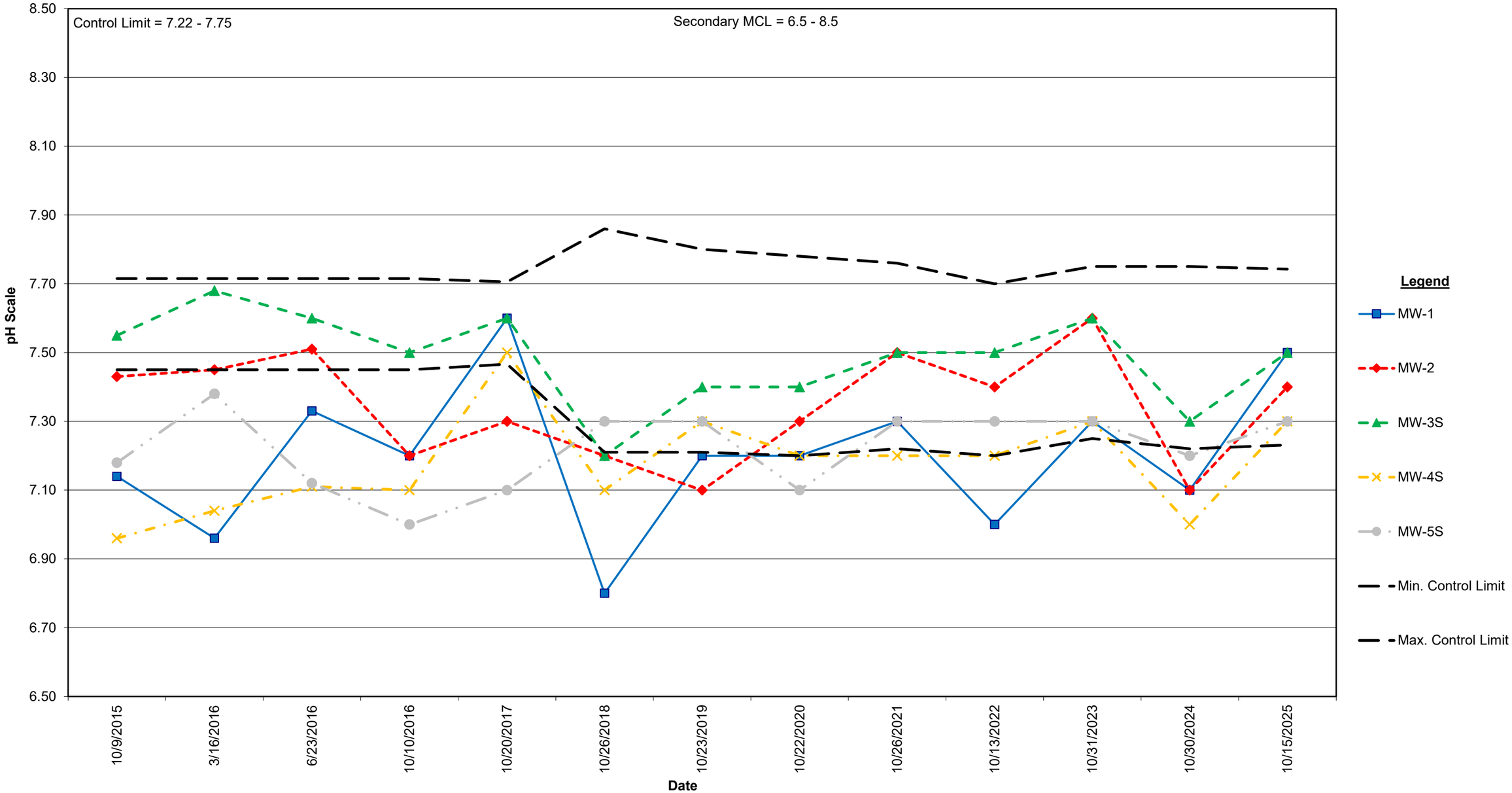
Field pH


Control Limit = 6.65 - 7.82
Secondary MCL = 6.5 - 8.5
8.50
8.00
7.50
7.00
6.50
6.00
pH Scale
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Min. Control Limit
Max. Control Limit

Laboratory pH



Laboratory pH



Aluminum

Control Limit = 0.092 mg/L

Secondary MCL = 0.05 - 0.2 mg/L

Concentration (mg/L)

0.1600
0.1400
0.1200
0.1000
0.0800
0.0600
0.0400
0.0200
0.0000

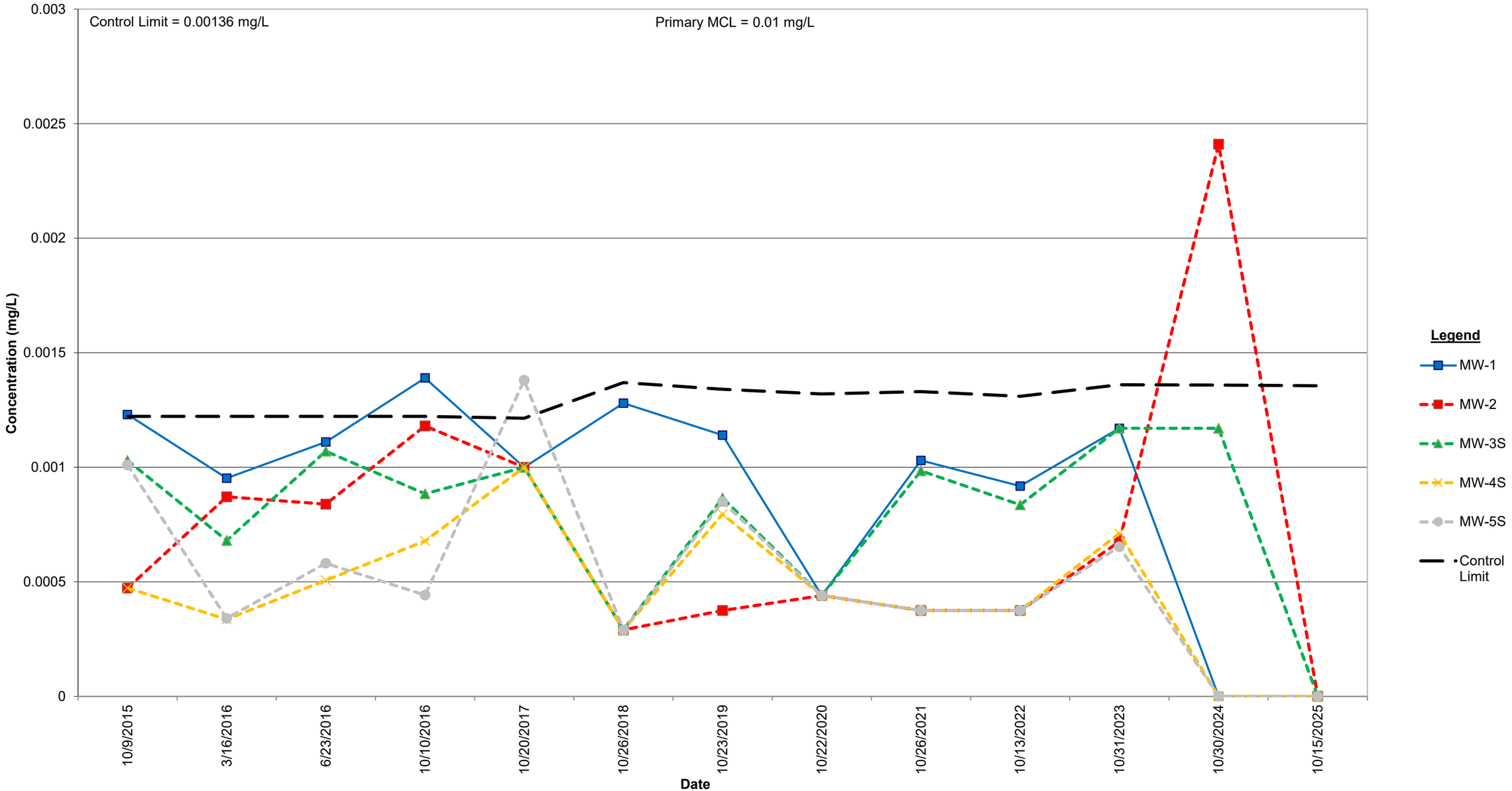
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025

Date

Legend

- MW-1
- MW-2
- MW-3S
- MW-4S
- MW-5S
- Control Limit

Arsenic


Control Limit = 0.00136 mg/L
Primary MCL = 0.01 mg/L
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
Concentration (mg/L)
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

Barium

Control Limit = 0.0597 mg/L

Primary MCL = 2.0 mg/L
Iowa Statewide Standard for Protected Groundwater Source = 2 mg/L
Iowa Statewide Standard for Non-Protected Groundwater Source = 10 mg/L

Concentration (mg/L)

0.25
0.2
0.15
0.1
0.05
0

10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025

Date

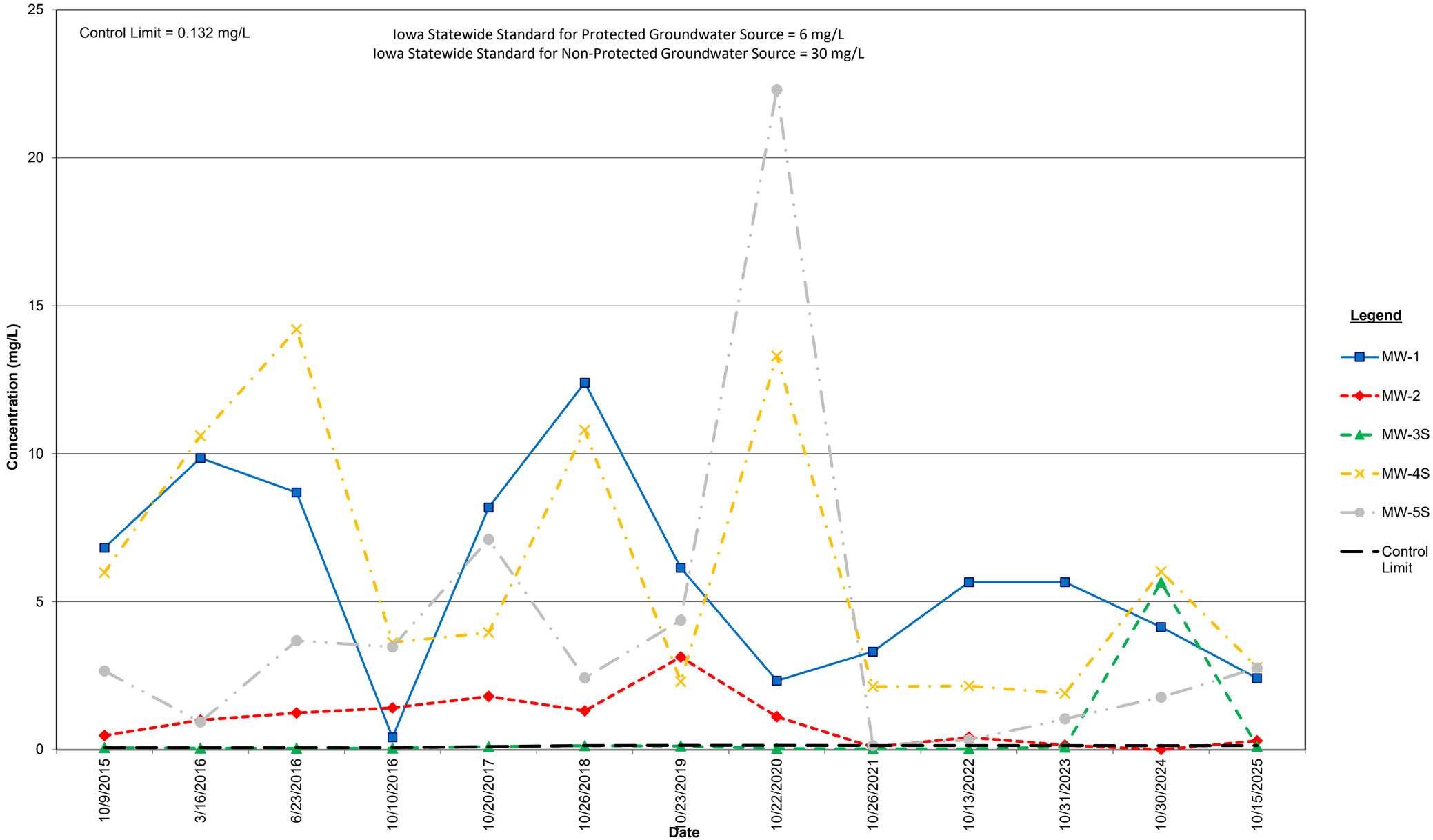
Legend

- MW-1
- MW-2
- MW-3S
- MW-4S
- MW-5S
- Control Limit

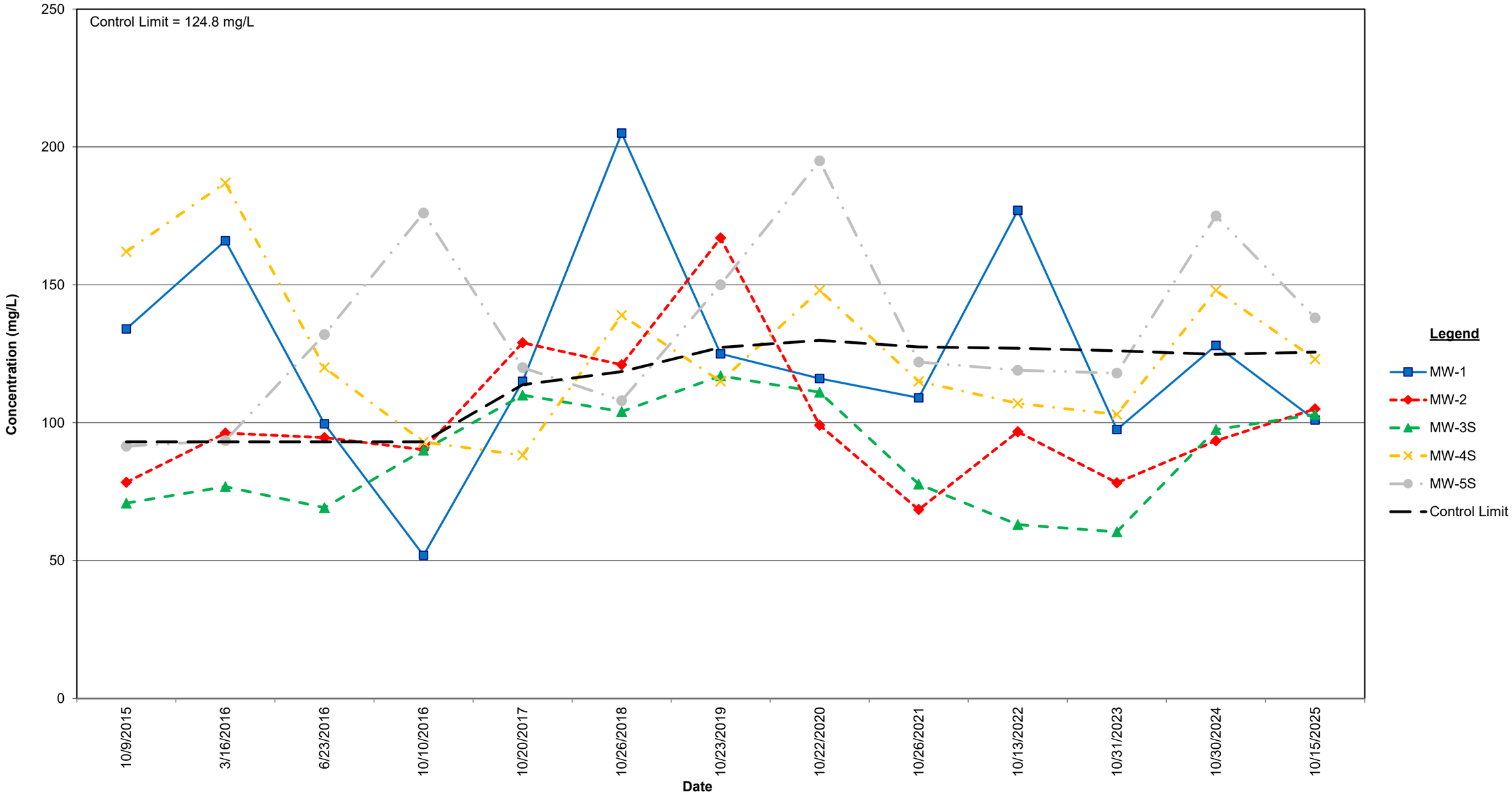
Boron

Control Limit = 0.132 mg/L

Iowa Statewide Standard for Protected Groundwater Source = 6 mg/L
Iowa Statewide Standard for Non-Protected Groundwater Source = 30 mg/L



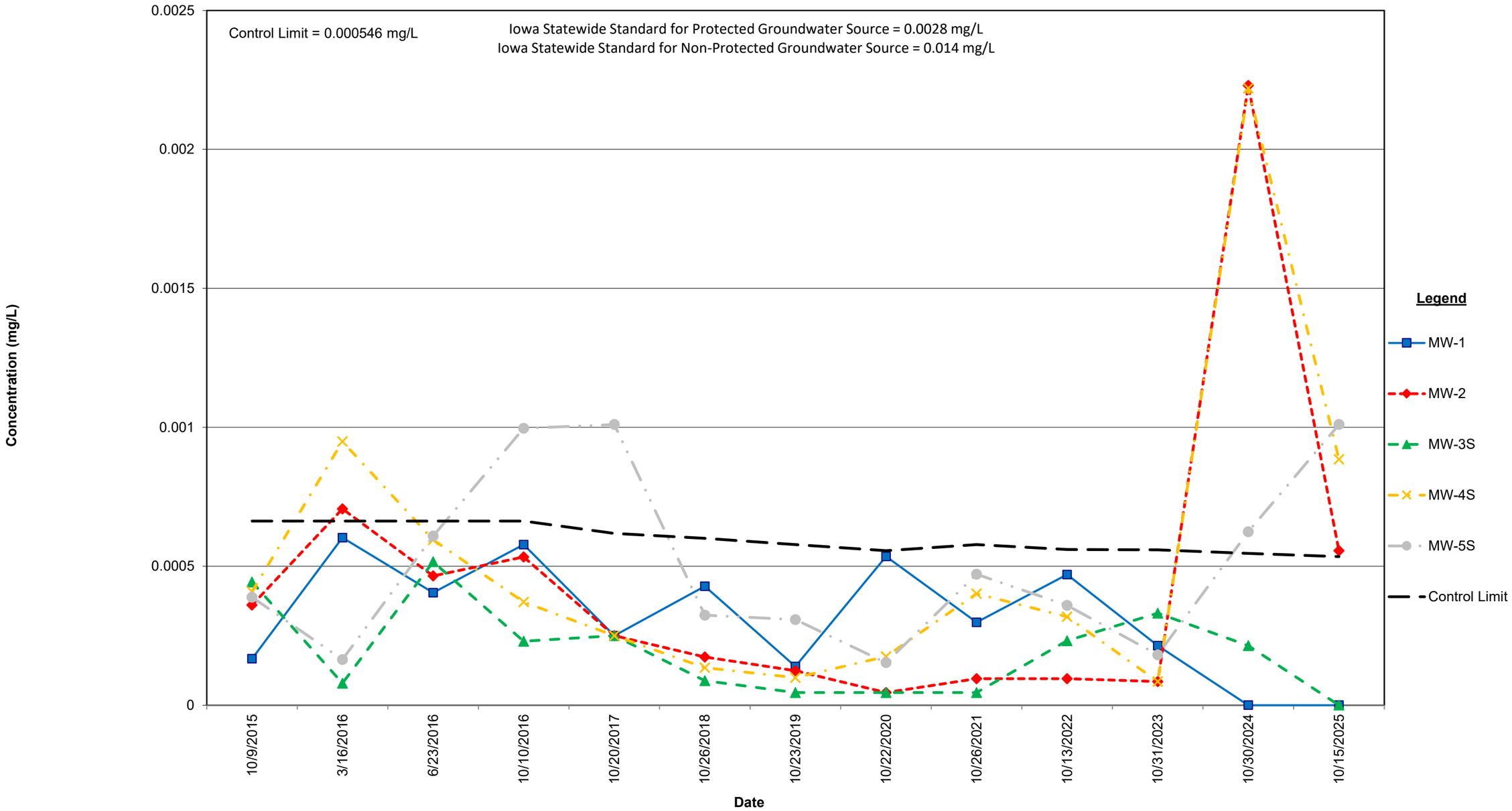
Calcium


Control Limit = 124.8 mg/L
250
200
150
100
50
0
Concentration (mg/L)
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

Cobalt

Control Limit = 0.000546 mg/L

Iowa Statewide Standard for Protected Groundwater Source = 0.0028 mg/L
Iowa Statewide Standard for Non-Protected Groundwater Source = 0.014 mg/L



Copper

Control Limit = 0.00272 mg/L

Primary MCL = 1.3 mg/L

Concentration (mg/L)

0.0035
0.003
0.0025
0.002
0.0015
0.001
0.0005
0

10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025

Date

Legend

- MW-1
- MW-2
- MW-3S
- MW-4S
- MW-5S
- Control Limit

Iron

Control Limit = 0.202 mg/L

Secondary MCL = 0.3 mg/L

Concentration (mg/L)

2.5
2
1.5
1
0.5
0

10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025

Date

Legend

- MW-1
- MW-2
- MW-3S
- MW-4S
- MW-5S
- Control Limit

Lead

Control Limit = 0.000473 mg/L

Primary MCL = 0.015 mg/L

Concentration (mg/L)

0.002
0.0018
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0

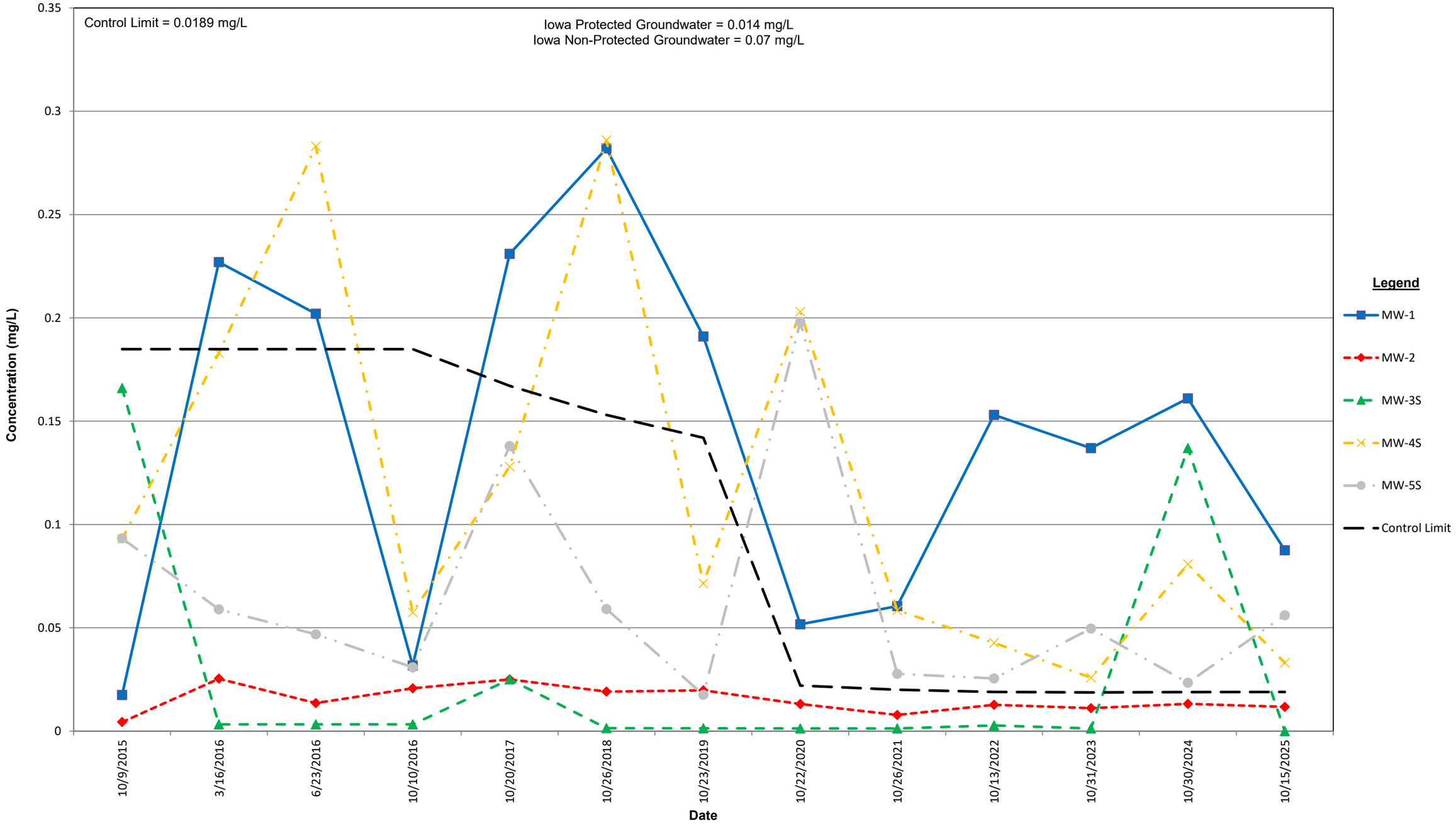
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025

Date

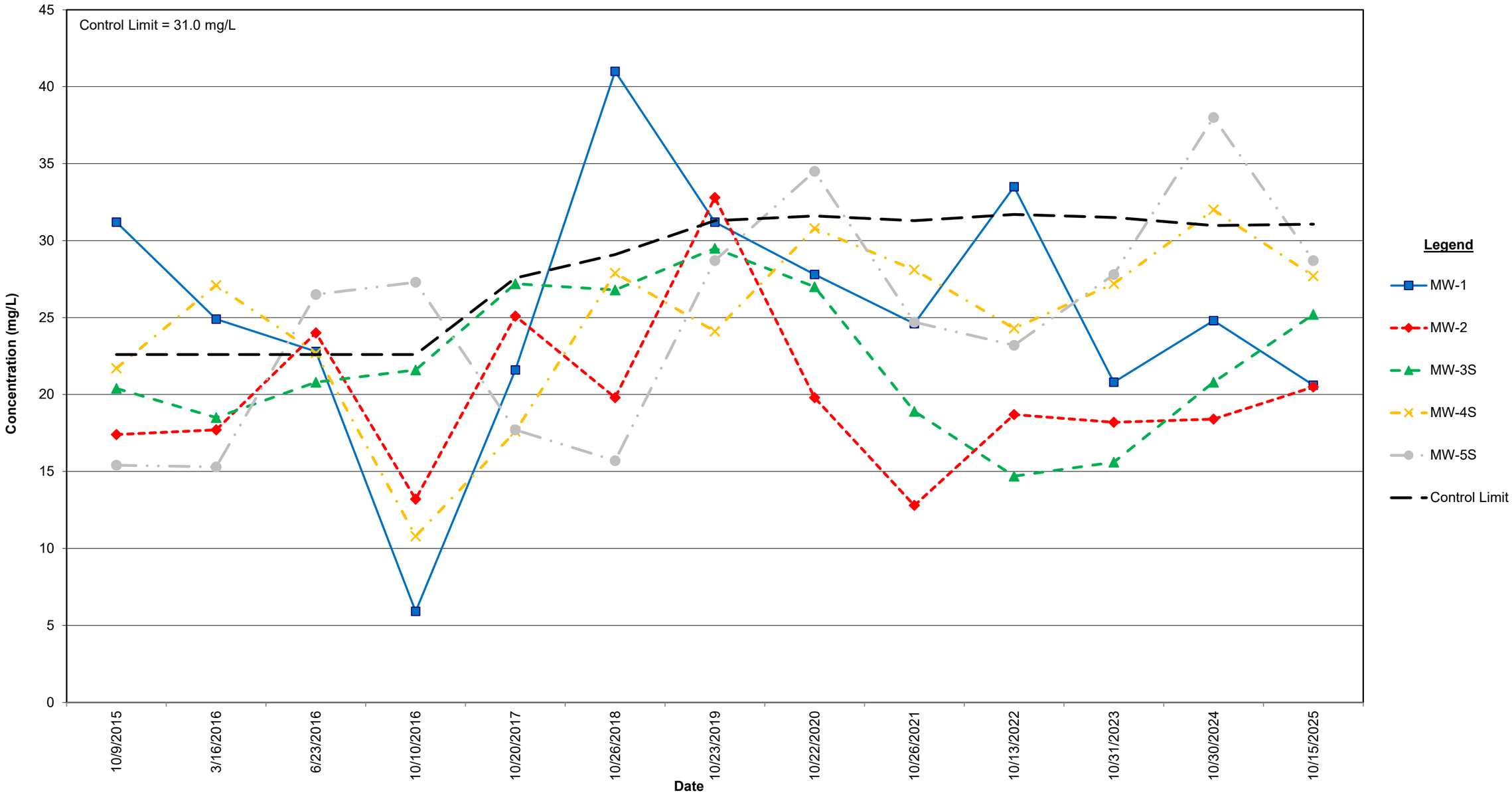
Legend

- MW-1
- MW-2
- MW-3S
- MW-4S
- MW-5S
- Control Limit

Lithium


Control Limit = 0.0189 mg/L
Iowa Protected Groundwater = 0.014 mg/L
Iowa Non-Protected Groundwater = 0.07 mg/L
Concentration (mg/L)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

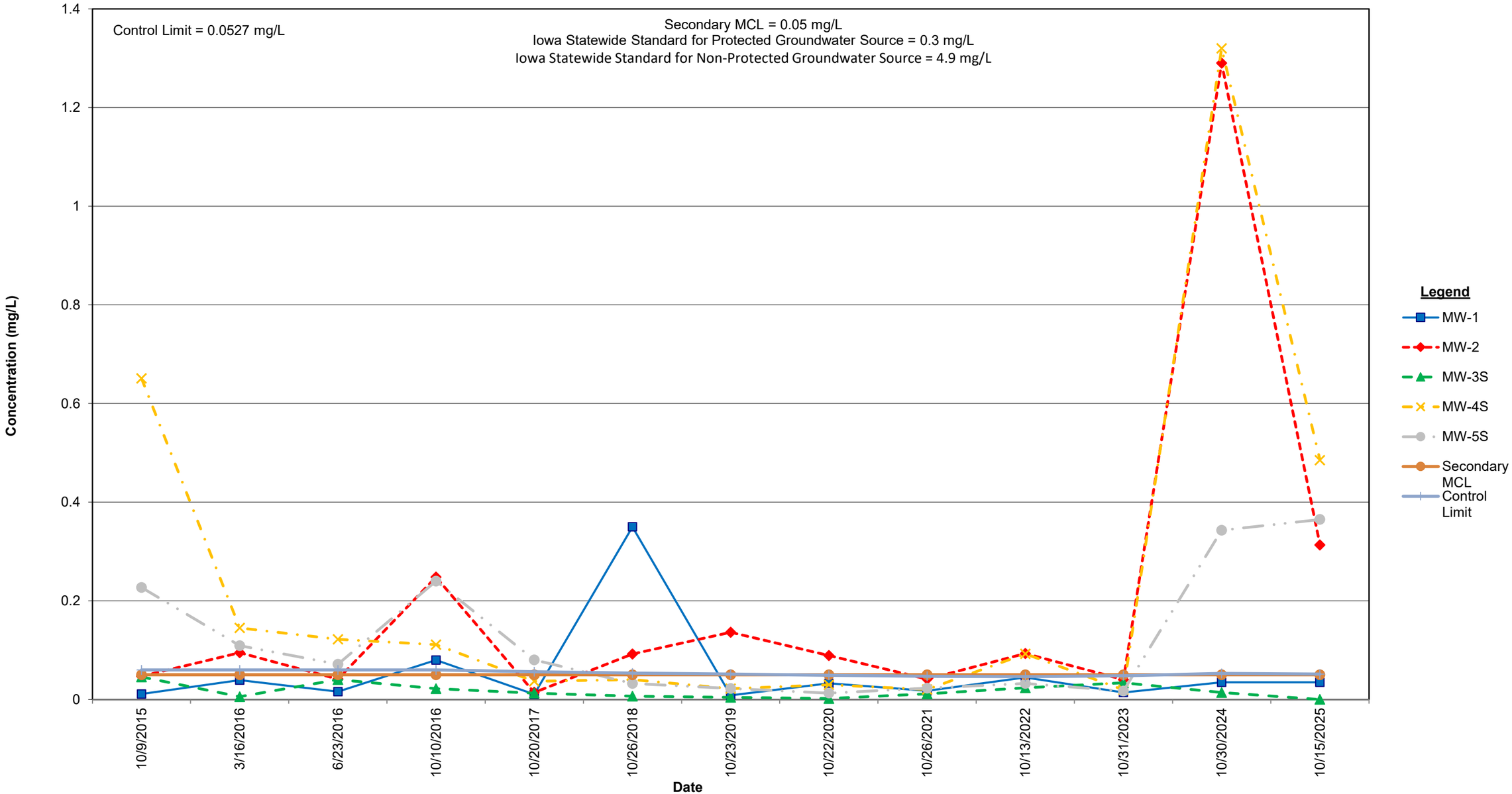
Magnesium


Control Limit = 31.0 mg/L
45
40
35
30
25
20
15
10
5
0
Concentration (mg/L)
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

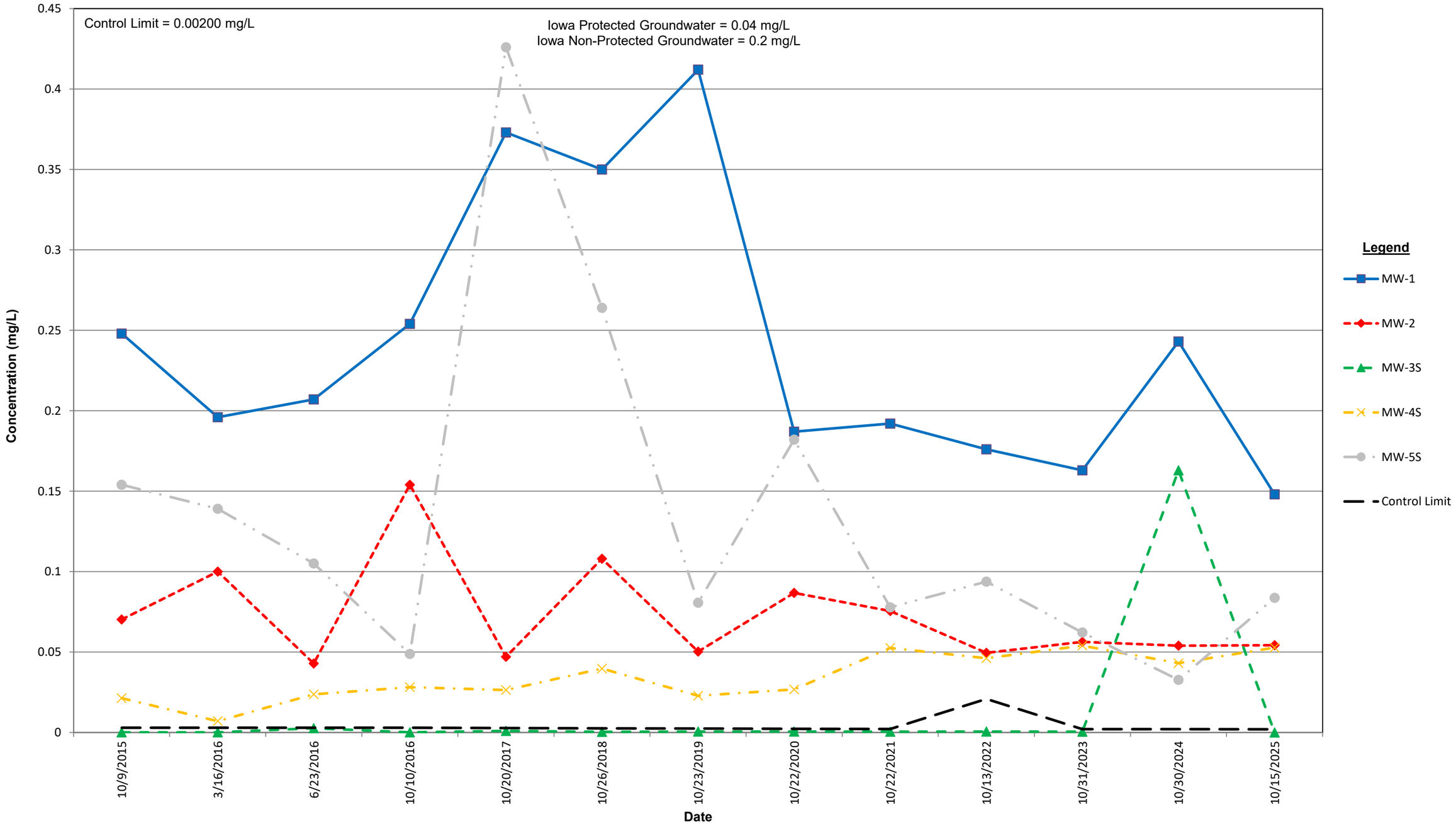
Manganese

Control Limit = 0.0527 mg/L

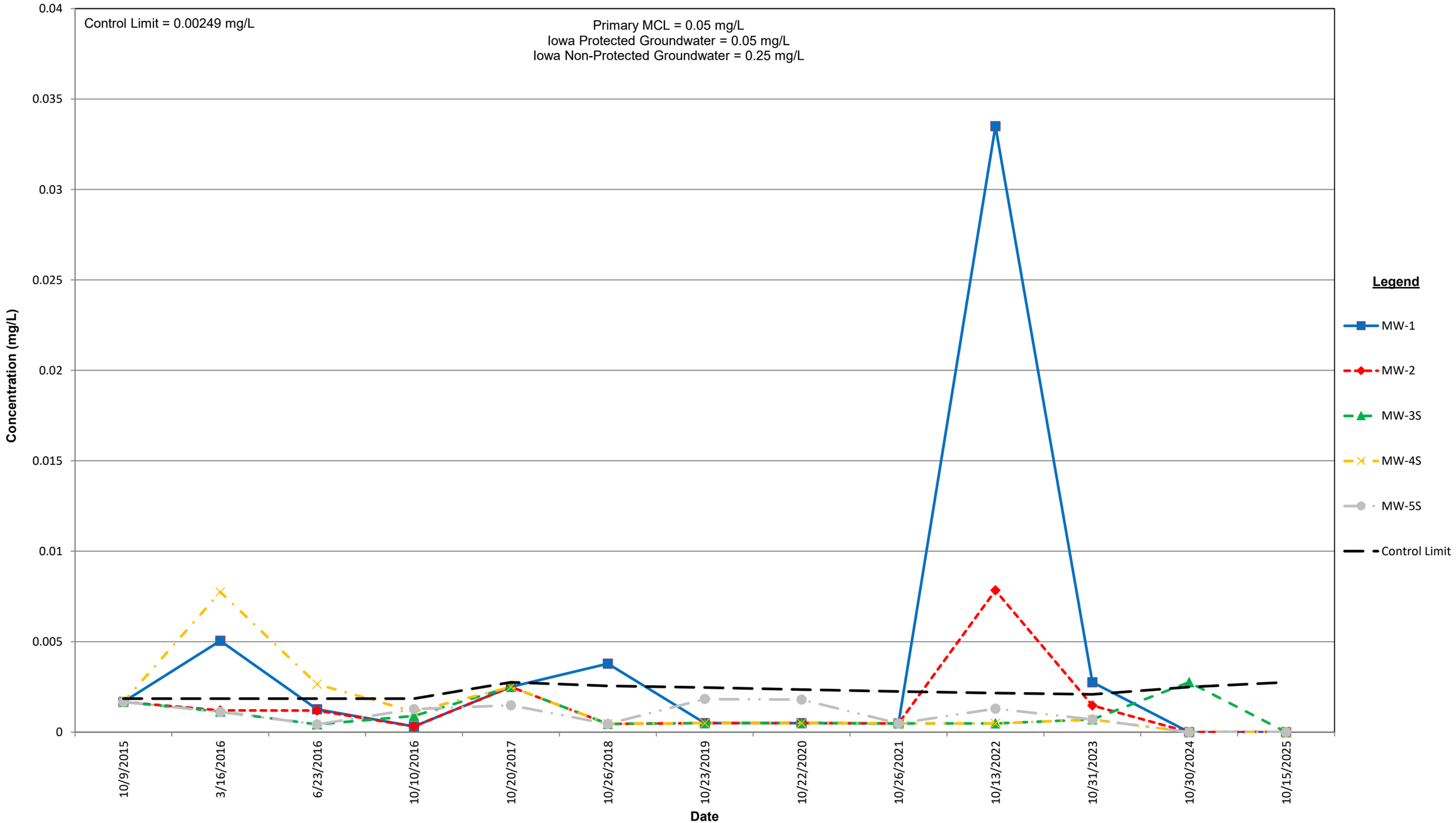
Secondary MCL = 0.05 mg/L
Iowa Statewide Standard for Protected Groundwater Source = 0.3 mg/L
Iowa Statewide Standard for Non-Protected Groundwater Source = 4.9 mg/L



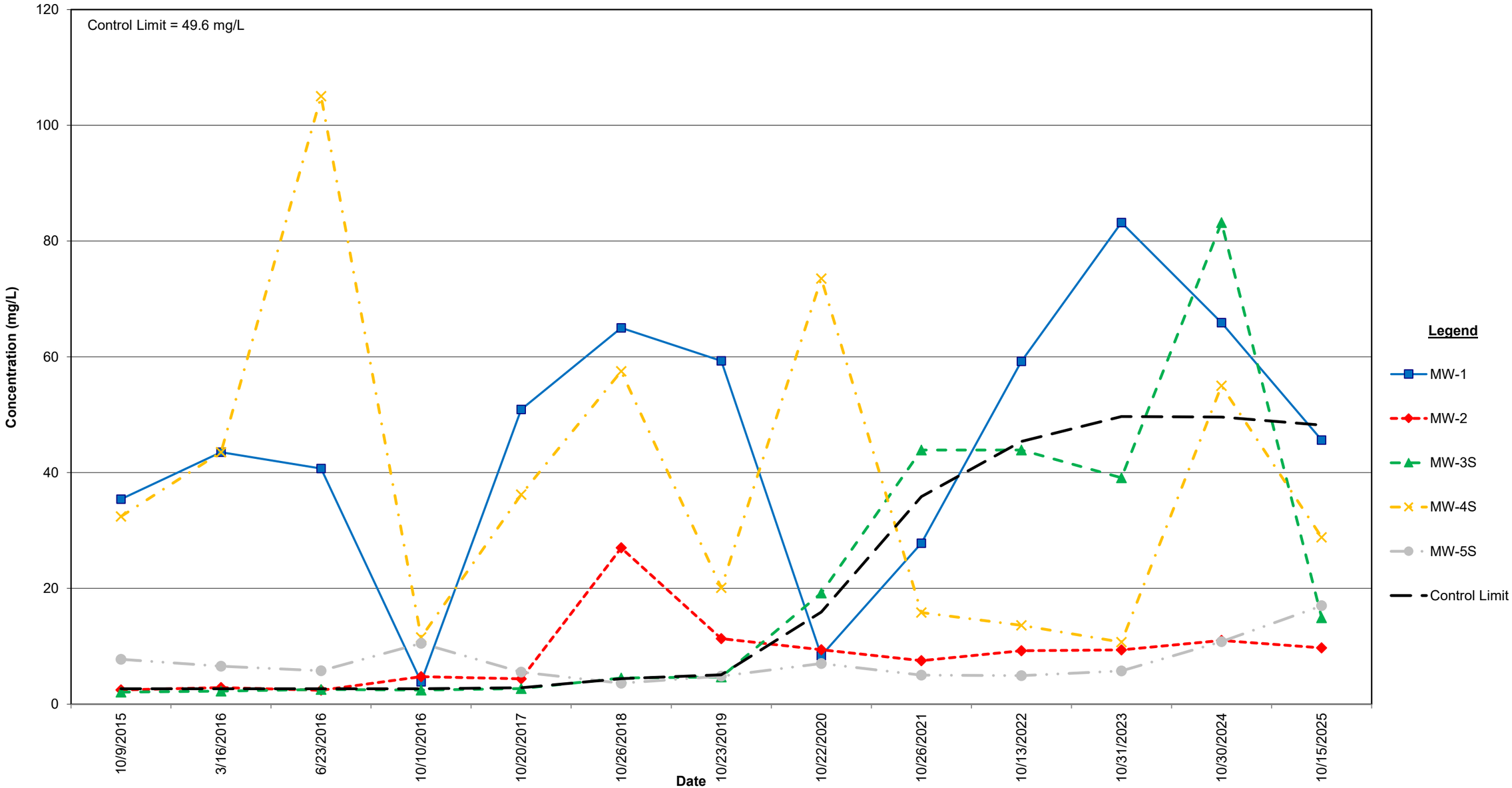
Molybdenum


Control Limit = 0.00200 mg/L
Iowa Protected Groundwater = 0.04 mg/L
Iowa Non-Protected Groundwater = 0.2 mg/L
Concentration (mg/L)
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/22/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

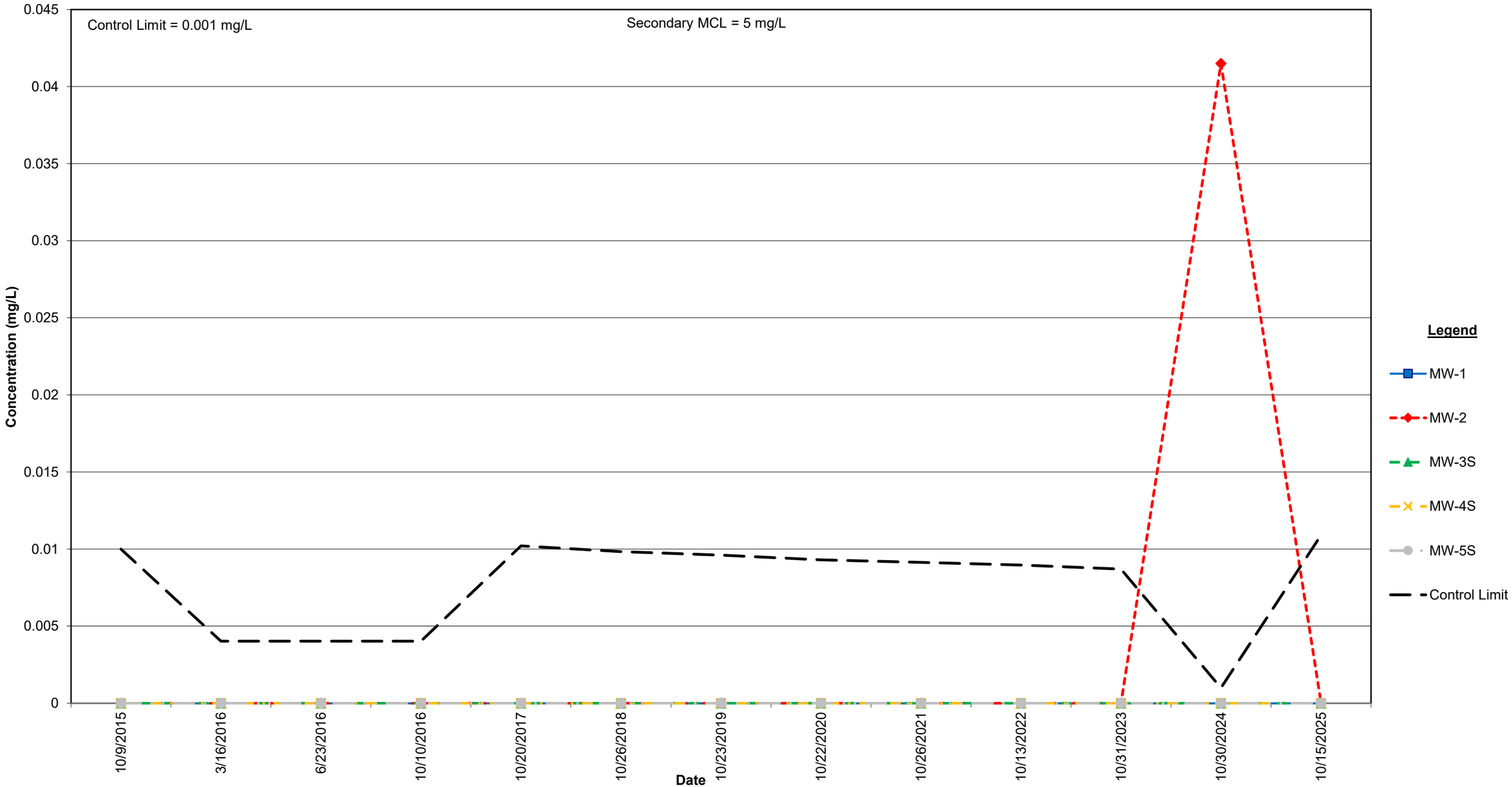
Selenium


Control Limit = 0.00249 mg/L
Primary MCL = 0.05 mg/L
Iowa Protected Groundwater = 0.05 mg/L
Iowa Non-Protected Groundwater = 0.25 mg/L
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
Concentration (mg/L)
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

Sodium


Control Limit = 49.6 mg/L
120
100
80
60
40
20
0
Concentration (mg/L)
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

Zinc


Control Limit = 0.001 mg/L
Secondary MCL = 5 mg/L
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
Concentration (mg/L)
10/9/2015
3/16/2016
6/23/2016
10/10/2016
10/20/2017
10/26/2018
10/23/2019
10/22/2020
10/26/2021
10/13/2022
10/31/2023
10/30/2024
10/15/2025
Date
Legend
MW-1
MW-2
MW-3S
MW-4S
MW-5S
Control Limit

Appendix E Field and Laboratory Reports

3105 Capital Way, Suite 5
Cedar Falls, IA 50613
P (319) 277-4016
Terracon.com

October 24, 2025

Cedar Falls Utilities
Utility Parkway, P.O. Box 769
Cedar Falls, Iowa 50613

Attn: Mr. David Ames
P: (319) 268-5300

RE: Groundwater Sampling Services Report
Leversee Road Ash Disposal Site
Leversee Road
Cedar Falls, Iowa 50613
Terracon Project No. 13257063

Dear Mr. Ames,

Terracon Consultants, Inc. (Terracon) is pleased to submit this Groundwater Sampling Services Report for the above-referenced site. The sampling services were completed in accordance with Terracon Proposal No. P13257063, dated June 26, 2025. The following is a summary of the sampling services, reported information, and field observations.

Terracon performed the sampling services on October 15, 2025, with assistance from Cedar Falls Utilities (CFU) personnel Mr. David Ames. Mr. Trenton Humphrey with Stanley Consultants was also in attendance to observe the sampling activities. According to Mr. Ames, CFU personnel bailed monitoring wells MW-1, MW-2, MW-4S, and MW-5S on October 2, 2025, and MW-3S on October 3, 2025. During bailing of the wells, Mr. Ames identified root hairs in MW-2 and MW-4S. As a result, Terracon cleaned MW-2 and MW-4S using a stiff-bristled brush attached to a 1-inch polyvinyl chloride (PVC) casing. Terracon scrubbed the inside of the 2-inch well casing several times from top to bottom to remove the root hairs. After scrubbing, Terracon utilized a high-volume submersible pump and disposable tubing to purge the water and root hairs from the wells.

Terracon collected depth to water and total well depth levels from the five sampled wells. In addition, depth to water and total well depth levels were also collected for the four deep wells, which included MW-3D, MW-4D, MW-5D, and MW-6.

Groundwater samples were collected from MW-1, MW-2, MW-3S, MW-4S, and MW-5S using a peristaltic pump and disposable polyethylene and silicon tubing dedicated to each well. Parameters were collected from each of the wells using a direct-read YSI meter, which included temperature, pH, and specific conductance. The field readings are included on the attached groundwater measurement forms.

The groundwater samples were placed in laboratory-provided containers, labeled, and placed on ice in a cooler. The samples and completed chain-of-custody form were transported to the Eurofins Environmental Testing in Cedar Falls, Iowa for analysis of pH by Environmental Protection Agency (EPA) Method 4500, select metals by EPA Method 200.8/245.2, and chloride and sulfate by EPA Method 300. The sample results are included in the attached laboratory analytical report.

During the well inspection, Mr. Ames noticed that MW-2 is bent, will no longer accept a 2-inch bailer for purging the well, and he had to use a 1-inch bailer instead. Additionally, Terracon discovered during the sampling of MW-5S that there appears to be a blockage approximately seven feet from the bottom of the well, or the well has filled in with approximately seven feet of sediment since the 2024 sampling event. Additional investigation into these two wells may be warranted prior to or during the 2026 event.

If you have questions or comments, please contact Rob Bergman at (319) 277-4016 or via email at Rob.Bergman@terracon.com.

Sincerely,
Terracon Consultants, Inc.

Rob Bergman

Rob Bergman
Senior Environmental Scientist

Jesse Nelson

Jesse M. Nelson, REM, CGP
Senior Scientist

Attachments: Groundwater Measurement Forms
Laboratory Analytical Report

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-1	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☑ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☑ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 858.41	**Ground Elevation**
Depth of Well 20.45	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	8.42	837.96
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons) 6.60 (Performed by CFU on October 2, 2025)	
No. of Well Volumes (based on current water level) 3.36	
Was well pumped/bailed dry? No	
Equipment used:	
Bailer type NA	**Dedicated Bailer?** NA
Pump type Geotech Geopump Peristaltic Pump	**Dedicated Pump?** No
If not dedicated, method of cleaning New tubing was used for each well and then disposed	

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions 57˚ Fahrenheit, Overcast and raining	
Field Measurements (after stabilization):	
Temperature 13.58	**Units** Celcius
Equipment Used YSI - 556	
pH 7.25	
Equipment Used YSI - 556	
Specific Conductance 701	**Units** uS
Equipment Used YSI - 556	

Comments
Well was developed by CFU thirteen days prior to sampling. Terracon purged approx. four gallons of water prior to sample collection.
Samples were collected and submitted to Eurofins Environmental Testing in Cedar Falls in sample containers supplied by Eurofins.

CERTIFICATION I certify under penalty of law I believe the information reported above is true, accurate and complete.		
Signature		**Date**
Telephone 319-277-4016	**Fax** 319-277-4320	**Email** RPBergman@Terracon.com
NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.		

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-2	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☒ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☒ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 861.12	**Ground Elevation**
Depth of Well 23.45	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	10.85	850.27
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons) 6.07 (Performed by CFU on October 2, 2025)	
No. of Well Volumes (based on current water level) 2.95	
Was well pumped/bailed dry? No	
Equipment used:	
Bailer type NA	**Dedicated Bailer?** NA
Pump type Geotech Geopump Peristaltic Pump	**Dedicated Pump?** No
If not dedicated, method of cleaning New tubing was used for each well and then disposed	

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions 57˚ Fahrenheit, Overcast and raining	
Field Measurements (after stabilization):	
Temperature 13.60	**Units** Celcius
Equipment Used YSI - 556	
pH 7.24	
Equipment Used YSI - 556	
Specific Conductance 557	**Units** uS
Equipment Used YSI - 556	

Comments
Well was purged by CFU thirteen days prior to sampling. Terracon purged approx. four gallons of water prior to sample collection.
Samples were collected and submitted to Eurofins Environmental Testing in Cedar Falls in sample containers supplied by Eurofins.

CERTIFICATION I certify under penalty of law I believe the information reported above is true, accurate and complete.		
Signature		**Date**
Telephone 319-277-4016	**Fax** 319-277-4320	**Email** RPBergman@Terracon.com
NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.		

*Omit if only measuring groundwater elevations.

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-3D	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☒ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☒ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 868.80	**Ground Elevation**
Depth of Well 58.90	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	18.35	850.45
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons)	
No. of Well Volumes (based on current water level)	
Was well pumped/bailed dry?	
Equipment used:	
Bailer type	**Dedicated Bailer?**
Pump type	**Dedicated Pump?**
If not dedicated, method of cleaning	

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Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions	
Field Measurements (after stabilization):	
Temperature	**Units**
Equipment Used	
pH	
Equipment Used	
Specific Conductance	**Units**
Equipment Used	

Comments

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature	**Date**
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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-3S	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☑ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☑ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 868.55	**Ground Elevation**
Depth of Well 32.28	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	18.15	850.40
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons) 6.60 (Performed by CFU on October 3, 2025)	
No. of Well Volumes (based on current water level) 2.86	
Was well pumped/bailed dry? No	
Equipment used:	
Bailer type NA	**Dedicated Bailer?** NA
Pump type Geotech Geopump Peristaltic Pump	**Dedicated Pump?** No
If not dedicated, method of cleaning New tubing was used for each well and then disposed	

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Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions 57˚ Fahrenheit, Overcast and raining	
Field Measurements (after stabilization):	
Temperature 12.50	**Units** Celcius
Equipment Used YSI - 556	
pH 7.35	
Equipment Used YSI - 556	
Specific Conductance 620	**Units** uS
Equipment Used YSI - 556	

Comments
Well was purged by CFU twelve days prior to sampling. Terracon purged approx. four gallons of water prior to sample collection.
Samples were collected and submitted to Eurofins Environmental Testing in Cedar Falls in sample containers supplied by Eurofins.

CERTIFICATION

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NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.		

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Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-4D	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☒ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☒ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 859.19	**Ground Elevation**
Depth of Well 72.00	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	9.15	850.04
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons)	
No. of Well Volumes (based on current water level)	
Was well pumped/bailed dry?	
Equipment used:	
Bailer type	**Dedicated Bailer?**
Pump type	**Dedicated Pump?**
If not dedicated, method of cleaning	

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Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions	
Field Measurements (after stabilization):	
Temperature	**Units**
Equipment Used	
pH	
Equipment Used	
Specific Conductance	**Units**
Equipment Used	

Comments

CERTIFICATION

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-4S	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☑ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☑ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 858.98	**Ground Elevation**
Depth of Well 20.11	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	8.91	850.07
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons) 6.60 (Performed by CFU on October 2, 2025)	
No. of Well Volumes (based on current water level) 3.61	
Was well pumped/bailed dry? No	
Equipment used:	
Bailer type NA	**Dedicated Bailer?** NA
Pump type Geotech Geopump Peristaltic Pump	**Dedicated Pump?** No
If not dedicated, method of cleaning New tubing was used for each well and then disposed	

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Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions 57˚ Fahrenheit, Overcast and raining	
Field Measurements (after stabilization):	
Temperature 13.73	**Units** Celcius
Equipment Used YSI - 556	
pH 7.09	
Equipment Used YSI - 556	
Specific Conductance 734	**Units** uS
Equipment Used YSI - 556	

Comments
Well was purged by CFU thirteen days prior to sampling. Terracon purged approx. four gallons of water prior to sample collection.
Samples were collected and submitted to Eurofins Environmental Testing in Cedar Falls in sample containers supplied by Eurofins.

CERTIFICATION

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-5D	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☑ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☑ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 868.72	**Ground Elevation**
Depth of Well 54.45	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	18.62	850.10
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons)	
No. of Well Volumes (based on current water level)	
Was well pumped/bailed dry?	
Equipment used:	
Bailer type	**Dedicated Bailer?**
Pump type	**Dedicated Pump?**
If not dedicated, method of cleaning	

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
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*D. FIELD MEASUREMENT	
Weather Conditions	
Field Measurements (after stabilization):	
Temperature	**Units**
Equipment Used	
pH	
Equipment Used	
Specific Conductance	**Units**
Equipment Used	

Comments

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-5S	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☑ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☑ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 868.10	**Ground Elevation**
Depth of Well 20.10	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	18.00	850.10
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons) 6.60 (Performed by CFU on October 2, 2025)	
No. of Well Volumes (based on current water level) 19.29	
Was well pumped/bailed dry? No	
Equipment used:	
Bailer type NA	**Dedicated Bailer?** NA
Pump type Geotech Geopump Peristaltic Pump	**Dedicated Pump?** No
If not dedicated, method of cleaning New tubing was used for each well and then disposed	

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*D. FIELD MEASUREMENT	
Weather Conditions 57˚ Fahrenheit and Overcast and raining	
Field Measurements (after stabilization):	
Temperature 12.52	**Units** Celcius
Equipment Used YSI - 556	
pH 7.02	
Equipment Used YSI - 556	
Specific Conductance 751	**Units** uS
Equipment Used YSI - 556	

Comments
Well was purged by CFU thirteen days prior to sampling. Terracon purged approx. four gallons of water prior to sample collection.
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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cedar Falls Utilities Leversee Road Ash Disposal Site	**Permit No.** 07-SDP-11-89P-CCR
Monitoring Well/Piezometer No. MW-6	
Upgradient	**Downgradient**
Name of person sampling Conner Bohlen, Terracon, 3105 Capital Way Cedar Falls, Iowa 50613	

A. MONITORING WELL/PIEZOMETER CONDITIONS		
Well/Piezometer Properly Capped? (please check)	☒ **YES**	☐ **NO**
If no, explain		
Standing Water or Litter? (please check)	☐ **YES**	☒ **NO**
If yes, explain		

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)	
Elevation:	
Top of inner well casing 868.49	**Ground Elevation**
Depth of Well 25.32	**Inside Casing Diameter (in inches)** 2
Equipment Used Slope Indicator Electronic Water Level Indicator	

Groundwater Level (± 0.01 foot below top of inner casing, MSL):			
	Date/Time	**Depth to Groundwater**	**Groundwater Elevation**
Before Purging			
***After Purging**	10/15/25	18.18	850.31
***Before Purging**			

***C. WELL PURGING**	
Quantity of Water Removed from Well (gallons)	
No. of Well Volumes (based on current water level)	
Was well pumped/bailed dry?	
Equipment used:	
Bailer type	**Dedicated Bailer?**
Pump type	**Dedicated Pump?**
If not dedicated, method of cleaning	

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Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, nina.koger@dnr.iowa.gov

*D. FIELD MEASUREMENT	
Weather Conditions	
Field Measurements (after stabilization):	
Temperature	**Units**
Equipment Used	
pH	
Equipment Used	
Specific Conductance	**Units**
Equipment Used	

Comments

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature	**Date**
Telephone 319-277-4016	**Fax** 319-277-4320	**Email** RPBergman@Terracon.com
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eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: David Ames
Cedar Falls Utilities
PO BOX 769
Cedar Falls, Iowa 50613-0769

Generated 10/22/2025 12:53:04 PM

JOB DESCRIPTION

Cedar Falls Ash Landfill

JOB NUMBER

310-318109-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report was automatically generated by Eurofins Cedar Falls LIMS system, after peer review by each individual department. If you notice any issues please contact your project manager or call the lab at 319-277-2401.

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

Authorization

Generated
10/22/2025 12:53:04 PM

Authorized for release by
Hannah Dietz, Project Manager I
Hannah.Dietz@et.eurofinsus.com
(319)277-2401

Job Narrative
310-318109-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 10/15/2025 2:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.6°C.

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

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

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

Sample Summary

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-318109-1	MW-5S	Ground Water	10/15/25 09:00	10/15/25 14:10	Iowa
310-318109-2	MW-1	Ground Water	10/15/25 09:30	10/15/25 14:10	Iowa
310-318109-3	MW-4S	Ground Water	10/15/25 09:55	10/15/25 14:10	Iowa
310-318109-4	MW-2	Ground Water	10/15/25 10:25	10/15/25 14:10	Iowa
310-318109-5	MW-3S	Ground Water	10/15/25 11:00	10/15/25 14:10	Iowa

Client Sample Results

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Client Sample ID: MW-5S
Lab Sample ID: 310-318109-1
Date Collected: 10/15/25 09:00
Matrix: Ground Water
Date Received: 10/15/25 14:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Sulfate	**105**		5.00		mg/L		10/16/25 22:09	5	ZRI4
Chloride	**28.0**		5.00		mg/L		10/16/25 22:09	5	ZRI4

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Arsenic	<0.00200		0.00200		mg/L		10/21/25 17:42	1	NFT2
Beryllium	<0.00100		0.00100		mg/L		10/21/25 17:42	1	NFT2
Cadmium	<0.000200		0.000200		mg/L		10/21/25 17:42	1	NFT2
Chromium	<0.00500		0.00500		mg/L		10/21/25 17:42	1	NFT2
Lead	<0.000500		0.000500		mg/L		10/21/25 17:42	1	NFT2
Selenium	<0.00500		0.00500		mg/L		10/21/25 17:42	1	NFT2
Silver	<0.00100		0.00100		mg/L		10/21/25 17:42	1	NFT2

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		10/21/25 10:46	1	RLT9

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU		10/16/25 01:45	1	ZJX4

Client Sample ID: MW-1
Lab Sample ID: 310-318109-2
Date Collected: 10/15/25 09:30
Matrix: Ground Water
Date Received: 10/15/25 14:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Sulfate	**85.4**		5.00		mg/L		10/16/25 22:44	5	ZRI4
Chloride	**29.4**		5.00		mg/L		10/16/25 22:44	5	ZRI4

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Arsenic	<0.00200		0.00200		mg/L		10/21/25 17:45	1	NFT2
Beryllium	<0.00100		0.00100		mg/L		10/21/25 17:45	1	NFT2
Cadmium	<0.000200		0.000200		mg/L		10/21/25 17:45	1	NFT2
Chromium	<0.00500		0.00500		mg/L		10/21/25 17:45	1	NFT2
Lead	**0.000653**		0.000500		mg/L		10/21/25 17:45	1	NFT2
Selenium	<0.00500		0.00500		mg/L		10/21/25 17:45	1	NFT2
Silver	<0.00100		0.00100		mg/L		10/21/25 17:45	1	NFT2

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		10/21/25 10:48	1	RLT9

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU		10/16/25 01:40	1	ZJX4

Client Sample ID: MW-4S

Lab Sample ID: 310-318109-3

Date Collected: 10/15/25 09:55

Matrix: Ground Water

Date Received: 10/15/25 14:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Sulfate	**106**		5.00		mg/L		10/16/25 22:55	5	ZRI4
Chloride	**15.4**		5.00		mg/L		10/16/25 22:55	5	ZRI4

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Arsenic	<0.00200		0.00200		mg/L		10/21/25 17:51	1	NFT2
Beryllium	<0.00100		0.00100		mg/L		10/21/25 17:51	1	NFT2
Cadmium	<0.000200		0.000200		mg/L		10/21/25 17:51	1	NFT2
Chromium	<0.00500		0.00500		mg/L		10/21/25 17:51	1	NFT2
Lead	<0.000500		0.000500		mg/L		10/21/25 17:51	1	NFT2
Selenium	<0.00500		0.00500		mg/L		10/21/25 17:51	1	NFT2
Silver	<0.00100		0.00100		mg/L		10/21/25 17:51	1	NFT2

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		10/21/25 10:50	1	RLT9

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU		10/16/25 01:44	1	ZJX4

Client Sample ID: MW-2

Lab Sample ID: 310-318109-4

Date Collected: 10/15/25 10:25

Matrix: Ground Water

Date Received: 10/15/25 14:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Sulfate	**29.0**		5.00		mg/L		10/16/25 23:07	5	ZRI4
Chloride	**10.4**		5.00		mg/L		10/16/25 23:07	5	ZRI4

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Arsenic	<0.00200		0.00200		mg/L		10/21/25 17:54	1	NFT2
Beryllium	<0.00100		0.00100		mg/L		10/21/25 17:54	1	NFT2
Cadmium	<0.000200		0.000200		mg/L		10/21/25 17:54	1	NFT2
Chromium	<0.00500		0.00500		mg/L		10/21/25 17:54	1	NFT2
Lead	<0.000500		0.000500		mg/L		10/21/25 17:54	1	NFT2
Selenium	<0.00500		0.00500		mg/L		10/21/25 17:54	1	NFT2
Silver	<0.00100		0.00100		mg/L		10/21/25 17:54	1	NFT2

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		10/21/25 10:52	1	RLT9

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU		10/16/25 01:42	1	ZJX4

Client Sample Results

Client: Cedar Falls Utilities
Project/Site: Cedar Falls Ash Landfill

Job ID: 310-318109-1

Client Sample ID: MW-3S

Date Collected: 10/15/25 11:00
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-5

Matrix: Ground Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Sulfate	**13.9**		5.00		mg/L		10/16/25 23:18	5	ZRI4
Chloride	**44.0**		5.00		mg/L		10/16/25 23:18	5	ZRI4

Method: 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Arsenic	<0.00200		0.00200		mg/L		10/21/25 18:02	1	NFT2
Beryllium	<0.00100		0.00100		mg/L		10/21/25 18:02	1	NFT2
Cadmium	<0.000200		0.000200		mg/L		10/21/25 18:02	1	NFT2
Chromium	<0.00500		0.00500		mg/L		10/21/25 18:02	1	NFT2
Lead	<0.000500		0.000500		mg/L		10/21/25 18:02	1	NFT2
Selenium	<0.00500		0.00500		mg/L		10/21/25 18:02	1	NFT2
Silver	<0.00100		0.00100		mg/L		10/21/25 18:02	1	NFT2

Method: 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac	Analyst
Mercury	<0.000200		0.000200		mg/L		10/21/25 11:35	1	RLT9

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Analyzed	Dil Fac	Analyst
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU		10/16/25 01:43	1	ZJX4

Accreditation/Certification and Definitions Summary

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

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

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
MRL	Method Reporting Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
SDL	Sample Detection Limit
SDL	Sample Detection Limit
SDL	Sample Detection Limit
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CF
200.8	Metals (ICP/MS)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 4500 H+ B	pH	SM	EET CF
200.8	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

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

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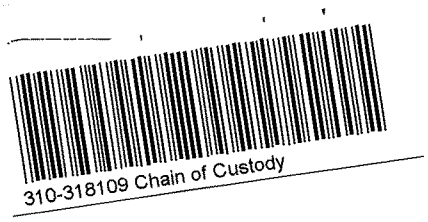

Cooler/Sample Receipt and Temperature L . . . m

Client Information			
Client:	Terracon		
City/State:	CITY: Cedar Falls	STATE: IA	Project: 11297
Receipt Information			
Date/Time Received:	DATE: 10/8/25	TIME: 1410	Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☒ Client Drop-off ☐ Other _____

Condition of Cooler/Containers			
Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID.
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

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

Thermometer ID: BB	Correction Factor (°C): 0.0
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature	
Uncorrected Temp (°C): 6.6	Corrected Temp (°C): 6.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used.		
Uncorrected Temp (°C):		
Corrected Temp (°C).		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☒ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☒ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Chain of Custody Record

653526

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Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact	Project Manager: David Ames	Site Contact: David Ames	Date: 10/15/25	COC No
Company Name: Cedar Falls Utilities	Tel/Email: david.ames@cfunet.net	Lab Contact:	Carrier: Conner Bohlen	1 of 1 COCs
Address: 1 Utility Parkway Pobox 769	Analysis Turnaround Time			Sampler: Conner Bohlen
City/State/Zip: Cedar Falls, IA, 50613	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: 319-268 5300	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks ☒ 1 week ☐ 2 days ☐ 1 day — 5 day			Lab Sampling
Project Name: Lewesee Rud Ash Landfill				Job / SDG No: 13257063
Site: Cedar Falls Ash Landfill				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	pH	Metals	Chloride	Sulfate	Sample Specific Notes
MW-5S	10/15/25	0100	G	Gw	2	N		X	X	X	X	
MW-1		0930	G	Gw	2	N		X	X	X	X	
MW-4S		0955	G	Gw	2	N		X	X	X	X	
MW-2		1025	G	Gw	2	N		X	X	X	X	
MW-3S		1100	G	Gw	2	N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Please email results to Bob berg man@terracon.com & david.ames@cfunet.net

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____

	Company	Date/Time		Company	Date/Time
Relinquished by: Conner Bohlen	Terracon	10/15/25 1410	Received by:		10/15/25 1410
Relinquished by:	Company	Date/Time	Received by:	Company	Date/Time
Relinquished by:	Company	Date/Time	Received in Laboratory by:	Company	Date/Time 10/15/25 1416

10/22/2025

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ANALYTICAL REPORT

PREPARED FOR

Attn: David Ames
Cedar Falls Utilities
PO BOX 769
Cedar Falls, Iowa 50613-0769

Generated 11/17/2025 2:09:58 PM Revision 1

JOB DESCRIPTION

Cedar Falls Ash Landfill

JOB NUMBER

310-318109-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report was automatically generated by Eurofins Cedar Falls LIMS system, after peer review by each individual department. If you notice any issues please contact your project manager or call the lab at 319-277-2401.

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

Authorization

Generated
11/17/2025 2:09:58 PM
Revision 1

Authorized for release by
Hannah Dietz, Project Manager I
Hannah.Dietz@et.eurofinsus.com
(319)277-2401

Table of Contents

Job Narrative
310-318109-1

REVISION

The report being provided is a revision of the original report sent on 11/14/2025. The report (revision 1) is being revised due to sodium added.

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 10/15/2025 2:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.6°C.

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

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

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

Sample Summary

Client: Cedar Falls Utilities
Project/Site: Cedar Falls Ash Landfill

Job ID: 310-318109-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-318109-1	MW-5S	Ground Water	10/15/25 09:00	10/15/25 14:10	Iowa
310-318109-2	MW-1	Ground Water	10/15/25 09:30	10/15/25 14:10	Iowa
310-318109-3	MW-4S	Ground Water	10/15/25 09:55	10/15/25 14:10	Iowa
310-318109-4	MW-2	Ground Water	10/15/25 10:25	10/15/25 14:10	Iowa
310-318109-5	MW-3S	Ground Water	10/15/25 11:00	10/15/25 14:10	Iowa

Client Sample ID: MW-5S

Date Collected: 10/15/25 09:00
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-1
Matrix: Ground Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**105**		5.00		mg/L			10/16/25 22:09	5
Chloride	**28.0**		5.00		mg/L			10/16/25 22:09	5

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/17/25 08:30	10/21/25 17:42	1
Beryllium	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:42	1
Cadmium	<0.000200		0.000200		mg/L		10/17/25 08:30	10/21/25 17:42	1
Chromium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Lead	<0.000500		0.000500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Selenium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Silver	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:42	1
Barium	**0.0869**		0.00200		mg/L		10/17/25 08:30	10/21/25 17:42	1
Calcium	**138**		0.500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Iron	**0.135**		0.100		mg/L		10/17/25 08:30	10/21/25 17:42	1
Magnesium	**28.7**		0.500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Copper	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Lithium	**0.0561**		0.0100		mg/L		10/17/25 08:30	10/21/25 17:42	1
Molybdenum	**0.0837**		0.00200		mg/L		10/17/25 08:30	10/21/25 17:42	1
Boron	**2.76**		0.400		mg/L		10/17/25 08:30	11/14/25 12:31	4
Aluminum	<0.0500		0.0500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Zinc	<0.0200		0.0200		mg/L		10/17/25 08:30	10/21/25 17:42	1
Manganese	**0.365**		0.0100		mg/L		10/17/25 08:30	10/21/25 17:42	1
Cobalt	**0.00101**		0.000500		mg/L		10/17/25 08:30	10/21/25 17:42	1
Sodium	**17.0**		1.00		mg/L		10/17/25 08:30	10/21/25 17:42	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/20/25 13:00	10/21/25 10:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			10/16/25 01:45	1

Client Sample ID: MW-1

Date Collected: 10/15/25 09:30
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-2
Matrix: Ground Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**85.4**		5.00		mg/L			10/16/25 22:44	5
Chloride	**29.4**		5.00		mg/L			10/16/25 22:44	5

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/17/25 08:30	10/21/25 17:45	1
Beryllium	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:45	1
Cadmium	<0.000200		0.000200		mg/L		10/17/25 08:30	10/21/25 17:45	1
Chromium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Lead	**0.000653**		0.000500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Selenium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:45	1

Client Sample ID: MW-1

Date Collected: 10/15/25 09:30
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-2
Matrix: Ground Water

Method: EPA 200.8 - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:45	1
Barium	**0.0714**		0.00200		mg/L		10/17/25 08:30	10/21/25 17:45	1
Calcium	**101**		0.500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Iron	**0.343**		0.100		mg/L		10/17/25 08:30	10/21/25 17:45	1
Magnesium	**20.6**		0.500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Copper	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Lithium	**0.0875**		0.0100		mg/L		10/17/25 08:30	10/21/25 17:45	1
Molybdenum	**0.148**		0.00200		mg/L		10/17/25 08:30	10/21/25 17:45	1
Boron	**2.41**		0.100		mg/L		10/17/25 08:30	10/21/25 17:45	1
Aluminum	**0.0892**		0.0500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Zinc	<0.0200		0.0200		mg/L		10/17/25 08:30	10/21/25 17:45	1
Manganese	**0.0347**		0.0100		mg/L		10/17/25 08:30	10/21/25 17:45	1
Cobalt	<0.000500		0.000500		mg/L		10/17/25 08:30	10/21/25 17:45	1
Sodium	**45.6**		1.00		mg/L		10/17/25 08:30	10/21/25 17:45	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/20/25 13:00	10/21/25 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU			10/16/25 01:40	1

Client Sample ID: MW-4S

Date Collected: 10/15/25 09:55
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-3
Matrix: Ground Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**106**		5.00		mg/L			10/16/25 22:55	5
Chloride	**15.4**		5.00		mg/L			10/16/25 22:55	5

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/17/25 08:30	10/21/25 17:51	1
Beryllium	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:51	1
Cadmium	<0.000200		0.000200		mg/L		10/17/25 08:30	10/21/25 17:51	1
Chromium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Lead	<0.000500		0.000500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Selenium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Silver	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:51	1
Barium	**0.0548**		0.00200		mg/L		10/17/25 08:30	10/21/25 17:51	1
Calcium	**123**		0.500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Iron	**0.124**		0.100		mg/L		10/17/25 08:30	10/21/25 17:51	1
Magnesium	**27.7**		0.500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Copper	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Lithium	**0.0330**		0.0100		mg/L		10/17/25 08:30	10/21/25 17:51	1
Molybdenum	**0.0527**		0.00200		mg/L		10/17/25 08:30	10/21/25 17:51	1
Boron	**2.78**		0.100		mg/L		10/17/25 08:30	10/21/25 17:51	1
Aluminum	<0.0500		0.0500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Zinc	<0.0200		0.0200		mg/L		10/17/25 08:30	10/21/25 17:51	1

Client Sample ID: MW-4S

Date Collected: 10/15/25 09:55
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-3
Matrix: Ground Water

Method: EPA 200.8 - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.485		0.0100		mg/L		10/17/25 08:30	10/21/25 17:51	1
Cobalt	0.000885		0.000500		mg/L		10/17/25 08:30	10/21/25 17:51	1
Sodium	28.8		1.00		mg/L		10/17/25 08:30	10/21/25 17:51	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/20/25 13:00	10/21/25 10:50	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.3	HF	1.0		SU			10/16/25 01:44	1

Client Sample ID: MW-2

Date Collected: 10/15/25 10:25
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-4
Matrix: Ground Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	29.0		5.00		mg/L			10/16/25 23:07	5
Chloride	10.4		5.00		mg/L			10/16/25 23:07	5

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/17/25 08:30	10/21/25 17:54	1
Beryllium	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:54	1
Cadmium	<0.000200		0.000200		mg/L		10/17/25 08:30	10/21/25 17:54	1
Chromium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Lead	<0.000500		0.000500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Selenium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Silver	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 17:54	1
Barium	0.0618		0.00200		mg/L		10/17/25 08:30	10/21/25 17:54	1
Calcium	105		0.500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Iron	0.521		0.100		mg/L		10/17/25 08:30	10/21/25 17:54	1
Magnesium	20.5		0.500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Copper	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Lithium	0.0117		0.0100		mg/L		10/17/25 08:30	10/21/25 17:54	1
Molybdenum	0.0542		0.00200		mg/L		10/17/25 08:30	10/21/25 17:54	1
Boron	0.298		0.100		mg/L		10/17/25 08:30	10/21/25 17:54	1
Aluminum	<0.0500		0.0500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Zinc	<0.0200		0.0200		mg/L		10/17/25 08:30	10/21/25 17:54	1
Manganese	0.313		0.0100		mg/L		10/17/25 08:30	10/21/25 17:54	1
Cobalt	0.000556		0.000500		mg/L		10/17/25 08:30	10/21/25 17:54	1
Sodium	9.71		1.00		mg/L		10/17/25 08:30	10/21/25 17:54	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/20/25 13:00	10/21/25 10:52	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.4	HF	1.0		SU			10/16/25 01:42	1

Client Sample Results

Client: Cedar Falls Utilities
Project/Site: Cedar Falls Ash Landfill

Job ID: 310-318109-1

Client Sample ID: MW-3S
Date Collected: 10/15/25 11:00
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-5
Matrix: Ground Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**13.9**		5.00		mg/L			10/16/25 23:18	5
Chloride	**44.0**		5.00		mg/L			10/16/25 23:18	5

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/17/25 08:30	10/21/25 18:02	1
Beryllium	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 18:02	1
Cadmium	<0.000200		0.000200		mg/L		10/17/25 08:30	10/21/25 18:02	1
Chromium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Lead	<0.000500		0.000500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Selenium	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Silver	<0.00100		0.00100		mg/L		10/17/25 08:30	10/21/25 18:02	1
Barium	**0.0505**		0.00200		mg/L		10/17/25 08:30	10/21/25 18:02	1
Calcium	**103**		0.500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Iron	<0.100		0.100		mg/L		10/17/25 08:30	10/21/25 18:02	1
Magnesium	**25.2**		0.500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Copper	<0.00500		0.00500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Lithium	<0.0100		0.0100		mg/L		10/17/25 08:30	10/21/25 18:02	1
Molybdenum	<0.00200		0.00200		mg/L		10/17/25 08:30	10/21/25 18:02	1
Boron	**0.106**		0.100		mg/L		10/17/25 08:30	10/21/25 18:02	1
Aluminum	<0.0500		0.0500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Zinc	<0.0200		0.0200		mg/L		10/17/25 08:30	10/21/25 18:02	1
Manganese	<0.0100		0.0100		mg/L		10/17/25 08:30	10/21/25 18:02	1
Cobalt	<0.000500		0.000500		mg/L		10/17/25 08:30	10/21/25 18:02	1
Sodium	**14.9**		1.00		mg/L		10/17/25 08:30	10/21/25 18:02	1

Method: EPA 245.2 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/20/25 13:00	10/21/25 11:35	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU			10/16/25 01:43	1

Lab Chronicle

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Client Sample ID: MW-5S
Lab Sample ID: 310-318109-1
Date Collected: 10/15/25 09:00
Matrix: Ground Water
Date Received: 10/15/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	470621	ZRI4	EET CF	10/16/25 22:09
Total/NA	Prep	200.8			470387	RLT9	EET CF	10/17/25 08:30
Total/NA	Analysis	200.8		4	473623	NFT2	EET CF	11/14/25 12:31
Total/NA	Prep	200.8			470387	RLT9	EET CF	10/17/25 08:30
Total/NA	Analysis	200.8		1	470906	NFT2	EET CF	10/21/25 17:42
Total/NA	Prep	245.1			470611	RLT9	EET CF	10/20/25 13:00
Total/NA	Analysis	245.2		1	470872	RLT9	EET CF	10/21/25 10:46
Total/NA	Analysis	SM 4500 H+ B		1	470257	ZJX4	EET CF	10/16/25 01:45

Client Sample ID: MW-1
Lab Sample ID: 310-318109-2
Date Collected: 10/15/25 09:30
Matrix: Ground Water
Date Received: 10/15/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	470621	ZRI4	EET CF	10/16/25 22:44
Total/NA	Prep	200.8			470387	RLT9	EET CF	10/17/25 08:30
Total/NA	Analysis	200.8		1	470906	NFT2	EET CF	10/21/25 17:45
Total/NA	Prep	245.1			470611	RLT9	EET CF	10/20/25 13:00
Total/NA	Analysis	245.2		1	470872	RLT9	EET CF	10/21/25 10:48
Total/NA	Analysis	SM 4500 H+ B		1	470257	ZJX4	EET CF	10/16/25 01:40

Client Sample ID: MW-4S
Lab Sample ID: 310-318109-3
Date Collected: 10/15/25 09:55
Matrix: Ground Water
Date Received: 10/15/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	470621	ZRI4	EET CF	10/16/25 22:55
Total/NA	Prep	200.8			470387	RLT9	EET CF	10/17/25 08:30
Total/NA	Analysis	200.8		1	470906	NFT2	EET CF	10/21/25 17:51
Total/NA	Prep	245.1			470611	RLT9	EET CF	10/20/25 13:00
Total/NA	Analysis	245.2		1	470872	RLT9	EET CF	10/21/25 10:50
Total/NA	Analysis	SM 4500 H+ B		1	470257	ZJX4	EET CF	10/16/25 01:44

Client Sample ID: MW-2
Lab Sample ID: 310-318109-4
Date Collected: 10/15/25 10:25
Matrix: Ground Water
Date Received: 10/15/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	470621	ZRI4	EET CF	10/16/25 23:07
Total/NA	Prep	200.8			470387	RLT9	EET CF	10/17/25 08:30
Total/NA	Analysis	200.8		1	470906	NFT2	EET CF	10/21/25 17:54
Total/NA	Prep	245.1			470611	RLT9	EET CF	10/20/25 13:00
Total/NA	Analysis	245.2		1	470872	RLT9	EET CF	10/21/25 10:52
Total/NA	Analysis	SM 4500 H+ B		1	470257	ZJX4	EET CF	10/16/25 01:42

Lab Chronicle

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Client Sample ID: MW-3S
Date Collected: 10/15/25 11:00
Date Received: 10/15/25 14:10

Lab Sample ID: 310-318109-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	470621	ZRI4	EET CF	10/16/25 23:18
Total/NA	Prep	200.8			470387	RLT9	EET CF	10/17/25 08:30
Total/NA	Analysis	200.8		1	470906	NFT2	EET CF	10/21/25 18:02
Total/NA	Prep	245.1			470615	RLT9	EET CF	10/20/25 13:00
Total/NA	Analysis	245.2		1	470872	RLT9	EET CF	10/21/25 11:35
Total/NA	Analysis	SM 4500 H+ B		1	470257	ZJX4	EET CF	10/16/25 01:43

Laboratory References:

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

Definitions/Glossary

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Glossary

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

Accreditation/Certification Summary

Client: Cedar Falls Utilities
Job ID: 310-318109-1
Project/Site: Cedar Falls Ash Landfill

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

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

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8	200.8	Ground Water	Lithium

Method Summary

Client: Cedar Falls Utilities
Project/Site: Cedar Falls Ash Landfill

Job ID: 310-318109-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CF
200.8	Metals (ICP/MS)	EPA	EET CF
245.2	Mercury (CVAA)	EPA	EET CF
SM 4500 H+ B	pH	SM	EET CF
200.8	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF

Protocol References:

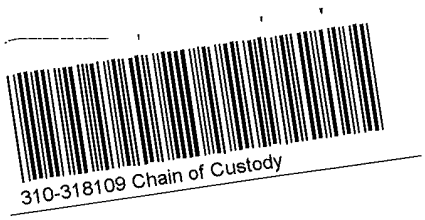
EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

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

eurofins | Environment Testing America



Cooler/Sample Receipt and Temperature L . . . .

Client Information

Client: Terracon

City/State: CITY Cedar Falls | STATE IA | Project: 11297

Receipt Information

Date/Time Received: DATE 10/8/25 | TIME 1410 | Received By: TD

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☑ Client Drop-off ☐ Other _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID.

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

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

Thermometer ID: BB | Correction Factor (°C): 0.0

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

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• **Sample Container Temperature**

	CONTAINER 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

Chain of Custody Record

653526

eurofins | Environment Testing America

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact	Project Manager: David Ames	Site Contact: David Ames	Date: 10/15/25	COC No
Company Name: Cedar Falls Utilities	Tel/Email: david.ames@cfunet.net	Lab Contact:	Carrier: Conner Bohlen	1 of 1 COCs
Address: 1 Utility Parkway Pobox 769	Analysis Turnaround Time			Sampler: Conner Bohlen
City/State/Zip: Cedar Falls, IA, 50613	☐ CALENDAR DAYS ☒ WORKING DAYS			For Lab Use Only:
Phone: 319-268 5300	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks ☒ 1 week ☐ 2 days ☐ 1 day — 5 day			Lab Sampling
Project Name: Lewis Reid Ash Landfill				Job / SDG No: 13257063
Site: Cedar Falls Ash Landfill				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PH	Metals	Chloride	Sulfate	Sample Specific Notes
MW-5S	10/15/25	0100	G	Gw	2	N		X	X	X	X	
MW-1		0930	G	Gw	2	N		X	X	X	X	
MW-4S		0955	G	Gw	2	N		X	X	X	X	
MW-2		1025	G	Gw	2	N		X	X	X	X	
MW-3S		1100	G	Gw	2	N		X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Please email results to Bob berg man@terracon.com & david.ames@cfunet.net

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____		
Relinquished by: Conner Bohlen	Company: Terracon	Date/Time: 10/15/25 1410	Received by:	Company:	Date/Time: 10/15/25 1410
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 10/15/25 1416

Login Sample Receipt Checklist

Client: Cedar Falls Utilities

Job Number: 310-318109-1

Login Number: 318109
List Number: 1
Creator: Robison, Jessie

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 F Semi-Annual Inspection Reports

Leversee Road Ash Landfill Spring Inspection
April 01, 2025

The spring inspection of the Leversee Road Landfill was completed over two days on March 04, 2025, and March 12, 2025.

There has been substantial activity at the landfill since the annual inspection and AWQR in October 2024. Cedar Falls Utilities Gas and Water Construction were on site for approximately two weeks at the end of January and the beginning of February this year during a warm spell with temperatures in the upper forties to middle fifties with a good firm frost in the ground.

The entire fence line of the landfill was grubbed of trees and shrubs exposing the fence to view. Approximately seventy-five truckloads of wooded materials were taken to the local city composting facility.

The fence has been deemed in enough disrepair over the last two inspections to conclude that replacement is necessary. Walk-throughs were performed with two contractors to measure the fence-line and solicit bid for replacement. Internal discussions and advice from outside counsel recommended a fence consisting of four-foot-high commercial galvanized material with a sixteen-foot single panel entry gate and a ten-foot double swing gate at the western boundary of the property to allow for access to the exterior perimeter of the fence for maintenance.

The overall condition of the cap is unremarkable with no erosion evident and sufficient vegetation rooted. There are noticeably young trees starting to grow sporadically over the cap that will need to be removed this summer. Grounds has already been consulted to formulate a plan. The tall foliage around the base of the cap was mowed down in mid-February.

Removal of the trees along the fence perimeter have exposed two mounds of fill which will need to be levelled before replacement of the fence can begin, and much of the site has mulch debris from the tree removal that grounds will rake up this spring. The south side of the landfill has had deep ruts made from vehicle traffic after the frost thawed. Those will also need to be smoothed out.

The wells were observed as being intact, locked, and untampered with. The new fence will be moved in approximately six feet to allow access on the outside perimeter for maintenance however, it will have to be moved back out to the property line around the perimeter wells. It

should be noted that the wells now have complete unobstructed access due to removal of the vegetation and sampling with be much easier in the future.

Maintenance Performed:

1. The perimeter of the landfill and roadway were mowed.
2. The entire fence-line was grubbed of trees and vegetation this winter/ spring.
3. Assessment of a replacement fence and bids to replace were solicited.

Recommendations:

1. Remove volunteer trees on the cap.
2. Grade the mounds of fill left on the site after capping.
3. Rake the remaining tree mulch on the site and repair ruts.
4. Completely replace the fence with new four-foot-high commercial fence.

David S. Ames

David Ames MSc, CEP-IT
Environmental Compliance Coordinator
Cedar Falls Utilities

Leversee Road Ash Landfill Fall Inspection
September 25, 2025

The Fall inspection of the Leversee Road Landfill was completed on Thursday, September 25, 2025. The weather was mostly sunny, 78 degrees and slightly windy. The entrance gate was found locked, and no foul activity was noticed. The project to replace the perimeter fence has been completed.

All wells were inspected and were in good repair. The well casings have been repainted a bright yellow and all locks were found to locked and functional in preparation for purging the wells next week. Terracon will perform annual well sampling for the AWQR on October 15'th.

A drive around the perimeter fence showed no unauthorized entry with no damage to the fence. There is no vegetation encroaching on the fence line, and no trees that look ready for imminent shedding of branches.

The perimeter fence has been replaced with a four-foot-high galvanized commercial grade chain link, approximately thirty-two-hundred feet long. There are two gates, a sixteen-foot entry gate that was placed about twenty feet inset of the old gate, and a ten-foot access gate on the west end of the landfill near MW-2.

The condition of the cap is excellent with mowed vegetation. There is no evidence of trees other than a minor number of small saplings which will get mowed over the next time the grounds department is there. The vegetation consists of a mixture of alfalfa, brome, fescue, and orchard grass with a mix of small woody brush.

Grass has been seeded around the entire perimeter of the fence due to the removal of vegetation and disturbance of the topsoil. Half of this grass has taken root and is growing well. The rest will need to be re-seeded at least twice, before winter, and this spring.

Maintenance Performed:

1. Entire fence line was replaced.
2. Wells were repainted a bright yellow.
3. Cap and surrounding vegetation were mowed.
4. Perimeter fence line was seeded.

Recommendations:

1. Perform more frequent inspections to detect problems with falling trees.
2. Re-seed the perimeter fence line to promote establishment of grasses.

David Ames

David Ames MSc, CEP-IT
Environmental Compliance Coordinator
Cedar Falls Utilities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