

## **2023 Annual Water Quality Report**

Leversee Road Ash Disposal Site

Permit Number: 07-SDP-11-89P

**Cedar Falls Utilities**

Cedar Falls, Iowa

**Final**

November 2023

31581.01.00

Certification

Prepared by: H.Scott Byram Date: 11/30/2023

Typed: \_\_\_\_\_

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

A handwritten signature in black ink that reads "Howard Scott Byram". The signature is written in a cursive, flowing style.

Howard Scott Byram Date: 11/30/2023

License Number:  
10454

My license renewal date is December 31, 2023

Pages or sheets covered by this certification:

Entire Bound Document

## Executive Summary

### Executive Summary

#### Period of Report Coverage

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 summarizes the activities for the year 2023.

#### Report Priority

The 2023 sampling event was consistent with past results, and in many cases lower contaminant levels were observed. The results discussed herein suggest no urgency for DNR review at this time. No deviations from the current monitoring program are recommended at this time. No permit modifications are requested at this time. No actions are on hold pending DNR review or approval.

#### Site Status and Applicable Rules

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.

On October 3, 2015, CFU sent notice of closure of the site to the DNR. 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.



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Figure 1 – Site Location

Figure 2 – Groundwater Surface Map

## Site Background History

### Site Background History

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.

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).

Table 1  
Monitoring Program Summary  
2023 Annual Water Quality Report  
Leversee Road Ash Disposal Site  
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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,Ba,B,Li,Mo,Se,Na      | 6                                                                   | 0            | 0               |
| MW-2            | Aluvial Sand and Gravel | Routine                    | NC                             | SO4,B,Mo                  | 6                                                                   | 0            | 0               |
| MW-3S           | Aluvial Sand and Gravel | Background                 | NC                             | None                      | 6                                                                   | 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,Li,Mo               | 6                                                                   | 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,Fe,Li,Mo         | 7                                                                   | 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: No changes from previous year.

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*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.

## Site Figures

Comments: See attached Figures 1 and 2.



Table 2  
Monitoring Program Implementation Schedule  
2023 Annual Water Quality Report  
Leversee Road Ash Disposal Site  
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| Monitoring Well | Recent Sampling Dates and Constituents |                |                |                |                |                |                | Planned        |
|-----------------|----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                 | 3/8/2018                               | 10/26/2018     | 10/23/2019     | 10/22/2020     | 10/26/2021     | 10/13/2022     | 10/31/2023     | October 2024   |
| 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 |
| 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 |
| 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 |
| MW-3D           |                                        | 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 |
| MW-4D           |                                        | 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 |
| MW-5D           |                                        | None           | None           | None           | None           | None           | None           | None           |
| MW-6            |                                        | None           | None           | None           | None           | None           | None           | None           |
|                 |                                        |                |                |                |                |                |                |                |

Comments: No changes from previous year.

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

- 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

**Table 3**  
**Monitoring Well Maintenance and Performance Revaluation Schedule**  
**2023 Annual Water Quality Report**  
**Leversee Road Ash Disposal Site**  
**Permit No. 07-SDP-11-89P**

| Compliance with:                                                        | Monitoring Calendar Years |           |           |           |           |           |           |
|-------------------------------------------------------------------------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                                                                         | 2018                      | 2019      | 2020      | 2021      | 2022      | 2023      | 2024      |
| 567 IAC 114.21(2)"a" high and low water levels (add required frequency) | 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 | Scheduled |
| 567 IAC 114.21(2)"c" well depths                                        | Completed                 | Completed | Completed | Completed | Completed | Completed | Scheduled |
| 567 IAC 114.21(2)"d" in-situ permeability tests                         |                           |           |           |           |           |           |           |

Monitoring wells MW-4, MW-5, and MW-6 were cleaned to remove root hairs on 8/23/2023. Removal of root hairs was accomplished by using a stiff bristle brush to loosen the roots followed by pumping to remove the resultant debris.

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

Table 4  
Monitoring Well Maintenance and Performance Summary  
2023 Annual Water Quality Report  
Leversee Road Ash Disposal Site  
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(includes all wells, underdrains etc.)

| Well  | Top of Casing | Top of Screen | Total Depth |                                | Date of Measurements |            | Maximum Depth Discrepancy (ft) | Baseline Permeability (cm/s/date) | Current Permeability |          |
|-------|---------------|---------------|-------------|--------------------------------|----------------------|------------|--------------------------------|-----------------------------------|----------------------|----------|
|       |               |               |             |                                |                      | 10/31/2023 |                                |                                   |                      | % Change |
| MW-1  | 858.41        | 848.1         | 20.3        | Groundwater Level (ft)         |                      | 11.74      | 0.1                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.67     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 20.15      |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | N          |                                |                                   |                      |          |
| MW-2  | 861.13        | 847.8         | 23.3        | Groundwater Level (ft)         |                      | 14.25      | 0.1                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.88     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 23.4       |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | N          |                                |                                   |                      |          |
| MW-3S | 868.55        | 846.5         | 32.1        | Groundwater Level (ft)         |                      | 21.65      | 0.1                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.9      |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 32.2       |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | Y          |                                |                                   |                      |          |
| MW-3D | 868.8         | 819.5         | 59.3        | Groundwater Level (ft)         |                      | 21.88      | 0.2                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.92     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 59.1       |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | Y          |                                |                                   |                      |          |
| MW-4S | 858.98        | 848.68        | 20.3        | Groundwater Level (ft)         |                      | 12.22      | 1.2                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.76     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 21.5       |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | N          |                                |                                   |                      |          |
| MW-4D | 859.19        | 798.3         | 70.9        | Groundwater Level (ft)         |                      | 12.48      | 1.6                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.71     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 71.33      |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | Y          |                                |                                   |                      |          |
| MW-5S | 868.1         | 850.5         | 27.6        | Groundwater Level (ft)         |                      | 21.45      | 0.3                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.65     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 27.3       |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | N          |                                |                                   |                      |          |
| MW-5D | 868.72        | 824.62        | 54.1        | Groundwater Level (ft)         |                      | 22.00      | 0                              | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 846.72     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 54.07      |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | Y          |                                |                                   |                      |          |
| MW-6  | 868.49        | 853.19        | 25.3        | Groundwater Level (ft)         |                      | 22.72      | 0.1                            | 0.01 - 0.02<br>6/1/1992           |                      |          |
|       |               |               |             | Groundwater Elevation (Ft MSL) |                      | 845.77     |                                |                                   |                      |          |
|       |               |               |             | Measured Well Depth (ft)       |                      | 25.4       |                                |                                   |                      |          |
|       |               |               |             | Submerged screen               |                      | N          |                                |                                   |                      |          |

All wells were constructed with 10 ft. screens. Accordingly 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 2023 were approximately 1.5 feet below those of 2022. The direction of groundwater flow was more southeasterly than 2022, 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.

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



Table 5  
Background Summary Well MW-35  
2023 Annual Water Quality Report  
Leversee Road Ash Disposal Site  
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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 |           |                    |               |       |
| 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       | 21.501    | 24.634             | 70.769        |       |
| 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       | 17.936    | 4.011              | 25.959        |       |
| 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       | 7.218     | 0.301              | 7.821         | 6.615 |
| 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        | 7.503     | 0.126              | 7.755         | 7.251 |
| Specific Conductance | 5 µS/cm                    |               | 1,390.0   | 540.0     | 1,120.0    | 680        | 718        | 560        | 629        | 466        | 434        | 521        | 705,800   | 293.374            | 1,292.5       |       |
| Temperature          | 0.5 °C                     |               | 13.10     | 12.70     | 14.80      | 12.38      | 13         | 9.93       | 11.97      | 9.82       | 11.62      | 10.6       | 11.992    | 1.477              | 14.947        | 9.037 |
| 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    | 0.03571   | 0.02948            | 0.09467       |       |
| 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   | 0.0008405 | 0.0002595          | #####         |       |
| 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     | 0.04337   | 0.00816            | 0.05969       |       |
| 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   | 0.0001507 | 0.0001159          | #####         |       |
| 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     | 0.06765   | 0.03385            | 0.13535       |       |
| 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       | 86.355    | 19.890             | 126.135       |       |
| 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   | 0.0002419 | 0.0001585          | #####         |       |
| 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    | 0.0009885 | 0.0007166          | #####         |       |
| 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     | 0.07712   | 0.06250            | 0.20212       |       |
| 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   | 0.0002152 | 0.0001326          | #####         |       |
| Lithium              | 0.0500 mg/L                | 0.166000      | 0.003275  | 0.003275  | 0.003275   | 0.0250     | 0.0014     | 0.00135    | 0.00125    | 0.00125    | 0.00271    | 0.00125    | 0.0044035 | 0.0072114          | #####         |       |
| 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       | 21.909    | 4.782              | 31.472        |       |
| 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     | 0.01878   | 0.01461            | 0.04800       |       |
| 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    | 0.0006405 | 0.0006853          | #####         |       |
| 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    | 0.0008335 | 0.0006292          | #####         |       |
| 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       | 15.206    | 17.267             | 49.740        |       |
| 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     | 0.004385  | 0.002157           | 0.008699      |       |

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 2023 data in the calculations, although the control limit did increase.

This worksheet;

1) Summarizes the size and quality of the data record of the 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.

background

**Table 6**  
**Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances**  
**2023 Annual Water Quality Report**  
**Leversee Road Ash Disposal Site**  
**Permit No. 07-SDP-11-89P**

Comments: Refer to the data summary tables for this information. Iron in MW-4 exceeded its control limit in 2023 but has not done so in previous sampling events. There were no problems with any of the monitoring points in 2023.

*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.*

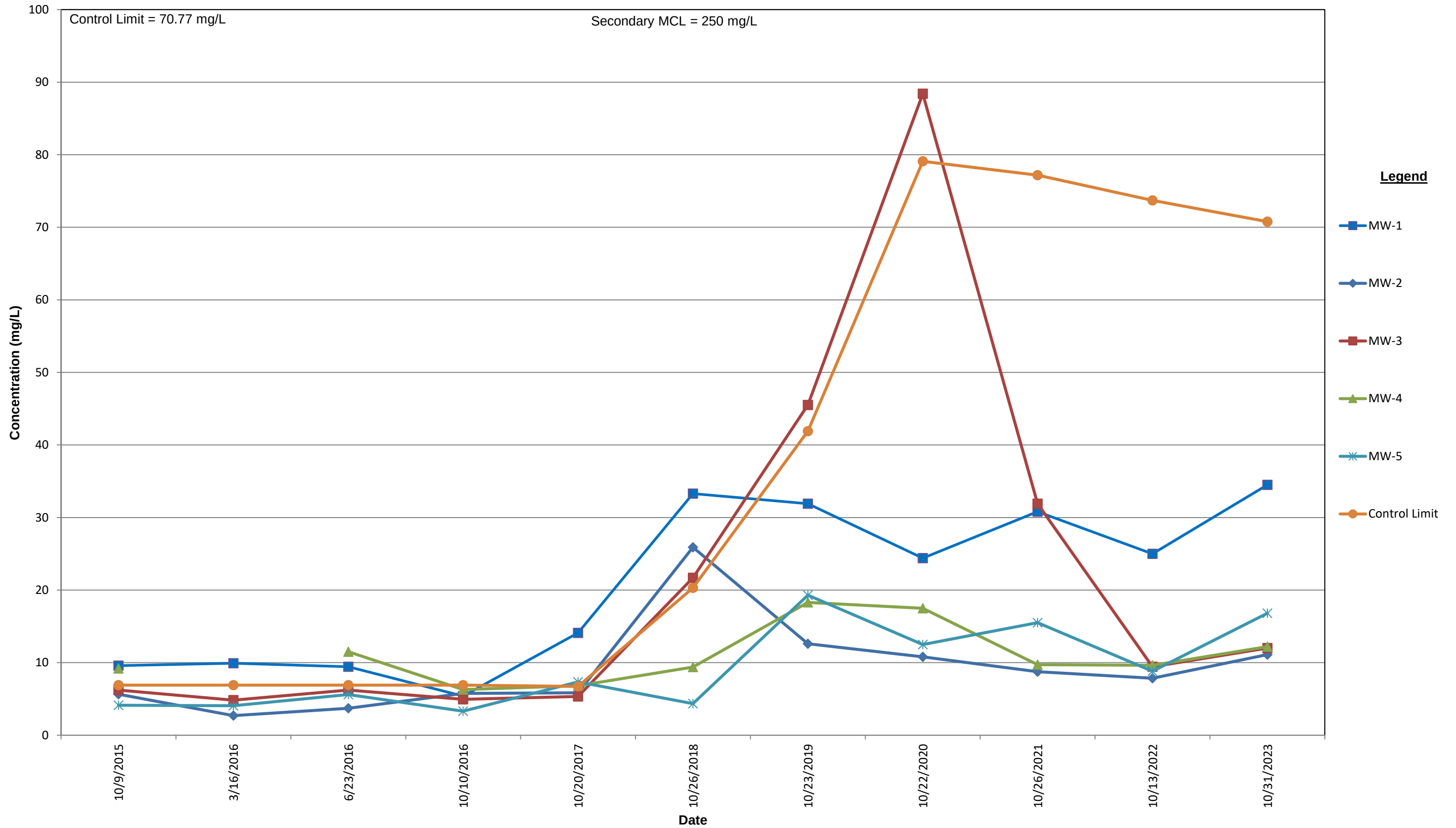
**Table 7**  
**Summary of Ongoing and Newly Identified Control Limit Exceedances**  
**2023 Annual Water Quality Report**  
**Leversee Road Ash Disposal Site**  
**Permit No. 07-SDP-11-89P**

| Parameter            | Number of Exceedances |                                                        |                                                            |
|----------------------|-----------------------|--------------------------------------------------------|------------------------------------------------------------|
|                      | 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)      | 0                     | 0                                                      | 0                                                          |
| Specific Conductance | 0                     | 0                                                      | 0                                                          |
| Temperature          | 0                     | 0                                                      | 0                                                          |
| Aluminum             | 0                     | 0                                                      | 0                                                          |
| Arsenic              | 0                     | 0                                                      | 0                                                          |
| Barium               | 2                     | 0                                                      | 0                                                          |
| Beryllium            | 0                     | 0                                                      | 0                                                          |
| Boron                | 4                     | 0                                                      | 0                                                          |
| Calcium              | 0                     | 0                                                      | 0                                                          |
| Cobalt               | 0                     | 0                                                      | 0                                                          |
| Copper               | 0                     | 0                                                      | 0                                                          |
| Iron                 | 1                     | 0                                                      | 0                                                          |
| Lead                 | 0                     | 0                                                      | 0                                                          |
| Lithium              | 3                     | 3                                                      | 1                                                          |
| Magnesium            | 0                     | 0                                                      | 0                                                          |
| Manganese            | 0                     | 0                                                      | 0                                                          |
| Molybdenum           | 4                     | 4                                                      | 0                                                          |
| Selenium             | 1                     | 0                                                      | 0                                                          |
| Sodium               | 1                     | 0                                                      | 0                                                          |
| Zinc                 | 0                     | 0                                                      | 0                                                          |

Comments: Refer to the data summary tables for historical information. There were no problems with any of the monitoring points in 2023. Manganese values exceeded the Secondary MCL in one well. No other Secondary MCL's were exceeded. No Primary MCL's were exceeded. The HAL for sodium (20 mg/L) was exceeded in Wells MW-1 and MW-3.



# Chloride



# Chloride

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 9.58      | 9.92      | 9.43      | 5.39       |
| MW-2          | 5.65      | 2.7       | 3.72      | 5.77       |
| MW-3          | 6.22      | 4.83      | 6.23      | 4.95       |
| MW-4          | 9.2       |           | 11.5      | 6.29       |
| MW-5          | 4.12      | 4.07      | 5.61      | 3.31       |
| Control Limit | 6.895     | 6.895     | 6.895     | 6.895      |
| Secondary MCL | 250       | 250       | 250       | 250        |

# FIELD pH

|                    | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|--------------------|-----------|-----------|-----------|------------|
| MW-1               |           | 7.02      | 7.43      |            |
| MW-2               |           | 7.24      | 7.49      | 6.92       |
| MW-3               |           | 7.43      | 7.53      | 7.12       |
| MW-4               |           | 7.12      | 7.41      |            |
| MW-5               |           | 6.90      | 7.02      | 6.99       |
| Min. Control Limit |           | 6.31      | 6.31      | 6.31       |
| Max. Control Limit |           | 7.97      | 7.97      | 7.97       |

# LABORATORY pH

|                    | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|--------------------|-----------|-----------|-----------|------------|
| MW-1               | 7.14      | 6.96      | 7.33      | 7.20       |
| MW-2               | 7.43      | 7.45      | 7.51      | 7.20       |
| MW-3               | 7.55      | 7.68      | 7.60      | 7.50       |
| MW-4               | 6.96      | 7.04      | 7.11      | 7.10       |
| MW-5               | 7.18      | 7.38      | 7.12      | 7.00       |
| Min. Control Limit | 7.45      | 7.45      | 7.45      | 7.45       |
| Max. Control Limit | 7.72      | 7.72      | 7.72      | 7.72       |

# Sulfate

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 247       | 416       | 184       | 7.19       |
| MW-2          | 32.1      | 61.9      | 89.9      | 13.1       |
| MW-3          | 16.3      | 16.1      | 19.7      | 16.9       |
| MW-4          | 191       | 428       | 322       | 38.8       |
| MW-5          | 32        | 32.7      | 154       | 149        |
| Control Limit | 20.140    | 20.140    | 20.140    | 20.140     |
| Secondary MCL | 250       | 250       | 250       | 250        |

# Barium

|      | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|------|-----------|-----------|-----------|------------|
| MW-1 | 0.0822    | 0.0875    | 0.05      | 0.0444     |
| MW-2 | 0.0561    | 0.0697    | 0.0584    | 0.0628     |
| MW-3 | 0.0344    | 0.0319    | 0.0311    | 0.0384     |
| MW-4 | 0.0923    | 0.119     | 0.0773    | 0.0364     |
| MW-5 | 0.0705    | 0.0573    | 0.0898    | 0.0803     |



|               |         |         |         |         |
|---------------|---------|---------|---------|---------|
| Control Limit | 0.03964 | 0.03964 | 0.03964 | 0.03964 |
| Primary MCL   | 2.0     | 2.0     | 2.0     | 2.0     |

#### Boron

|                                     | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|-------------------------------------|-----------|-----------|-----------|------------|
| MW-1                                | 6.82      | 9.85      | 8.69      | 0.416      |
| MW-2                                | 0.472     | 0.996     | 1.24      | 1.41       |
| MW-3                                | 0.0677    | 0.0497    | 0.0454    | 0.0519     |
| MW-4                                | 5.98      | 10.6      | 14.2      | 3.62       |
| MW-5                                | 2.66      | 0.933     | 3.68      | 3.47       |
| Control Limit                       | 0.0705    | 0.0705    | 0.0705    | 0.0705     |
| Statewide Standard Protected GW     | 6.0       | 6.0       | 6.0       | 6.0        |
| Statewide Standard Non-Protected GW | 30.0      | 30.0      | 30.0      | 30.0       |

#### Calcium

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 134       | 166       | 99.6      | 51.9       |
| MW-2          | 78.4      | 96.2      | 94.6      | 90.2       |
| MW-3          | 70.8      | 76.8      | 69.2      | 90         |
| MW-4          | 162       | 187       | 120       | 93         |
| MW-5          | 91.5      | 93.5      | 132       | 176        |
| Control Limit | 93.1      | 93.1      | 93.1      | 93.1       |

#### Cobalt

|                                     | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|-------------------------------------|-----------|-----------|-----------|------------|
| MW-1                                | 0.000167  | 0.000603  | 0.000405  | 0.000578   |
| MW-2                                | 0.00036   | 0.000706  | 0.000465  | 0.000533   |
| MW-3                                | 0.000443  | 0.000079  | 0.000516  | 0.00023    |
| MW-4                                | 0.000409  | 0.000949  | 0.000595  | 0.000371   |
| MW-5                                | 0.000388  | 0.000164  | 0.000609  | 0.000996   |
| Control Limit                       | 0.000663  | 0.000663  | 0.000663  | 0.000663   |
| Statewide Standard Protected GW     | 0.0028    | 0.0028    | 0.0028    | 0.0028     |
| Statewide Standard Non-Protected GW | 0.014     | 0.014     | 0.014     | 0.014      |

#### Magnesium

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 31.2      | 24.9      | 22.8      | 5.91       |
| MW-2          | 17.4      | 17.7      | 24        | 13.2       |
| MW-3          | 20.4      | 18.5      | 20.8      | 21.6       |
| MW-4          | 21.7      | 27.1      | 22.7      | 10.8       |
| MW-5          | 15.4      | 15.3      | 26.5      | 27.3       |
| Control Limit | 22.603    | 22.603    | 22.603    | 22.603     |

#### Manganese

|      | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|------|-----------|-----------|-----------|------------|
| MW-1 | 0.0111    | 0.039     | 0.0156    | 0.0799     |
| MW-2 | 0.0471    | 0.0948    | 0.0411    | 0.248      |

|                                 |         |         |         |         |
|---------------------------------|---------|---------|---------|---------|
| MW-3                            | 0.0456  | 0.0055  | 0.0401  | 0.0217  |
| MW-4                            | 0.651   | 0.145   | 0.122   | 0.111   |
| MW-5                            | 0.227   | 0.109   | 0.0714  | 0.24    |
| Secondary MCL                   | 0.05    | 0.05    | 0.05    | 0.05    |
| Control Limit                   | 0.05988 | 0.05988 | 0.05988 | 0.05988 |
| Statewide Standard Protected GW | 0.3     | 0.3     | 0.3     | 0.3     |

#### Sodium

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 35.4      | 43.5      | 40.7      | 3.84       |
| MW-2          | 2.44      | 2.86      | 2.41      | 4.74       |
| MW-3          | 2.08      | 2.24      | 2.54      | 2.42       |
| MW-4          | 32.4      | 43.5      | 105       | 11.5       |
| MW-5          | 7.73      | 6.54      | 5.76      | 10.5       |
| Control Limit | 2.67      | 2.67      | 2.67      | 2.67       |

#### Aluminum

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.0395    | 0.1300    | 0.1390    | 0.0395     |
| MW-2          | 0.0467    | 0.0572    | 0.0907    | 0.0369     |
| MW-3          | 0.0408    | 0.0104    | 0.0766    | 0.0884     |
| MW-4          | 0.00423   | 0.04040   | 0.02485   | 0.02080    |
| MW-5          | 0.00423   | 0.01040   | 0.02485   | 0.0704     |
| Control Limit | 0.11544   | 0.11544   | 0.11544   | 0.11544    |

#### Arsenic

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.00123   | 0.000952  | 0.00111   | 0.00139    |
| MW-2          | 0.0004725 | 0.000871  | 0.000839  | 0.00118    |
| MW-3          | 0.00103   | 0.00068   | 0.00107   | 0.000884   |
| MW-4          | 0.0004725 | 0.000336  | 0.000506  | 0.000678   |
| MW-5          | 0.00101   | 0.00034   | 0.000581  | 0.000442   |
| Control Limit | 0.0012217 | 0.0012217 | 0.0012217 | 0.0012217  |
| Primary MCL   |           |           |           |            |

#### Copper

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.0002425 | 0.00181   | 0.00118   | 0.00140    |
| MW-2          | 0.0002425 | 0.00146   | 0.001     | 0.00061    |
| MW-3          | 0.0002425 | 0.00061   | 0.00105   | 0.0007     |
| MW-4          | 0.0002425 | 0.00061   | 0.00101   | 0.00061    |
| MW-5          | 0.0002425 | 0.00061   | 0.000691  | 0.00061    |
| Control Limit | 0.001248  | 0.001248  | 0.001248  | 0.001248   |

#### Iron

|      | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|------|-----------|-----------|-----------|------------|
| MW-1 | 0.0885    | 0.167     | 0.224     | 0.0428     |
| MW-2 | 0.175     | 0.504     | 0.264     | 0.247      |
| MW-3 | 0.18      | 0.0835    | 0.195     | 0.0781     |
| MW-4 | 0.0875    | 0.252     | 0.176     | 0.0746     |

|               |        |         |        |         |
|---------------|--------|---------|--------|---------|
| MW-5          | 0.875  | 0.04175 | 0.0762 | 0.03905 |
| Control Limit | 0.2632 | 0.2632  | 0.2632 | 0.2632  |

#### Lead

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.000434  | 0.00106   | 0.000613  | 0.0001055  |
| MW-2          | 0.000494  | 0.000799  | 0.000571  | 0.0001055  |
| MW-3          | 0.000296  | 0.0001055 | 0.000502  | 0.0001055  |
| MW-4          | 4.835E-05 | 0.000439  | 0.000411  | 0.0001055  |
| MW-5          | 4.835E-05 | 0.0001055 | 0.000356  | 0.0001055  |
| Control Limit | 0.00058   | 0.00058   | 0.00058   | 0.00058    |

#### Lithium

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.0175    | 0.227     | 0.202     | 0.0317     |
| MW-2          | 0.004405  | 0.0254    | 0.0136    | 0.0207     |
| MW-3          | 0.166     | 0.003275  | 0.003275  | 0.003275   |
| MW-4          | 0.093     | 0.183     | 0.283     | 0.0575     |
| MW-5          | 0.0933    | 0.0589    | 0.0469    | 0.0309     |
| Control Limit | 0.18488   | 0.18488   | 0.18488   | 0.18488    |

#### Molybdenum

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.248     | 0.196     | 0.207     | 0.254      |
| MW-2          | 0.0702    | 0.1       | 0.0429    | 0.154      |
| MW-3          | 0.000106  | 0.000107  | 0.002635  | 0.0000525  |
| MW-4          | 0.0213    | 0.00705   | 0.0237    | 0.0281     |
| MW-5          | 0.154     | 0.139     | 0.105     | 0.0488     |
| Control Limit | 0.002931  | 0.002931  | 0.002931  | 0.002931   |

#### Selenium

|               | 10/9/2015 | 3/16/2016 | 6/23/2016 | 10/10/2016 |
|---------------|-----------|-----------|-----------|------------|
| MW-1          | 0.00167   | 0.00505   | 0.00126   | 0.000315   |
| MW-2          | 0.00167   | 0.0012    | 0.00119   | 0.000315   |
| MW-3          | 0.00167   | 0.00113   | 0.000428  | 0.000895   |
| MW-4          | 0.00167   | 0.00775   | 0.00265   | 0.00113    |
| MW-5          | 0.00167   | 0.00111   | 0.000428  | 0.00127    |
| Control Limit | 0.001853  | 0.001853  | 0.001853  | 0.001853   |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | ##### |
|------------|------------|------------|------------|------------|-------|-------|
| 14.1       | 33.30      | 31.9       | 24.4       | 30.8       | 25    | 34.5  |
| 5.84       | 25.9       | 12.6       | 10.8       | 8.76       | 7.84  | 11.1  |
| 5.34       | 21.7       | 45.5       | 88.4       | 31.9       | 9.44  | 12    |
| 6.81       | 9.38       | 18.3       | 17.5       | 9.72       | 9.63  | 12.2  |
| 7.34       | 4.34       | 19.3       | 12.5       | 15.5       | 8.82  | 16.8  |
| 6.7230724  | 20.3       | 41.9       | 79.09      | 77.18      | 73.7  | 70.77 |
| 250        | 250        | 250        | 250        | 250        | 250   | 250   |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | ##### |
|------------|------------|------------|------------|------------|-------|-------|
| 6.23       | 6.64       | 7.06       | 7.21       | 7.23       | 7.31  | 7.1   |
| 6.17       | 6.82       | 6.98       | 7.18       | 7.48       | 7.43  | 7.27  |
| 6.47       | 6.90       | 7.29       | 7.28       | 7.37       | 7.37  | 7.42  |
| 6.68       | 6.92       | 7.13       | 7.10       | 7.16       | 7.06  | 7.08  |
|            | 6.74       | 7.13       | 6.96       | 6.88       | 7.07  | 7.12  |
| 6.31       | 6.33       | 6.41       | 6.48       | 6.53       | 6.60  | 6.62  |
| 7.97       | 7.86       | 7.83       | 7.82       | 7.82       | 7.80  | 7.82  |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | ##### |
|------------|------------|------------|------------|------------|-------|-------|
| 7.60       | 6.80       | 7.20       | 7.20       | 7.30       | 7.00  | 7.3   |
| 7.30       | 7.20       | 7.10       | 7.30       | 7.50       | 7.40  | 7.6   |
| 7.60       | 7.20       | 7.40       | 7.40       | 7.50       | 7.50  | 7.6   |
| 7.50       | 7.10       | 7.30       | 7.20       | 7.20       | 7.20  | 7.3   |
| 7.1        | 7.30       | 7.30       | 7.10       | 7.30       | 7.30  | 7.3   |
| 7.47       | 7.21       | 7.21       | 7.20       | 7.22       | 7.20  | 7.25  |
| 7.71       | 7.86       | 7.80       | 7.78       | 7.76       | 7.70  | 7.75  |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####  | ##### |
|------------|------------|------------|------------|------------|--------|-------|
| 234        | 387        | 165        | 63.5       | 92.3       | 220    | 139   |
| 99.9       | 104        | 145        | 37.7       | 11.8       | 27.6   | 26.1  |
| 17.2       | 26.4       | 19.3       | 20.3       | 13.5       | 10.4   | 21.2  |
| 92         | 242        | 86         | 209        | 84.4       | 70.9   | 81.7  |
| 53         | 57.4       | 71.9       | 205        | 14.3       | 39.7   | 80.6  |
| 19.824879  | 26.000     | 25.500     | 25.400     | 25.300     | 25.700 | 26    |
| 250        | 250        | 250        | 250        | 250        | 250    | 250   |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####  | #####  |
|------------|------------|------------|------------|------------|--------|--------|
| 0.0673     | 0.227      | 0.0902     | 0.0802     | 0.0958     | 0.138  | 0.0902 |
| 0.0887     | 0.0919     | 0.118      | 0.058      | 0.0399     | 0.0703 | 0.0497 |
| 0.0491     | 0.0487     | 0.0526     | 0.056      | 0.0495     | 0.043  | 0.0424 |
| 0.0362     | 0.101      | 0.0594     | 0.0781     | 0.0696     | 0.0579 | 0.0493 |
| 0.108      | 0.11       | 0.0847     | 0.0922     | 0.07       | 0.0794 | 0.0722 |

|           |        |        |        |        |        |        |
|-----------|--------|--------|--------|--------|--------|--------|
| 0.0501238 | 0.0538 | 0.0576 | 0.0614 | 0.0615 | 0.0606 | 0.0597 |
| 2.0       | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2      |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | #####  |
|------------|------------|------------|------------|------------|-------|--------|
| 8.18       | 12.4       | 6.14       | 2.33       | 3.31       | 5.66  | 5.66   |
| 1.8        | 1.31       | 3.13       | 1.11       | 0.0823     | 0.417 | 0.151  |
| 0.1        | 0.13       | 0.119      | 0.04       | 0.029      | 0.029 | 0.0824 |
| 3.95       | 10.8       | 2.3        | 13.3       | 2.13       | 2.15  | 1.9    |
| 7.1        | 2.42       | 4.37       | 22.3       | 0.14       | 0.329 | 1.04   |
| 0.1029493  | 0.136      | 0.146      | 0.142      | 0.14       | 0.137 | 0.135  |
| 6.0        | 6.0        | 6.0        | 6.0        | 6.0        | 6.0   | 6      |
| 30.0       | 30.0       | 30.0       | 30.0       | 30.0       | 30.0  | 30     |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | ##### |
|------------|------------|------------|------------|------------|-------|-------|
| 115        | 205        | 125        | 116        | 109        | 177   | 97.5  |
| 129        | 121        | 167        | 99.1       | 68.5       | 96.7  | 78.2  |
| 110        | 104        | 117        | 111        | 77.7       | 63    | 60.4  |
| 88.2       | 139        | 115        | 148        | 115        | 107   | 103   |
| 120        | 108        | 150        | 195        | 122        | 119   | 118   |
| 113.75832  | 118.5      | 127.3      | 129.9      | 127.5      | 127   | 126.1 |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####    | #####    |
|------------|------------|------------|------------|------------|----------|----------|
| 0.00025    | 0.000428   | 0.000139   | 0.000535   | 0.000298   | 0.00047  | 0.000214 |
| 0.00025    | 0.000173   | 0.000124   | 0.0000455  | 0.000095   | 0.000095 | 0.000085 |
| 0.00025    | 0.000088   | 0.0000455  | 0.0000455  | 0.0000455  | 0.000232 | 0.000331 |
| 0.00025    | 0.000135   | 0.000099   | 0.000175   | 0.000401   | 0.000318 | 0.000085 |
| 0.00101    | 0.000324   | 0.000308   | 0.000153   | 0.000471   | 0.000359 | 0.000181 |
| 0.0006176  | 0.0006     | 0.000578   | 0.000556   | 0.000578   | 0.00056  | 0.000559 |
| 0.0028     | 0.0028     | 0.0028     | 0.0028     | 0.0028     | 0.0028   | 0.0028   |
| 0.014      | 0.014      | 0.014      | 0.014      | 0.014      | 0.014    | 0.014    |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | ##### |
|------------|------------|------------|------------|------------|-------|-------|
| 21.6       | 41         | 31.2       | 27.8       | 24.6       | 33.5  | 20.8  |
| 25.1       | 19.8       | 32.8       | 19.8       | 12.8       | 18.7  | 18.2  |
| 27.2       | 26.8       | 29.5       | 27         | 18.9       | 14.7  | 15.6  |
| 17.6       | 27.9       | 24.1       | 30.8       | 28.1       | 24.3  | 27.2  |
| 17.7       | 15.7       | 28.7       | 34.5       | 24.7       | 23.2  | 27.8  |
| 27.565151  | 29.1       | 31.3       | 31.6       | 31.3       | 31.7  | 31.5  |

| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####  | #####  |
|------------|------------|------------|------------|------------|--------|--------|
| 0.0103     | 0.35       | 0.00833    | 0.0326     | 0.0175     | 0.0446 | 0.0141 |
| 0.0143     | 0.0921     | 0.136      | 0.0889     | 0.0411     | 0.0932 | 0.0402 |

|          |         |         |        |        |        |        |
|----------|---------|---------|--------|--------|--------|--------|
| 0.0126   | 0.00651 | 0.00407 | 0.002  | 0.0113 | 0.0234 | 0.0338 |
| 0.0369   | 0.0403  | 0.0219  | 0.0298 | 0.02   | 0.0925 | 0.0196 |
| 0.0801   | 0.0324  | 0.0222  | 0.013  | 0.0228 | 0.0325 | 0.017  |
| 0.05     | 0.05    | 0.05    | 0.05   | 0.05   | 0.05   | 0.05   |
| 0.056048 | 0.0535  | 0.0512  | 0.0491 | 0.0468 | 0.0463 | 0.048  |
| 0.3      | 0.3     | 0.3     | 0.3    | 0.3    | 0.3    | 0.3    |

|            |            |            |            |            |       |       |
|------------|------------|------------|------------|------------|-------|-------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | ##### | ##### |
| 50.9       | 65         | 59.3       | 8.38       | 27.8       | 59.2  | 83.2  |
| 4.36       | 27         | 11.3       | 9.38       | 7.5        | 9.23  | 9.35  |
| 2.69       | 4.52       | 4.68       | 19.2       | 43.9       | 43.9  | 39.1  |
| 36.2       | 57.5       | 20.1       | 73.5       | 15.8       | 13.6  | 10.7  |
| 5.52       | 3.62       | 4.82       | 7.02       | 5.01       | 4.91  | 5.72  |
| 2.8247389  | 4.38       | 5.05       | 15.91      | 35.85      | 45.38 | 49.7  |

|            |            |            |            |            |        |        |
|------------|------------|------------|------------|------------|--------|--------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####  | #####  |
| 0.0250     | 0.0135     | 0.0135     | 0.0308     | 0.0567     | 0.0398 | 0.0666 |
| 0.0250     | 0.0135     | 0.0135     | 0.0060     | 0.0850     | 0.0173 | 0.0085 |
| 0.0250     | 0.0135     | 0.0135     | 0.0060     | 0.0850     | 0.0330 | 0.0771 |
| 0.0250     | 0.0675     | 0.0135     | 0.0060     | 0.0850     | 0.0231 | 0.0085 |
| 0.1150     | 0.0564     | 0.0393     | 0.0060     | 0.0235     | 0.0419 | 0.0085 |
| 0.1078684  | 0.1079     | 0.0980     | 0.0940     | 0.0900     | 0.0870 | 0.095  |

|            |            |            |            |            |          |          |
|------------|------------|------------|------------|------------|----------|----------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####    | #####    |
| 0.001      | 0.00128    | 0.00114    | 0.00044    | 0.00103    | 0.000918 | 0.00117  |
| 0.001      | 0.00029    | 0.000375   | 0.00044    | 0.000375   | 0.000375 | 0.000675 |
| 0.001      | 0.00029    | 0.000866   | 0.00044    | 0.000984   | 0.000836 | 0.00117  |
| 0.001      | 0.00029    | 0.000795   | 0.00044    | 0.000375   | 0.000375 | 0.000712 |
| 0.00138    | 0.00029    | 0.00085    | 0.00044    | 0.000375   | 0.000375 | 0.000653 |
| 0.0012143  | 0.00137    | 0.00134    | 0.00132    | 0.00133    | 0.00131  | 0.00136  |

|            |            |            |            |            |         |         |
|------------|------------|------------|------------|------------|---------|---------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####   | #####   |
| 0.0025     | 0.0008     | 0.001      | 0.00075    | 0.0007     | 0.0009  | 0.0009  |
| 0.0025     | 0.0008     | 0.001      | 0.00075    | 0.0007     | 0.0009  | 0.0009  |
| 0.0025     | 0.0008     | 0.001      | 0.00075    | 0.0007     | 0.0009  | 0.00226 |
| 0.0025     | 0.0008     | 0.001      | 0.00075    | 0.0007     | 0.0009  | 0.0009  |
| 0.0011     | 0.0008     | 0.001      | 0.00075    | 0.00142    | 0.0009  | 0.0009  |
| 0.0026368  | 0.00247    | 0.00237    | 0.00226    | 0.00217    | 0.00211 | 0.00242 |

|            |            |            |            |            |        |        |
|------------|------------|------------|------------|------------|--------|--------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####  | #####  |
| 0.05       | 0.033      | 0.033      | 0.0654     | 0.0778     | 0.107  | 0.008  |
| 0.108      | 0.136      | 0.127      | 0.025      | 0.018      | 0.0378 | 0.138  |
| 0.05       | 0.033      | 0.033      | 0.025      | 0.018      | 0.0735 | 0.143  |
| 0.05       | 0.033      | 0.033      | 0.025      | 0.018      | 0.0622 | 0.0218 |

|           |       |       |        |       |       |        |
|-----------|-------|-------|--------|-------|-------|--------|
| 0.375     | 0.253 | 0.117 | 0.0564 | 0.112 | 0.24  | 0.0786 |
| 0.2452689 | 0.232 | 0.219 | 0.209  | 0.2   | 0.194 | 0.202  |

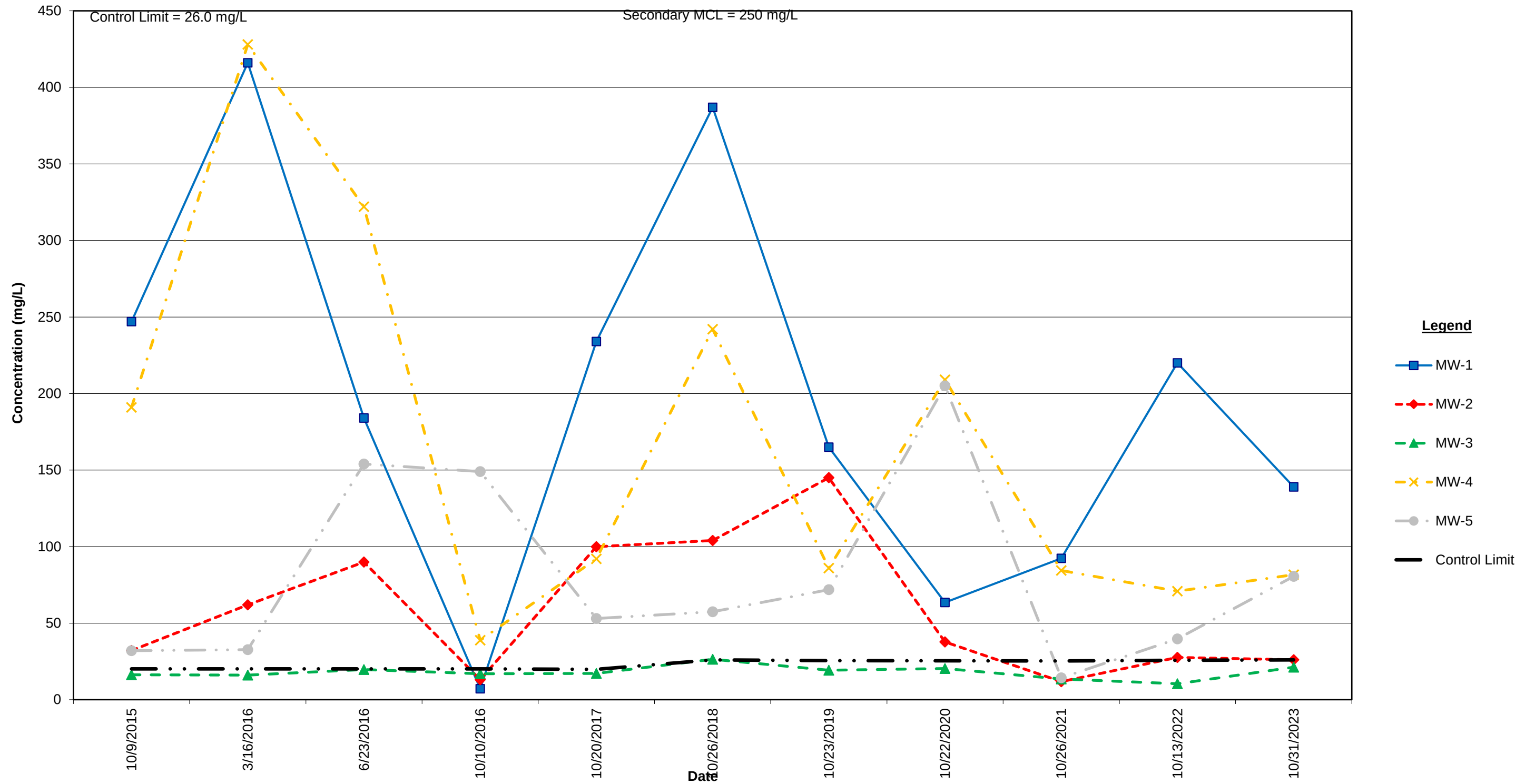
|            |            |            |            |            |          |          |
|------------|------------|------------|------------|------------|----------|----------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####    | #####    |
| 0.00128    | 0.00013    | 0.000135   | 0.000168   | 0.00109    | 0.00012  | 0.00012  |
| 0.00025    | 0.00013    | 0.000135   | 0.000055   | 0.000929   | 0.00012  | 0.00012  |
| 0.00025    | 0.00013    | 0.000135   | 0.000055   | 0.000356   | 0.00012  | 0.000317 |
| 0.00025    | 0.00013    | 0.000135   | 0.000055   | 0.00038    | 0.00012  | 0.00012  |
| 0.000826   | 0.000665   | 0.000347   | 0.00021    | 0.000946   | 0.000719 | 0.000253 |
| 0.0005449  | 0.00051    | 0.000488   | 0.000472   | 0.000493   | 0.000475 | 0.00048  |

|            |            |            |            |            |         |         |
|------------|------------|------------|------------|------------|---------|---------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####   | #####   |
| 0.231      | 0.282      | 0.191      | 0.0517     | 0.0605     | 0.153   | 0.137   |
| 0.025      | 0.0191     | 0.0197     | 0.0131     | 0.00779    | 0.0127  | 0.0111  |
| 0.025      | 0.0014     | 0.00135    | 0.00125    | 0.00125    | 0.00271 | 0.00125 |
| 0.128      | 0.286      | 0.0715     | 0.203      | 0.0585     | 0.0427  | 0.0259  |
| 0.138      | 0.0591     | 0.0176     | 0.198      | 0.0277     | 0.0255  | 0.0496  |
| 0.1671202  | 0.153      | 0.142      | 0.022      | 0.02       | 0.019   | 0.0188  |

|            |            |            |            |            |        |          |
|------------|------------|------------|------------|------------|--------|----------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/22/2021 | #####  | #####    |
| 0.373      | 0.35       | 0.412      | 0.187      | 0.192      | 0.176  | 0.163    |
| 0.047      | 0.108      | 0.0503     | 0.0867     | 0.0755     | 0.0495 | 0.0563   |
| 0.001      | 0.00034    | 0.00055    | 0.00055    | 0.0005     | 0.0006 | 0.000455 |
| 0.0264     | 0.0397     | 0.0228     | 0.0268     | 0.0525     | 0.0461 | 0.054    |
| 0.426      | 0.264      | 0.0806     | 0.182      | 0.0778     | 0.0938 | 0.0621   |
| 0.0027652  | 0.00255    | 0.00239    | 0.00227    | 0.00217    | 0.0209 | 0.00201  |

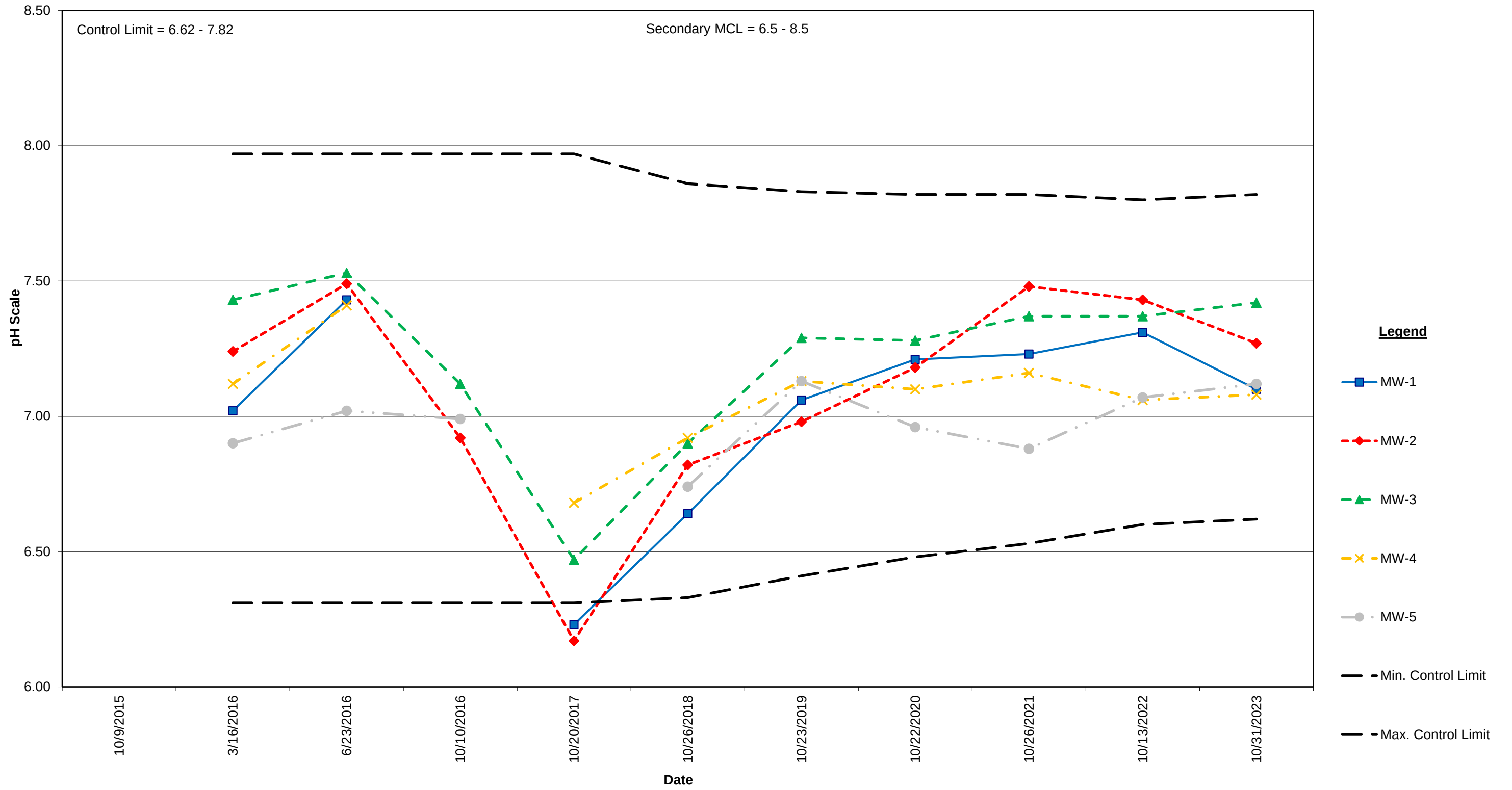
|            |            |            |            |            |         |         |
|------------|------------|------------|------------|------------|---------|---------|
| 10/20/2017 | 10/26/2018 | 10/23/2019 | 10/22/2020 | 10/26/2021 | #####   | #####   |
| 0.0025     | 0.00378    | 0.0005     | 0.0005     | 0.00048    | 0.0335  | 0.00276 |
| 0.0025     | 0.00045    | 0.0005     | 0.0005     | 0.00048    | 0.00784 | 0.00147 |
| 0.0025     | 0.00045    | 0.0005     | 0.0005     | 0.00048    | 0.00048 | 0.0007  |
| 0.0025     | 0.00045    | 0.0005     | 0.0005     | 0.00048    | 0.00048 | 0.0007  |
| 0.00148    | 0.00045    | 0.00183    | 0.0018     | 0.00048    | 0.0013  | 0.0007  |
| 0.0027614  | 0.00255    | 0.00247    | 0.00235    | 0.00225    | 0.00216 | 0.00209 |

# Sulfate

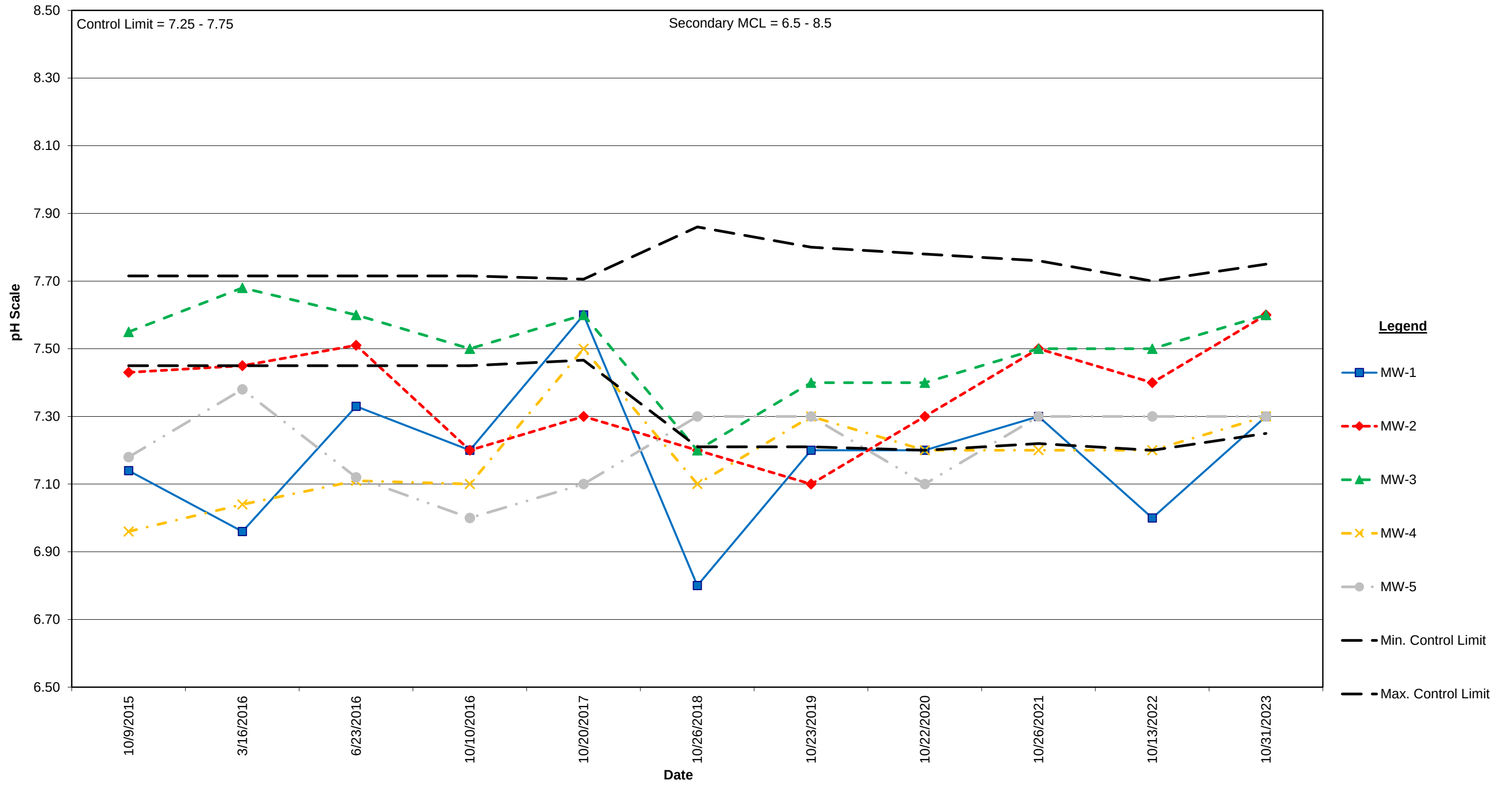




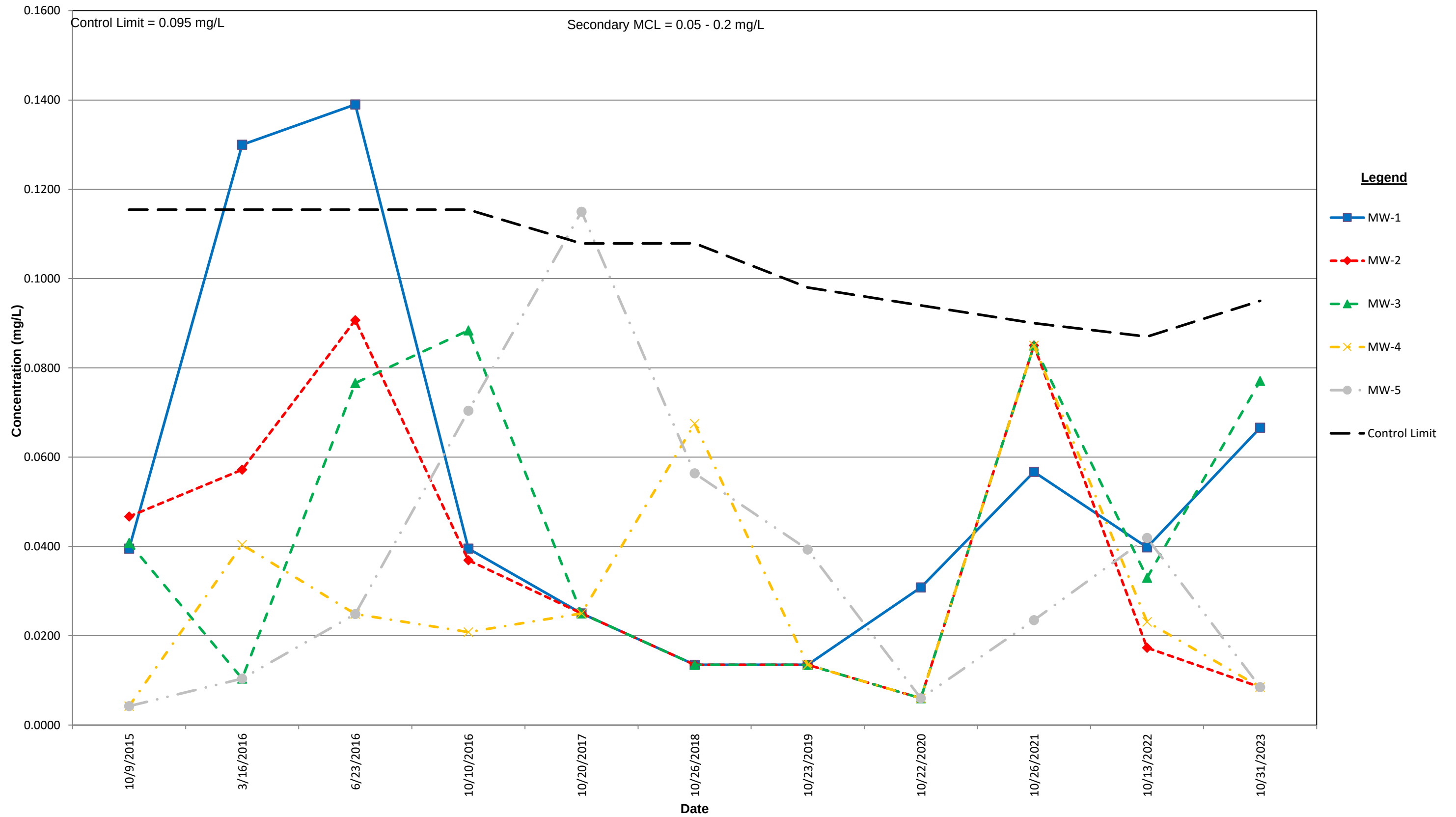
# Field pH



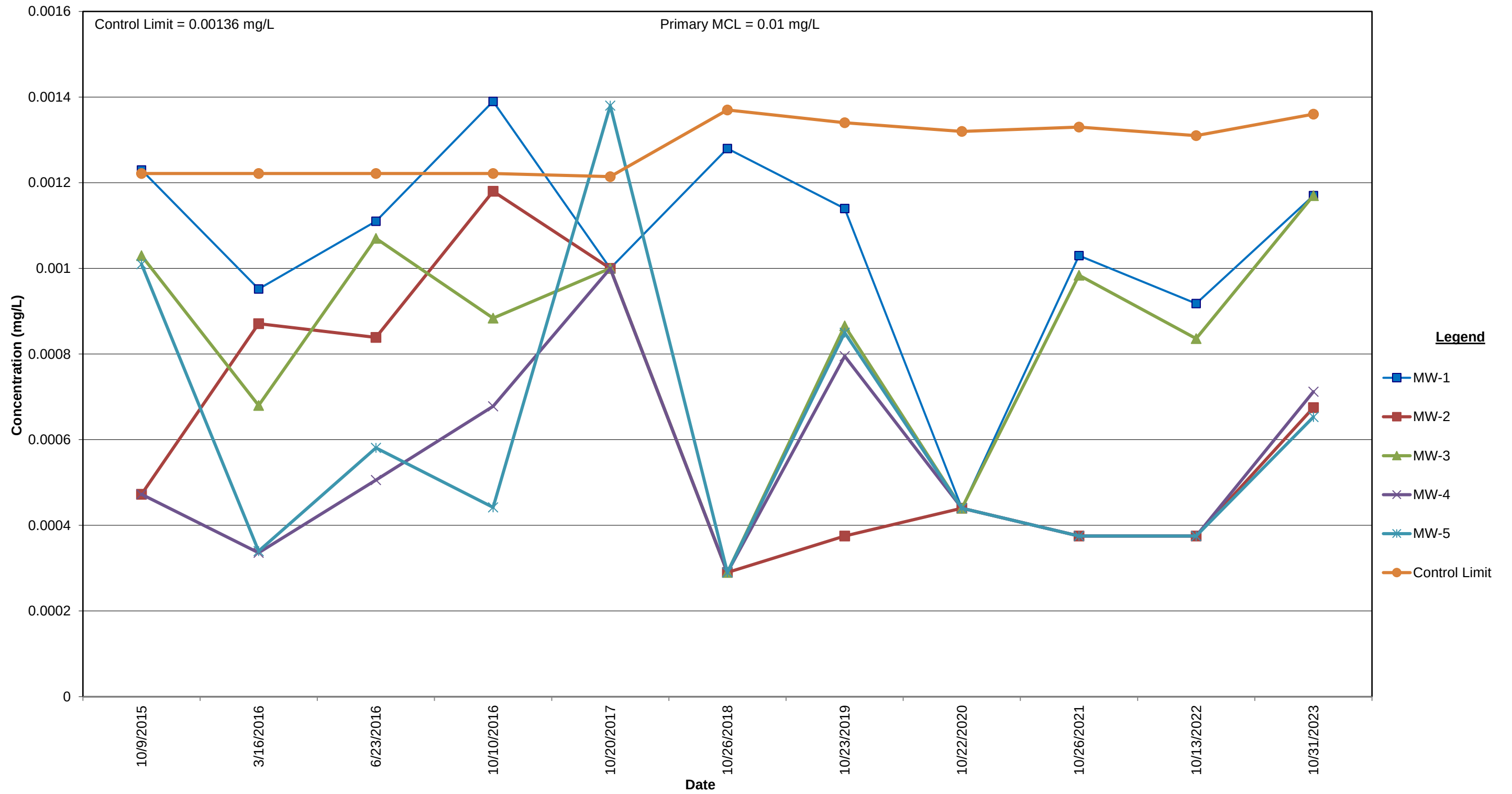
# Laboratory pH



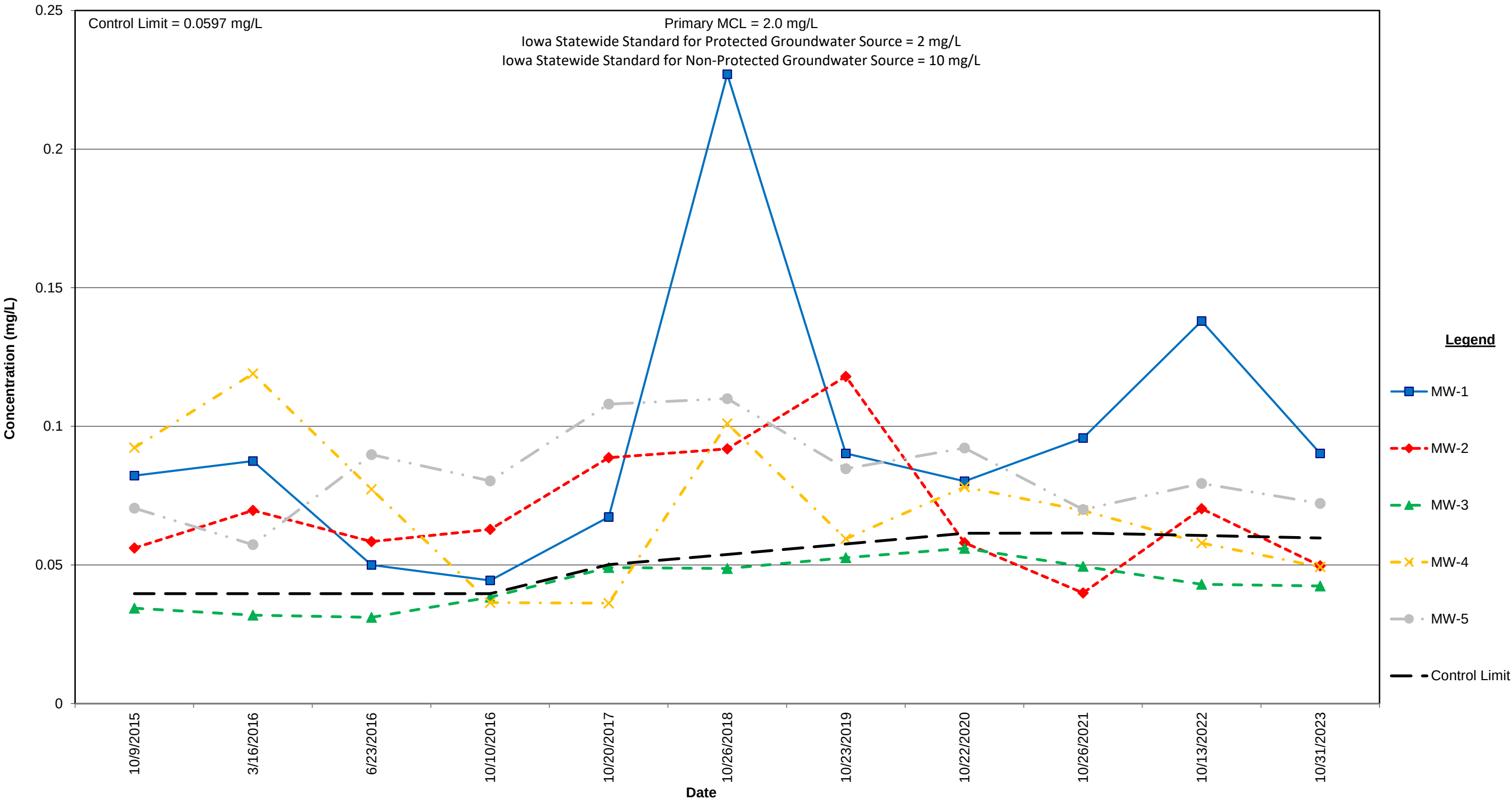
# Aluminum



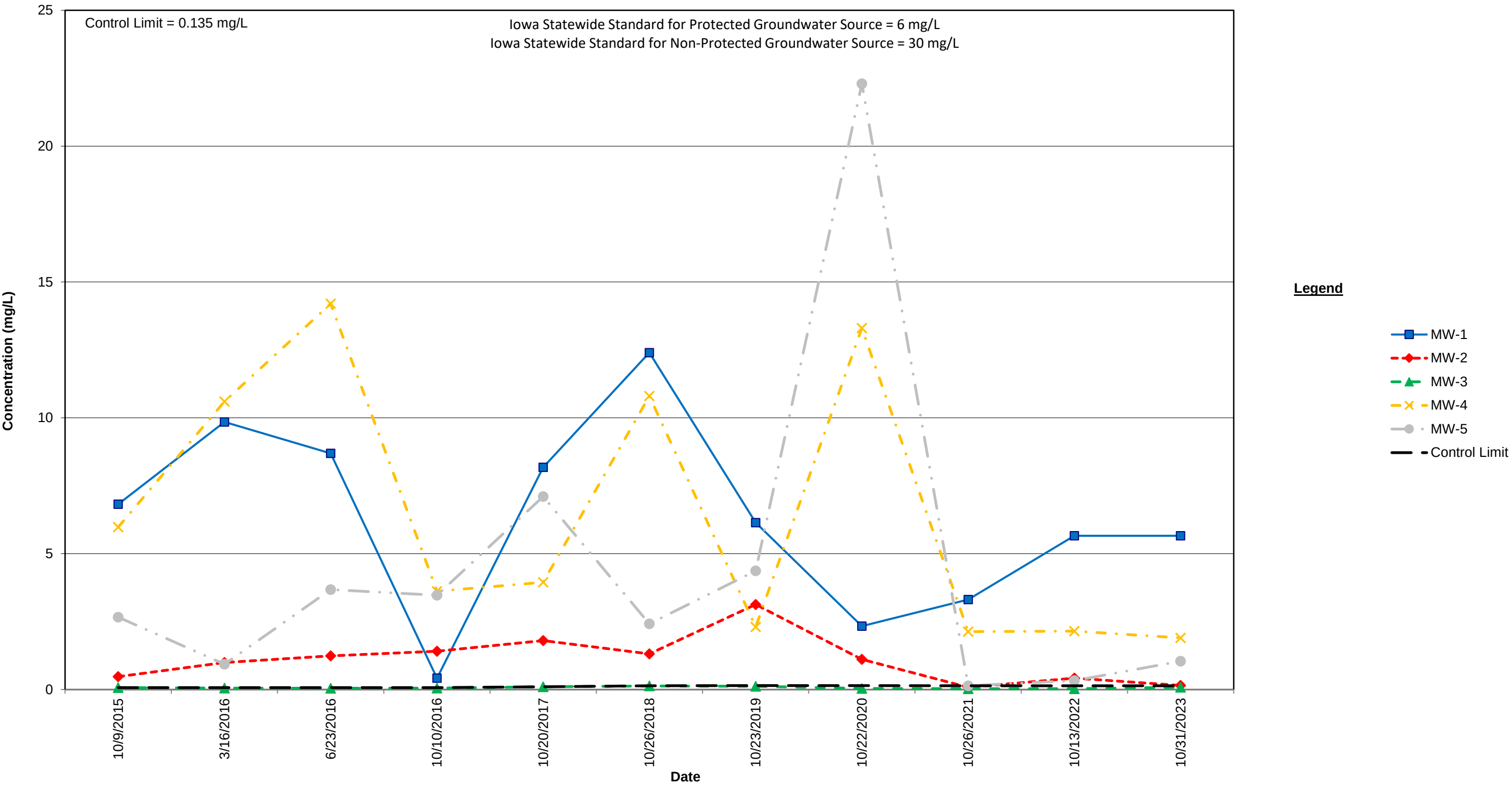
# Arsenic



Barium

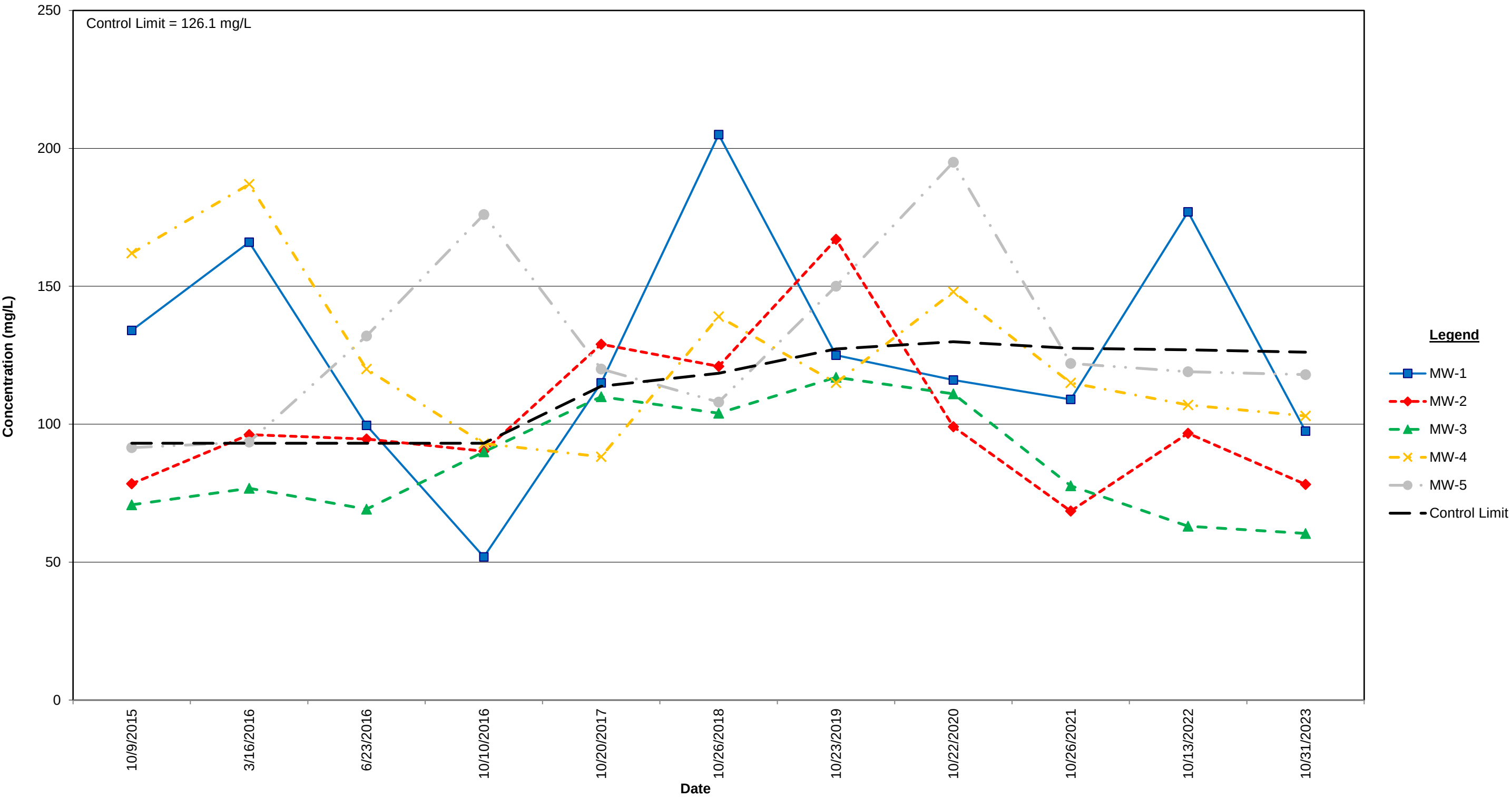


Boron

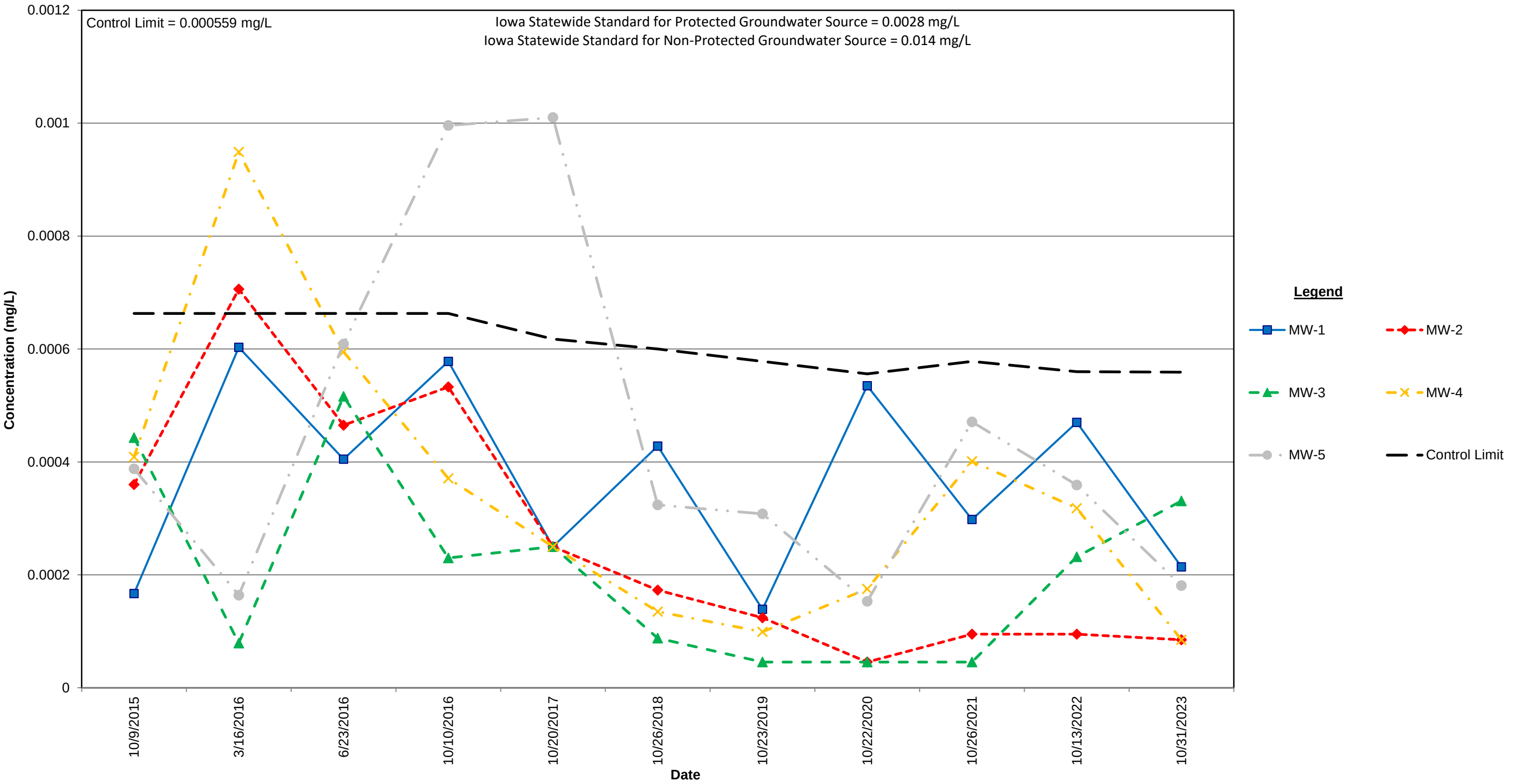




Calcium

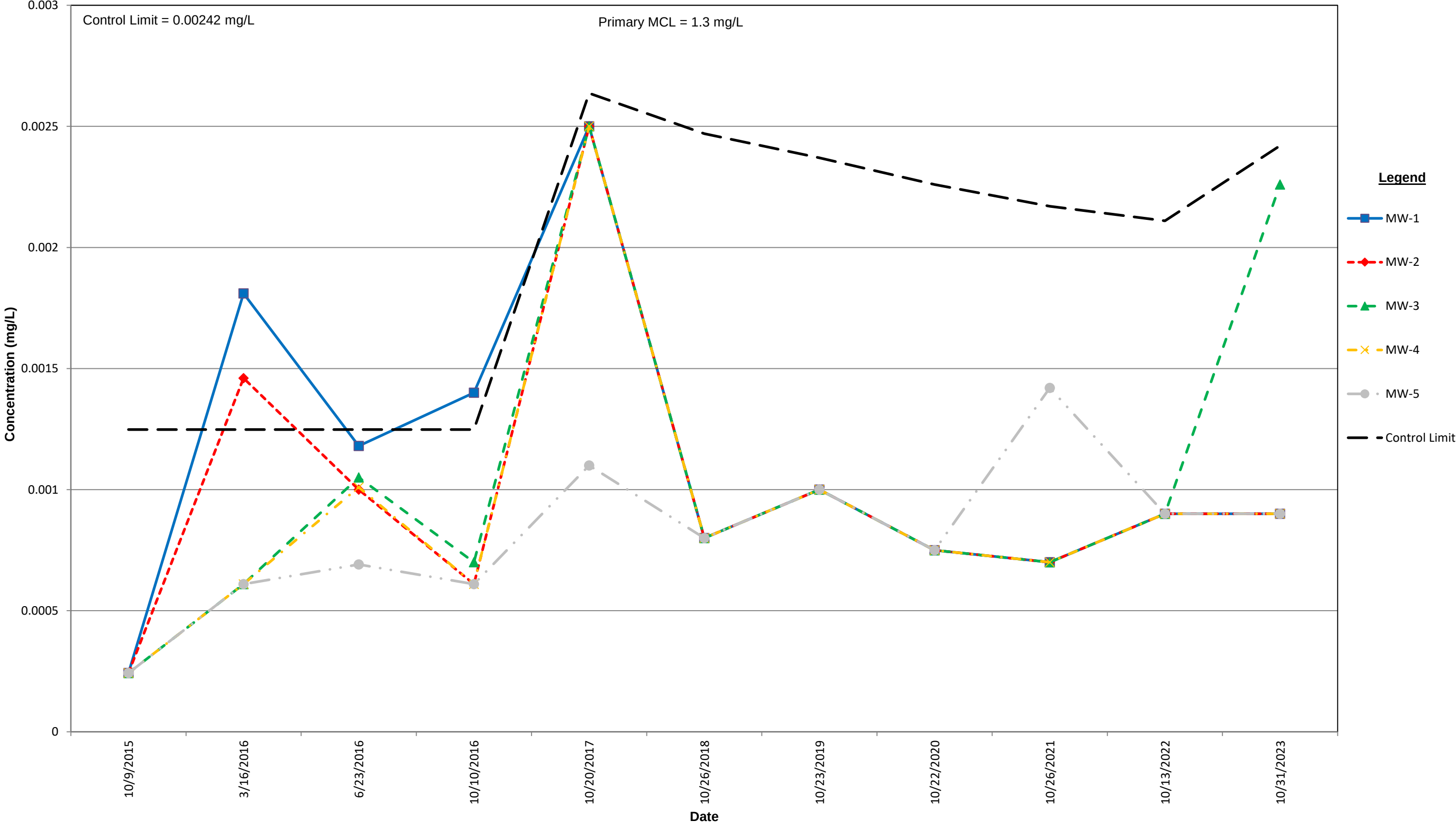


Cobalt

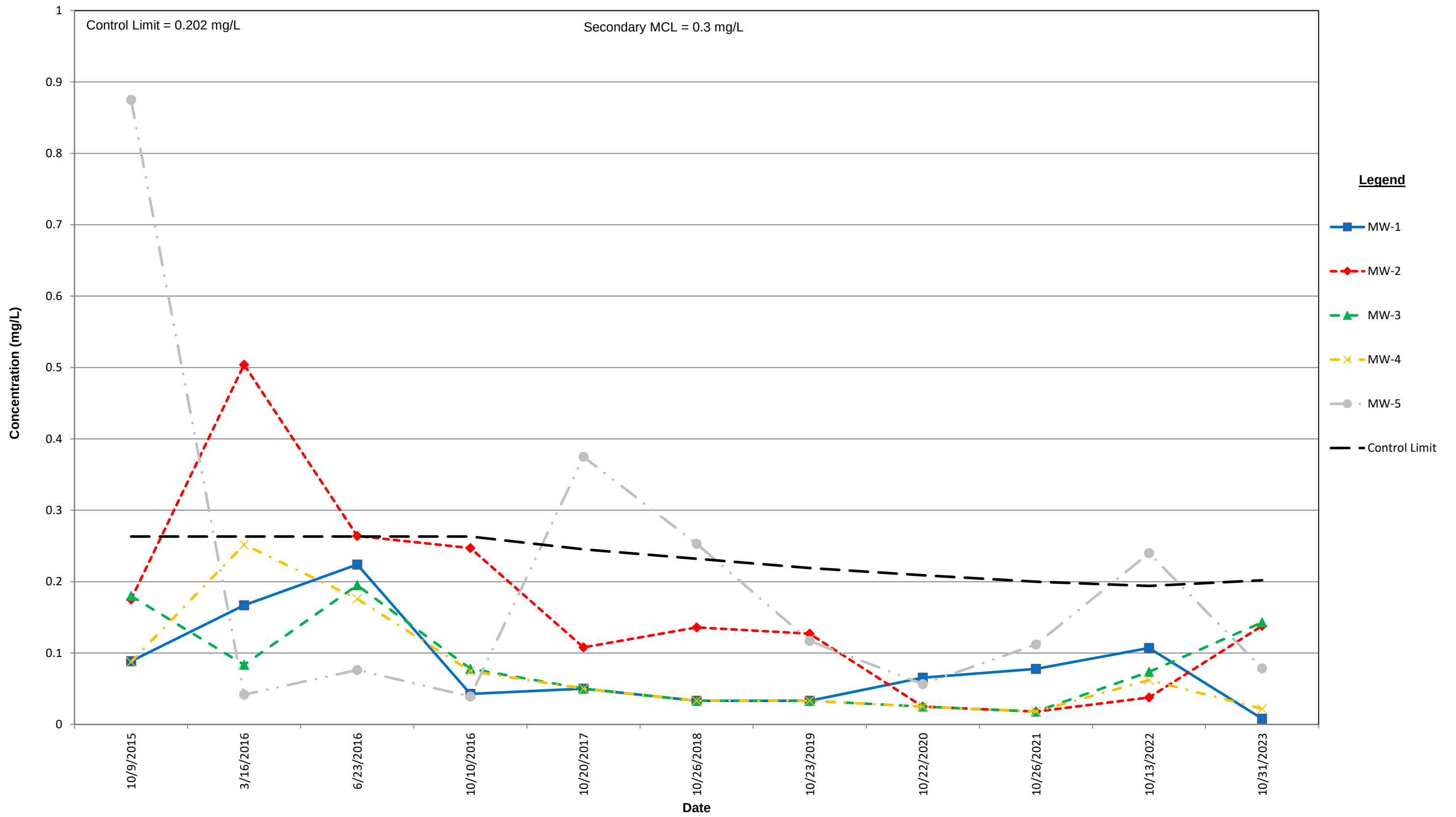




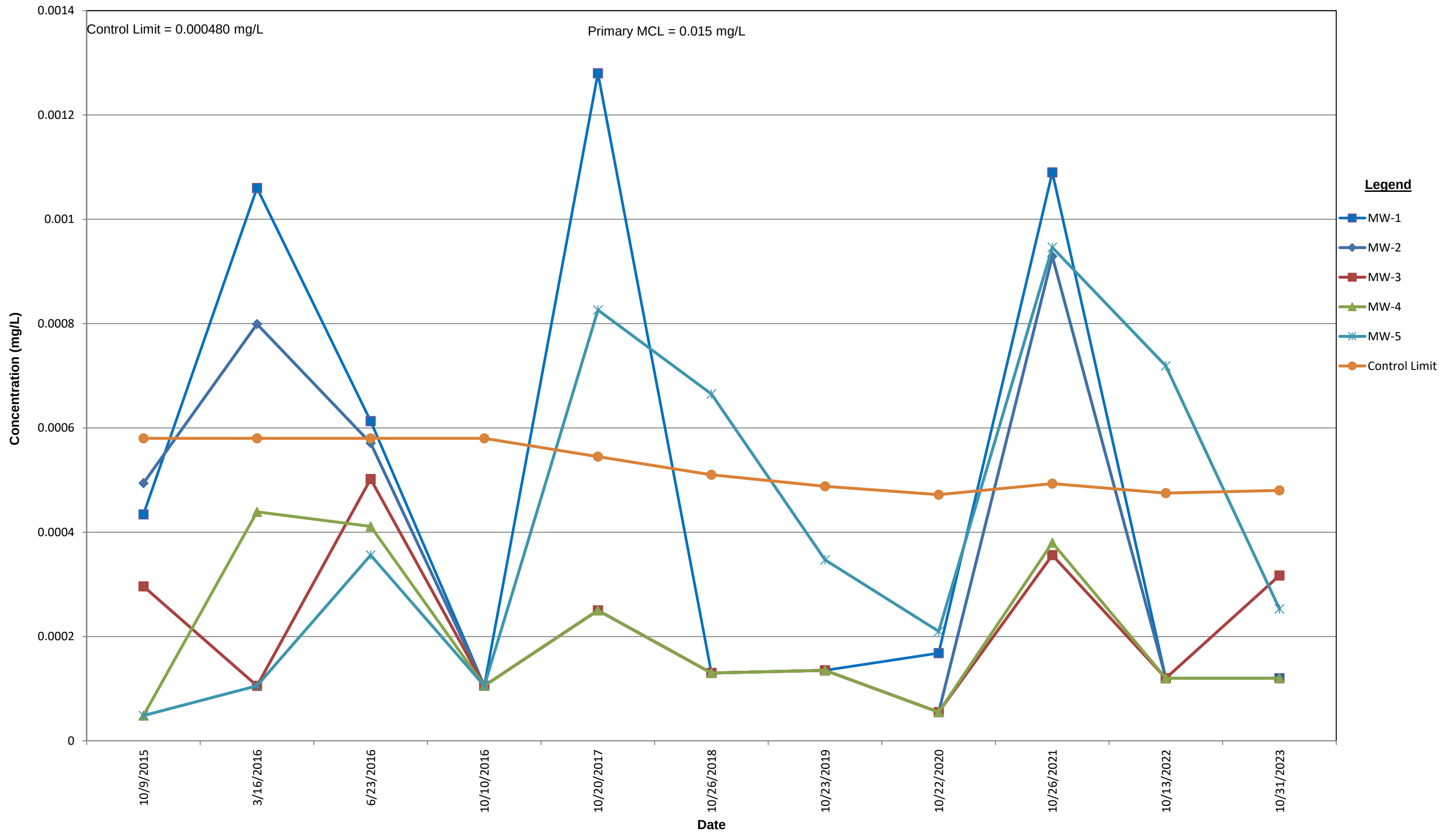
Copper



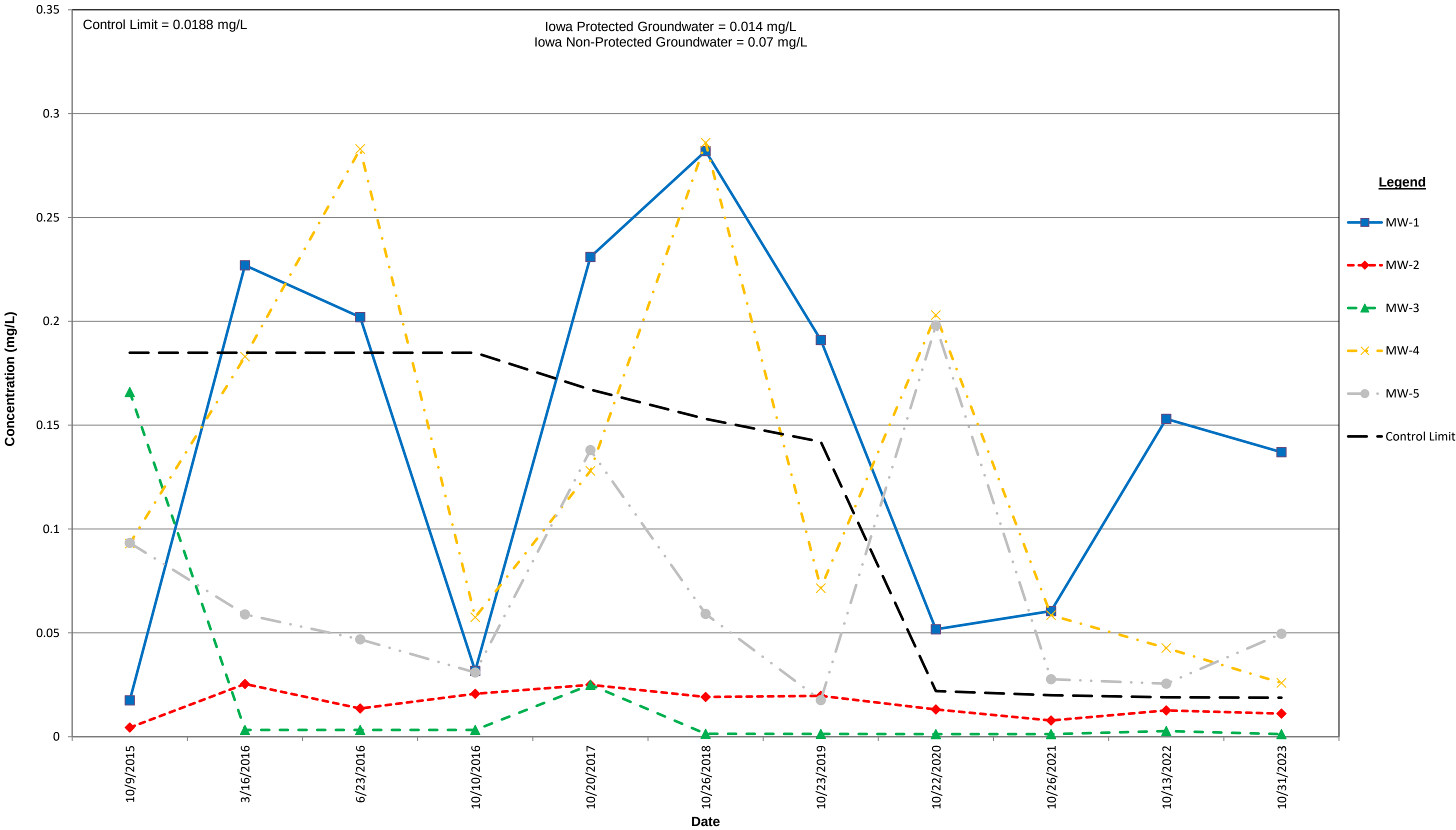
# Iron



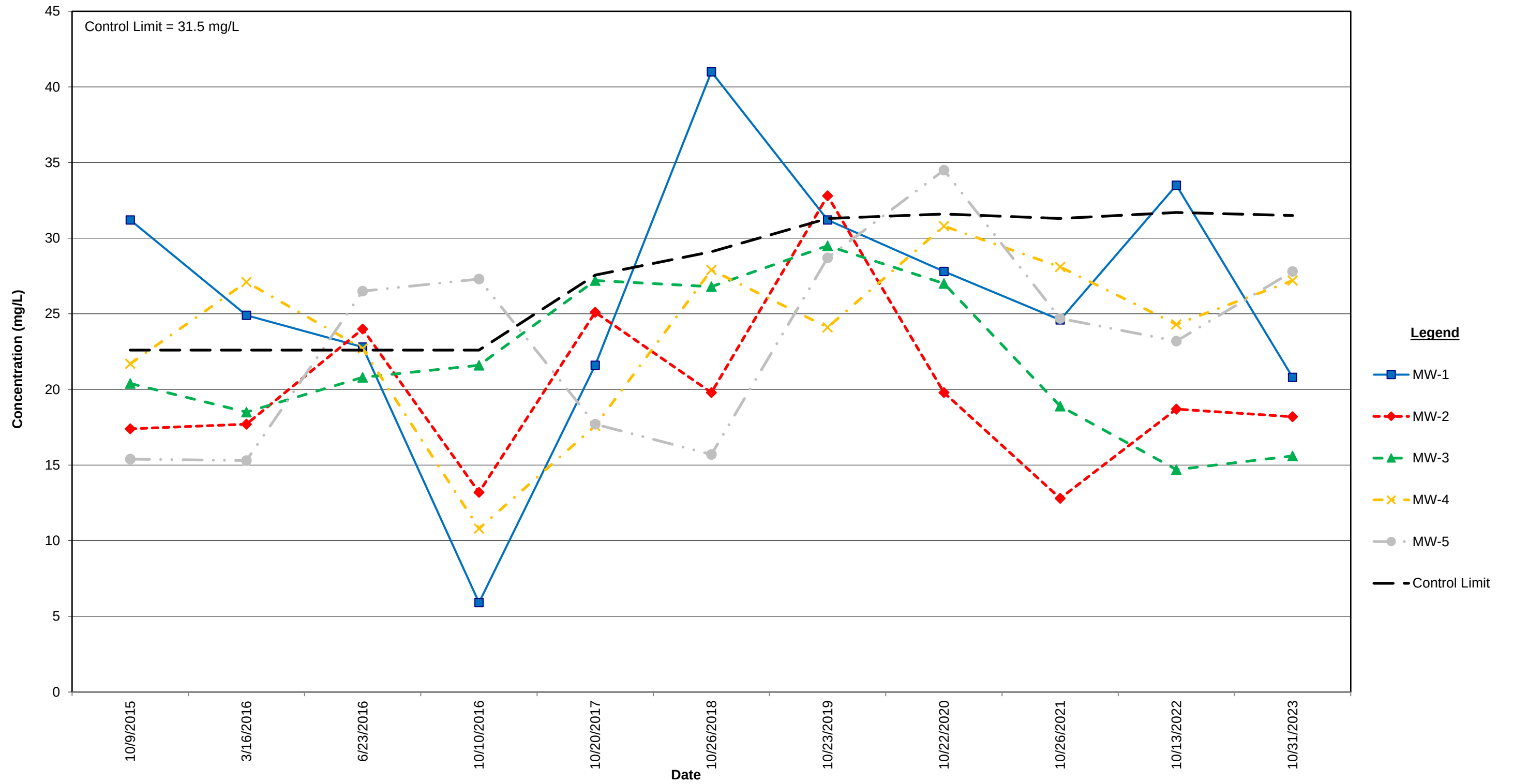
# Lead



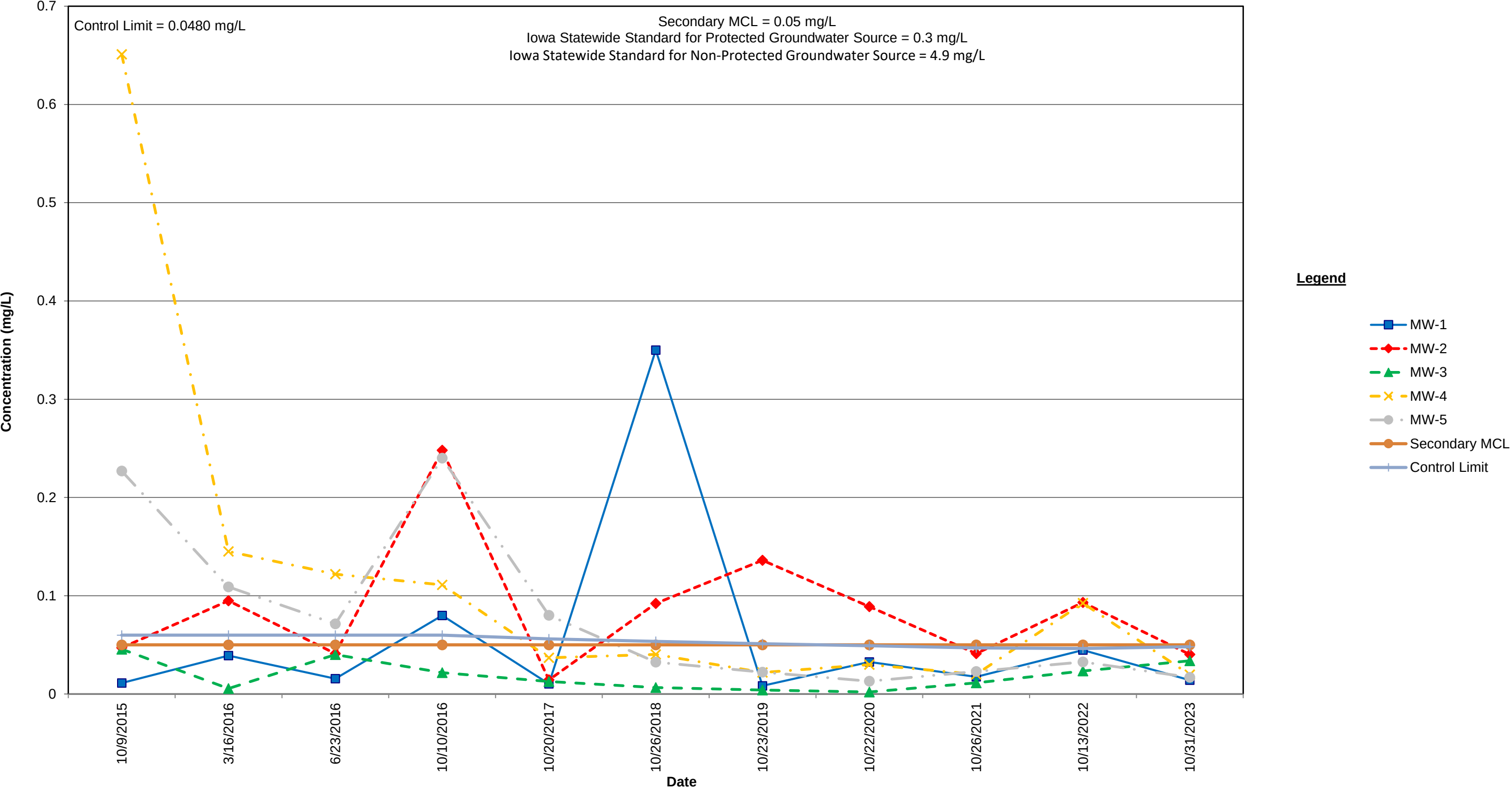
Lithium



# Magnesium

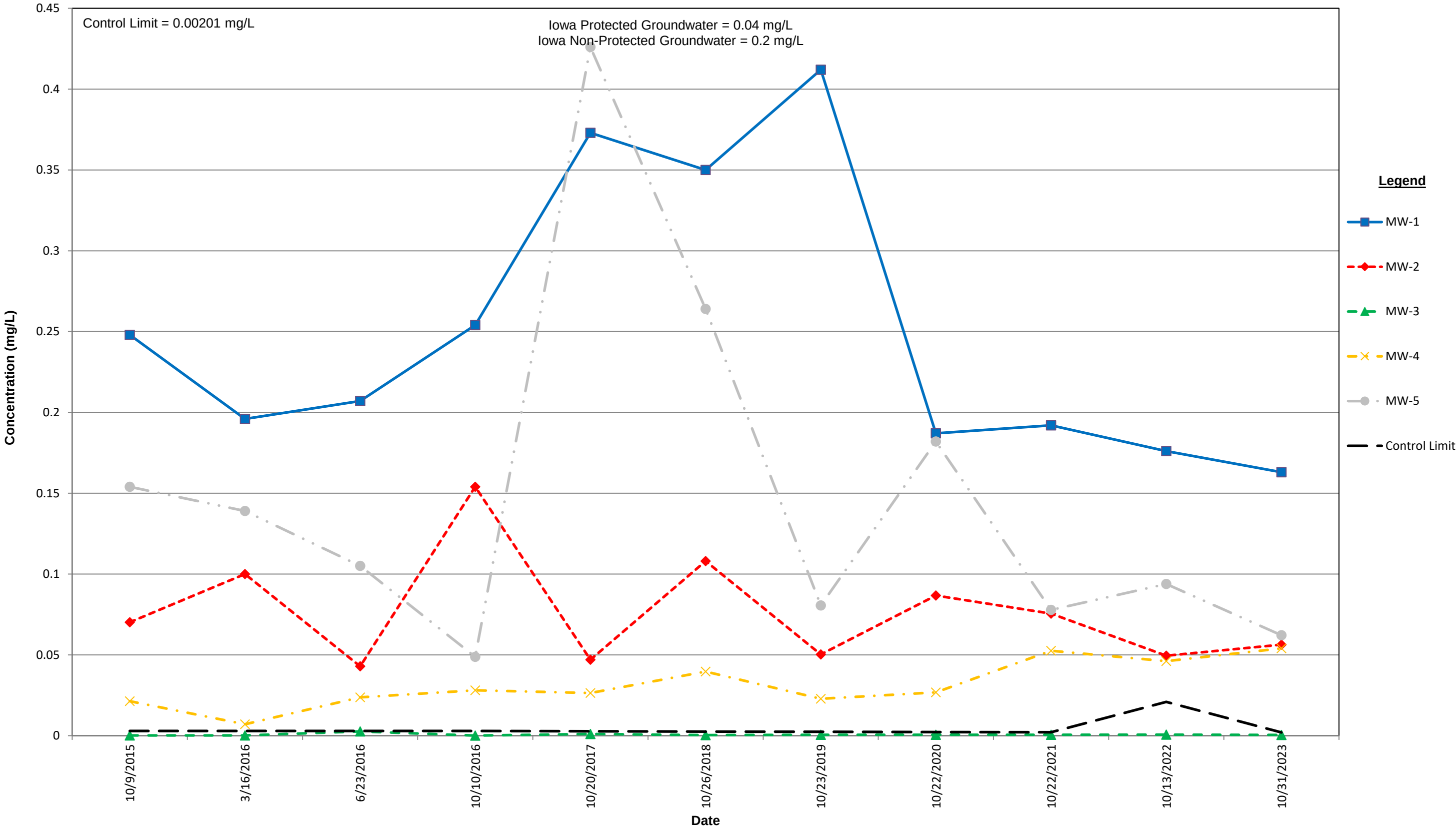


Manganese

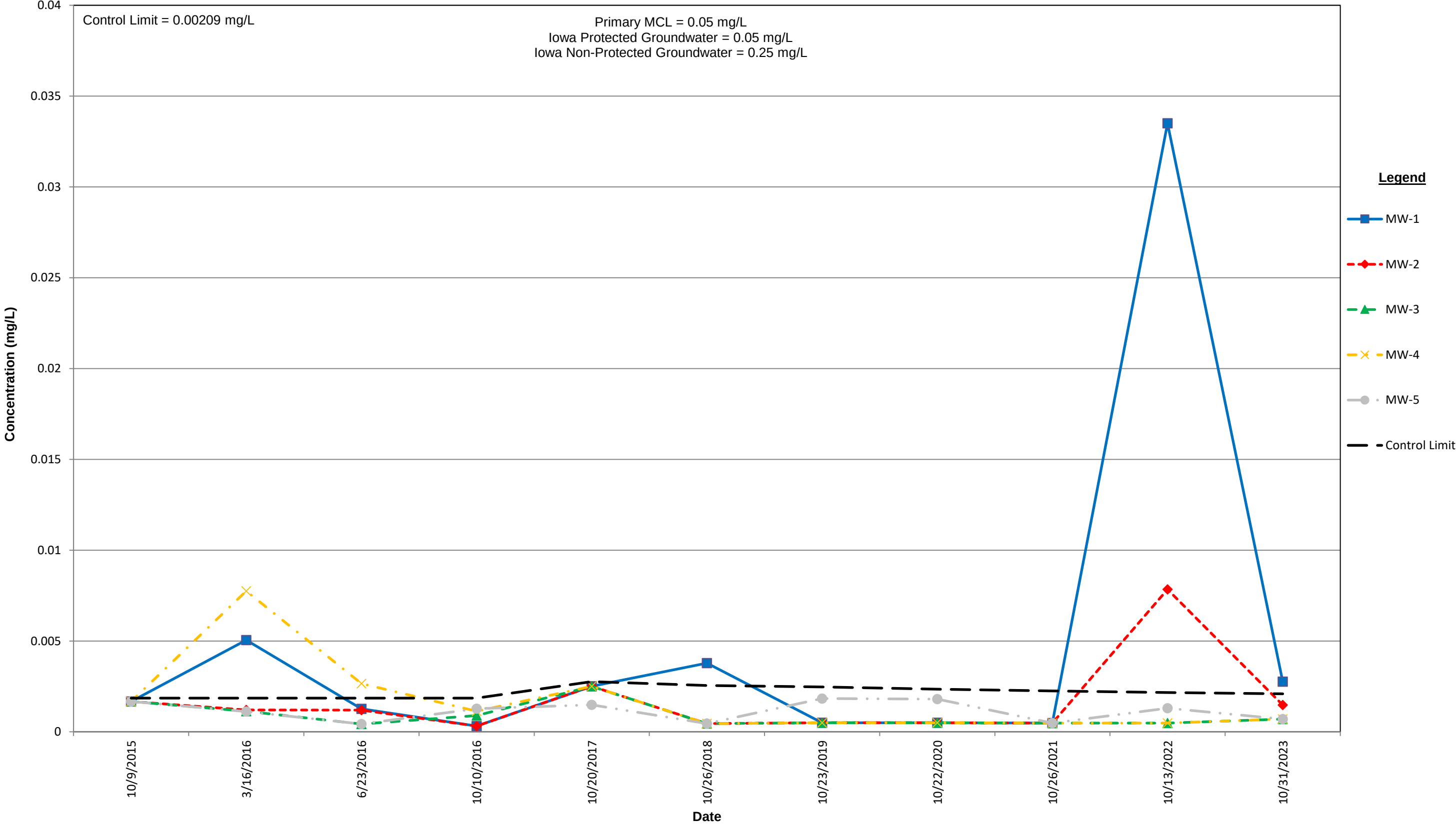




Molybdenum

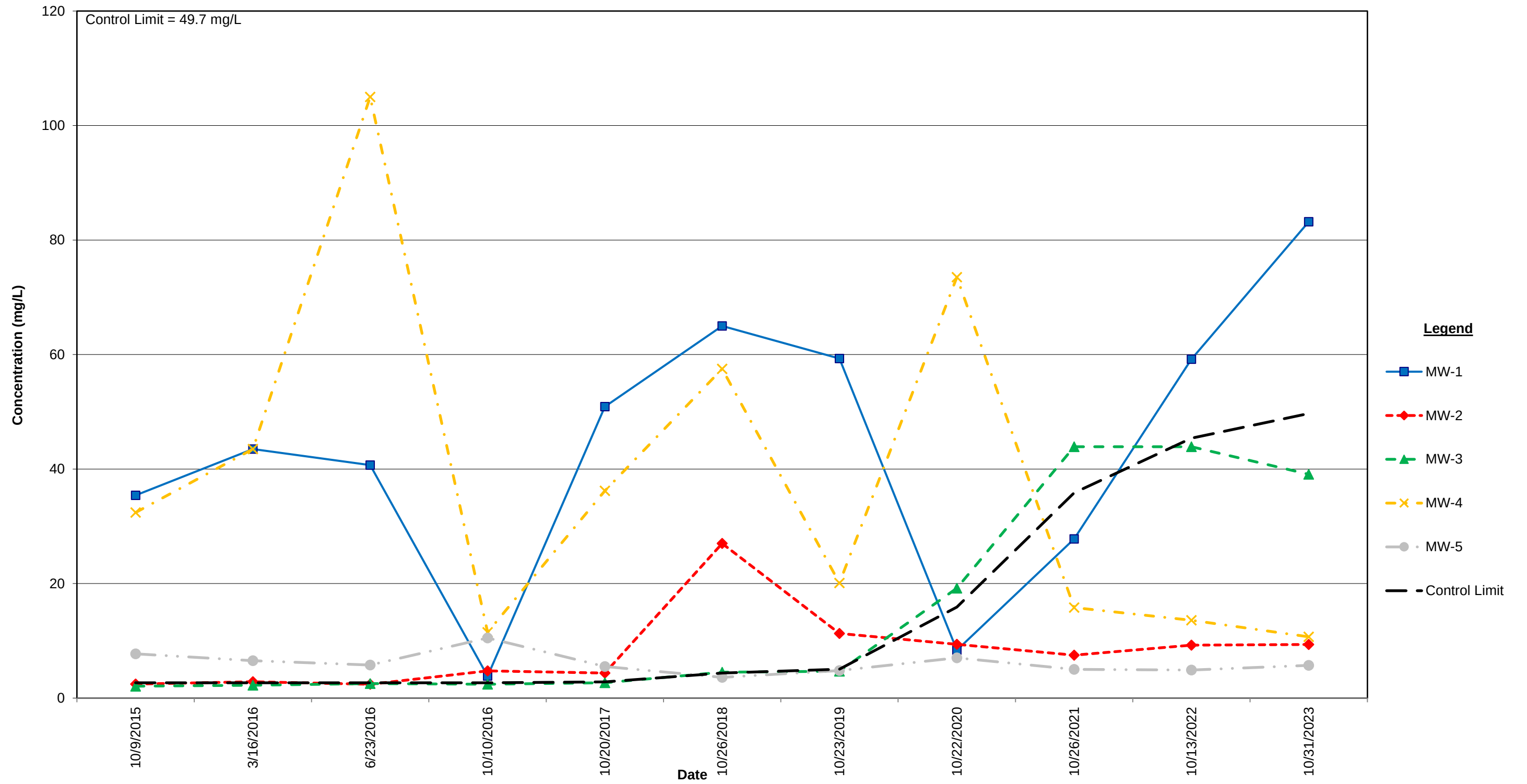


Selenium





# Sodium



Cedar Falls Utilities

Leversee Road Ash Disposal Site

2023 Groundwater Monitoring Data Summary for MW-1

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 | Iowa Statewide Standard for a Non-Protected Groundwater | Sampling Date |           |           |            |            |            |            |            |            |            |            |
|----------------------|----------------------------|-------------------------|----------------------|------------------------|-----------------------------------------------------|---------------------------------------------------------|---------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
|                      |                            |                         |                      |                        |                                                     |                                                         | 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 |
| Chloride             | 5 mg/L                     | 70.77                   |                      | 250                    |                                                     |                                                         | 9.58          | 9.92      | 9.43      | 5.39       | 14.1       | 33.3       | 31.9       |            | 30.8       | 25.0       | 34.5       |
| Sulfate              | 2 -20 mg/L                 | 26.0                    |                      | 250                    |                                                     |                                                         | 247           | 416       | 184       | 7.19       | 234        | 387        | 165        | 63.5       | 92.3       | 220        | 139        |
| pH (Field)           | 0.1 SU                     | 6.62 - 7.82             |                      | 6.5 - 8.5              |                                                     |                                                         | NA            | 7.02      | 7.43      | NA         | 6.23       | 6.64       | 7.06       | 7.21       | 7.23       | 7.31       | 7.1        |
| pH (Laboratory)      | 0.1 SU                     | 7.25 - 7.75             |                      | 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        |
| Specific Conductance | 5 µS/cm                    | 1,293                   |                      |                        |                                                     |                                                         | ND            | 1,920     | 880       | 180        | 994        | 1462       | 869        | 617        | 594        | 1042       | 918        |
| Temperature          | 0.5 °C                     | 9.0 - 14.9              |                      |                        |                                                     |                                                         | ND            | 12.3      | 14.4      | 18.2       | 13.6       | 14.3       | 11.6       | 12.47      | 11.14      | 12.13      | 12.2       |

|            |                       |          |         |             |        |       |            |           |           |           |           |           |           |           |           |           |           |
|------------|-----------------------|----------|---------|-------------|--------|-------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Aluminum   | 0.0500-0.100 mg/L     | 0.095    |         | 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    |
| 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   |
| Barium     | 0.00200-0.00250 mg/L  | 0.0597   | 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    |
| Beryllium  | 0.00100 mg/L          | 0.00038  | 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 |
| Boron      | 0.200-2.00 mg/L       | 0.135    |         |             | 6      | 30    | 6.82       | 9.85      | 8.69      | 0.416     | 8.18      | 12.4      | 6.14      | 2.33      | 3.31      | 5.66      | 5.66      |
| Calcium    | 0.200-2.00 mg/L       | 126.1    |         |             |        |       | 134        | 166       | 99.6      | 51.9      | 115       | 205       | 125       | 116       | 109       | 177       | 97.5      |
| Cobalt     | 0.000500-0.00100 mg/L | 0.000559 |         |             | 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  |
| Copper     | 0.00200-0.00500 mg/L  | 0.00242  | 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  |
| Iron       | 0.100 mg/L            | 0.202    |         | 0.3         |        |       | 0.0885     | 0.167     | 0.224     | 0.0428    | <0.100    | <0.0660   | <0.0660   | 0.0654    | 0.0778    | 0.107     | 0.118     |
| Lead       | 0.000500 mg/L         | 0.000480 | 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 |
| Lithium    | 0.0500 mg/L           | 0.0188   |         |             | 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     |
| Magnesium  | 0.0500-0.200 mg/L     | 31.5     |         |             |        |       | 31.2       | 24.9      | 22.8      | 5.91      | 21.6      | 41.0      | 31.2      | 27.8      | 24.6      | 33.5      | 20.8      |
| Manganese  | 0.00250-0.0100 mg/L   | 0.0480   |         | 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    |
| Molybdenum | 0.00200-0.0100 mg/L   | 0.00201  |         |             | 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     |
| Selenium   | 0.00250-0.00500 mg/L  | 0.00209  | 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   |
| Sodium     | 0.200-0.500 mg/L      | 49.7     |         |             |        |       | 35.4       | 43.5      | 40.7      | 3.84      | 50.9      | 65.0      | 59.3      | 8.38      | 27.8      | 59.2      | 83.2      |
| Zinc       | 0.0100-0.0200 mg/L    | 0.0087   |         | 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  |

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

Cedar Falls Utilities

Leversee Road Ash Disposal Site

2023 Groundwater Monitoring Data Summary for MW-2

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 |           |           |            |            |            |            |            |            |            |            |
|----------------------|----------------------------|-------------------------|----------------------|------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------|---------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
|                      |                            |                         |                      |                        |                                                                   |                                                                       | 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 |
| Chloride             | 5 mg/L                     | 70.77                   |                      | 250                    |                                                                   |                                                                       | 5.65          | 2.70      | 3.72      | 5.77       | 5.84       | 25.9       | 12.6       | 10.8       | 8.76       | 7.84       | 11.1       |
| Sulfate              | 2 -20 mg/L                 | 26.0                    |                      | 250                    |                                                                   |                                                                       | 32.1          | 61.9      | 89.9      | 13.1       | 99.9       | 104        | 145        | 37.7       | 11.8       | 27.6       | 26.1       |
| pH (Field)           | 0.1 SU                     | 6.62 - 7.82             |                      | 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       |
| pH (Laboratory)      | 0.1 SU                     | 7.25 - 7.75             |                      | 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        |
| Specific Conductance | 5 µS/cm                    | 1,293                   |                      |                        |                                                                   |                                                                       | ND            | 2,850     | 660       | 810        | 779        | 873        | 826        | 491        | 308        | 316        | 524        |
| Temperature          | 0.5 °C                     | 9.0 - 14.9              |                      |                        |                                                                   |                                                                       | ND            | 12.1      | 14.8      | 17.2       | 13.82      | 15.1       | 12.5       | 13.46      | 10.71      | 11.66      | 11.6       |

|            |                       |          |         |             |        |       |            |           |           |           |           |           |           |            |           |           |           |
|------------|-----------------------|----------|---------|-------------|--------|-------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| Aluminum   | 0.0500-0.100 mg/L     | 0.095    |         | 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   |
| 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  |
| Barium     | 0.00200-0.00250 mg/L  | 0.0597   | 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    |
| Beryllium  | 0.00100 mg/L          | 0.00038  | 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 |
| Boron      | 0.0500-1.00 mg/L      | 0.135    |         |             | 6      | 30    | 0.472      | 0.996     | 1.24      | 1.41      | 1.8       | 1.31      | 3.13      | 1.11       | 0.0823    | 0.417     | 0.151     |
| Calcium    | 0.200-2.00 mg/L       | 126.1    |         |             |        |       | 78.4       | 96.2      | 94.6      | 90.2      | 129       | 121       | 167       | 99.1       | 68.5      | 96.7      | 78.2      |
| Cobalt     | 0.000500-0.00100 mg/L | 0.000559 |         |             | 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 |
| Copper     | 0.00200-0.00500 mg/L  | 0.00242  | 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  |
| Iron       | 0.100-0.200 mg/L      | 0.202    |         | 0.3         |        |       | 0.175      | 0.504     | 0.264     | 0.247     | 0.108     | 0.136     | 0.127     | <0.0500    | <0.0360   | 0.0378    | 0.138     |
| Lead       | 0.000500 mg/L         | 0.000480 | 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 |
| Lithium    | 0.0500 mg/L           | 0.0188   |         |             | 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    |
| Magnesium  | 0.0500-0.200 mg/L     | 31.5     |         |             |        |       | 17.4       | 17.7      | 24.0      | 13.2      | 25.1      | 19.8      | 32.8      | 19.8       | 12.8      | 18.7      | 18.2      |
| Manganese  | 0.00250-0.0100 mg/L   | 0.0480   |         | 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    |
| Molybdenum | 0.00200-0.0100 mg/L   | 0.00201  |         |             | 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    |
| Selenium   | 0.00250-0.00500 mg/L  | 0.00209  | 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   |
| Sodium     | 0.200-0.500 mg/L      | 49.74    |         |             |        |       | 2.44       | 2.86      | 2.41      | 4.74      | 4.36      | 27.0      | 11.3      | 9.38       | 7.5       | 9.23      | 9.35      |
| Zinc       | 0.0100-0.0200 mg/L    | 0.0087   |         | 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  |

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



Cedar Falls Utilities

Leversee Road Ash Disposal Site

2023 Groundwater Monitoring Data Summary for MW-3S

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 |           |           |            |            |            |            |            |            |            |            |
|----------------------|----------------------------|-------------------------|----------------------|------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------|---------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
|                      |                            |                         |                      |                        |                                                                   |                                                                       | 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 | 10/26/2021 | 10/31.2023 |
| Chloride             | 5 mg/L                     | 70.77                   |                      | 250                    |                                                                   |                                                                       | 6.22          | 4.83      | 6.23      | 4.95       | 5.34       | 21.7       | 45.5       | 88.4       | 31.9       | 9.44       | 12.0       |
| Sulfate              | 2 -20 mg/L                 | 26.0                    |                      | 250                    |                                                                   |                                                                       | 16.3          | 16.1      | 19.7      | 16.9       | 17.2       | 26.4       | 19.3       | 20.3       | 13.5       | 10.4       | 21.2       |
| pH (Field)           | 0.1 SU                     | 6.62 - 7.82             |                      | 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       |
| pH (Laboratory)      | 0.1 SU                     | 7.25 - 7.75             |                      | 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        |
| Specific Conductance | 5 µS/cm                    | 1,293                   |                      |                        |                                                                   |                                                                       | ND            | 1,390     | 540       | 1,120      | 680        | 718        | 560        | 629        | 466        | 434        | 512        |
| Temperature          | 0.5 °C                     | 9.0 - 14.9              |                      |                        |                                                                   |                                                                       | ND            | 13.1      | 12.7      | 14.8       | 12.38      | 13.0       | 9.93       | 11.97      | 9.82       | 11.62      | 10.6       |

|            |                       |          |         |             |        |       |            |           |           |           |           |           |            |            |           |           |           |
|------------|-----------------------|----------|---------|-------------|--------|-------|------------|-----------|-----------|-----------|-----------|-----------|------------|------------|-----------|-----------|-----------|
| Aluminum   | 0.0500-0.100 mg/L     | 0.095    |         | 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    |
| 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   |
| Barium     | 0.00200-0.00250 mg/L  | 0.0597   | 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    |
| Beryllium  | 0.00100 mg/L          | 0.00038  | 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 |
| Boron      | 0.0500-1.00 mg/L      | 0.135    |         |             | 6      | 30    | 0.0677     | 0.0497    | 0.0454    | 0.0519    | <0.200    | 0.130     | 0.119      | <0.0800    | <0.0580   | <0.0580   | 0.0824    |
| Calcium    | 0.200-2.00 mg/L       | 126.1    |         |             |        |       | 70.8       | 76.8      | 69.2      | 90.0      | 110       | 104       | 117        | 111        | 77.7      | 63        | 60.4      |
| Cobalt     | 0.000500-0.00100 mg/L | 0.000559 |         |             | 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  |
| Copper     | 0.00200-0.00500 mg/L  | 0.00242  | 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   |
| Iron       | 0.100 mg/L            | 0.202    |         | 0.3         |        |       | 0.180      | <0.0394   | 0.195     | 0.0781    | <0.100    | <0.0660   | <0.0660    | <0.0500    | <0.0360   | 0.0735    | 0.143     |
| Lead       | 0.000500 mg/L         | 0.000480 | 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  |
| Lithium    | 0.0500 mg/L           | 0.0188   |         |             | 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  |
| Magnesium  | 0.0500-0.200 mg/L     | 31.5     |         |             |        |       | 20.4       | 18.5      | 20.8      | 21.6      | 27.2      | 26.8      | 29.5       | 27.0       | 18.9      | 14.7      | 15.6      |
| Manganese  | 0.00250-0.0100 mg/L   | 0.0480   |         | 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    |
| Molybdenum | 0.00200-0.0100 mg/L   | 0.00201  |         |             | 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 |
| Selenium   | 0.00250-0.00500 mg/L  | 0.00209  | 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  |
| Sodium     | 0.200-0.500 mg/L      | 49.74    |         |             |        |       | 2.08       | 2.24      | 2.54      | 2.42      | 2.69      | 4.52      | 4.68       | 19.2       | 43.9      | 43.9      | 39.1      |
| Zinc       | 0.0100-0.0200 mg/L    | 0.0087   |         | 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  |

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

Cedar Falls Utilities

Leversee Road Ash Disposal Site

2023 Groundwater Monitoring Data Summary for MW-4S

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 |              |             |              |            |            |            |            |             |             |             |
|----------------------|----------------------------|-------------------------|----------------------|------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------|---------------|--------------|-------------|--------------|------------|------------|------------|------------|-------------|-------------|-------------|
|                      |                            |                         |                      |                        |                                                                   |                                                                       | 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  |
| Chloride             | 5-20 mg/L                  | 70.77                   |                      | 250                    |                                                                   |                                                                       | 9.20          | <b>281</b>   | 11.5        | 6.29         | 6.81       | 9.38       | 18.3       | 17.5       | 9.72        | 9.63        | 12.2        |
| Sulfate              | 2-20 mg/L                  | 26.0                    |                      | 250                    |                                                                   |                                                                       | <b>191</b>    | <b>428</b>   | <b>322</b>  | <b>38.8</b>  | <b>92</b>  | <b>242</b> | <b>86</b>  | <b>209</b> | <b>84.4</b> | <b>70.9</b> | <b>81.7</b> |
| pH (Field)           | 0.1 SU                     | 6.62 - 7.82             |                      | 6.5 - 8.5              |                                                                   |                                                                       | NA            | 7.12         | 7.41        | NA           | 6.68       | 6.92       | 7.13       | 7.10       | 7.16        | 7.06        | 7.08        |
| pH (Laboratory)      | 0.1 SU                     | 7.25 - 7.75             |                      | 6.5 - 8.5              |                                                                   |                                                                       | <b>6.96</b>   | <b>7.04</b>  | <b>7.11</b> | <b>7.1</b>   | 7.5        | <b>7.1</b> | 7.3        | 7.2        | 7.2         | 7.2         | 7.3         |
| Specific Conductance | 5 µS/cm                    | 1,293                   |                      |                        |                                                                   |                                                                       | ND            | <b>3,010</b> | 1,210       | <b>6,730</b> | 690        | 1192       | 705        | 936        | 590         | 611         | 691         |
| Temperature          | 0.5 °C                     | 9.0 - 14.9              |                      |                        |                                                                   |                                                                       | ND            | 12.4         | 15.3        | <b>18.0</b>  | 14.2       | 13.8       | 11.93      | 12.62      | 11.58       | 12.95       | 12          |

|            |                       |          |         |             |        |       |               |                 |                |               |               |               |               |               |               |               |               |
|------------|-----------------------|----------|---------|-------------|--------|-------|---------------|-----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Aluminum   | 0.0500-0.100 mg/L     | 0.095    |         | 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       |
| 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      |
| Barium     | 0.00200-0.00250 mg/L  | 0.0597   | 2.0     |             | 2      | 10    | <b>0.0923</b> | <b>0.119</b>    | <b>0.0773</b>  | 0.0364        | 0.0362        | <b>0.101</b>  | 0.0594        | <b>0.0781</b> | <b>0.0696</b> | 0.0579        | 0.0493        |
| Beryllium  | 0.00100 mg/L          | 0.00038  | 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     |
| Boron      | 0.200-5.00 mg/L       | 0.135    |         |             | 6      | 30    | <b>5.98</b>   | <b>10.6</b>     | <b>14.2</b>    | <b>3.62</b>   | <b>3.95</b>   | <b>10.8</b>   | <b>2.3</b>    | <b>13.3</b>   | <b>2.13</b>   | <b>2.15</b>   | <b>1.90</b>   |
| Calcium    | 0.200-4.00 mg/L       | 126.1    |         |             |        |       | <b>162</b>    | <b>187</b>      | 120            | 93.0          | 88.2          | <b>139</b>    | 115           | <b>148</b>    | 115           | 107           | 103           |
| Cobalt     | 0.000500-0.00100 mg/L | 0.000559 |         |             | 0.0028 | 0.014 | 0.000409      | <b>0.000949</b> | 0.000595       | 0.000371      | <0.000500     | 0.000135      | 0.000099      | 0.000175      | <0.000190     | 0.000318      | <0.000170     |
| Copper     | 0.00200-0.00500 mg/L  | 0.00242  | 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      |
| Iron       | 0.100-1.0 mg/L        | 0.202    |         | 0.3         |        |       | <0.0511       | <0.394          | 0.176          | 0.0746        | <0.100        | <0.0660       | <0.0660       | <0.0500       | <0.0360       | 0.0622        | <b>0.218</b>  |
| Lead       | 0.000500 mg/L         | 0.000480 | 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     |
| Lithium    | 0.0500 mg/L           | 0.0188   |         |             | 0.014  | 0.07  | <b>0.0930</b> | <b>0.183</b>    | <b>0.283</b>   | <b>0.0575</b> | <b>0.128</b>  | <b>0.286</b>  | <b>0.0715</b> | <b>0.203</b>  | <b>0.0585</b> | <b>0.0427</b> | <b>0.0259</b> |
| Magnesium  | 0.0500-0.200 mg/L     | 31.5     |         |             |        |       | 21.7          | 27.1            | 22.7           | 10.8          | 17.6          | 27.9          | 24.1          | 30.8          | 28.1          | 24.3          | 27.2          |
| Manganese  | 0.00250-0.0100 mg/L   | 0.0480   |         | 0.05        | 0.3    | 4.9   | <b>0.651</b>  | <b>0.145</b>    | <b>0.122</b>   | <b>0.111</b>  | 0.0369        | 0.0403        | 0.0219        | 0.0298        | 0.02          | <b>0.0925</b> | 0.0196        |
| Molybdenum | 0.00200-0.0100 mg/L   | 0.00201  |         |             | 0.04   | 0.2   | <b>0.0213</b> | <b>0.00705</b>  | <b>0.0237</b>  | <b>0.0281</b> | <b>0.0264</b> | <b>0.0397</b> | <b>0.0228</b> | <b>0.0268</b> | <b>0.0525</b> | <b>0.0461</b> | <b>0.054</b>  |
| Selenium   | 0.00250-0.00500 mg/L  | 0.00209  | 0.05    |             | 0.05   | 0.25  | <0.00334      | <b>0.00775</b>  | <b>0.00265</b> | 0.00113       | <0.00500      | <0.000900     | <0.00100      | <0.00100      | <0.000960     | <0.000960     | <0.00140      |
| Sodium     | 0.200-0.500 mg/L      | 49.74    |         |             |        |       | 32.4          | 43.5            | <b>105</b>     | 11.5          | 36.2          | <b>57.5</b>   | 20.1          | <b>73.5</b>   | 15.8          | 13.6          | 10.7          |
| Zinc       | 0.0100-0.0200 mg/L    | 0.0087   |         | 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      |

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Cedar Falls Utilities  
Leversee Road Ash Disposal Site  
2023 Groundwater Monitoring Data Summary for MW-5S  
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 |           |           |            |          |            |            |            |            |            |            |
|----------------------|----------------------------|-------------------------|----------------------|------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------|---------------|-----------|-----------|------------|----------|------------|------------|------------|------------|------------|------------|
|                      |                            |                         |                      |                        |                                                                   |                                                                       | 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 |
| Chloride             | 5 mg/L                     | 70.77                   |                      | 250                    |                                                                   |                                                                       | 4.12          | 4.07      | 5.61      | 3.31       | 7.34     | 4.34       | 19.3       | 12.5       | 15.5       | 8.82       | 16.8       |
| Sulfate              | 2 -20 mg/L                 | 26.0                    |                      | 250                    |                                                                   |                                                                       | 32.0          | 32.7      | 154       | 149        | 53       | 57.4       | 71.9       | 205        | 14.3       | 39.7       | 80.6       |
| pH (Field)           | 0.1 SU                     | 6.62 - 7.82             |                      | 6.5 - 8.5              |                                                                   |                                                                       | NA            | 6.9       | 7.02      | 6.99       | ND       | 6.74       | 7.13       | 6.96       | 6.88       | 7.07       | 7.12       |
| pH (Laboratory)      | 0.1 SU                     | 7.25 - 7.75             |                      | 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        |
| Specific Conductance | 5 µS/cm                    | 1,293                   |                      |                        |                                                                   |                                                                       | ND            | 3,120     | 1,260     | 2,910      | ND       | 702        | 676        | 816        | 502        | 543        | 724        |
| Temperature          | 0.5 °C                     | 9.0 - 14.9              |                      |                        |                                                                   |                                                                       | ND            | 11.7      | 13.2      | 15.2       | ND       | 11.8       | 9.36       | 11.35      | 9.76       | 11.56      | 10.4       |

|            |                       |          |         |             |        |       |            |           |           |           |           |           |           |           |           |           |           |
|------------|-----------------------|----------|---------|-------------|--------|-------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Aluminum   | 0.0500-0.100 mg/L     | 0.095    |         | 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   |
| Arsenic    | 0.00100-0.00200 mg/L  | 0.00136  | 0.010   |             | 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  |
| Barium     | 0.00200-0.00250 mg/L  | 0.0597   | 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    |
| Beryllium  | 0.00100 mg/L          | 0.00038  | 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 |
| Boron      | 0.200-1.00 mg/L       | 0.135    |         |             | 6      | 30    | 2.66       | 0.933     | 3.68      | 3.47      | 7.10      | 2.42      | 4.37      | 22.3      | 0.14      | 0.329     | 1.04      |
| Calcium    | 0.200-2.00 mg/L       | 126.1    |         |             |        |       | 91.5       | 93.5      | 132       | 176       | 120       | 108       | 150       | 195       | 122       | 119       | 118       |
| Cobalt     | 0.000500-0.00100 mg/L | 0.000559 |         |             | 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  |
| Copper     | 0.00200-0.00500 mg/L  | 0.00242  | 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  |
| Iron       | 0.100-0.200 mg/L      | 0.202    |         | 0.3         |        |       | 0.875      | <0.0788   | 0.0762    | <0.0394   | 0.375     | 0.253     | 0.117     | 0.0564    | 0.112     | 0.24      | 0.0786    |
| Lead       | 0.000500 mg/L         | 0.000480 | 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  |
| Lithium    | 0.0500 mg/L           | 0.0188   |         |             | 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    |
| Magnesium  | 0.0500-0.200 mg/L     | 31.5     |         |             |        |       | 15.4       | 15.3      | 26.5      | 27.3      | 17.7      | 15.7      | 28.7      | 34.5      | 24.7      | 23.2      | 27.8      |
| Manganese  | 0.00250-0.0100 mg/L   | 0.0480   |         | 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    |
| Molybdenum | 0.00200-0.0100 mg/L   | 0.00201  |         |             | 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    |
| Selenium   | 0.00250-0.00500 mg/L  | 0.00209  | 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  |
| Sodium     | 0.200-0.500 mg/L      | 49.74    |         |             |        |       | 7.73       | 6.54      | 5.76      | 10.5      | 5.52      | 3.62      | 4.82      | 7.02      | 5.01      | 4.91      | 5.72      |
| Zinc       | 0.0100-0.0200 mg/L    | 0.0087   |         | 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  |

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

## Sampling Protocol

*Provide a discussion on the effectiveness of the Sampling Protocol as described in 114.20.*

Based on observations of water levels at the site as summarized in 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 2023 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.



**Table 9**  
**Historic Control Limit & Action Level Exceedances**  
**2023 Annual Water Quality Report**  
**Leversee Road Ash Disposal Site**  
**Permit No. 07-SDP-11-89P**

Comments: Refer to the data summary tables for this information.  
All control limit and action level exceedences are highlighted in that information.

*This worksheet;*

- 1) Summarizes the historical extent of groundwater impact,*
- 2) Tracks GWQAP effectiveness, and*
- 3) Potentially highlights sequential degradation of  
contaminants of concern.*

**Table 10**  
**Groundwater Quality Assessment Plan Trend Analysis**  
**2023 Annual Water Quality Report**  
**Leversee Road Ash Disposal Site**  
**Permit No. 07-SDP-11-89P**

| Well               | Current SSL | Trend |
|--------------------|-------------|-------|
| See comments below |             |       |
|                    |             |       |
|                    |             |       |
|                    |             |       |
|                    |             |       |
|                    |             |       |

- \* - Permit holder addresses adequacy of groundwater quality assessment plan measure when trend is not
- \* - Permit holder shall adjust groundwater quality assessment plan action for financial assurance as compl

Comments:

The sodium values appear to be trending upward in Wells MW-1 and MW-3, the site background well. This should be watched for future consideration. Refer to data tables for more information

*This worksheet summarizes progress to ending groundwater quality assessment.*

[https://stanleyconsultants-my.sharepoint.com/personal/5246\\_stanleygroup\\_com/Documents/Desktop/Projects/CFU/2023/Final/2023 AWQR.xlsx](https://stanleyconsultants-my.sharepoint.com/personal/5246_stanleygroup_com/Documents/Desktop/Projects/CFU/2023/Final/2023 AWQR.xlsx)

## Recommendations

The results of the sampling for 2023 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.

The HAL for sodium (20 mg/L) was exceeded in Wells MW-1 and MW-3.

In comparison to the Iowa Statewide Standards for Protected Groundwater Sources, there were three exceedances for lithium, and four exceedances for molybdenum.

There was one exceedance for lithium in MW-1 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 2023 sampling event is generally consistent with past events, although somewhat lower. The results for 2023 are very similar to or somewhat lower than 2022.

Surface runoff is adequately controlled at the site and the closure cover has been effective and well maintained. As such, the site is not having an adverse effect on surface water quality.

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.





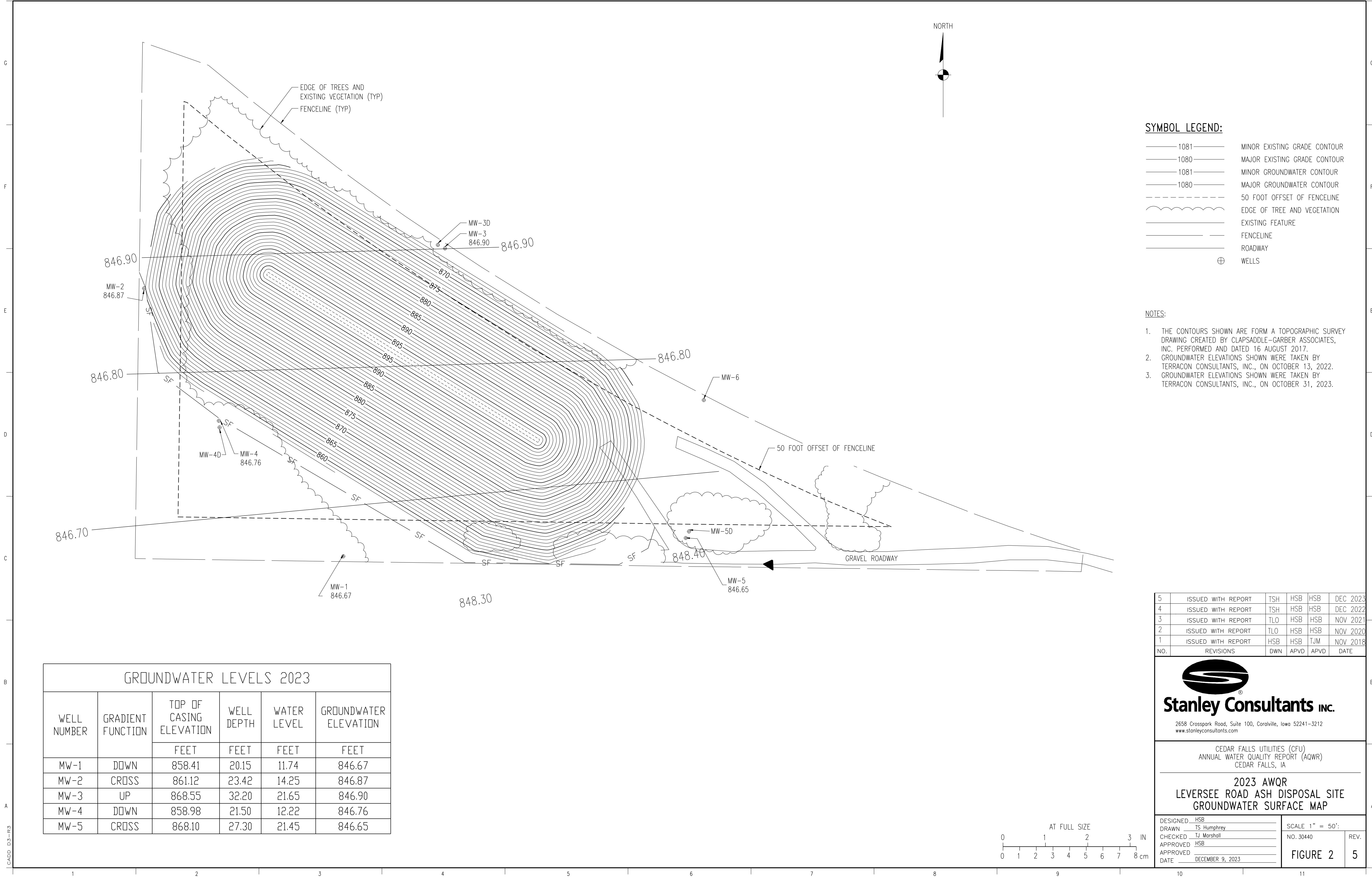
**FIGURE 1**  
**SITE LOCATION MAP**



**Legend**

 Site





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

| GROUNDWATER LEVELS 2023 |                   |                         |            |             |                       |
|-------------------------|-------------------|-------------------------|------------|-------------|-----------------------|
| WELL NUMBER             | GRADIENT FUNCTION | TOP OF CASING ELEVATION | WELL DEPTH | WATER LEVEL | GROUNDWATER ELEVATION |
|                         |                   | FEET                    |            |             |                       |
| MW-1                    | DOWN              | 858.41                  | 20.15      | 11.74       | 846.67                |
| MW-2                    | CROSS             | 861.12                  | 23.42      | 14.25       | 846.87                |
| MW-3                    | UP                | 868.55                  | 32.20      | 21.65       | 846.90                |
| MW-4                    | DOWN              | 858.98                  | 21.50      | 12.22       | 846.76                |
| MW-5                    | CROSS             | 868.10                  | 27.30      | 21.45       | 846.65                |

|     |                    |     |      |      |          |
|-----|--------------------|-----|------|------|----------|
| 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 |
| NO. | REVISIONS          | DWN | APVD | APVD | DATE     |



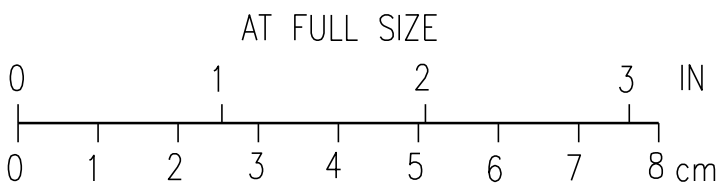
**Stanley Consultants INC.**

2658 Crosspark Road, Suite 100, Coralville, Iowa 52241-3212  
www.stanleyconsultants.com

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

**2023 AWQR**  
**LEVERSEE ROAD ASH DISPOSAL SITE**  
**GROUNDWATER SURFACE MAP**

|                              |                              |                  |
|------------------------------|------------------------------|------------------|
| DESIGNED <u>HSB</u>          | SCALE 1" = 50':<br>NO. 30440 | REV.<br><b>5</b> |
| DRAWN <u>TS Humphrey</u>     |                              |                  |
| CHECKED <u>TJ Marshall</u>   |                              |                  |
| APPROVED <u>HSB</u>          |                              |                  |
| APPROVED <u>HSB</u>          |                              |                  |
| DATE <u>DECEMBER 9, 2023</u> | <b>FIGURE 2</b>              |                  |





**3105 Capital Way, Suite 5**  
Cedar Falls, IA 50613  
**P** (319) 277-4016  
**F** (319) 277-4320  
**Terracon.com**

**TO:** Mr. Ed Olthoff  
Cedar Falls Utilities  
Utility Parkway PO Box 769  
Cedar Falls, Iowa 50613  
(319) 268-5309

**FROM:** Rob Bergman  
Terracon Consultants, Inc. (Terracon)  
3105 Capital Way, Suite 5  
Cedar Falls, Iowa 50613

**Date** November 13, 2023

**RE: Groundwater Sampling Services**  
Leversee Road Ash Disposal Site  
Leversee Road  
Cedar Falls, Iowa 50613  
Project No. 13237078

---

Dear Mr. Olthoff,

Terracon Consultants, inc. (Terracon) performed well cleaning services at the request of Cedar Falls Utilities (CFU) to remove root hairs out of wells #4, #5 and #6. Terracon performed this service on August 23, 2023 using a stiff bristled brush attached to 1 inch PVC casing with Mr. Ed Olthoff's assistance. Terracon scrubbed the inside of the 2 inch well casing several times from top to bottom to loosen the root hairs. After scrubbing, Terracon utilized a high-volume submersible pump to purge the water and root hairs out of the well.

Groundwater sampling was performed on October 31, 2023, with Mr. Olthoff's assistance. According to Mr. Olthoff, of Cedar Falls Utilities, bailed each of the sampled wells which included MW-1, MW-2, MW-3S, MW-4S and MW-5S on October 23, 2023. Terracon collected depth to water and depth of well levels for the five sampled wells. In addition, depths to water and well depths were also collected for the three deep wells, which included MW-3D, MW-4D, MW-5D, as well as MW-6.

Groundwater samples were collected using a peristaltic pump and new dedicated polyethylene tubing. Data from each of the five sampled wells was collected using a direct read YSI meter and included temperature, pH and specific conductance. The YSI meter was calibrated following manufactures specifications by the equipment rental company, Field Environmental Instruments, prior to sampling. The groundwater samples were placed in laboratory prepared containers, labeled, and placed on ice in a cooler.

The samples and completed chain-of-custody forms were transported to Eurofins Environmental Testing (formerly TestAmerica) in Cedar Falls, Iowa for analysis of pH, metals, chloride and sulfate.

No issues were encountered during well inspections and sampling.

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

Sincerely,

**Terracon Consultants, Inc.**

*Rob Bergman*

Rob Bergman

Senior Environmental Scientist

A handwritten signature in black ink, appearing to read 'Dennis Sensenbrenner'.

Dennis Sensenbrenner, CGP, PG

Senior Associate

Attachments: Groundwater Measurement Forms

Laboratory Analytical Report



# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| <b>If no, explain</b>                                  |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| <b>If yes, explain</b>                                 |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                             |                      |                       |
|------------------------------------------------------------------------|---------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                             |                      |                       |
| <b>Top of inner well casing</b> 858.41                                 | <b>Ground Elevation</b>                     |                      |                       |
| <b>Depth of Well</b> 20.15                                             | <b>Inside Casing Diameter (in inches)</b> 2 |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                             |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                             |                      |                       |
|                                                                        | Date/Time                                   | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                             |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                    | 11.74                | 846.67                |
| <b>*Before Purging</b>                                                 |                                             |                      |                       |

| *C. WELL PURGING                                                                                 |                             |
|--------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Quantity of Water Removed from Well (gallons)</b> 6.60 (Performed by CFU on October 23, 2023) |                             |
| <b>No. of Well Volumes (based on current water level)</b> 4.81                                   |                             |
| <b>Was well pumped/bailed dry?</b> No                                                            |                             |
| Equipment used:                                                                                  |                             |
| <b>Bailer type</b> NA                                                                            | <b>Dedicated Bailer?</b> NA |
| <b>Pump type</b> Geotech Geopump Peristaltic Pump                                                | <b>Dedicated Pump?</b> No   |
| <b>If not dedicated, method of cleaning</b> 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. 9<sup>th</sup> St, Des Moines, IA 50319.  
 Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, [nina.koger@dnr.iowa.gov](mailto:nina.koger@dnr.iowa.gov)

**\*D. FIELD MEASUREMENT****Weather Conditions** 35°Fahrenheit, Overcast and windy**Field Measurements (after stabilization):****Temperature** 12.1**Units** Celcius**Equipment Used** YSI - ProDss**pH** 7.10**Equipment Used** YSI - ProDss**Specific Conductance** 918**Units** uS**Equipment Used** YSI - ProDss**Comments**

Well was developed by CFU approximately eight days prior to sampling. Terracon purged water prior to sample collection as well.

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***Rob Bergman***Date** 11/13/23**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. 9<sup>th</sup> St, Des Moines, IA 50319.  
Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, [nina.koger@dnr.iowa.gov](mailto:nina.koger@dnr.iowa.gov)

# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                     |
|--------------------------------------------------------|---------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| If no, explain                                         |                                                                     |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| If yes, explain                                        |                                                                     |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                                        |                      |                       |
|------------------------------------------------------------------------|--------------------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                                        |                      |                       |
| <b>Top of inner well casing</b> <sup>861.13</sup>                      | <b>Ground Elevation</b>                                |                      |                       |
| <b>Depth of Well</b> <sup>23.42</sup>                                  | <b>Inside Casing Diameter (in inches)</b> <sup>2</sup> |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                                        |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                                        |                      |                       |
|                                                                        | Date/Time                                              | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                                        |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                               | 14.25                | 846.88                |
| <b>*Before Purging</b>                                                 |                                                        |                      |                       |

| *C. WELL PURGING                                                                                            |                             |
|-------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Quantity of Water Removed from Well (gallons)</b> <sup>6.07</sup> (Performed by CFU on October 23, 2023) |                             |
| <b>No. of Well Volumes (based on current water level)</b> <sup>4.06</sup>                                   |                             |
| <b>Was well pumped/bailed dry?</b> No                                                                       |                             |
| Equipment used:                                                                                             |                             |
| <b>Bailer type</b> NA                                                                                       | <b>Dedicated Bailer?</b> NA |
| <b>Pump type</b> Geotech Geopump Peristaltic Pump                                                           | <b>Dedicated Pump?</b> No   |
| <b>If not dedicated, method of cleaning</b> 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. 9<sup>th</sup> St, Des Moines, IA 50319.  
 Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, [nina.koger@dnr.iowa.gov](mailto:nina.koger@dnr.iowa.gov)

**\*D. FIELD MEASUREMENT****Weather Conditions** 35°Fahrenheit, Overcast and windy**Field Measurements (after stabilization):****Temperature** 11.60 **Units** Celcius**Equipment Used** YSI - ProDss**pH** 7.27**Equipment Used** YSI - ProDss**Specific Conductance** 524 **Units** uS**Equipment Used** YSI - ProDss**Comments**

Well was purged by CFU approximately eight days prior to sampling. Terracon purged water prior to sample collection as well.

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** *Rob Bergman***Date** 11/13/23**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.

# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| If no, explain                                         |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| If yes, explain                                        |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                             |                      |                       |
|------------------------------------------------------------------------|---------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                             |                      |                       |
| <b>Top of inner well casing</b> 868.55                                 | <b>Ground Elevation</b>                     |                      |                       |
| <b>Depth of Well</b> 32.20                                             | <b>Inside Casing Diameter (in inches)</b> 2 |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                             |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                             |                      |                       |
|                                                                        | Date/Time                                   | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                             |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                    | 21.65                | 846.90                |
| <b>*Before Purging</b>                                                 |                                             |                      |                       |

| *C. WELL PURGING                                                                                 |                             |
|--------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Quantity of Water Removed from Well (gallons)</b> 6.60 (Performed by CFU on October 23, 2023) |                             |
| <b>No. of Well Volumes (based on current water level)</b> 3.84                                   |                             |
| <b>Was well pumped/bailed dry?</b> No                                                            |                             |
| Equipment used:                                                                                  |                             |
| <b>Bailer type</b> NA                                                                            | <b>Dedicated Bailer?</b> NA |
| <b>Pump type</b> Geotech Geopump Peristaltic Pump                                                | <b>Dedicated Pump?</b> No   |
| <b>If not dedicated, method of cleaning</b> 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. 9<sup>th</sup> St, Des Moines, IA 50319.  
 Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, [nina.koger@dnr.iowa.gov](mailto:nina.koger@dnr.iowa.gov)

**\*D. FIELD MEASUREMENT****Weather Conditions** 35°Fahrenheit, Overcast and windy**Field Measurements (after stabilization):****Temperature** 10.60 **Units** Celcius**Equipment Used** YSI - ProDss**pH** 7.42**Equipment Used** YSI - ProDss**Specific Conductance** 512 **Units** uS**Equipment Used** YSI - ProDss**Comments**

Well was purged by CFU approximately eight days prior to sampling. Terracon purged water prior to sample collection as well.

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** *Rob Bergman***Date** 11/13/23**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. 9<sup>th</sup> St, Des Moines, IA 50319.  
Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, [nina.koger@dnr.iowa.gov](mailto:nina.koger@dnr.iowa.gov)



# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| <b>If no, explain</b>                                  |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| <b>If yes, explain</b>                                 |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                                        |                      |                       |
|------------------------------------------------------------------------|--------------------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                                        |                      |                       |
| <b>Top of inner well casing</b> 868.80                                 | <b>Ground Elevation</b>                                |                      |                       |
| <b>Depth of Well</b> 59.10                                             | <b>Inside Casing Diameter (in inches)</b> <sup>2</sup> |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                                        |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                                        |                      |                       |
|                                                                        | Date/Time                                              | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                                        |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                               | 21.88                | 846.92                |
| <b>*Before Purging</b>                                                 |                                                        |                      |                       |

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

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

**\*D. FIELD MEASUREMENT****Weather Conditions****Field Measurements (after stabilization):**

|                    |              |
|--------------------|--------------|
| <b>Temperature</b> | <b>Units</b> |
|--------------------|--------------|

|                       |
|-----------------------|
| <b>Equipment Used</b> |
|-----------------------|

|           |
|-----------|
| <b>pH</b> |
|-----------|

|                       |
|-----------------------|
| <b>Equipment Used</b> |
|-----------------------|

|                             |              |
|-----------------------------|--------------|
| <b>Specific Conductance</b> | <b>Units</b> |
|-----------------------------|--------------|

|                       |
|-----------------------|
| <b>Equipment Used</b> |
|-----------------------|

**Comments****CERTIFICATION**

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

|                                     |
|-------------------------------------|
| <b>Signature</b> <i>Rob Bergman</i> |
|-------------------------------------|

|                             |
|-----------------------------|
| <b>Date</b> <i>11/13/23</i> |
|-----------------------------|

|                               |
|-------------------------------|
| <b>Telephone</b> 319-277-4016 |
|-------------------------------|

|                         |
|-------------------------|
| <b>Fax</b> 319-277-4320 |
|-------------------------|

|                                     |
|-------------------------------------|
| <b>Email</b> 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.



# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| <b>If no, explain</b>                                  |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| <b>If yes, explain</b>                                 |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                             |                      |                       |
|------------------------------------------------------------------------|---------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                             |                      |                       |
| <b>Top of inner well casing</b> 858.98                                 | <b>Ground Elevation</b>                     |                      |                       |
| <b>Depth of Well</b> 21.5                                              | <b>Inside Casing Diameter (in inches)</b> 2 |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                             |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                             |                      |                       |
|                                                                        | Date/Time                                   | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                             |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                    | 12.22                | 846.76                |
| <b>*Before Purging</b>                                                 |                                             |                      |                       |

| *C. WELL PURGING                                                                                 |                             |
|--------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Quantity of Water Removed from Well (gallons)</b> 5.28 (Performed by CFU on October 23, 2023) |                             |
| <b>No. of Well Volumes (based on current water level)</b> 3.49                                   |                             |
| <b>Was well pumped/bailed dry?</b> No                                                            |                             |
| Equipment used:                                                                                  |                             |
| <b>Bailer type</b> NA                                                                            | <b>Dedicated Bailer?</b> NA |
| <b>Pump type</b> Geotech Geopump Peristaltic Pump                                                | <b>Dedicated Pump?</b> No   |
| <b>If not dedicated, method of cleaning</b> 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](mailto:nina.koger@dnr.iowa.gov)

|                                                             |                      |
|-------------------------------------------------------------|----------------------|
| <b>*D. FIELD MEASUREMENT</b>                                |                      |
| <b>Weather Conditions</b> 35°Fahrenheit, Overcast and windy |                      |
| <b>Field Measurements (after stabilization):</b>            |                      |
| <b>Temperature</b> 12.00                                    | <b>Units</b> Celcius |
| <b>Equipment Used</b> YSI - ProDss                          |                      |
| <b>pH</b> 7.08                                              |                      |
| <b>Equipment Used</b> YSI - ProDss                          |                      |
| <b>Specific Conductance</b> 691                             | <b>Units</b> uS      |
| <b>Equipment Used</b> YSI - ProDss                          |                      |

| Comments                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------|
| Well was purged by CFU approximately two days prior to sampling. Terracon purged water prior to sample collection as well.       |
| Samples were collected and submitted to Eurofins Environmental Testing in Cedar Falls in sample containers supplied by Eurofins. |
|                                                                                                                                  |
|                                                                                                                                  |
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|                                                                                                                                  |
|                                                                                                                                  |

| CERTIFICATION                                                                                                                                                  |                         |                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------|
| I certify under penalty of law I believe the information reported above is true, accurate and complete.                                                        |                         |                                     |
| <b>Signature</b> <i>Rob Bergman</i>                                                                                                                            | <b>Date</b> 11/13/23    |                                     |
| <b>Telephone</b> 319-277-4016                                                                                                                                  | <b>Fax</b> 319-277-4320 | <b>Email</b> RPBergman@Terracon.com |
| <b>NOTE:</b> 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.

# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| <b>If no, explain</b>                                  |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| <b>If yes, explain</b>                                 |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                                        |                      |                       |
|------------------------------------------------------------------------|--------------------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                                        |                      |                       |
| <b>Top of inner well casing</b> 859.19                                 | <b>Ground Elevation</b>                                |                      |                       |
| <b>Depth of Well</b> 71.33                                             | <b>Inside Casing Diameter (in inches)</b> <sup>2</sup> |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                                        |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                                        |                      |                       |
|                                                                        | Date/Time                                              | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                                        |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                               | 12.48                | 846.71                |
| <b>*Before Purging</b>                                                 |                                                        |                      |                       |

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

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

[illegible]

**CERTIFICATION**

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

|                              |                      |
|------------------------------|----------------------|
| Signature <i>Let Bergman</i> | Date <i>11/13/23</i> |
|------------------------------|----------------------|

|                               |                         |                                     |
|-------------------------------|-------------------------|-------------------------------------|
| <b>Telephone</b> 319-277-4016 | <b>Fax</b> 319-277-4320 | <b>Email</b> RPBergman@Terracon.com |
|-------------------------------|-------------------------|-------------------------------------|

**NOTE:** Attach Laboratory Report and 8 1/2" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

\*Omit if only measuring groundwater elevations.

# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| If no, explain                                         |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| If yes, explain                                        |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                             |                       |
|------------------------------------------------------------------------|---------------------------------------------|-----------------------|
| Elevation:                                                             |                                             |                       |
| <b>Top of inner well casing</b> 868.51                                 | <b>Ground Elevation</b>                     |                       |
| <b>Depth of Well</b> 27.30                                             | <b>Inside Casing Diameter (in Inches)</b> 2 |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                             |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                             |                       |
| Date/Time                                                              | Depth to Groundwater                        | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                             |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                    | 21.45<br>847.06       |
| <b>*Before Purging</b>                                                 |                                             |                       |

| *C. WELL PURGING                                                                                 |                             |
|--------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Quantity of Water Removed from Well (gallons)</b> 5.28 (Performed by CFU on October 23, 2023) |                             |
| <b>No. of Well Volumes (based on current water level)</b> 5.54                                   |                             |
| <b>Was well pumped/bailed dry?</b> No                                                            |                             |
| Equipment used:                                                                                  |                             |
| <b>Bailer type</b> NA                                                                            | <b>Dedicated Bailer?</b> NA |
| <b>Pump type</b> Geotech Geopump Peristaltic Pump                                                | <b>Dedicated Pump?</b> No   |
| <b>If not dedicated, method of cleaning</b> 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. 9<sup>th</sup> St, Des Moines, IA 50319.  
 Questions? Call or Email: Nina Koger Environmental Engineer Sr., 515-725-8309, [nina.koger@dnr.iowa.gov](mailto:nina.koger@dnr.iowa.gov)

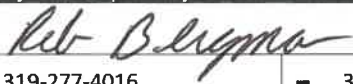
**\*D. FIELD MEASUREMENT****Weather Conditions** 35°Fahrenheit, Overcast and windy**Field Measurements (after stabilization):****Temperature** 10.40**Units** Celcius**Equipment Used** YSI - DssPro**pH** 7.12**Equipment Used** YSI - DssPro**Specific Conductance** 724**Units** uS**Equipment Used** YSI - DssPro**Comments**

Well was purged by CFU approximately eight days prior to sampling. Terracon purged water prior to sample collection as well.

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**

11/13/23

**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.



# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| If no, explain                                         |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| If yes, explain                                        |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                                        |                       |
|------------------------------------------------------------------------|--------------------------------------------------------|-----------------------|
| Elevation:                                                             |                                                        |                       |
| <b>Top of inner well casing</b> 868.72                                 | <b>Ground Elevation</b>                                |                       |
| <b>Depth of Well</b> 54.07                                             | <b>Inside Casing Diameter (in inches)</b> <sup>2</sup> |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                                        |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                                        |                       |
| Date/Time                                                              | Depth to Groundwater                                   | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                                        |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                               | 22.00                 |
| <b>*Before Purging</b>                                                 |                                                        |                       |

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

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

| *D. FIELD MEASUREMENT                     |       |
|-------------------------------------------|-------|
| <b>Weather Conditions</b>                 |       |
| Field Measurements (after stabilization): |       |
| Temperature                               | Units |
| <b>Equipment Used</b>                     |       |
| pH                                        |       |
| <b>Equipment Used</b>                     |       |
| Specific Conductance                      | Units |
| <b>Equipment Used</b>                     |       |

[illegible]

|                                                                                                                                                           |                  |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------|
| <b>CERTIFICATION</b>                                                                                                                                      |                  |                                     |
| I certify under penalty of law I believe the information reported above is true, accurate and complete.                                                   |                  |                                     |
| Signature <i>Rob Bergman</i>                                                                                                                              |                  | Date <i>11/13/23</i>                |
| Telephone 319-277-4016                                                                                                                                    | Fax 319-277-4320 | Email <i>RPBergman@Terracon.com</i> |
| NOTE: Attach Laboratory Report and 8 1/2" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round. |                  |                                     |

\*Omit if only measuring groundwater elevations.



# GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

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

| A. MONITORING WELL/PIEZOMETER CONDITIONS               |                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Well/Piezometer Properly Capped?</b> (please check) | <input checked="" type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> |
| If no, explain                                         |                                                                                   |
| <b>Standing Water or Litter?</b> (please check)        | <input type="checkbox"/> <b>YES</b> <input checked="" type="checkbox"/> <b>NO</b> |
| If yes, explain                                        |                                                                                   |

| B. GROUNDWATER ELEVATION MEASUREMENT ( $\pm 0.01$ foot, MSL)           |                                             |                      |                       |
|------------------------------------------------------------------------|---------------------------------------------|----------------------|-----------------------|
| Elevation:                                                             |                                             |                      |                       |
| <b>Top of inner well casing</b> 868.49                                 | <b>Ground Elevation</b>                     |                      |                       |
| <b>Depth of Well</b> 25.40                                             | <b>Inside Casing Diameter (in inches)</b> 2 |                      |                       |
| <b>Equipment Used</b> Slope Indicator Electronic Water Level Indicator |                                             |                      |                       |
| Groundwater Level ( $\pm 0.01$ foot below top of inner casing, MSL):   |                                             |                      |                       |
|                                                                        | Date/Time                                   | Depth to Groundwater | Groundwater Elevation |
| <b>Before Purging</b>                                                  |                                             |                      |                       |
| <b>*After Purging</b>                                                  | 10/31/23                                    | 22.72                | 845.77                |
| <b>*Before Purging</b>                                                 |                                             |                      |                       |

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

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

**\*D. FIELD MEASUREMENT****Weather Conditions****Field Measurements (after stabilization):**

|                    |              |
|--------------------|--------------|
| <b>Temperature</b> | <b>Units</b> |
|--------------------|--------------|

|                       |
|-----------------------|
| <b>Equipment Used</b> |
|-----------------------|

|           |
|-----------|
| <b>pH</b> |
|-----------|

|                       |
|-----------------------|
| <b>Equipment Used</b> |
|-----------------------|

|                             |              |
|-----------------------------|--------------|
| <b>Specific Conductance</b> | <b>Units</b> |
|-----------------------------|--------------|

|                       |
|-----------------------|
| <b>Equipment Used</b> |
|-----------------------|

**Comments****CERTIFICATION**

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

|                                     |
|-------------------------------------|
| <b>Signature</b> <i>Rob Bergman</i> |
|-------------------------------------|

|                             |
|-----------------------------|
| <b>Date</b> <i>11/13/23</i> |
|-----------------------------|

|                               |
|-------------------------------|
| <b>Telephone</b> 319-277-4016 |
|-------------------------------|

|                         |
|-------------------------|
| <b>Fax</b> 319-277-4320 |
|-------------------------|

|                                     |
|-------------------------------------|
| <b>Email</b> 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.

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ed Olthoff  
Cedar Falls Utilities  
PO BOX 769  
Cedar Falls, Iowa 50613-0769

Generated 11/10/2023 3:31:08 PM

## JOB DESCRIPTION

Leversee Road Ash Landfill

## JOB NUMBER

310-268535-1

# Eurofins Cedar Falls

## Job Notes

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

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

## Authorization



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Authorized for release by  
Matthew Hummel, Project Manager I  
[Matthew.Hummel@et.eurofinsus.com](mailto:Matthew.Hummel@et.eurofinsus.com)  
(319)595-2010

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## Case Narrative

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

Job ID: 310-268535-1

**Job ID: 310-268535-1**

**Laboratory: Eurofins Cedar Falls**

### Narrative

#### Job Narrative 310-268535-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 10/31/2023 5:20 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 5.3°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: Leverage Road Ash Landfill

Job ID: 310-268535-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 310-268535-1  | MW-1             | Water  | 10/31/23 14:15 | 10/31/23 17:20 |
| 310-268535-2  | MW-2             | Water  | 10/31/23 13:15 | 10/31/23 17:20 |
| 310-268535-3  | MW-3S            | Water  | 10/31/23 12:30 | 10/31/23 17:20 |
| 310-268535-4  | MW-4S            | Water  | 10/31/23 13:45 | 10/31/23 17:20 |
| 310-268535-5  | MW-5S            | Water  | 10/31/23 11:45 | 10/31/23 17:20 |

## Detection Summary

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

Job ID: 310-268535-1

### Client Sample ID: MW-1

### Lab Sample ID: 310-268535-1

| Analyte    | Result   | Qualifier | RL       | MDL      | Unit | Dil | Fac | D | Method       | Prep Type |
|------------|----------|-----------|----------|----------|------|-----|-----|---|--------------|-----------|
| Chloride   | 34.5     |           | 5.00     | 2.25     | mg/L | 5   |     |   | 9056A        | Total/NA  |
| Sulfate    | 139      |           | 5.00     | 2.10     | mg/L | 5   |     |   | 9056A        | Total/NA  |
| Aluminum   | 0.0666   |           | 0.0500   | 0.0170   | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Arsenic    | 0.00117  | J         | 0.00200  | 0.000530 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Barium     | 0.0902   |           | 0.00200  | 0.000640 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Boron      | 5.66     |           | 0.400    | 0.304    | mg/L | 4   |     |   | 6020B        | Total/NA  |
| Calcium    | 97.5     |           | 0.500    | 0.190    | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Cobalt     | 0.000214 | J         | 0.000500 | 0.000170 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Iron       | 0.118    |           | 0.100    | 0.0360   | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Lithium    | 0.137    |           | 0.0100   | 0.00250  | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Magnesium  | 20.8     |           | 0.500    | 0.150    | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Manganese  | 0.0141   |           | 0.0100   | 0.00360  | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Molybdenum | 0.163    |           | 0.00200  | 0.000910 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Selenium   | 0.00276  | J         | 0.00500  | 0.00140  | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Sodium     | 83.2     |           | 1.00     | 0.460    | mg/L | 1   |     |   | 6020B        | Total/NA  |
| pH         | 7.3      | HF        | 1.0      | 1.0      | SU   | 1   |     |   | SM 4500 H+ B | Total/NA  |

### Client Sample ID: MW-2

### Lab Sample ID: 310-268535-2

| Analyte    | Result   | Qualifier | RL      | MDL      | Unit | Dil | Fac | D | Method       | Prep Type |
|------------|----------|-----------|---------|----------|------|-----|-----|---|--------------|-----------|
| Chloride   | 11.1     |           | 5.00    | 2.25     | mg/L | 5   |     |   | 9056A        | Total/NA  |
| Sulfate    | 26.1     |           | 5.00    | 2.10     | mg/L | 5   |     |   | 9056A        | Total/NA  |
| Arsenic    | 0.000675 | J         | 0.00200 | 0.000530 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Barium     | 0.0497   |           | 0.00200 | 0.000640 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Boron      | 0.151    |           | 0.100   | 0.0760   | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Calcium    | 78.2     |           | 0.500   | 0.190    | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Iron       | 0.138    |           | 0.100   | 0.0360   | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Lithium    | 0.0111   |           | 0.0100  | 0.00250  | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Magnesium  | 18.2     |           | 0.500   | 0.150    | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Manganese  | 0.0402   |           | 0.0100  | 0.00360  | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Molybdenum | 0.0563   |           | 0.00200 | 0.000910 | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Selenium   | 0.00147  | J         | 0.00500 | 0.00140  | mg/L | 1   |     |   | 6020B        | Total/NA  |
| Sodium     | 9.35     |           | 1.00    | 0.460    | mg/L | 1   |     |   | 6020B        | Total/NA  |
| pH         | 7.6      | HF        | 1.0     | 1.0      | SU   | 1   |     |   | SM 4500 H+ B | Total/NA  |

### Client Sample ID: MW-3S

### Lab Sample ID: 310-268535-3

| Analyte   | Result   | Qualifier | RL       | MDL      | Unit | Dil | Fac | D | Method | Prep Type |
|-----------|----------|-----------|----------|----------|------|-----|-----|---|--------|-----------|
| Chloride  | 12.0     |           | 5.00     | 2.25     | mg/L | 5   |     |   | 9056A  | Total/NA  |
| Sulfate   | 21.2     |           | 5.00     | 2.10     | mg/L | 5   |     |   | 9056A  | Total/NA  |
| Aluminum  | 0.0771   |           | 0.0500   | 0.0170   | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Arsenic   | 0.00117  | J         | 0.00200  | 0.000530 | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Barium    | 0.0424   |           | 0.00200  | 0.000640 | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Boron     | 0.0824   | J         | 0.100    | 0.0760   | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Calcium   | 60.4     |           | 0.500    | 0.190    | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Cobalt    | 0.000331 | J         | 0.000500 | 0.000170 | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Copper    | 0.00226  | J         | 0.00500  | 0.00180  | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Iron      | 0.143    |           | 0.100    | 0.0360   | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Lead      | 0.000317 | J B       | 0.000500 | 0.000240 | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Magnesium | 15.6     |           | 0.500    | 0.150    | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Manganese | 0.0338   |           | 0.0100   | 0.00360  | mg/L | 1   |     |   | 6020B  | Total/NA  |
| Sodium    | 39.1     |           | 1.00     | 0.460    | mg/L | 1   |     |   | 6020B  | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls



## Detection Summary

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

Job ID: 310-268535-1

### Client Sample ID: MW-3S (Continued)

Lab Sample ID: 310-268535-3

| Analyte | Result | Qualifier | RL  | RL  | Unit | Dil Fac | D | Method       | Prep Type |
|---------|--------|-----------|-----|-----|------|---------|---|--------------|-----------|
| pH      | 7.6    | HF        | 1.0 | 1.0 | SU   | 1       |   | SM 4500 H+ B | Total/NA  |

### Client Sample ID: MW-4S

Lab Sample ID: 310-268535-4

| Analyte    | Result   | Qualifier | RL      | MDL      | Unit | Dil Fac | D | Method       | Prep Type |
|------------|----------|-----------|---------|----------|------|---------|---|--------------|-----------|
| Chloride   | 12.2     |           | 5.00    | 2.25     | mg/L | 5       |   | 9056A        | Total/NA  |
| Sulfate    | 81.7     |           | 5.00    | 2.10     | mg/L | 5       |   | 9056A        | Total/NA  |
| Arsenic    | 0.000712 | J         | 0.00200 | 0.000530 | mg/L | 1       |   | 6020B        | Total/NA  |
| Barium     | 0.0493   |           | 0.00200 | 0.000640 | mg/L | 1       |   | 6020B        | Total/NA  |
| Boron      | 1.90     |           | 0.100   | 0.0760   | mg/L | 1       |   | 6020B        | Total/NA  |
| Calcium    | 103      |           | 0.500   | 0.190    | mg/L | 1       |   | 6020B        | Total/NA  |
| Iron       | 0.218    |           | 0.100   | 0.0360   | mg/L | 1       |   | 6020B        | Total/NA  |
| Lithium    | 0.0259   |           | 0.0100  | 0.00250  | mg/L | 1       |   | 6020B        | Total/NA  |
| Magnesium  | 27.2     |           | 0.500   | 0.150    | mg/L | 1       |   | 6020B        | Total/NA  |
| Manganese  | 0.0196   |           | 0.0100  | 0.00360  | mg/L | 1       |   | 6020B        | Total/NA  |
| Molybdenum | 0.0540   |           | 0.00200 | 0.000910 | mg/L | 1       |   | 6020B        | Total/NA  |
| Sodium     | 10.7     |           | 1.00    | 0.460    | mg/L | 1       |   | 6020B        | Total/NA  |
| pH         | 7.3      | HF        | 1.0     | 1.0      | SU   | 1       |   | SM 4500 H+ B | Total/NA  |

### Client Sample ID: MW-5S

Lab Sample ID: 310-268535-5

| Analyte    | Result   | Qualifier | RL       | MDL      | Unit | Dil Fac | D | Method       | Prep Type |
|------------|----------|-----------|----------|----------|------|---------|---|--------------|-----------|
| Chloride   | 16.8     |           | 5.00     | 2.25     | mg/L | 5       |   | 9056A        | Total/NA  |
| Sulfate    | 80.6     |           | 5.00     | 2.10     | mg/L | 5       |   | 9056A        | Total/NA  |
| Arsenic    | 0.000653 | J         | 0.00200  | 0.000530 | mg/L | 1       |   | 6020B        | Total/NA  |
| Barium     | 0.0722   |           | 0.00200  | 0.000640 | mg/L | 1       |   | 6020B        | Total/NA  |
| Boron      | 1.04     |           | 0.100    | 0.0760   | mg/L | 1       |   | 6020B        | Total/NA  |
| Calcium    | 118      |           | 0.500    | 0.190    | mg/L | 1       |   | 6020B        | Total/NA  |
| Cobalt     | 0.000181 | J         | 0.000500 | 0.000170 | mg/L | 1       |   | 6020B        | Total/NA  |
| Iron       | 0.0786   | J         | 0.100    | 0.0360   | mg/L | 1       |   | 6020B        | Total/NA  |
| Lead       | 0.000253 | J B       | 0.000500 | 0.000240 | mg/L | 1       |   | 6020B        | Total/NA  |
| Lithium    | 0.0495   |           | 0.0100   | 0.00250  | mg/L | 1       |   | 6020B        | Total/NA  |
| Magnesium  | 27.8     |           | 0.500    | 0.150    | mg/L | 1       |   | 6020B        | Total/NA  |
| Manganese  | 0.0170   |           | 0.0100   | 0.00360  | mg/L | 1       |   | 6020B        | Total/NA  |
| Molybdenum | 0.0621   |           | 0.00200  | 0.000910 | mg/L | 1       |   | 6020B        | Total/NA  |
| Sodium     | 5.72     |           | 1.00     | 0.460    | mg/L | 1       |   | 6020B        | Total/NA  |
| pH         | 7.3      | HF        | 1.0      | 1.0      | SU   | 1       |   | SM 4500 H+ B | Total/NA  |

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

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

Job ID: 310-268535-1

Client Sample ID: MW-1

Lab Sample ID: 310-268535-1

Date Collected: 10/31/23 14:15

Matrix: Water

Date Received: 10/31/23 17:20

## Method: SW846 9056A - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 34.5   |           | 5.00 | 2.25 | mg/L |   |          | 11/08/23 21:30 | 5       |
| Sulfate  | 139    |           | 5.00 | 2.10 | mg/L |   |          | 11/08/23 21:30 | 5       |

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

| Analyte    | Result    | Qualifier | RL       | MDL      | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------|-----------|-----------|----------|----------|------|---|----------------|----------------|---------|
| Aluminum   | 0.0666    |           | 0.0500   | 0.0170   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Arsenic    | 0.00117   | J         | 0.00200  | 0.000530 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Barium     | 0.0902    |           | 0.00200  | 0.000640 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Beryllium  | <0.000330 |           | 0.00100  | 0.000330 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Boron      | 5.66      |           | 0.400    | 0.304    | mg/L |   | 11/01/23 09:50 | 11/09/23 13:51 | 4       |
| Calcium    | 97.5      |           | 0.500    | 0.190    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Cobalt     | 0.000214  | J         | 0.000500 | 0.000170 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Copper     | <0.00180  |           | 0.00500  | 0.00180  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Iron       | 0.118     |           | 0.100    | 0.0360   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Lead       | <0.000240 |           | 0.000500 | 0.000240 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Lithium    | 0.137     |           | 0.0100   | 0.00250  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Magnesium  | 20.8      |           | 0.500    | 0.150    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Manganese  | 0.0141    |           | 0.0100   | 0.00360  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Molybdenum | 0.163     |           | 0.00200  | 0.000910 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Selenium   | 0.00276   | J         | 0.00500  | 0.00140  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Sodium     | 83.2      |           | 1.00     | 0.460    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |
| Zinc       | <0.00640  |           | 0.0200   | 0.00640  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:20 | 1       |

## General Chemistry

| Analyte           | Result | Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| pH (SM 4500 H+ B) | 7.3    | HF        | 1.0 | 1.0 | SU   |   |          | 11/01/23 07:14 | 1       |

# Client Sample Results

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

Job ID: 310-268535-1

Client Sample ID: MW-2

Lab Sample ID: 310-268535-2

Date Collected: 10/31/23 13:15

Matrix: Water

Date Received: 10/31/23 17:20

## Method: SW846 9056A - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 11.1   |           | 5.00 | 2.25 | mg/L |   |          | 11/08/23 21:45 | 5       |
| Sulfate  | 26.1   |           | 5.00 | 2.10 | mg/L |   |          | 11/08/23 21:45 | 5       |

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

| Analyte    | Result    | Qualifier | RL       | MDL      | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------|-----------|-----------|----------|----------|------|---|----------------|----------------|---------|
| Aluminum   | <0.0170   |           | 0.0500   | 0.0170   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Arsenic    | 0.000675  | J         | 0.00200  | 0.000530 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Barium     | 0.0497    |           | 0.00200  | 0.000640 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Beryllium  | <0.000330 |           | 0.00100  | 0.000330 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Boron      | 0.151     |           | 0.100    | 0.0760   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Calcium    | 78.2      |           | 0.500    | 0.190    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Cobalt     | <0.000170 |           | 0.000500 | 0.000170 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Copper     | <0.00180  |           | 0.00500  | 0.00180  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Iron       | 0.138     |           | 0.100    | 0.0360   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Lead       | <0.000240 |           | 0.000500 | 0.000240 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Lithium    | 0.0111    |           | 0.0100   | 0.00250  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Magnesium  | 18.2      |           | 0.500    | 0.150    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Manganese  | 0.0402    |           | 0.0100   | 0.00360  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Molybdenum | 0.0563    |           | 0.00200  | 0.000910 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Selenium   | 0.00147   | J         | 0.00500  | 0.00140  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Sodium     | 9.35      |           | 1.00     | 0.460    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |
| Zinc       | <0.00640  |           | 0.0200   | 0.00640  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:50 | 1       |

## General Chemistry

| Analyte           | Result | Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| pH (SM 4500 H+ B) | 7.6    | HF        | 1.0 | 1.0 | SU   |   |          | 11/01/23 07:17 | 1       |

# Client Sample Results

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

Job ID: 310-268535-1

Client Sample ID: MW-3S

Lab Sample ID: 310-268535-3

Date Collected: 10/31/23 12:30

Matrix: Water

Date Received: 10/31/23 17:20

## Method: SW846 9056A - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 12.0   |           | 5.00 | 2.25 | mg/L |   |          | 11/08/23 21:59 | 5       |
| Sulfate  | 21.2   |           | 5.00 | 2.10 | mg/L |   |          | 11/08/23 21:59 | 5       |

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

| Analyte    | Result    | Qualifier | RL       | MDL      | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------|-----------|-----------|----------|----------|------|---|----------------|----------------|---------|
| Aluminum   | 0.0771    |           | 0.0500   | 0.0170   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Arsenic    | 0.00117   | J         | 0.00200  | 0.000530 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Barium     | 0.0424    |           | 0.00200  | 0.000640 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Beryllium  | <0.000330 |           | 0.00100  | 0.000330 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Boron      | 0.0824    | J         | 0.100    | 0.0760   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Calcium    | 60.4      |           | 0.500    | 0.190    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Cobalt     | 0.000331  | J         | 0.000500 | 0.000170 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Copper     | 0.00226   | J         | 0.00500  | 0.00180  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Iron       | 0.143     |           | 0.100    | 0.0360   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Lead       | 0.000317  | J B       | 0.000500 | 0.000240 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Lithium    | <0.00250  |           | 0.0100   | 0.00250  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Magnesium  | 15.6      |           | 0.500    | 0.150    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Manganese  | 0.0338    |           | 0.0100   | 0.00360  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Molybdenum | <0.000910 |           | 0.00200  | 0.000910 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Selenium   | <0.00140  |           | 0.00500  | 0.00140  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Sodium     | 39.1      |           | 1.00     | 0.460    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |
| Zinc       | <0.00640  |           | 0.0200   | 0.00640  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:53 | 1       |

## General Chemistry

| Analyte           | Result | Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| pH (SM 4500 H+ B) | 7.6    | HF        | 1.0 | 1.0 | SU   |   |          | 11/01/23 07:19 | 1       |

# Client Sample Results

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

Job ID: 310-268535-1

Client Sample ID: MW-4S

Lab Sample ID: 310-268535-4

Date Collected: 10/31/23 13:45

Matrix: Water

Date Received: 10/31/23 17:20

## Method: SW846 9056A - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 12.2   |           | 5.00 | 2.25 | mg/L |   |          | 11/08/23 22:13 | 5       |
| Sulfate  | 81.7   |           | 5.00 | 2.10 | mg/L |   |          | 11/08/23 22:13 | 5       |

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

| Analyte    | Result    | Qualifier | RL       | MDL      | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------|-----------|-----------|----------|----------|------|---|----------------|----------------|---------|
| Aluminum   | <0.0170   |           | 0.0500   | 0.0170   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Arsenic    | 0.000712  | J         | 0.00200  | 0.000530 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Barium     | 0.0493    |           | 0.00200  | 0.000640 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Beryllium  | <0.000330 |           | 0.00100  | 0.000330 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Boron      | 1.90      |           | 0.100    | 0.0760   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Calcium    | 103       |           | 0.500    | 0.190    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Cobalt     | <0.000170 |           | 0.000500 | 0.000170 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Copper     | <0.00180  |           | 0.00500  | 0.00180  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Iron       | 0.218     |           | 0.100    | 0.0360   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Lead       | <0.000240 |           | 0.000500 | 0.000240 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Lithium    | 0.0259    |           | 0.0100   | 0.00250  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Magnesium  | 27.2      |           | 0.500    | 0.150    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Manganese  | 0.0196    |           | 0.0100   | 0.00360  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Molybdenum | 0.0540    |           | 0.00200  | 0.000910 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Selenium   | <0.00140  |           | 0.00500  | 0.00140  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Sodium     | 10.7      |           | 1.00     | 0.460    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |
| Zinc       | <0.00640  |           | 0.0200   | 0.00640  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:57 | 1       |

## General Chemistry

| Analyte           | Result | Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| pH (SM 4500 H+ B) | 7.3    | HF        | 1.0 | 1.0 | SU   |   |          | 11/01/23 07:18 | 1       |

# Client Sample Results

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

Job ID: 310-268535-1

Client Sample ID: MW-5S

Lab Sample ID: 310-268535-5

Date Collected: 10/31/23 11:45

Matrix: Water

Date Received: 10/31/23 17:20

## Method: SW846 9056A - Anions, Ion Chromatography

| Analyte  | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Chloride | 16.8   |           | 5.00 | 2.25 | mg/L |   |          | 11/08/23 22:27 | 5       |
| Sulfate  | 80.6   |           | 5.00 | 2.10 | mg/L |   |          | 11/08/23 22:27 | 5       |

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

| Analyte    | Result    | Qualifier | RL       | MDL      | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------|-----------|-----------|----------|----------|------|---|----------------|----------------|---------|
| Aluminum   | <0.0170   |           | 0.0500   | 0.0170   | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Arsenic    | 0.000653  | J         | 0.00200  | 0.000530 | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Barium     | 0.0722    |           | 0.00200  | 0.000640 | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Beryllium  | <0.000330 |           | 0.00100  | 0.000330 | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Boron      | 1.04      |           | 0.100    | 0.0760   | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Calcium    | 118       |           | 0.500    | 0.190    | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Cobalt     | 0.000181  | J         | 0.000500 | 0.000170 | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Copper     | <0.00180  |           | 0.00500  | 0.00180  | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Iron       | 0.0786    | J         | 0.100    | 0.0360   | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Lead       | 0.000253  | J B       | 0.000500 | 0.000240 | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Lithium    | 0.0495    |           | 0.0100   | 0.00250  | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Magnesium  | 27.8      |           | 0.500    | 0.150    | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Manganese  | 0.0170    |           | 0.0100   | 0.00360  | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Molybdenum | 0.0621    |           | 0.00200  | 0.000910 | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Selenium   | <0.00140  |           | 0.00500  | 0.00140  | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Sodium     | 5.72      |           | 1.00     | 0.460    | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |
| Zinc       | <0.00640  |           | 0.0200   | 0.00640  | mg/L |   | 11/01/23 09:50 | 11/08/23 16:00 | 1       |

## General Chemistry

| Analyte           | Result | Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| pH (SM 4500 H+ B) | 7.3    | HF        | 1.0 | 1.0 | SU   |   |          | 11/01/23 07:16 | 1       |

## Definitions/Glossary

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

Job ID: 310-268535-1

### Qualifiers

#### Metals

| Qualifier | Qualifier Description                                                                                                                                     |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4         | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| B         | Compound was found in the blank and sample.                                                                                                               |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.                                            |

#### 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.                                 |
|----------------|-------------------------------------------------------------------------------------------------------------|
| α              | 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                                                                                       |

# QC Sample Results

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

Job ID: 310-268535-1

## Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-405626/3

Matrix: Water

Analysis Batch: 405626

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL   | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|-------|------|---|----------|----------------|---------|
| Chloride | <0.450    |              | 1.00 | 0.450 | mg/L |   |          | 11/08/23 17:03 | 1       |
| Sulfate  | <0.420    |              | 1.00 | 0.420 | mg/L |   |          | 11/08/23 17:03 | 1       |

Lab Sample ID: LCS 310-405626/37

Matrix: Water

Analysis Batch: 405626

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|----------|-------------|------------|---------------|------|---|------|-------------|
| Chloride | 10.0        | 10.21      |               | mg/L |   | 102  | 90 - 110    |
| Sulfate  | 10.0        | 10.84      |               | mg/L |   | 108  | 90 - 110    |

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

Lab Sample ID: MB 310-404546/1-A

Matrix: Water

Analysis Batch: 405404

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 404546

| Analyte    | MB Result | MB Qualifier | RL       | MDL      | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------|-----------|--------------|----------|----------|------|---|----------------|----------------|---------|
| Aluminum   | <0.0170   |              | 0.0500   | 0.0170   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Arsenic    | <0.000530 |              | 0.00200  | 0.000530 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Barium     | <0.000640 |              | 0.00200  | 0.000640 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Beryllium  | <0.000330 |              | 0.00100  | 0.000330 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Boron      | <0.0760   |              | 0.100    | 0.0760   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Calcium    | <0.190    |              | 0.500    | 0.190    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Cobalt     | <0.000170 |              | 0.000500 | 0.000170 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Copper     | <0.00180  |              | 0.00500  | 0.00180  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Iron       | <0.0360   |              | 0.100    | 0.0360   | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Lead       | 0.0004120 | J            | 0.000500 | 0.000240 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Lithium    | <0.00250  |              | 0.0100   | 0.00250  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Magnesium  | <0.150    |              | 0.500    | 0.150    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Manganese  | <0.00360  |              | 0.0100   | 0.00360  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Molybdenum | <0.000910 |              | 0.00200  | 0.000910 | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Selenium   | <0.00140  |              | 0.00500  | 0.00140  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Sodium     | <0.460    |              | 1.00     | 0.460    | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |
| Zinc       | <0.00640  |              | 0.0200   | 0.00640  | mg/L |   | 11/01/23 09:50 | 11/08/23 15:10 | 1       |

Lab Sample ID: LCS 310-404546/2-A

Matrix: Water

Analysis Batch: 405404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 404546

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------|-------------|------------|---------------|------|---|------|-------------|
| Aluminum  | 0.200       | 0.1854     |               | mg/L |   | 93   | 80 - 120    |
| Arsenic   | 0.200       | 0.2025     |               | mg/L |   | 101  | 80 - 120    |
| Barium    | 0.100       | 0.09808    |               | mg/L |   | 98   | 80 - 120    |
| Beryllium | 0.100       | 0.09409    |               | mg/L |   | 94   | 80 - 120    |
| Boron     | 0.200       | 0.1909     |               | mg/L |   | 95   | 80 - 120    |
| Calcium   | 2.00        | 1.789      |               | mg/L |   | 89   | 80 - 120    |
| Cobalt    | 0.100       | 0.09520    |               | mg/L |   | 95   | 80 - 120    |
| Copper    | 0.200       | 0.1908     |               | mg/L |   | 95   | 80 - 120    |

Eurofins Cedar Falls



# QC Sample Results

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

Job ID: 310-268535-1

## Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-404546/2-A

Matrix: Water

Analysis Batch: 405404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 404546

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|------------|-------------|------------|---------------|------|---|------|-------------|
| Iron       | 0.200       | 0.2304     |               | mg/L |   | 115  | 80 - 120    |
| Lead       | 0.200       | 0.1930     |               | mg/L |   | 97   | 80 - 120    |
| Lithium    | 0.200       | 0.1961     |               | mg/L |   | 98   | 80 - 120    |
| Magnesium  | 2.00        | 1.946      |               | mg/L |   | 97   | 80 - 120    |
| Manganese  | 0.100       | 0.09445    |               | mg/L |   | 94   | 80 - 120    |
| Molybdenum | 0.200       | 0.1874     |               | mg/L |   | 94   | 80 - 120    |
| Selenium   | 0.400       | 0.3482     |               | mg/L |   | 87   | 80 - 120    |
| Sodium     | 2.00        | 2.019      |               | mg/L |   | 101  | 80 - 120    |
| Zinc       | 0.200       | 0.1785     |               | mg/L |   | 89   | 80 - 120    |

Lab Sample ID: 310-268535-1 MS

Matrix: Water

Analysis Batch: 405404

Client Sample ID: MW-1

Prep Type: Total/NA

Prep Batch: 404546

| Analyte    | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|------------|---------------|------------------|-------------|-----------|--------------|------|---|------|-------------|
| Aluminum   | 0.0666        |                  | 0.200       | 0.2570    |              | mg/L |   | 95   | 75 - 125    |
| Arsenic    | 0.00117       | J                | 0.200       | 0.2157    |              | mg/L |   | 107  | 75 - 125    |
| Barium     | 0.0902        |                  | 0.100       | 0.1903    |              | mg/L |   | 100  | 75 - 125    |
| Beryllium  | <0.000330     |                  | 0.100       | 0.09739   |              | mg/L |   | 97   | 75 - 125    |
| Calcium    | 97.5          |                  | 2.00        | 98.36     | 4            | mg/L |   | 45   | 75 - 125    |
| Cobalt     | 0.000214      | J                | 0.100       | 0.09424   |              | mg/L |   | 94   | 75 - 125    |
| Copper     | <0.00180      |                  | 0.200       | 0.1850    |              | mg/L |   | 92   | 75 - 125    |
| Iron       | 0.118         |                  | 0.200       | 0.3139    |              | mg/L |   | 98   | 75 - 125    |
| Lead       | <0.000240     |                  | 0.200       | 0.1871    |              | mg/L |   | 94   | 75 - 125    |
| Lithium    | 0.137         |                  | 0.200       | 0.3220    |              | mg/L |   | 92   | 75 - 125    |
| Magnesium  | 20.8          |                  | 2.00        | 21.99     | 4            | mg/L |   | 62   | 75 - 125    |
| Manganese  | 0.0141        |                  | 0.100       | 0.1143    |              | mg/L |   | 100  | 75 - 125    |
| Molybdenum | 0.163         |                  | 0.200       | 0.3708    |              | mg/L |   | 104  | 75 - 125    |
| Selenium   | 0.00276       | J                | 0.400       | 0.3775    |              | mg/L |   | 94   | 75 - 125    |
| Sodium     | 83.2          |                  | 2.00        | 83.73     | 4            | mg/L |   | 25   | 75 - 125    |
| Zinc       | <0.00640      |                  | 0.200       | 0.1888    |              | mg/L |   | 94   | 75 - 125    |

Lab Sample ID: 310-268535-1 MS

Matrix: Water

Analysis Batch: 405515

Client Sample ID: MW-1

Prep Type: Total/NA

Prep Batch: 404546

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|-------------|
| Boron   | 5.66          |                  | 0.200       | 6.026     | 4            | mg/L |   | 180  | 75 - 125    |

Lab Sample ID: 310-268535-1 MSD

Matrix: Water

Analysis Batch: 405404

Client Sample ID: MW-1

Prep Type: Total/NA

Prep Batch: 404546

| Analyte   | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|-----------|---------------|------------------|-------------|------------|---------------|------|---|------|-------------|-----|-----------|
| Aluminum  | 0.0666        |                  | 0.200       | 0.2653     |               | mg/L |   | 99   | 75 - 125    | 3   | 20        |
| Arsenic   | 0.00117       | J                | 0.200       | 0.2147     |               | mg/L |   | 107  | 75 - 125    | 0   | 20        |
| Barium    | 0.0902        |                  | 0.100       | 0.1859     |               | mg/L |   | 96   | 75 - 125    | 2   | 20        |
| Beryllium | <0.000330     |                  | 0.100       | 0.09380    |               | mg/L |   | 94   | 75 - 125    | 4   | 20        |
| Calcium   | 97.5          |                  | 2.00        | 99.67      | 4             | mg/L |   | 110  | 75 - 125    | 1   | 20        |

Eurofins Cedar Falls

# QC Sample Results

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

Job ID: 310-268535-1

## Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-268535-1 MSD

Matrix: Water

Analysis Batch: 405404

Client Sample ID: MW-1

Prep Type: Total/NA

Prep Batch: 404546

| Analyte    | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|------------|---------------|------------------|-------------|------------|---------------|------|---|------|-------------|-----|-----------|
| Cobalt     | 0.000214      | J                | 0.100       | 0.09401    |               | mg/L |   | 94   | 75 - 125    | 0   | 20        |
| Copper     | <0.00180      |                  | 0.200       | 0.1828     |               | mg/L |   | 91   | 75 - 125    | 1   | 20        |
| Iron       | 0.118         |                  | 0.200       | 0.3243     |               | mg/L |   | 103  | 75 - 125    | 3   | 20        |
| Lead       | <0.000240     |                  | 0.200       | 0.1844     |               | mg/L |   | 92   | 75 - 125    | 1   | 20        |
| Lithium    | 0.137         |                  | 0.200       | 0.3174     |               | mg/L |   | 90   | 75 - 125    | 1   | 20        |
| Magnesium  | 20.8          |                  | 2.00        | 21.91      | 4             | mg/L |   | 58   | 75 - 125    | 0   | 20        |
| Manganese  | 0.0141        |                  | 0.100       | 0.1153     |               | mg/L |   | 101  | 75 - 125    | 1   | 20        |
| Molybdenum | 0.163         |                  | 0.200       | 0.3694     |               | mg/L |   | 103  | 75 - 125    | 0   | 20        |
| Selenium   | 0.00276       | J                | 0.400       | 0.3754     |               | mg/L |   | 93   | 75 - 125    | 1   | 20        |
| Sodium     | 83.2          |                  | 2.00        | 84.16      | 4             | mg/L |   | 47   | 75 - 125    | 1   | 20        |
| Zinc       | <0.00640      |                  | 0.200       | 0.1871     |               | mg/L |   | 94   | 75 - 125    | 1   | 20        |

Lab Sample ID: 310-268535-1 MSD

Matrix: Water

Analysis Batch: 405515

Client Sample ID: MW-1

Prep Type: Total/NA

Prep Batch: 404546

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|-------------|-----|-----------|
| Boron   | 5.66          |                  | 0.200       | 6.212      | 4             | mg/L |   | 273  | 75 - 125    | 3   | 20        |

## Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-404418/1

Matrix: Water

Analysis Batch: 404418

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---------|-------------|------------|---------------|------|---|------|-------------|
| pH      | 7.00        | 7.1        |               | SU   |   | 101  | 98 - 102    |

Lab Sample ID: 310-268535-1 DU

Matrix: Water

Analysis Batch: 404418

Client Sample ID: MW-1

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| pH      | 7.3           | HF               | 7.3       |              | SU   |   | 0.1 | 20        |

## QC Association Summary

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

Job ID: 310-268535-1

### HPLC/IC

#### Analysis Batch: 405626

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 310-268535-1      | MW-1               | Total/NA  | Water  | 9056A  |            |
| 310-268535-2      | MW-2               | Total/NA  | Water  | 9056A  |            |
| 310-268535-3      | MW-3S              | Total/NA  | Water  | 9056A  |            |
| 310-268535-4      | MW-4S              | Total/NA  | Water  | 9056A  |            |
| 310-268535-5      | MW-5S              | Total/NA  | Water  | 9056A  |            |
| MB 310-405626/3   | Method Blank       | Total/NA  | Water  | 9056A  |            |
| LCS 310-405626/37 | Lab Control Sample | Total/NA  | Water  | 9056A  |            |

### Metals

#### Prep Batch: 404546

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 310-268535-1       | MW-1               | Total/NA  | Water  | 3005A  |            |
| 310-268535-2       | MW-2               | Total/NA  | Water  | 3005A  |            |
| 310-268535-3       | MW-3S              | Total/NA  | Water  | 3005A  |            |
| 310-268535-4       | MW-4S              | Total/NA  | Water  | 3005A  |            |
| 310-268535-5       | MW-5S              | Total/NA  | Water  | 3005A  |            |
| MB 310-404546/1-A  | Method Blank       | Total/NA  | Water  | 3005A  |            |
| LCS 310-404546/2-A | Lab Control Sample | Total/NA  | Water  | 3005A  |            |
| 310-268535-1 MS    | MW-1               | Total/NA  | Water  | 3005A  |            |
| 310-268535-1 MSD   | MW-1               | Total/NA  | Water  | 3005A  |            |

#### Analysis Batch: 405404

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 310-268535-1       | MW-1               | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-2       | MW-2               | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-3       | MW-3S              | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-4       | MW-4S              | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-5       | MW-5S              | Total/NA  | Water  | 6020B  | 404546     |
| MB 310-404546/1-A  | Method Blank       | Total/NA  | Water  | 6020B  | 404546     |
| LCS 310-404546/2-A | Lab Control Sample | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-1 MS    | MW-1               | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-1 MSD   | MW-1               | Total/NA  | Water  | 6020B  | 404546     |

#### Analysis Batch: 405515

| Lab Sample ID    | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|--------|------------|
| 310-268535-1     | MW-1             | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-1 MS  | MW-1             | Total/NA  | Water  | 6020B  | 404546     |
| 310-268535-1 MSD | MW-1             | Total/NA  | Water  | 6020B  | 404546     |

### General Chemistry

#### Analysis Batch: 404418

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method       | Prep Batch |
|------------------|--------------------|-----------|--------|--------------|------------|
| 310-268535-1     | MW-1               | Total/NA  | Water  | SM 4500 H+ B |            |
| 310-268535-2     | MW-2               | Total/NA  | Water  | SM 4500 H+ B |            |
| 310-268535-3     | MW-3S              | Total/NA  | Water  | SM 4500 H+ B |            |
| 310-268535-4     | MW-4S              | Total/NA  | Water  | SM 4500 H+ B |            |
| 310-268535-5     | MW-5S              | Total/NA  | Water  | SM 4500 H+ B |            |
| LCS 310-404418/1 | Lab Control Sample | Total/NA  | Water  | SM 4500 H+ B |            |
| 310-268535-1 DU  | MW-1               | Total/NA  | Water  | SM 4500 H+ B |            |

Eurofins Cedar Falls

# Lab Chronicle

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

Job ID: 310-268535-1

## Client Sample ID: MW-1

## Lab Sample ID: 310-268535-1

Date Collected: 10/31/23 14:15

Matrix: Water

Date Received: 10/31/23 17:20

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Analysis   | 9056A        |     | 5               | 405626       | QTZ5    | EET CF | 11/08/23 21:30       |
| Total/NA  | Prep       | 3005A        |     |                 | 404546       | KCK5    | EET CF | 11/01/23 09:50       |
| Total/NA  | Analysis   | 6020B        |     | 1               | 405404       | A6US    | EET CF | 11/08/23 15:20       |
| Total/NA  | Prep       | 3005A        |     |                 | 404546       | KCK5    | EET CF | 11/01/23 09:50       |
| Total/NA  | Analysis   | 6020B        |     | 4               | 405515       | A6US    | EET CF | 11/09/23 13:51       |
| Total/NA  | Analysis   | SM 4500 H+ B |     | 1               | 404418       | W9YR    | EET CF | 11/01/23 07:14       |

## Client Sample ID: MW-2

## Lab Sample ID: 310-268535-2

Date Collected: 10/31/23 13:15

Matrix: Water

Date Received: 10/31/23 17:20

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Analysis   | 9056A        |     | 5               | 405626       | QTZ5    | EET CF | 11/08/23 21:45       |
| Total/NA  | Prep       | 3005A        |     |                 | 404546       | KCK5    | EET CF | 11/01/23 09:50       |
| Total/NA  | Analysis   | 6020B        |     | 1               | 405404       | A6US    | EET CF | 11/08/23 15:50       |
| Total/NA  | Analysis   | SM 4500 H+ B |     | 1               | 404418       | W9YR    | EET CF | 11/01/23 07:17       |

## Client Sample ID: MW-3S

## Lab Sample ID: 310-268535-3

Date Collected: 10/31/23 12:30

Matrix: Water

Date Received: 10/31/23 17:20

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Analysis   | 9056A        |     | 5               | 405626       | QTZ5    | EET CF | 11/08/23 21:59       |
| Total/NA  | Prep       | 3005A        |     |                 | 404546       | KCK5    | EET CF | 11/01/23 09:50       |
| Total/NA  | Analysis   | 6020B        |     | 1               | 405404       | A6US    | EET CF | 11/08/23 15:53       |
| Total/NA  | Analysis   | SM 4500 H+ B |     | 1               | 404418       | W9YR    | EET CF | 11/01/23 07:19       |

## Client Sample ID: MW-4S

## Lab Sample ID: 310-268535-4

Date Collected: 10/31/23 13:45

Matrix: Water

Date Received: 10/31/23 17:20

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Analysis   | 9056A        |     | 5               | 405626       | QTZ5    | EET CF | 11/08/23 22:13       |
| Total/NA  | Prep       | 3005A        |     |                 | 404546       | KCK5    | EET CF | 11/01/23 09:50       |
| Total/NA  | Analysis   | 6020B        |     | 1               | 405404       | A6US    | EET CF | 11/08/23 15:57       |
| Total/NA  | Analysis   | SM 4500 H+ B |     | 1               | 404418       | W9YR    | EET CF | 11/01/23 07:18       |

## Client Sample ID: MW-5S

## Lab Sample ID: 310-268535-5

Date Collected: 10/31/23 11:45

Matrix: Water

Date Received: 10/31/23 17:20

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Analysis   | 9056A        |     | 5               | 405626       | QTZ5    | EET CF | 11/08/23 22:27       |
| Total/NA  | Prep       | 3005A        |     |                 | 404546       | KCK5    | EET CF | 11/01/23 09:50       |
| Total/NA  | Analysis   | 6020B        |     | 1               | 405404       | A6US    | EET CF | 11/08/23 16:00       |

Eurofins Cedar Falls

Lab Chronicle

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

Job ID: 310-268535-1

**Client Sample ID: MW-5S**  
**Date Collected: 10/31/23 11:45**  
**Date Received: 10/31/23 17:20**

**Lab Sample ID: 310-268535-5**  
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab    | Prepared or Analyzed |
|-----------|------------|--------------|-----|-----------------|--------------|---------|--------|----------------------|
| Total/NA  | Analysis   | SM 4500 H+ B |     | 1               | 404418       | W9YR    | EET CF | 11/01/23 07:16       |

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

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Accreditation/Certification Summary

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

Job ID: 310-268535-1

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                   | 12-01-23        |
| <p>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.</p> |             |                       |                 |
| Analysis Method                                                                                                                                                                                              | Prep Method | Matrix                | Analyte         |
| 6020B                                                                                                                                                                                                        | 3005A       | Water                 | Lithium         |

## Method Summary

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

Job ID: 310-268535-1

| Method       | Method Description         | Protocol | Laboratory |
|--------------|----------------------------|----------|------------|
| 9056A        | Anions, Ion Chromatography | SW846    | EET CF     |
| 6020B        | Metals (ICP/MS)            | SW846    | EET CF     |
| SM 4500 H+ B | pH                         | SM       | EET CF     |
| 3005A        | Preparation, Total Metals  | SW846    | EET CF     |

### Protocol References:

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

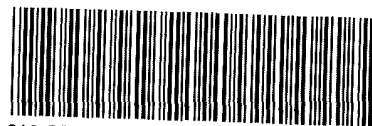
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

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



Environment Testing  
America



310-268535 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

|                                                                                                                                                                                                                                  |                 |                                                                     |                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Client Information</b>                                                                                                                                                                                                        |                 |                                                                     |                                                                                               |
| Client: <u>CFU</u>                                                                                                                                                                                                               |                 |                                                                     |                                                                                               |
| City/State:                                                                                                                                                                                                                      | CITY            | STATE                                                               | Project:                                                                                      |
|                                                                                                                                                                                                                                  |                 | <u>IA</u>                                                           |                                                                                               |
| <b>Receipt Information</b>                                                                                                                                                                                                       |                 |                                                                     |                                                                                               |
| Date/Time Received:                                                                                                                                                                                                              | DATE            | TIME                                                                | Received By:                                                                                  |
|                                                                                                                                                                                                                                  | <u>10/31/23</u> | <u>1720</u>                                                         | <u>SL</u>                                                                                     |
| Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee                                              |                 |                                                                     |                                                                                               |
| <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____                                            |                 |                                                                     |                                                                                               |
| <b>Condition of Cooler/Containers</b>                                                                                                                                                                                            |                 |                                                                     |                                                                                               |
| Sample(s) received in Cooler?                                                                                                                                                                                                    |                 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | If yes: Cooler ID: _____                                                                      |
| Multiple Coolers?                                                                                                                                                                                                                |                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If yes: Cooler # _____ of _____                                                               |
| Cooler Custody Seals Present?                                                                                                                                                                                                    |                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Sample Custody Seals Present?                                                                                                                                                                                                    |                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Trip Blank Present?                                                                                                                                                                                                              |                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If yes: Which VOA samples are in cooler? ↓                                                    |
| <b>Temperature Record</b>                                                                                                                                                                                                        |                 |                                                                     |                                                                                               |
| Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE                                      |                 |                                                                     |                                                                                               |
| Thermometer ID:                                                                                                                                                                                                                  |                 | Correction Factor (°C):                                             |                                                                                               |
| <u>8</u>                                                                                                                                                                                                                         |                 | <u>0</u>                                                            |                                                                                               |
| <b>* Temp Blank Temperature</b> - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature                                                                                            |                 |                                                                     |                                                                                               |
| Uncorrected Temp (°C):                                                                                                                                                                                                           |                 | Corrected Temp (°C):                                                |                                                                                               |
| <u>5.3</u>                                                                                                                                                                                                                       |                 | <u>5.3</u>                                                          |                                                                                               |
| <b>* Sample Container Temperature</b>                                                                                                                                                                                            |                 |                                                                     |                                                                                               |
| Container(s) used:                                                                                                                                                                                                               | CONTAINER 1     |                                                                     | CONTAINER 2                                                                                   |
| Uncorrected Temp (°C):                                                                                                                                                                                                           |                 |                                                                     |                                                                                               |
| Corrected Temp (°C):                                                                                                                                                                                                             |                 |                                                                     |                                                                                               |
| <b>Exceptions Noted</b>                                                                                                                                                                                                          |                 |                                                                     |                                                                                               |
| 1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No                                                                                        |                 |                                                                     |                                                                                               |
| a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No |                 |                                                                     |                                                                                               |
| NOTE: If yes, contact PM before proceeding. If no, proceed with login                                                                                                                                                            |                 |                                                                     |                                                                                               |
| <b>Additional Comments</b>                                                                                                                                                                                                       |                 |                                                                     |                                                                                               |
|                                                                                                                                                                                                                                  |                 |                                                                     |                                                                                               |
|                                                                                                                                                                                                                                  |                 |                                                                     |                                                                                               |
|                                                                                                                                                                                                                                  |                 |                                                                     |                                                                                               |



[illegible]

## Login Sample Receipt Checklist

Client: Cedar Falls Utilities

Job Number: 310-268535-1

**Login Number: 268535**

**List Source: Eurofins Cedar Falls**

**List Number: 1**

**Creator: Lage, Sydney**

| Question                                                                                 | Answer | Comment |
|------------------------------------------------------------------------------------------|--------|---------|
| Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (1/4"). | True   |         |
| Multiphasic samples are not present.                                                     | True   |         |
| Samples do not require splitting or compositing.                                         | True   |         |
| Residual Chlorine Checked.                                                               | N/A    |         |