

West Des Moines, IA

PROJECT: Iowa City,RFY23-24 Env Comp&ACM.,IA 27223308.00      DATE: 6/25/2024

SUBJECT: Iowa City Sanitary Landfill - 52-SDP-01-72P - 2024 Semi-Annual Sampling Notification      TRANSMITTAL ID: 00009

PURPOSE: For your approval      VIA: Info Exchange

FROM

NAME	COMPANY	EMAIL	PHONE
Nathan Ohrt West Des Moines, IA	SCS Engineers	NOhrt@scsengineers.com	

TO

NAME	COMPANY	EMAIL	PHONE
Mick Leat United States		mick.lead@dnr.iowa.gov	

REMARKS: Good afternoon Mick-

SCS Engineers, on behalf of the City of Iowa City, is submitting the attached 2024 Semi-Annual Sampling Notification for the Iowa City Sanitary Landfill. If you have any questions or comments regarding this notification, please contact me at the number below. Thank you.

Nathan Ohrt  
Senior Project Professional  
SCS Engineers  
West Des Moines, Iowa  
319-331-9613 (M)  
[nohrt@scsengineers.com](mailto:nohrt@scsengineers.com)

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QTY	DATED	TITLE	NOTES
1	6/25/2024	Iowa City Sanitary Landfill - 52-SDP-01-72P - 2024 Semi-Annual Sampling Notification.pdf	

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# Transmittal

DATE: 6/25/2024  
TRANSMITTAL ID: 00009

Jennifer Jordan	(Iowa City, City of (IA))
Joseph Welter	(Iowa City, City of (IA))
Christine Collier	(SCS Engineers)
Becky Jolly	
Nathan Ohrt	(SCS Engineers)

June 25, 2024  
File No. 27223308.00

Mr. Mick Leat  
Iowa Department of Natural Resources  
Land Quality Bureau  
Wallace State Office Building  
502 East 9<sup>th</sup> Street  
Des Moines, Iowa 50319

Subject: 2024 Spring Sampling Notification  
City of Iowa City Sanitary Landfill  
Permit No. 52-SDP-01-72P

Dear Mick:

SCS Engineers, on behalf of the City of Iowa City, has completed the statistical evaluation for the City of Iowa City Sanitary Landfill (Landfill) associated with the 1<sup>st</sup> 2024 semi-annual sampling event. Groundwater sampling was performed by Landfill personnel.

Pursuant to Iowa Administrative Code (IAC) 567-113.10(5) and 113.10(6), this correspondence notifies the Iowa Department of Natural Resources (DNR) of the results of the 1<sup>st</sup> 2024 semi-annual statistical evaluation.

### **Report Priority**

The corrective action plan (CAP) was approved in Revised Permit #7, issued September 2, 2021 (Doc #101157). The monitoring wells with statistically significant levels (SSL) above the groundwater protection standard (GWPS) previously identified at the Landfill along with their associated attenuation zone point of compliance (AZPOC) monitoring wells are shown in Table 1 on the following page.



**Table 1**

Area	Monitoring Well	SSLs Above GWPS	AZPOC Monitoring Well
Unlined	MW-16A	Tetrachloroethene	MW-311A
		Trichloroethene	
		Vinyl Chloride	
	MW-206A	Tetrachloroethene	MW-10B
		Trichloroethene	
	MW-207A	Arsenic	
	MW-11B	Arsenic	
	MW-209B	Arsenic	MW-309A, MW-1B
		Benzene	
Sulfide			
2' Clay Lined	MW-6B	Arsenic	MW-310A, MW-1B
		Cobalt	
	MW-211B	Cobalt	MW-410, MW-1B
4' Clay Lined	MW-1A	Arsenic	MW-408, MW-1B
	MW-2A-97	Cobalt	MW-410, MW-1B
	MW-212A	Arsenic	MW-29A, MW-1B

Six or more samples have been collected from AZPOC monitoring wells MW-312A, MW-10B, MW-310A, MW-408, MW-410, and MW-1B, representing three years of sampling data. The confidence intervals calculated during this reporting period for the AZPOC monitoring wells for parameters previously measured at SSLs above the GWPSs demonstrate that the upper confidence limits were below the corresponding GWPS; therefore, it can likely be assumed that the upper confidence limits would have been below the GWPS for the previous three consecutive years. Additionally, sulfide and volatile organic compounds (VOC) benzene, tetrachloroethene, trichloroethene, and vinyl chloride measured as SSLs have not been detected in the AZPOC monitoring wells, so although confidence intervals could not be calculated, the data indicates the VOC and sulfide upper confidence limits would have been below the GWPS for three consecutive years. Therefore, the corrective action remedy has satisfied the remedy completion requirements of Iowa Administrative Code (IAC) 567-113.10(9)"e"(1) and (2). It is requested that the DNR communicate what actions may be required in accordance with IAC 567-113.10(9)"e"(3) to complete the remedy. The confidence interval summary table and graphs for the AZPOC monitoring wells are included in Attachment A.

**Series A Wells**

Assessment monitoring comparisons to the GWPSs, established in accordance with IAC 567-113.10(6)*h.* and *i.*, were performed using parametric confidence intervals around a normal mean, non-parametric confidence intervals around a median, or non-parametric confidence bands around a Theil-Sen trend line, as appropriate, based on diagnostic statistical analyses. No SSLs above the GWPS were identified during this reporting period.



### **Series B Wells**

Assessment monitoring comparisons to the GWPSs, established in accordance with IAC 567-113.10(6)h. and i., were performed using parametric confidence intervals around a normal mean, non-parametric confidence intervals around a median, or non-parametric confidence bands around a Theil-Sen trend line, as appropriate, based on diagnostic statistical analyses. No SSLs above the GWPS were identified during this reporting period.

### **AZPOC Wells**

AZPOC monitoring wells MW-312A, MW-10B, MW-310A, MW-408, MW-410, and MW-1B were evaluated by confidence intervals to demonstrate that the concentrations of all Appendix II constituents did not exceed the GWPS at a SSL in accordance with 567 IAC 113.10(9)"e"(2). As explained in the Report Priority above, the remedy is considered complete (except for the potential requirements pursuant to 113.10(9)"e"(3)) and these monitoring wells will revert to the appropriate detection or assessment monitoring program.

Constituents in the AZPOC monitoring wells that had a detection in the most recent sampling event were analyzed using interwell prediction limits. A statistically significant increase (SSI) above background for selenium was indicated in monitoring well MW-408. The DNR gave verbal approval on June 14, 2024, to use the results of the 2<sup>nd</sup> 2024 semi-annual sampling event as a retest for the indicated selenium SSI in monitoring well MW-408. No other SSIs were indicated in the AZPOC monitoring wells.

### **Groundwater Underdrains**

Intrawell prediction limit analysis was performed on the groundwater underdrain discharge points WT-1, WT-2, WT-3, and WT-4. SSIs were indicated for cobalt and nickel in discharge point WT-1 and barium in discharge point WT-3. No other SSIs for inorganic parameters were indicated for the groundwater underdrains during this reporting period. Acetone and 2-butanone were detected in discharge point WT-1. Groundwater underdrain monitoring point ST-1 was dry during this reporting period.

The underdrain management process approved on September 20, 2023 (Doc #107723) includes the following steps:

- The individual discharge points WT-1, WT-2, WT-3, and WT-4 and combined discharge WT-OF are sampled semi-annually for Appendix I and total suspended solids.
- The individual discharge points are evaluated semi-annually by intrawell prediction limits. Once sufficient background has been collected for monitoring point WT-OF, intrawell prediction limits will be calculated for WT-OF in addition to the individual discharge points. Four samples from WT-OF had been collected as of the date of this report. A minimum of six samples (a background dataset of five samples is compared to subsequent samples) is required to perform intrawell prediction limit analysis.
- If, before sufficient background has been collected from WT-OF, an SSI is indicated in WT-1, WT-2, WT-3, and/or WT-4, the indicated SSI will not require retesting. If an SSI is indicated in an individual point, analytical results from WT-OF will be compared to the prediction limits of the individual points to determine appropriate actions.

- Once sufficient data is available to perform statistical evaluation for WT-OF, SSIs indicated in the individual monitoring points will not trigger additional action if the concentrations in WT-OF are below the WT-OF prediction limits.
- If an SSI in monitoring point WT-OF is indicated, retesting will occur. If the SSI is confirmed, appropriate management of the discharge will be evaluated and implemented after DNR concurrence.

In accordance with the process above, the indicated SSIs in discharge points WT-1 and WT-3 will not be retested. The concentrations measured for cobalt and nickel in discharge point WT-1 and barium in discharge point WT-3 were the highest measured concentrations in the historical concentration range for the respective discharge point. It appears likely that the markedly elevated inorganic concentrations measured during this reporting period, especially those indicated as SSIs, indicate the samples were likely not representative of actual groundwater conditions. It is recommended that the sampling results from the 2<sup>nd</sup> 2024 semi-annual sampling event be evaluated to determine if continued elevated concentrations may dictate a change in the appropriate management of the groundwater underdrain discharge. Retesting occurred on June 17, 2024 for the detection of acetone in discharge point WT-OF during this reporting period.

Services were performed in general accordance with IAC 567-113.10 and the current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP) for the Landfill. Field sampling forms, laboratory analytical data sheets, and statistical software output are included in Appendices B, C, and D, respectively. This correspondence constitutes the 2024 Spring Sampling Notification.

If you have any questions regarding this notification, please contact Nathan Ohrt at (319) 331-9613.

Sincerely,



Nathan Ohrt  
Senior Project Professional  
SCS Engineers



Timothy C. Buelow, P.E.  
Senior Project Advisor  
SCS Engineers

NPO/TCB

Copies: Ms. Jennifer Jordan, Iowa City Landfill  
Mr. Joe Welter, Iowa City Landfill

**Attachment A**  
**Confidence Interval Summary Table and Graphs**  
**AZPOC Monitoring Wells**

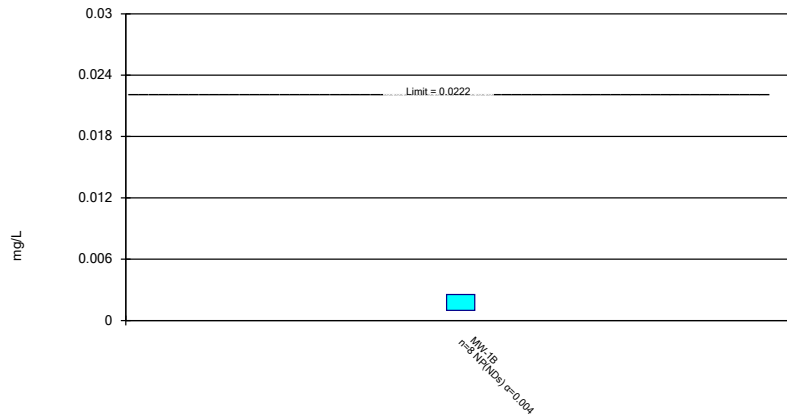
# Confidence Interval

Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN    Printed 6/4/2024, 12:30 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MW-1B	0.00255	0.001	0.0222	No	8	87.5	No	0.004	NP (NDs)
Barium (mg/L)	MW-10B	0.1518	0.1195	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-1B	0.6005	0.5132	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-310A	0.1587	0.06535	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-312A	0.1907	0.1641	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-408	0.1937	0.1566	2	No	6	0	No	0.01	Param.
Barium (mg/L)	MW-410	0.1118	0.09132	2	No	6	0	No	0.01	Param.
Cadmium (mg/L)	MW-10B	0.00125	0.0001	0.005	No	8	75	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-408	0.0008	0.0001	0.005	No	6	0	No	0.0155	NP (normality)
Cobalt (mg/L)	MW-1B	0.0003408	0.0001412	0.01156	No	8	50	No	0.01	Param.
Cobalt (mg/L)	MW-310A	0.0062	0.0002	0.01156	No	8	62.5	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-312A	0.0035	0.0002	0.01156	No	8	62.5	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-408	0.0189	0.000179	0.01156	No	6	16.67	No	0.0155	NP (normality)
Cobalt (mg/L)	MW-410	0.001882	0.00009651	0.01156	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-10B	0.055	0.0016	0.105	No	8	75	No	0.004	NP (NDs)
Nickel (mg/L)	MW-312A	0.025	0.002	0.105	No	8	75	No	0.004	NP (NDs)
Nickel (mg/L)	MW-408	0.0191	0.00205	0.105	No	6	16.67	No	0.0155	NP (normality)
Nickel (mg/L)	MW-410	0.005019	0.003309	0.105	No	6	16.67	No	0.01	Param.
Selenium (mg/L)	MW-310A	0.0044	0.002	0.05	No	8	75	No	0.004	NP (NDs)
Selenium (mg/L)	MW-408	0.0371	0.002	0.05	No	6	83.33	No	0.0155	NP (NDs)
Toluene (ug/L)	MW-1B	4.07	0.5	1000	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	MW-310A	0.0674	0.01	2	No	8	75	No	0.004	NP (NDs)
Zinc (mg/L)	MW-312A	0.061	0.01	2	No	8	75	No	0.004	NP (NDs)

### Non-Parametric Confidence Interval

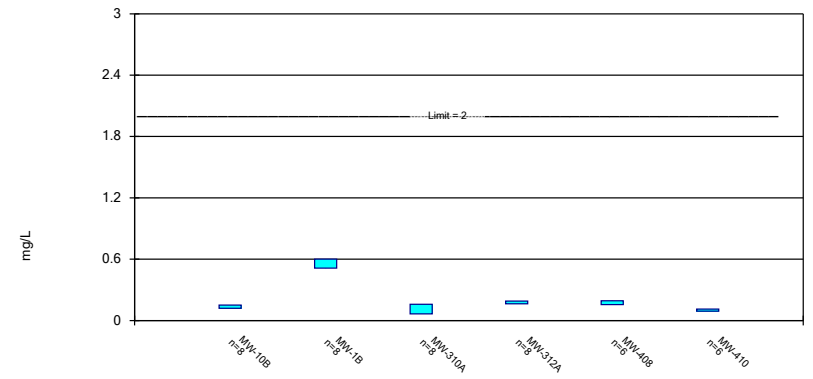
Compliance Limit is not exceeded.



Constituent: Arsenic Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Parametric Confidence Interval

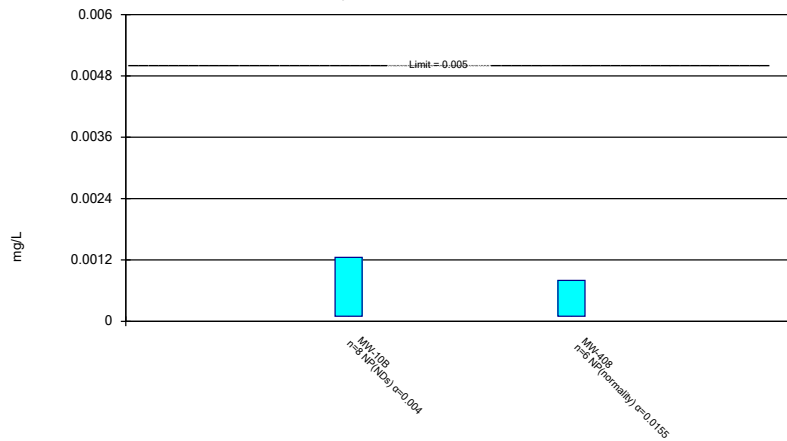
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Non-Parametric Confidence Interval

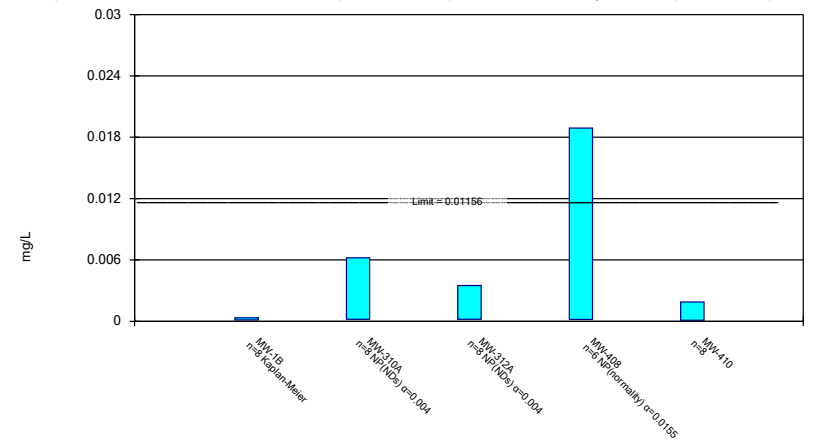
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

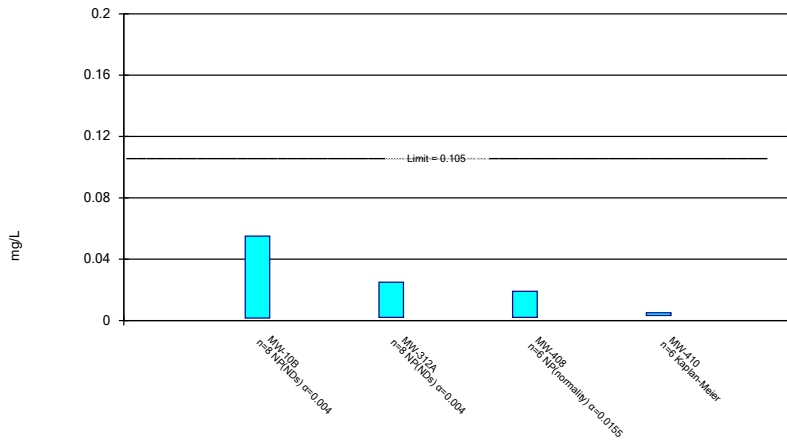
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

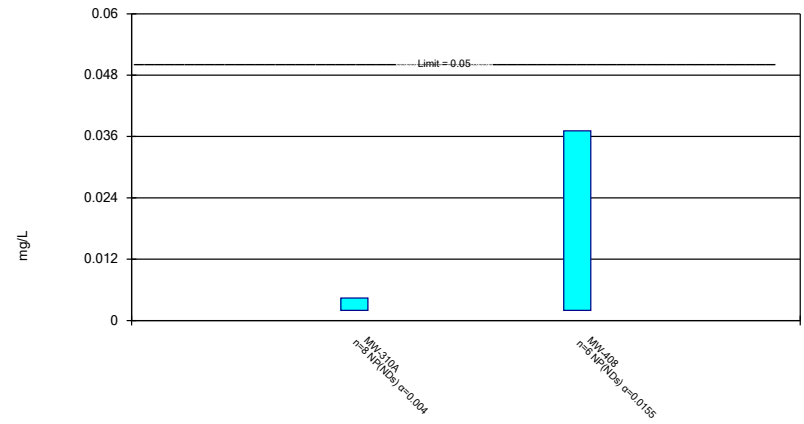
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Non-Parametric Confidence Interval

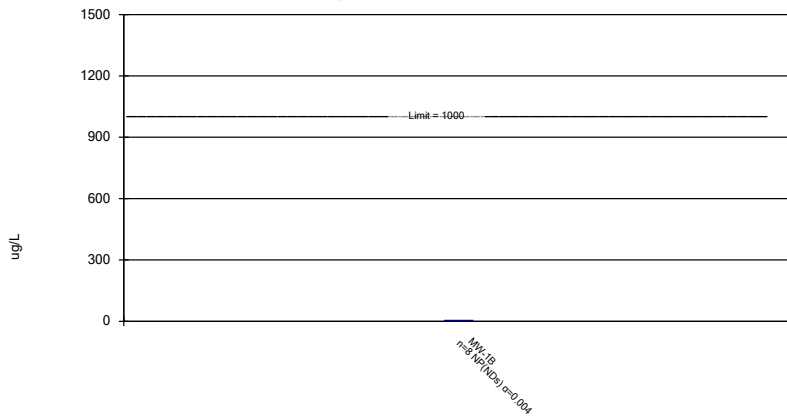
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Non-Parametric Confidence Interval

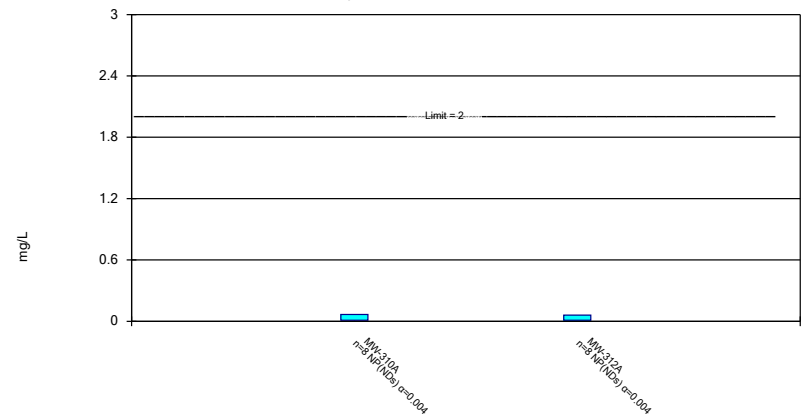
Compliance Limit is not exceeded.



Constituent: Toluene Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 6/4/2024 12:28 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME-AM AZPOC Series A and B 2024SSN

**Attachment B  
Field Sampling Forms  
1<sup>st</sup> 2024 Semi-Annual Sampling Event**

**Sampling Performed by Iowa City Landfill Personnel**

### FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 1A Date: 4/30/24  
 Gradient (circle one): Up / Down Sampler: AW

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): No If No, explain: \_\_\_\_\_

Litter/Standing Water? (circle one): Yes/ No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 29.0

Initial Static Water Level (feet): 10.50

Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS** [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>9:50</u>	Purging start time						<u>10.50</u>
<u>9:53</u>	<u>11.8</u>	<u>22.1</u>	<u>1052</u>	<u>6.50</u>			<u>12.08</u>
<u>9:56</u>	<u>11.7</u>	<u>14.0</u>	<u>1057</u>	<u>6.52</u>			<u>13.00</u>
<u>9:59</u>	<u>11.6</u>	<u>10.8</u>	<u>1058</u>	<u>6.48</u>			<u>13.88</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.0

Was well pumped/bailed dry? No

Total Amount of Time Purged (minutes:seconds) 9

Average Purge Rate (mL/min) 222.2

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes / No

If yes, explain: \_\_\_\_\_

Additional Comments:

59° Sun

6 mph SE WIND







## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 20-97 Date: 4/30/24  
 Gradient (circle one): Up / Down Sampler: MW

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 67.72  
 Initial Static Water Level (feet): 22.70  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>8:52</u>	Purging start time						<u>22.70</u>
<u>8:55</u>	<u>12.5</u>	<u>60.2</u>	<u>525</u>	<u>8.09</u>			<u>22.88</u>
<u>8:58</u>	<u>12.4</u>	<u>27.0</u>	<u>519</u>	<u>7.99</u>			<u>22.88</u>
<u>9:01</u>	<u>12.5</u>	<u>13.5</u>	<u>521</u>	<u>8.01</u>			<u>22.92</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.3  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 255.55

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes NO  
 If yes, explain: \_\_\_\_\_

Additional Comments: 57° 6 mph SE WIND  
SKYNY



## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: MW-6B Date: 4-30-24  
 Gradient (circle one): Up / Down Sampler: JF

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 23.10  
 Initial Static Water Level (feet): 11.75  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>1325</u>	Purging start time						<u>11.75</u>
<u>1328</u>	<u>12.1</u>	<u>18.1</u>	<u>1082</u>	<u>5.77</u>			<u>12.69</u>
<u>1331</u>	<u>12.0</u>	<u>11.7</u>	<u>1080</u>	<u>5.95</u>			<u>12.92</u>
<u>1334</u>	<u>11.9</u>	<u>8.9</u>	<u>1071</u>	<u>5.92</u>			<u>13.05</u>
<u>1337</u>	<u>11.8</u>	<u>8.4</u>	<u>1067</u>	<u>5.89</u>			<u>13.14</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 3.0L  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 12 min.  
 Average Purge Rate (mL/min) 25000

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes No  
 If yes, explain: \_\_\_\_\_

Additional Comments:  
71°F Sunny SSE 10 MPH

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 7B1 | Date: 5/6/24  
 Gradient (circle one): Up / Down \_\_\_\_\_ | Sampler: 1 W F

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): (Yes) No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes (No) If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 26.73  
 Initial Static Water Level (feet): 11.33  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Dedicated Bailer  Other: \_\_\_\_\_

**C. WELL PURGING**

**FIELD PARAMETERS** [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>9:55</u>	Purging start time						<u>11.33</u>
<u>9:58</u>	<u>11.7</u>	<u>24.1</u>	<u>544</u>	<u>6.46</u>		<u>11.94</u>	
<u>10:01</u>	<u>11.6</u>	<u>14.0</u>	<u>544</u>	<u>6.40</u>		<u>12.05</u>	
<u>10:04</u>	<u>11.5</u>	<u>11.6</u>	<u>556</u>	<u>6.26</u>		<u>12.09</u>	
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.1  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) ?  
 Average Purge Rate (mL/min) 222.22

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 62° 10mph ESE WIND  
SUN

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 7C Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: MF

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 48.08  
 Initial Static Water Level (feet): 9.11  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>15:33</u>	Purging start time						<u>9.11</u>
<u>15:36</u>	<u>12.1</u>	<u>34.8</u>	<u>567</u>	<u>6.71</u>			<u>9.44</u>
<u>15:39</u>	<u>17.3</u>	<u>16.8</u>	<u>574</u>	<u>6.67</u>			<u>9.46</u>
<u>15:42</u>	<u>12.0</u>	<u>10.6</u>	<u>570</u>	<u>6.65</u>			<u>9.47</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.3  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes/seconds): 9  
 Average Purge Rate (mL/min): 255.55

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes NO  
 If yes, explain: \_\_\_\_\_

Additional Comments: 63°F  
16 mph, NSW  
wind  
p. sunny







## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 11B Date: 4/30/24  
 Gradient (circle one): Up / Down Sampler: MW F

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 22.18  
 Initial Static Water Level (feet): 7.65  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>12:00</u>	Purging start time						<u>7.65</u>
<u>12:03</u>	<u>11.4</u>	<u>24.7</u>	<u>886</u>	<u>6.05</u>			<u>8.77</u>
<u>12:06</u>	<u>11.2</u>	<u>17.6</u>	<u>886</u>	<u>6.27</u>			<u>9.28</u>
<u>12:09</u>	<u>11.2</u>	<u>14.2</u>	<u>888</u>	<u>6.22</u>			<u>9.76</u>
<u>12:12</u>	<u>11.2</u>	<u>11.7</u>	<u>891</u>	<u>6.20</u>			<u>9.97</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.7  
 Was well pumped/bailed dry? No  
 Total Amount of Time Purged (minutes/seconds) 12  
 Average Purge Rate (mL/min) 225.0

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 70° Sun  
10mph SSE wind









# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Date: 4/30/24  
 Monitoring Well/Piezometer ID: 16A  
 Gradient (circle one): Up / Down Sampler: MW F

### A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): No If No, explain: \_\_\_\_\_

Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

### B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 24.05

Initial Static Water Level (feet): 14.70

Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

### C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>10:44</u>	Purging start time						<u>14.70</u>
<u>10:47</u>	<u>12.2</u>	<u>20.2</u>	<u>1034</u>	<u>6.15</u>			<u>15.11</u>
<u>10:50</u>	<u>12.1</u>	<u>13.6</u>	<u>1034</u>	<u>6.37</u>			<u>15.22</u>
<u>10:53</u>	<u>12.0</u>	<u>11.3</u>	<u>1031</u>	<u>6.42</u>			<u>15.34</u>
<u>10:56</u>	<u>11.9</u>	<u>10.3</u>	<u>1026</u>	<u>6.40</u>			<u>15.54</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.1

Was well pumped/bailed dry? No

Total Amount of Time Purged (minutes:seconds) 12

Average Purge Rate (mL/min) 175.00

### D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes No

If yes, explain: \_\_\_\_\_

Additional Comments:

65°  
Sunny  
8mph SSE Wind.





## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Date: 5.1.24  
 Monitoring Well/Piezometer ID: 18AR  
 Gradient (circle one): Up / Down Sampler: MJ

### A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_

Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

### B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 33.32

Initial Static Water Level (feet): 23.99

Initial Groundwater Elevation (ft-gmsl): \_\_\_\_\_

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

### C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>8:36</u>	Purging start time						<u>23.99</u>
<u>8:39</u>	<u>13.8</u>	<u>35.2</u>	<u>765</u>	<u>6.61</u>			<u>24.32</u>
<u>8:42</u>	<u>13.5</u>	<u>26.5</u>	<u>766</u>	<u>6.65</u>			<u>24.44</u>
<u>8:45</u>	<u>13.5</u>	<u>25.3</u>	<u>764</u>	<u>6.70</u>			<u>24.55</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 1.1

Was well pumped/bailed dry? NO

Total Amount of Time Purged (minutes:seconds) 9

Average Purge Rate (mL/min) 122.22

### D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes No

If yes, explain: \_\_\_\_\_

Additional Comments:

56° 10mph NW WIND  
p. Cloudy

# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Date: 5.1.24  
 Monitoring Well/Piezometer ID: 18A-07  
 Gradient (circle one): Up / Down \_\_\_\_\_ Sampler: MW J

### A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_

Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

### B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 32.77

Initial Static Water Level (feet): 23.59

Initial Groundwater Elevation (ft, amsl): \_\_\_\_\_

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

### C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>9:08</u>	Purging start time						<u>23.59</u>
<u>9:11</u>	<u>13.3</u>	<u>17.4</u>	<u>1057</u>	<u>6.18</u>		<u>23.97</u>	
<u>9:14</u>	<u>13.2</u>	<u>11.7</u>	<u>1054</u>	<u>6.09</u>		<u>24.10</u>	
<u>9:17</u>	<u>13.0</u>	<u>9.0</u>	<u>1061</u>	<u>6.11</u>		<u>24.28</u>	

Quantity of Water Removed from Well (circle units: liters / gallons): 1.7

Was well pumped/bailed dry? No

Total Amount of Time Purged (minutes:seconds) 9

Average Purge Rate (mL/min) 188.88

### D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes / No

If yes, explain: \_\_\_\_\_

Additional Comments:

59°

12 mph NW WIND  
p. cloudy

# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Monitoring Well/Piezometer ID: 23A Date: 4/27/24  
 Gradient (circle one): Up / Down \_\_\_\_\_ Sampler: MW J

### A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

### B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 45.71  
 Initial Static Water Level (feet): 11.88  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

### C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>14:11</u>	Purging start time						
<u>14:16</u>	<u>12.1</u>	<u>53.4</u>	<u>451.2</u>	<u>6.48</u>			<u>11.88</u>
<u>14:19</u>	<u>11.8</u>	<u>52.1</u>	<u>448.0</u>	<u>6.78</u>			<u>13.31</u>
<u>14:22</u>	<u>11.8</u>	<u>52.8</u>	<u>448.3</u>	<u>6.77</u>			<u>14.22</u>
<u>14:25</u>	<u>12.2</u>	<u>52.6</u>	<u>449.8</u>	<u>6.74</u>			<u>15.69</u>
							<u>16.11</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.7  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 12  
 Average Purge Rate (mL/min) 225

### D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 63° 16mph WSW wind  
p. sunny

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Monitoring Well/Piezometer ID: 24A Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: MW J

### A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain:  
 Litter/Standing Water? (circle one): Yes No If Yes, explain:

### B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 45.36  
 Initial Static Water Level (feet): 26.03  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

### C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>13:00</u>	Purging start time						<u>26.03</u>
<u>13:03</u>	<u>13.7</u>	<u>15.3</u>	<u>748</u>	<u>6.05</u>			<u>27.41</u>
<u>13:06</u>	<u>13.8</u>	<u>10.2</u>	<u>748</u>	<u>6.08</u>			<u>28.09</u>
<u>13:09</u>	<u>13.9</u>	<u>7.9</u>	<u>748</u>	<u>6.12</u>			<u>28.96</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.5  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 277.77

### D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain:

Additional Comments: 61°P 18mph WSW wind  
M. cloudy

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 25A-00 Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: MW J

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 29.93  
 Initial Static Water Level (feet): 7.72  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  Other: XQED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1p	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>7:47</u>	Purging start time						<u>7.72</u>
<u>7:50</u>	<u>11.4</u>	<u>34.9</u>	<u>724</u>	<u>6.65</u>			<u>9.13</u>
<u>7:53</u>	<u>11.4</u>	<u>25.9</u>	<u>722</u>	<u>8.24</u>			<u>9.80</u>
<u>7:56</u>	<u>11.4</u>	<u>22.8</u>	<u>720</u>	<u>8.32</u>			<u>10.53</u>
<u>7:59</u>	<u>11.3</u>	<u>21.3</u>	<u>720</u>	<u>8.52</u>			<u>11.08</u>
<u>8:02</u>	<u>11.3</u>	<u>20.4</u>	<u>719</u>	<u>8.58</u>			<u>11.46</u>
<u>8:05</u>	<u>11.3</u>	<u>20.0</u>	<u>717</u>	<u>8.50</u>			<u>11.79</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 4.4  
 Was well pumped/bailed dry? No  
 Total Amount of Time Purged (minutes:seconds) 15  
 Average Purge Rate (mL/min) 488.88

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes (No)  
 If yes, explain: \_\_\_\_\_

Additional Comments: 56° 11mph WSW wind  
cloudy.

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 294 Date: 5.1.24  
 Gradient (circle one): Up / Down Sampler: M F

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_

Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 19.98

Initial Static Water Level (feet): 7.44

Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>11:12</u>	Purging start time						<u>7.44</u>
<u>11:15</u>	<u>11.4</u>	<u>34.2</u>	<u>672</u>	<u>5.94</u>			<u>8.64</u>
<u>11:18</u>	<u>11.2</u>	<u>25.0</u>	<u>670</u>	<u>5.92</u>			<u>9.38</u>
<u>11:21</u>	<u>11.1</u>	<u>21.9</u>	<u>667</u>	<u>5.97</u>			<u>9.66</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.4

Was well pumped/bailed dry? No

Total Amount of Time Purged (minutes:seconds) 9

Average Purge Rate (mL/min) 260

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes No

If yes, explain: \_\_\_\_\_

Additional Comments:

61°  
14 mph NW WIND  
p. cloudy

# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 31B Date: 5/7/24  
 Gradient (circle one): Up / Down \_\_\_\_\_ Sampler: NF

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one):  Yes  No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes  No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 458  
 Initial Static Water Level (feet): 35.65  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Dedicated Bailer  Other: WATERA

**C. WELL PURGING**

**FIELD PARAMETERS** [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>9:42</u>	Purging start time						<u>35.65</u>
<u>9:45</u>	<u>13.9</u>	<u>35.1</u>	<u>756</u>	<u>6.42</u>			<u>36.70</u>
<u>9:48</u>	<u>13.8</u>	<u>27.4</u>	<u>753</u>	<u>6.34</u>			<u>36.90</u>
<u>9:51</u>	<u>13.7</u>	<u>23.9</u>	<u>752</u>	<u>6.33</u>			<u>37.21</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.7  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 300

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes /  No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 670 clarity  
13 mph SW WIND

### FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 34A Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: MF

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 27.78  
 Initial Static Water Level (feet): 20.89  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>9:34</u>	Purging start time						<u>20.89</u>
<u>9:37</u>	<u>11.7</u>	<u>53.4</u>	<u>469.8</u>	<u>8.36</u>			<u>21.31</u>
<u>9:40</u>	<u>11.6</u>	<u>54.7</u>	<u>471.2</u>	<u>8.26</u>			<u>21.63</u>
<u>9:43</u>	<u>11.6</u>	<u>60.1</u>	<u>467.7</u>	<u>8.21</u>			<u>21.93</u>
<u>9:46</u>	<u>11.3</u>	<u>63.6</u>	<u>464.9</u>	<u>8.17</u>			<u>22.10</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.9  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 12  
 Average Purge Rate (mL/min) 241

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 56° 13 WSW wind SUN





# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
Monitoring Well/Piezometer ID: 39B  
Gradient (circle one): Up / Down  
Sampler: AW J | Date: 5/6/24

## A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

## B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 17  
Initial Static Water Level (feet): 8.49  
Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
Equipment Used (check one):  Dedicated Peristaltic Pump  
 Dedicated Bailer  Other: \_\_\_\_\_  Dedicated Submersible Pump

## C. WELL PURGING

### FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>7:25</u>	Purging start time						
<u>7:28</u>	<u>9.9</u>	<u>23.1</u>	<u>200.7</u>	<u>6.85</u>			<u>8.49</u>
<u>7:31</u>	<u>9.5</u>	<u>13.4</u>	<u>196.8</u>	<u>6.35</u>			<u>8.83</u>
<u>7:34</u>	<u>9.8</u>	<u>11.8</u>	<u>195.5</u>	<u>6.34</u>			<u>8.96</u>
<u>7:37</u>	<u>9.7</u>	<u>11.0</u>	<u>195.1</u>	<u>6.26</u>			<u>9.03</u>
							<u>9.07</u>

Pump shut-off, sample collected.

Quantity of Water Removed from Well (circle units): liters / gallons: 2.5  
Was well pumped/bailed dry? NO  
Total Amount of Time Purged (minutes:seconds) 12  
Average Purge Rate (mL/min) 208.33

## D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes / No  
If yes, explain: \_\_\_\_\_

Additional Comments: 54°  
10mph ESE WIND  
Mostly SUNNY

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Date: 5.1.24  
 Monitoring Well/Piezometer ID: 200A  
 Gradient (circle one): Up / Down Sampler: W J

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain:  
 Litter/Standing Water? (circle one): Yes No If Yes, explain:

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 35.4  
 Initial Static Water Level (feet): 21.11  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**  
 FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>9:38</u>	Purging start time						<u>21.11</u>
<u>9:41</u>	<u>14.0</u>	<u>28.5</u>	<u>940</u>	<u>6.27</u>			<u>21.44</u>
<u>9:44</u>	<u>14.0</u>	<u>21.5</u>	<u>941</u>	<u>6.27</u>			<u>21.60</u>
<u>9:47</u>	<u>14.0</u>	<u>19.4</u>	<u>940</u>	<u>6.26</u>			<u>22.71</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 1.8  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes; seconds) 9  
 Average Purge Rate (mL/min) 200

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments:  
60°  
12 mph NW wind  
p. cloudy

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 201A Date: 5/1/24  
 Gradient (circle one): Up / Down Sampler: NW J

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 28.26  
 Initial Static Water Level (feet): 21.24  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>8:04</u>	Purging start time						<u>21.24</u>
<u>8:07</u>	<u>12.4</u>	<u>30.4</u>	<u>488.9</u>	<u>6.42</u>			<u>21.43</u>
<u>8:10</u>	<u>12.4</u>	<u>29.2</u>	<u>464.6</u>	<u>6.49</u>			<u>21.61</u>
<u>8:13</u>	<u>12.3</u>	<u>55.3</u>	<u>443.1</u>	<u>6.49</u>			<u>21.75</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters) gallons: 1.4  
 Was well pumped/bailed dry? No  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 155.55

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 56°  
10 mph NW wind  
p. cloudy

### FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Date: 5.1.24  
 Monitoring Well/Piezometer ID: 202A Sampler: WJF  
 Gradient (circle one): Up / Down

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes / **No** If No, explain:  
 Litter/Standing Water? (circle one): Yes / **No** If Yes, explain:

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 34.54  
 Initial Static Water Level (feet): 15.79  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump     Dedicated Submersible Pump  
     Other: \_\_\_\_\_     QED

**C. WELL PURGING**  
**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>10:20</u>	Purging start time						<u>15.79</u>
<u>10:23</u>	<u>12.7</u>	<u>55.3</u>	<u>382.1</u>	<u>6.67</u>			<u>16.95</u>
<u>10:26</u>	<u>12.5</u>	<u>65.2</u>	<u>350.3</u>	<u>6.67</u>			<u>17.57</u>
<u>10:29</u>	<u>12.3</u>	<u>69.5</u>	<u>343.6</u>	<u>6.59</u>			<u>18.31</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units) liters / gallons: 1.9  
 Was well pumped/bailed dry? **No**  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 211.11

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / **No**  
 If yes, explain:

Additional Comments:  
6/0  
12 mph NW WIND  
p. Cloudy

### FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: Z03A Date: 5/3/21  
 Gradient (circle one): Up / Down Sampler: AW

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 33.15  
 Initial Static Water Level (feet): 21.02  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>8:24</u>	Purging start time						<u>21.02</u>
<u>8:27</u>	<u>12.2</u>	<u>46.7</u>	<u>612</u>	<u>6.55</u>			<u>21.50</u>
<u>8:30</u>	<u>12.1</u>	<u>36.4</u>	<u>608</u>	<u>6.50</u>			<u>21.74</u>
<u>8:33</u>	<u>12.2</u>	<u>34.4</u>	<u>609</u>	<u>6.49</u>			<u>22.10</u>

Quantity of Water Removed from Well (circle units: liters / gallons): 1.9  
 Was well pumped/bailed dry? NS  
 Total Amount of Time Purged (minutes:seconds)  
 Average Purge Rate (mL/min) 211.11

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 54° 4mph NNE  
SWW

# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: **2-4A** Date: **5/3/24**  
 Gradient (circle one): Up / Down Sampler: **AW**

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one)  Yes / No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes /  No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): **23.24**  
 Initial Static Water Level (feet): **4.50**  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<b>8:55</b>	Purging start time						<b>4.50</b>
<b>8:58</b>	<b>11.2</b>	<b>68.3</b>	<b>284.3</b>	<b>6.83</b>			<b>5.60</b>
<b>9:01</b>	<b>11.1</b>	<b>66.0</b>	<b>282.5</b>	<b>6.85</b>			<b>5.98</b>
<b>9:04</b>	<b>11.1</b>	<b>64.9</b>	<b>283.6</b>	<b>6.77</b>			<b>6.36</b>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units:  liters / gallons): **7.0**  
 Was well pumped/bailed dry? **NO**  
 Total Amount of Time Purged (minutes;seconds) **9**  
 Average Purge Rate (mL/min) **272.72**

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes /  No  
 If yes, explain: \_\_\_\_\_

Additional Comments: **58° 4mph NNE**  
**SUN**









### FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 207A Date: 4/30/21  
 Gradient (circle one): Up / Down \_\_\_\_\_ Sampler: N J

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 20.24  
 Initial Static Water Level (feet): 4.18  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**  
 FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>12:25</u>	Purging start time						<u>4.18</u>
<u>12:28</u>	<u>11.2</u>	<u>20.2</u>	<u>769</u>	<u>6.11</u>			<u>4.59</u>
<u>12:31</u>	<u>11.0</u>	<u>17.2</u>	<u>763</u>	<u>6.20</u>			<u>4.66</u>
<u>12:34</u>	<u>10.9</u>	<u>8.9</u>	<u>757</u>	<u>6.19</u>			<u>4.71</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.4  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 266.66

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 70° SUN  
10 mph SSE  
WIND



### FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 209B Date: 5/7/24  
 Gradient (circle one): Up / Down Sampler: mw J

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 23.13  
 Initial Static Water Level (feet): 10.90  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Dedicated Bailer  Other: \_\_\_\_\_

**C. WELL PURGING**  
**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
8:49	Purging start time						10.90
8:52	11.6	19.7	2462	6.54			11.49
8:55	11.5	11.9	2456	6.46			11.65
8:58	11.5	8.8	2456	6.45			11.76
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 7.3  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) \_\_\_\_\_  
 Average Purge Rate (mL/min) 255.55

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes (No)  
 If yes, explain: \_\_\_\_\_

Additional Comments: 60°  
11 SSW WIND  
partly SUNNY





# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Monitoring Well/Piezometer ID: MW-212A Date: 4-30-24  
 Gradient (circle one): Up / Down \_\_\_\_\_ Sampler: SF

### A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_

Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

### B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 29.34

Initial Static Water Level (feet): 20.94

Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

### C. WELL PURGING

**FIELD PARAMETERS** [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>1433</u>	Purging start time						<u>20.94</u>
<u>1436</u>	<u>13.6</u>	<u>20.1</u>	<u>1621</u>	<u>5.75</u>			<u>21.59</u>
<u>1439</u>	<u>13.3</u>	<u>17.1</u>	<u>1614</u>	<u>5.78</u>			<u>21.81</u>
<u>1443</u>	<u>13.1</u>	<u>8.7</u>	<u>1613</u>	<u>5.80</u>			<u>22.07</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 1.6 L

Was well pumped/bailed dry? No

Total Amount of Time Purged (minutes:seconds) 9 min.

Average Purge Rate (mL/min) 177.77

### D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes / No

If yes, explain: Need New Cap!

Additional Comments:

71°F Partly Cloudy SSE 10 MPH









## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 216A Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: pw F

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 37.0  
 Initial Static Water Level (feet): 29.71  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

**C. WELL PURGING**  
 FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>8:20</u>	Purging start time						<u>29.71</u>
<u>8:23</u>	<u>12.4</u>	<u>22.4</u>	<u>1128</u>	<u>8.19</u>			<u>30.31</u>
<u>8:26</u>	<u>12.4</u>	<u>16.9</u>	<u>1121</u>	<u>8.09</u>			<u>30.45</u>
<u>8:29</u>	<u>12.3</u>	<u>18.3</u>	<u>1108</u>	<u>8.11</u>			<u>30.74</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.2  
 Was well pumped/bailed dry? No  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 244.44

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: needs new lock & Hinges

Additional Comments: 56° 11mph WSW Wind  
cloudy

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 217A Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: MJ

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 42.6  
 Initial Static Water Level (feet): 30.39  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: X LOED

**C. WELL PURGING**

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>10:04</u>	Purging start time						<u>30.39</u>
<u>10:07</u>	<u>13.2</u>	<u>50.2</u>	<u>271.1</u>	<u>7.37</u>			<u>30.90</u>
<u>10:10</u>	<u>13.1</u>	<u>40.2</u>	<u>270.0</u>	<u>7.60</u>			<u>31.01</u>
<u>10:13</u>	<u>13.2</u>	<u>37.3</u>	<u>271.1</u>	<u>7.52</u>			<u>31.11</u>
<u>10:16</u>	<u>13.4</u>	<u>35.9</u>	<u>271.7</u>	<u>7.53</u>			<u>31.10</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 3.0  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 12  
 Average Purge Rate (mL/min) 250

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 57°  
14 MPH WSW WIND  
SUN

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 218A Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: h J

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 47.5  
 Initial Static Water Level (feet): 28.06  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>10:33</u>	Purging start time						<u>28.06</u>
<u>10:36</u>	<u>12.9</u>	<u>43.4</u>	<u>515</u>	<u>7.72</u>			<u>29.34</u>
<u>10:39</u>	<u>12.9</u>	<u>20.9</u>	<u>522</u>	<u>8.12</u>			<u>30.15</u>
<u>10:42</u>	<u>12.6</u>	<u>15.6</u>	<u>519</u>	<u>8.12</u>			<u>30.96</u>
<u>10:45</u>	<u>12.7</u>	<u>13.4</u>	<u>519</u>	<u>8.09</u>			<u>31.76</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.6  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 12  
 Average Purge Rate (mL/min) 2.6

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes (No)  
 If yes, explain: \_\_\_\_\_

Additional Comments: 57° 14 mph WSW wind  
SUN





## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 306A Date: 5.1.24  
 Gradient (circle one): Up / Down Sampler: WF

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 23  
 Initial Static Water Level (feet): 6.21  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>13:32</u>	Purging start time						<u>6.21</u>
<u>13:35</u>	<u>11.2</u>	<u>44.8</u>	<u>332.3</u>	<u>6.04</u>			<u>6.71</u>
<u>13:38</u>	<u>10.0</u>	<u>37.2</u>	<u>330.9</u>	<u>5.92</u>			<u>6.86</u>
<u>13:41</u>	<u>10.9</u>	<u>34.6</u>	<u>330.6</u>	<u>5.89</u>			<u>6.86</u>
<u>13:44</u>	<u>10.9</u>	<u>33.3</u>	<u>329.6</u>	<u>5.86</u>			<u>6.89</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 3.2  
 Was well pumped/bailed dry? No  
 Total Amount of Time Purged (minutes:seconds) 12  
 Average Purge Rate (mL/min) 266.66

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: well needs to be cut down (metal)

Additional Comments: 690  
10mph NW wind  
Sunny





# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_ Date: 5.1.24  
 Monitoring Well/Piezometer ID: 312A Sampler: MWF  
 Gradient (circle one): Up / Down

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 77.78  
 Initial Static Water Level (feet): 7.78  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>15:11</u>	Purging start time						<u>7.78</u>
<u>15:14</u>	<u>12.2</u>	<u>27.7</u>	<u>458.1</u>	<u>6.10</u>			<u>8.15</u>
<u>15:17</u>	<u>11.9</u>	<u>19.7</u>	<u>455.7</u>	<u>6.06</u>			<u>8.22</u>
<u>15:20</u>	<u>11.6</u>	<u>15.7</u>	<u>451.6</u>	<u>6.04</u>			<u>8.30</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 2.2  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes/seconds): \_\_\_\_\_  
 Average Purge Rate (mL/min): 244.44

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 72° 8 mph NW WIND  
p. SUNNY

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 404 Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: MJ

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 41.44  
 Initial Static Water Level (feet): 16.34  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  Other: QED

**C. WELL PURGING**  
 FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>11:05</u>	Purging start time						<u>16.34</u>
<u>11:08</u>	<u>12.3</u>	<u>49.9</u>	<u>503</u>	<u>8.19</u>			<u>18.00</u>
<u>11:11</u>	<u>12.2</u>	<u>58.8</u>	<u>493.5</u>	<u>8.40</u>			<u>19.01</u>
<u>11:14</u>	<u>12.3</u>	<u>66.4</u>	<u>492.1</u>	<u>8.43</u>			<u>19.95</u>
<u>11:17</u>	<u>12.0</u>	<u>69.8</u>	<u>487.1</u>	<u>8.43</u>			<u>21.11</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters / gallons): 2.6  
 Was well pumped/bailed dry? No  
 Total Amount of Time Purged (minutes:seconds) 12  
 Average Purge Rate (mL/min) 216.66

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 58° 15mph WSW WIND  
p. cloudy

### FORM FOR GROUNDWATER SAMPLING

Project:		Monitoring Well/Piezometer ID: <u>MW-407</u>		Date: <u>4-29-24</u>
Gradient (circle one): Up / Down		Sampler: <u>ZW / JF</u>		

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain:

Litter/Standing Water? (circle one): Yes No If Yes, explain:

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 41.39

Initial Static Water Level (feet): 11.87

Initial Groundwater Elevation (ft-amsl):

Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>15:10</u>	Purging start time						<u>11.87</u>
<u>15:13</u>	<u>12.4</u>	<u>25.2</u>	<u>667</u>	<u>6.66</u>			<u>13.76</u>
<u>15:16</u>	<u>12.4</u>	<u>16.4</u>	<u>668</u>	<u>6.72</u>			<u>14.84</u>
<u>15:19</u>	<u>12.2</u>	<u>12.6</u>	<u>662</u>	<u>6.69</u>			<u>16.00</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): 15

Was well pumped/bailed dry? NO

Total Amount of Time Purged (minutes:seconds) 9

Average Purge Rate (mL/min) 166.66

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes / No

If yes, explain:

Additional Comments:

63°F Partly Sunny WSW 16 MPH



# FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 409 Date: 5-1-24  
 Gradient (circle one): Up / Down Sampler: W F

**A. MW/PIEZOMETER CONDITIONS**

Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**

Measured Well Total Depth (feet): 33.85  
 Initial Static Water Level (feet): \_\_\_\_\_  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: \_\_\_\_\_  QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>13:10</u>	Purging start time						<u>13.51</u>
<u>13:13</u>	<u>13.1</u>	<u>27.7</u>	<u>1045</u>	<u>5.55</u>			<u>13.70</u>
<u>13:16</u>	<u>12.7</u>	<u>18.8</u>	<u>1077</u>	<u>5.59</u>			<u>13.77</u>
<u>13:19</u>	<u>12.7</u>	<u>14.9</u>	<u>1036</u>	<u>5.51</u>			<u>13.81</u>
	Pump shut-off, sample collected.						

Quantity of Water Removed from Well (circle units: liters) / gallons: 1.3  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes:seconds) 9  
 Average Purge Rate (mL/min) 144.44

**D. WELL MAINTENANCE**

Does the monitoring well/piezometer require any future maintenance? Yes (No)  
 If yes, explain: \_\_\_\_\_

Additional Comments: 69°  
10mph NW wind  
SUNNY

## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: 410 Date: 4/29/24  
 Gradient (circle one): Up / Down Sampler: NF

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): 28.35  
 Initial Static Water Level (feet): 13.84  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Other: QED

**C. WELL PURGING**

**FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES**

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>15:51</u>	Purging start time						
<u>15:54</u>	<u>11.2</u>	<u>59.8</u>	<u>791</u>	<u>6.28</u>			<u>13.84</u>
<u>15:57</u>	<u>10.6</u>	<u>35.1</u>	<u>790</u>	<u>6.14</u>			<u>14.49</u>
<u>16:00</u>	<u>10.7</u>	<u>29.5</u>	<u>794</u>	<u>6.14</u>			<u>14.70</u>
<u>16:03</u>	<u>10.5</u>	<u>25.5</u>	<u>788</u>	<u>6.13</u>			<u>14.94</u>
							<u>15.19</u>
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units) liters / gallons: 3.0  
 Was well pumped/bailed dry? NO  
 Total Amount of Time Purged (minutes/seconds) 12  
 Average Purge Rate (mL/min) 250

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No  
 If yes, explain: \_\_\_\_\_

Additional Comments: 62°F 16mph WSW wind  
P. Sunny







## FORM FOR GROUNDWATER SAMPLING

Project: \_\_\_\_\_  
 Monitoring Well/Piezometer ID: WT-2 Date: 8/2/21  
 Gradient (circle one): Up / Down Sampler: NW J

**A. MW/PIEZOMETER CONDITIONS**  
 Well/Piezometer Capped? (circle one): Yes No If No, explain: \_\_\_\_\_  
 Litter/Standing Water? (circle one): Yes No If Yes, explain: \_\_\_\_\_

**B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)**  
 Measured Well Total Depth (feet): \_\_\_\_\_  
 Initial Static Water Level (feet): \_\_\_\_\_  
 Initial Groundwater Elevation (ft-amsl): \_\_\_\_\_  
 Equipment Used (check one):  Dedicated Peristaltic Pump  Dedicated Submersible Pump  
 Dedicated Bailer  Other: \_\_\_\_\_

**C. WELL PURGING**

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	Static Water Level (feet)
<u>8:16</u>	Purging start time						
Pump shut-off, sample collected.							

Quantity of Water Removed from Well (circle units: liters / gallons): \_\_\_\_\_  
 Was well pumped/bailed dry? \_\_\_\_\_  
 Total Amount of Time Purged (minutes:seconds) \_\_\_\_\_  
 Average Purge Rate (mL/min) \_\_\_\_\_

**D. WELL MAINTENANCE**  
 Does the monitoring well/piezometer require any future maintenance? Yes / No \_\_\_\_\_  
 If yes, explain: \_\_\_\_\_

Additional Comments: 61°  
12 mph SW wind  
SUN





**Attachment C**  
**Laboratory Analytical Data Sheets**  
**1<sup>st</sup> 2024 Semi-Annual Sampling Event**

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 6/5/2024 3:16:01 PM Revision 1

## JOB DESCRIPTION

Iowa City Landfill 1st 2024  
Source Characterization  
Source Characterization

## JOB NUMBER

310-280197-1

# 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



Generated  
6/5/2024 3:16:01 PM  
Revision 1

Authorized for release by  
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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill 1st 2024

Job ID: 310-280197-1

**Job ID: 310-280197-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280197-1

### REVISION

The report being provided is a revision of the original report sent on 5/10/2024. The report (revision 1) is being revised due to removed Dichlorodifluoromethane, M&P-Xylene, and O-Xylene from analyte list.

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

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

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

### **Receipt**

The samples were received on 5/1/2024 3:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 5.0°C and 5.8°C.

### **GC/MS VOA**

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420620 recovered above the upper control limit for Carbon tetrachloride (33.12%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420620/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420620 recovered above the upper control limit for Vinyl chloride (34.4%D), Chloroethane (30.0%D) and Trichlorofluoromethane (34.8%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420620/4).

Method 8260D: The laboratory control sample (LCS) for analytical batch 310-420620 recovered outside control limits for the following analytes: Carbon tetrachloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

### **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.

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280197-1	MW-1A	Groundwater	04/30/24 10:05	05/01/24 15:20
310-280197-2	MW-2A-97	Groundwater	04/30/24 09:28	05/01/24 15:20
310-280197-3	MW-16A	Groundwater	04/30/24 10:59	05/01/24 15:20
310-280197-4	MW-206A	Groundwater	04/30/24 13:02	05/01/24 15:20
310-280197-5	MW-207A	Groundwater	04/30/24 12:37	05/01/24 15:20
310-280197-6	MW-212A	Groundwater	04/30/24 14:45	05/01/24 15:20
310-280197-7	MW-6B	Groundwater	04/30/24 13:40	05/01/24 15:20
310-280197-8	MW-11B	Groundwater	04/30/24 12:15	05/01/24 15:20
310-280197-9	MW-211B	Groundwater	04/30/24 14:13	05/01/24 15:20
310-280197-10	Trip Blank	Water	04/30/24 00:00	05/01/24 15:20

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# Detection Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Client Sample ID: MW-1A

## Lab Sample ID: 310-280197-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	460		100	42.0	mg/L	100		9056A	Total/NA
Arsenic	0.0349		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.126		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000145	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.0211		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0123		0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	62.5		0.100	0.0360	mg/L	1		6020B	Total/NA
Zinc	0.0104	J	0.0200	0.00970	mg/L	1		6020B	Total/NA
Manganese	4.46		0.0100	0.00360	mg/L	1		6020B	Total/NA
Total Organic Carbon	5.72		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	167		7.50	5.55	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-2A-97

## Lab Sample ID: 310-280197-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	0.888	J	1.00	0.390	ug/L	1		8260D	Total/NA
Nitrate as N	0.395		0.200	0.0780	mg/L	1		9056A	Total/NA
Sulfate	98.7		1.00	0.420	mg/L	1		9056A	Total/NA
Arsenic	0.00299		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.228		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000149	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.0156		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00241	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Nickel	0.0283		0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	0.916		0.100	0.0360	mg/L	1		6020B	Total/NA
Manganese	7.61		0.0100	0.00360	mg/L	1		6020B	Total/NA
Total Organic Carbon	6.05		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	3.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-16A

## Lab Sample ID: 310-280197-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroethane	0.824	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	7.46		1.00	0.210	ug/L	1		8260D	Total/NA
Dichlorodifluoromethane	1.84	J	3.00	0.250	ug/L	1		8260D	Total/NA
1,1-Dichloroethane	7.73		1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloroethane	0.942	J	1.00	0.390	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	2.30		1.00	0.270	ug/L	1		8260D	Total/NA
Tetrachloroethene	2.15		1.00	0.480	ug/L	1		8260D	Total/NA
Trichloroethene	2.16		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	2.46		1.00	0.180	ug/L	1		8260D	Total/NA
Nitrate as N	0.238		0.200	0.0780	mg/L	1		9056A	Total/NA
Sulfate	18.1		1.00	0.420	mg/L	1		9056A	Total/NA
Barium	0.376		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000925		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00321	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Manganese	0.140		0.0100	0.00360	mg/L	1		6020B	Total/NA
Total Organic Carbon	2.00		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	3.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## Client Sample ID: MW-206A

## Lab Sample ID: 310-280197-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloromethane	0.862	J	3.00	0.610	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	1.46		1.00	0.210	ug/L	1		8260D	Total/NA
1,1-Dichloroethane	9.25		1.00	0.220	ug/L	1		8260D	Total/NA
Tetrachloroethene	1.83		1.00	0.480	ug/L	1		8260D	Total/NA
Trichloroethene	1.87		1.00	0.430	ug/L	1		8260D	Total/NA
Nitrate as N	2.10		0.200	0.0780	mg/L	1		9056A	Total/NA
Sulfate	76.9		1.00	0.420	mg/L	1		9056A	Total/NA
Barium	0.144		0.00200	0.000660	mg/L	1		6020B	Total/NA
Selenium	0.00175	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Iron	0.0571	J	0.100	0.0360	mg/L	1		6020B	Total/NA
Total Organic Carbon	2.41		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	1.63	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-207A

## Lab Sample ID: 310-280197-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	39.5		1.00	0.420	mg/L	1		9056A	Total/NA
Arsenic	0.0579		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.383		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000567		0.000500	0.000170	mg/L	1		6020B	Total/NA
Iron	27.4		0.100	0.0360	mg/L	1		6020B	Total/NA
Manganese	1.32		0.0100	0.00360	mg/L	1		6020B	Total/NA
Total Organic Carbon	11.7		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	68.7		5.00	3.70	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-212A

## Lab Sample ID: 310-280197-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.39	J	10.0	3.10	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	13.4		10.0	2.10	ug/L	1		8260D	Total/NA
Carbon disulfide	13.3		1.00	0.450	ug/L	1		8260D	Total/NA
Sulfate	693		100	42.0	mg/L	100		9056A	Total/NA
Arsenic	0.00409	J	0.00800	0.00212	mg/L	4		6020B	Total/NA
Barium	0.0855		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000984		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00753		0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.000605		0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.00356	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	5.92		0.100	0.0360	mg/L	1		6020B	Total/NA
Vanadium	0.00239	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Manganese	10.1		0.0400	0.0144	mg/L	4		6020B	Total/NA
Total Organic Carbon	21.0		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	24.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-6B

## Lab Sample ID: 310-280197-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.61	J	10.0	3.10	ug/L	1		8260D	Total/NA
Carbon disulfide	0.541	J	1.00	0.450	ug/L	1		8260D	Total/NA
Sulfate	111		100	42.0	mg/L	100		9056A	Total/NA
Arsenic	0.0236		0.00800	0.00212	mg/L	4		6020B	Total/NA
Barium	0.472		0.00200	0.000660	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Client Sample ID: MW-6B (Continued)

## Lab Sample ID: 310-280197-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0202		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00200	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.000706		0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.0104		0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	25.6		0.100	0.0360	mg/L	1		6020B	Total/NA
Manganese	13.1		0.0400	0.0144	mg/L	4		6020B	Total/NA
Total Organic Carbon	12.1		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	61.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-11B

## Lab Sample ID: 310-280197-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.228	J	1.00	0.220	ug/L	1		8260D	Total/NA
Sulfate	74.7		1.00	0.420	mg/L	1		9056A	Total/NA
Arsenic	0.0464		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.314		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00137		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00813		0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	18.3		0.100	0.0360	mg/L	1		6020B	Total/NA
Manganese	1.08		0.0100	0.00360	mg/L	1		6020B	Total/NA
Total Organic Carbon	5.44		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	42.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-211B

## Lab Sample ID: 310-280197-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	18.5		1.00	0.420	mg/L	1		9056A	Total/NA
Arsenic	0.0169		0.00800	0.00212	mg/L	4		6020B	Total/NA
Barium	0.687		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.0641		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00250	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.000295	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.0674		0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	36.3		0.100	0.0360	mg/L	1		6020B	Total/NA
Manganese	10.2		0.0400	0.0144	mg/L	4		6020B	Total/NA
Total Organic Carbon	8.86		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	42.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank

## Lab Sample ID: 310-280197-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-1A**

**Lab Sample ID: 310-280197-1**

**Date Collected: 04/30/24 10:05**

**Matrix: Groundwater**

**Date Received: 05/01/24 15:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 02:53	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 02:53	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 02:53	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 02:53	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 02:53	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 02:53	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 02:53	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 02:53	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 02:53	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 02:53	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 02:53	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 02:53	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 02:53	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 02:53	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 02:53	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 02:53	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 02:53	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 02:53	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 02:53	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 02:53	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 02:53	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 02:53	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 02:53	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 02:53	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 02:53	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 02:53	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 02:53	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 02:53	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 02:53	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 02:53	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 02:53	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 02:53	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 02:53	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 02:53	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 02:53	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 02:53	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 02:53	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 02:53	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 02:53	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 02:53	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 02:53	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 02:53	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 02:53	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 02:53	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 02:53	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 02:53	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 02:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120		05/04/24 02:53	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-1A**  
**Date Collected: 04/30/24 10:05**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-1**  
**Matrix: Groundwater**

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	115		73 - 130		05/04/24 02:53	1
Toluene-d8 (Surr)	101		80 - 120		05/04/24 02:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/02/24 00:38	1
Sulfate	460		100	42.0	mg/L			05/02/24 15:56	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 14:16	1
Arsenic	0.0349		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:16	1
Barium	0.126		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:09	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:09	1
Cadmium	0.000145	J	0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 14:16	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 14:16	1
Cobalt	0.0211		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:09	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:09	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:09	1
Nickel	0.0123		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:09	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:09	1
Iron	62.5		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:09	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:09	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:09	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:09	1
Zinc	0.0104	J	0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:09	1
Manganese	4.46		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 19:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	5.72		1.00	0.500	mg/L			05/07/24 02:27	1
Total Suspended Solids (USGS I-3765-85)	167		7.50	5.55	mg/L			05/04/24 09:40	1



# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

**Client Sample ID: MW-2A-97**

**Lab Sample ID: 310-280197-2**

Date Collected: 04/30/24 09:28

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 03:16	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 03:16	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 03:16	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 03:16	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 03:16	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 03:16	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 03:16	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 03:16	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 03:16	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 03:16	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 03:16	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 03:16	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 03:16	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 03:16	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 03:16	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 03:16	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 03:16	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 03:16	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 03:16	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 03:16	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 03:16	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 03:16	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 03:16	1
<b>1,2-Dichloroethane</b>	<b>0.888</b>	<b>J</b>	1.00	0.390	ug/L			05/04/24 03:16	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 03:16	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 03:16	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 03:16	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 03:16	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 03:16	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 03:16	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 03:16	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 03:16	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 03:16	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 03:16	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 03:16	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 03:16	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 03:16	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 03:16	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 03:16	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 03:16	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 03:16	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 03:16	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 03:16	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 03:16	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 03:16	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 03:16	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 03:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/04/24 03:16	1

Eurofins Cedar Falls



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-2A-97**

**Lab Sample ID: 310-280197-2**

Date Collected: 04/30/24 09:28

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	117		73 - 130		05/04/24 03:16	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 03:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.395		0.200	0.0780	mg/L			05/02/24 00:26	1
Sulfate	98.7		1.00	0.420	mg/L			05/02/24 00:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 14:18	1
Arsenic	0.00299		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:18	1
Barium	0.228		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:26	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:26	1
Cadmium	0.000149	J	0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 14:18	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 14:18	1
Cobalt	0.0156		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:26	1
Copper	0.00241	J	0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:26	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:26	1
Nickel	0.0283		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:26	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:26	1
Iron	0.916		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:26	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:26	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:26	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:26	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:26	1
Manganese	7.61		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 19:26	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	6.05		1.00	0.500	mg/L			05/07/24 03:03	1
Total Suspended Solids (USGS I-3765-85)	3.75		1.88	1.39	mg/L			05/04/24 09:40	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-16A**

**Lab Sample ID: 310-280197-3**

Date Collected: 04/30/24 10:59

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 03:38	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 03:38	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 03:38	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 03:38	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 03:38	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 03:38	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 03:38	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 03:38	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 03:38	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 03:38	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 03:38	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 03:38	1
<b>Chloroethane</b>	<b>0.824</b>	<b>J</b>	4.00	0.790	ug/L			05/07/24 18:45	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 03:38	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 03:38	1
<b>cis-1,2-Dichloroethene</b>	<b>7.46</b>		1.00	0.210	ug/L			05/04/24 03:38	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 03:38	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 03:38	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 03:38	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 03:38	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 03:38	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 03:38	1
<b>Dichlorodifluoromethane</b>	<b>1.84</b>	<b>J</b>	3.00	0.250	ug/L			05/04/24 03:38	1
<b>1,1-Dichloroethane</b>	<b>7.73</b>		1.00	0.220	ug/L			05/04/24 03:38	1
<b>1,2-Dichloroethane</b>	<b>0.942</b>	<b>J</b>	1.00	0.390	ug/L			05/04/24 03:38	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 03:38	1
<b>1,2-Dichloropropane</b>	<b>2.30</b>		1.00	0.270	ug/L			05/04/24 03:38	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 03:38	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 03:38	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 03:38	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 03:38	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 03:38	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 03:38	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 03:38	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 03:38	1
<b>Tetrachloroethene</b>	<b>2.15</b>		1.00	0.480	ug/L			05/04/24 03:38	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 03:38	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 03:38	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 03:38	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 03:38	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 03:38	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 03:38	1
<b>Trichloroethene</b>	<b>2.16</b>		1.00	0.430	ug/L			05/04/24 03:38	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 03:38	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 03:38	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 03:38	1
<b>Vinyl chloride</b>	<b>2.46</b>		1.00	0.180	ug/L			05/07/24 18:45	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 03:38	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-16A**

**Lab Sample ID: 310-280197-3**

Date Collected: 04/30/24 10:59

Matrix: Groundwater

Date Received: 05/01/24 15:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/04/24 03:38	1
4-Bromofluorobenzene (Surr)	102		80 - 120		05/07/24 18:45	1
Dibromofluoromethane (Surr)	112		73 - 130		05/04/24 03:38	1
Dibromofluoromethane (Surr)	112		73 - 130		05/07/24 18:45	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 03:38	1
Toluene-d8 (Surr)	99		80 - 120		05/07/24 18:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.238		0.200	0.0780	mg/L			05/02/24 00:50	1
Sulfate	18.1		1.00	0.420	mg/L			05/02/24 00:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 14:20	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:20	1
Barium	0.376		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:30	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:30	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 14:20	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 14:20	1
Cobalt	0.000925		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:30	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:30	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:30	1
Nickel	0.00321	J	0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:30	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:30	1
Iron	<0.100		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:30	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:30	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:30	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:30	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:30	1
Manganese	0.140		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 19:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	2.00		1.00	0.500	mg/L			05/07/24 10:15	1
Total Suspended Solids (USGS I-3765-85)	3.25		1.88	1.39	mg/L			05/04/24 09:40	1

# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

**Client Sample ID: MW-206A**

**Lab Sample ID: 310-280197-4**

Date Collected: 04/30/24 13:02

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 04:01	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 04:01	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 04:01	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 04:01	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 04:01	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 04:01	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 04:01	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 04:01	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 04:01	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 04:01	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 04:01	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 04:01	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 04:01	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 04:01	1
<b>Chloromethane</b>	<b>0.862</b>	<b>J</b>	3.00	0.610	ug/L			05/04/24 04:01	1
<b>cis-1,2-Dichloroethene</b>	<b>1.46</b>		1.00	0.210	ug/L			05/04/24 04:01	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 04:01	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 04:01	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 04:01	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 04:01	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 04:01	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 04:01	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/04/24 04:01	1
<b>1,1-Dichloroethane</b>	<b>9.25</b>		1.00	0.220	ug/L			05/04/24 04:01	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 04:01	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 04:01	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 04:01	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 04:01	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 04:01	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 04:01	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 04:01	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 04:01	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 04:01	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 04:01	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 04:01	1
<b>Tetrachloroethene</b>	<b>1.83</b>		1.00	0.480	ug/L			05/04/24 04:01	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 04:01	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 04:01	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 04:01	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 04:01	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 04:01	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 04:01	1
<b>Trichloroethene</b>	<b>1.87</b>		1.00	0.430	ug/L			05/04/24 04:01	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 04:01	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 04:01	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 04:01	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 04:01	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 04:01	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-206A**  
**Date Collected: 04/30/24 13:02**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-4**  
**Matrix: Groundwater**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		05/04/24 04:01	1
Dibromofluoromethane (Surr)	111		73 - 130		05/04/24 04:01	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 04:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.10		0.200	0.0780	mg/L			05/02/24 01:26	1
Sulfate	76.9		1.00	0.420	mg/L			05/02/24 01:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 14:22	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:22	1
Barium	0.144		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:33	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:33	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 14:22	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 14:22	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:33	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:33	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:33	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:33	1
Selenium	0.00175	J	0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:33	1
Iron	0.0571	J	0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:33	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:33	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:33	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:33	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:33	1
Manganese	<0.0100		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 19:33	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	2.41		1.00	0.500	mg/L			05/07/24 10:51	1
Total Suspended Solids (USGS I-3765-85)	1.63	J	1.88	1.39	mg/L			05/03/24 08:54	1

# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

**Client Sample ID: MW-207A**

**Lab Sample ID: 310-280197-5**

Date Collected: 04/30/24 12:37

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 04:24	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 04:24	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 04:24	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 04:24	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 04:24	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 04:24	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 04:24	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 04:24	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 04:24	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 04:24	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 04:24	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 04:24	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 04:24	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 04:24	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 04:24	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 04:24	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 04:24	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 04:24	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 04:24	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 04:24	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 04:24	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 04:24	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 04:24	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 04:24	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 04:24	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 04:24	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 04:24	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 04:24	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 04:24	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 04:24	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 04:24	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 04:24	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 04:24	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 04:24	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 04:24	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 04:24	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 04:24	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 04:24	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 04:24	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 04:24	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 04:24	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 04:24	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 04:24	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 04:24	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 04:24	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 04:24	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 04:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/04/24 04:24	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-207A**

**Lab Sample ID: 310-280197-5**

Date Collected: 04/30/24 12:37

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	113		73 - 130		05/04/24 04:24	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 04:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/02/24 01:14	1
Sulfate	39.5		1.00	0.420	mg/L			05/02/24 01:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 14:25	1
Arsenic	0.0579		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:25	1
Barium	0.383		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:37	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:37	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 14:25	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 14:25	1
Cobalt	0.000567		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:37	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:37	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:37	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:37	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:37	1
Iron	27.4		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:37	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:37	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:37	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:37	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:37	1
Manganese	1.32		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 19:37	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:43	1
Total Organic Carbon (SW846 9060A)	11.7		1.00	0.500	mg/L			05/07/24 11:27	1
Total Suspended Solids (USGS I-3765-85)	68.7		5.00	3.70	mg/L			05/04/24 09:40	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-212A**

**Lab Sample ID: 310-280197-6**

Date Collected: 04/30/24 14:45

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>8.39</b>	<b>J</b>	10.0	3.10	ug/L			05/04/24 04:47	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 04:47	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 04:47	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 04:47	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 04:47	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 04:47	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 04:47	1
<b>2-Butanone (MEK)</b>	<b>13.4</b>		10.0	2.10	ug/L			05/04/24 04:47	1
<b>Carbon disulfide</b>	<b>13.3</b>		1.00	0.450	ug/L			05/04/24 04:47	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 04:47	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 04:47	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 04:47	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 04:47	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 04:47	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 04:47	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 04:47	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 04:47	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 04:47	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 04:47	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 04:47	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 04:47	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 04:47	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 04:47	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 04:47	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 04:47	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 04:47	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 04:47	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 04:47	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 04:47	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 04:47	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 04:47	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 04:47	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 04:47	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 04:47	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 04:47	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 04:47	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 04:47	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 04:47	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 04:47	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 04:47	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 04:47	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 04:47	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 04:47	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 04:47	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 04:47	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 04:47	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 04:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 04:47	1

Eurofins Cedar Falls



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-212A**  
**Date Collected: 04/30/24 14:45**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-6**  
**Matrix: Groundwater**

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	118		73 - 130		05/04/24 04:47	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 04:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/01/24 22:27	1
Sulfate	693		100	42.0	mg/L			05/02/24 12:28	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00800		0.00800	0.00400	mg/L		05/03/24 09:00	05/09/24 14:27	4
Arsenic	0.00409	J	0.00800	0.00212	mg/L		05/03/24 09:00	05/09/24 14:27	4
Barium	0.0855		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:40	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:40	1
Cadmium	<0.000800		0.000800	0.000400	mg/L		05/03/24 09:00	05/09/24 14:27	4
Chromium	<0.0200		0.0200	0.00480	mg/L		05/03/24 09:00	05/09/24 14:27	4
Cobalt	0.000984		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:40	1
Copper	0.00753		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:40	1
Lead	0.000605		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:40	1
Nickel	0.00356	J	0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:40	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:40	1
Iron	5.92		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:40	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:40	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:40	1
Vanadium	0.00239	J	0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:40	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:40	1
Manganese	10.1		0.0400	0.0144	mg/L		05/03/24 09:00	05/09/24 14:27	4

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	21.0		1.00	0.500	mg/L			05/07/24 12:03	1
Total Suspended Solids (USGS I-3765-85)	24.5		7.50	5.55	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-6B**

**Lab Sample ID: 310-280197-7**

Date Collected: 04/30/24 13:40

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>3.61</b>	<b>J</b>	10.0	3.10	ug/L			05/04/24 05:10	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 05:10	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 05:10	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 05:10	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 05:10	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 05:10	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 05:10	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 05:10	1
<b>Carbon disulfide</b>	<b>0.541</b>	<b>J</b>	1.00	0.450	ug/L			05/04/24 05:10	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 05:10	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 05:10	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 05:10	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 05:10	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 05:10	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 05:10	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 05:10	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 05:10	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 05:10	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 05:10	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 05:10	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 05:10	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 05:10	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 05:10	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 05:10	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 05:10	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 05:10	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 05:10	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 05:10	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 05:10	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 05:10	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 05:10	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 05:10	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 05:10	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 05:10	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 05:10	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 05:10	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 05:10	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 05:10	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 05:10	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 05:10	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 05:10	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 05:10	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 05:10	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 05:10	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 05:10	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 05:10	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 05:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 05:10	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-6B**  
**Date Collected: 04/30/24 13:40**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-7**  
**Matrix: Groundwater**

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	117		73 - 130		05/04/24 05:10	1
Toluene-d8 (Surr)	99		80 - 120		05/04/24 05:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/02/24 01:50	1
Sulfate	111		100	42.0	mg/L			05/02/24 15:44	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00800		0.00800	0.00400	mg/L		05/03/24 09:00	05/09/24 14:29	4
Arsenic	0.0236		0.00800	0.00212	mg/L		05/03/24 09:00	05/09/24 14:29	4
Barium	0.472		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:44	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:44	1
Cadmium	<0.000800		0.000800	0.000400	mg/L		05/03/24 09:00	05/09/24 14:29	4
Chromium	<0.0200		0.0200	0.00480	mg/L		05/03/24 09:00	05/09/24 14:29	4
Cobalt	0.0202		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:44	1
Copper	0.00200	J	0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:44	1
Lead	0.000706		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:44	1
Nickel	0.0104		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:44	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:44	1
Iron	25.6		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:44	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:44	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:44	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:44	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:44	1
Manganese	13.1		0.0400	0.0144	mg/L		05/03/24 09:00	05/09/24 14:29	4

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	12.1		1.00	0.500	mg/L			05/08/24 14:58	1
Total Suspended Solids (USGS I-3765-85)	61.3		5.00	3.70	mg/L			05/03/24 08:54	1

# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

**Client Sample ID: MW-11B**

**Lab Sample ID: 310-280197-8**

Date Collected: 04/30/24 12:15

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 05:33	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 05:33	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 05:33	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 05:33	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 05:33	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 05:33	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 05:33	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 05:33	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 05:33	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 05:33	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 05:33	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 05:33	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 05:33	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 05:33	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 05:33	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 05:33	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 05:33	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 05:33	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 05:33	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 05:33	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 05:33	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 05:33	1
<b>1,1-Dichloroethane</b>	<b>0.228</b>	<b>J</b>	1.00	0.220	ug/L			05/04/24 05:33	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 05:33	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 05:33	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 05:33	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 05:33	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 05:33	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 05:33	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 05:33	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 05:33	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 05:33	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 05:33	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 05:33	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 05:33	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 05:33	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 05:33	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 05:33	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 05:33	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 05:33	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 05:33	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 05:33	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 05:33	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 05:33	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 05:33	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 05:33	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 05:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/04/24 05:33	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-11B**  
 Date Collected: 04/30/24 12:15  
 Date Received: 05/01/24 15:20

**Lab Sample ID: 310-280197-8**  
 Matrix: Groundwater

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	112		73 - 130		05/04/24 05:33	1
Toluene-d8 (Surr)	101		80 - 120		05/04/24 05:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/02/24 01:02	1
Sulfate	74.7		1.00	0.420	mg/L			05/02/24 01:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 14:31	1
Arsenic	0.0464		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:31	1
Barium	0.314		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:47	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:47	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 14:31	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 14:31	1
Cobalt	0.00137		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:47	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:47	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:47	1
Nickel	0.00813		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:47	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:47	1
Iron	18.3		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:47	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:47	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:47	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:47	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:47	1
Manganese	1.08		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 19:47	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	5.44		1.00	0.500	mg/L			05/08/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	42.3		5.00	3.70	mg/L			05/03/24 08:54	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-211B**

**Lab Sample ID: 310-280197-9**

Date Collected: 04/30/24 14:13

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 05:55	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 05:55	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 05:55	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 05:55	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 05:55	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 05:55	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 05:55	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 05:55	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 05:55	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 05:55	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 05:55	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 05:55	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 05:55	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 05:55	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 05:55	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 05:55	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 05:55	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 05:55	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 05:55	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 05:55	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 05:55	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 05:55	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 05:55	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 05:55	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 05:55	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 05:55	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 05:55	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 05:55	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 05:55	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 05:55	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 05:55	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 05:55	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 05:55	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 05:55	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 05:55	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 05:55	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 05:55	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 05:55	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 05:55	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 05:55	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 05:55	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 05:55	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 05:55	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 05:55	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 05:55	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 05:55	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 05:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 05:55	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-211B**

**Lab Sample ID: 310-280197-9**

Date Collected: 04/30/24 14:13

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	114		73 - 130		05/04/24 05:55	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 05:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/02/24 02:02	1
Sulfate	18.5		1.00	0.420	mg/L			05/02/24 02:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00800		0.00800	0.00400	mg/L		05/03/24 09:00	05/09/24 14:42	4
Arsenic	0.0169		0.00800	0.00212	mg/L		05/03/24 09:00	05/09/24 14:42	4
Barium	0.687		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 19:50	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 19:50	1
Cadmium	<0.000800		0.000800	0.000400	mg/L		05/03/24 09:00	05/09/24 14:42	4
Chromium	<0.0200		0.0200	0.00480	mg/L		05/03/24 09:00	05/09/24 14:42	4
Cobalt	0.0641		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 19:50	1
Copper	0.00250	J	0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 19:50	1
Lead	0.000295	J	0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 19:50	1
Nickel	0.0674		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 19:50	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 19:50	1
Iron	36.3		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 19:50	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 19:50	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 19:50	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 19:50	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 19:50	1
Manganese	10.2		0.0400	0.0144	mg/L		05/03/24 09:00	05/09/24 14:42	4

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	8.86		1.00	0.500	mg/L			05/08/24 16:46	1
Total Suspended Solids (USGS I-3765-85)	42.3		5.00	3.70	mg/L			05/03/24 08:54	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280197-10**

**Date Collected: 04/30/24 00:00**

**Matrix: Water**

**Date Received: 05/01/24 15:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 00:36	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 00:36	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 00:36	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 00:36	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 00:36	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 00:36	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 00:36	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 00:36	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 00:36	1
Carbon tetrachloride	<2.00	*+	2.00	0.650	ug/L			05/04/24 00:36	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 00:36	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 00:36	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 00:36	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 00:36	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 00:36	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 00:36	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 00:36	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 00:36	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 00:36	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 00:36	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 00:36	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 00:36	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/04/24 00:36	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 00:36	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 00:36	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 00:36	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 00:36	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 00:36	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 00:36	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 00:36	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 00:36	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 00:36	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 00:36	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 00:36	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 00:36	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 00:36	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 00:36	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 00:36	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 00:36	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 00:36	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 00:36	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 00:36	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 00:36	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 00:36	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 00:36	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 00:36	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 00:36	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 00:36	1



# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280197-10**

**Date Collected: 04/30/24 00:00**

**Matrix: Water**

**Date Received: 05/01/24 15:20**

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 00:36	1
Dibromofluoromethane (Surr)	116		73 - 130		05/04/24 00:36	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 00:36	1

- 1
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# Definitions/Glossary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

# Surrogate Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

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

Matrix: Groundwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280197-1	MW-1A	99	115	101
310-280197-1 MS	MW-1A	98	104	102
310-280197-1 MSD	MW-1A	98	100	100
310-280197-2	MW-2A-97	101	117	102
310-280197-3	MW-16A	101	112	100
310-280197-3	MW-16A	102	112	99
310-280197-4	MW-206A	100	111	100
310-280197-5	MW-207A	103	113	102
310-280197-6	MW-212A	102	118	100
310-280197-7	MW-6B	102	117	99
310-280197-8	MW-11B	103	112	101
310-280197-9	MW-211B	102	114	100

**Surrogate Legend**  
 BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280197-10	Trip Blank	102	116	100
LCS 310-420620/6	Lab Control Sample	99	99	101
LCS 310-420620/7	Lab Control Sample	101	118	101
LCS 310-420876/6	Lab Control Sample	99	101	100
LCS 310-420876/7	Lab Control Sample	102	115	99
MB 310-420620/5	Method Blank	99	115	102
MB 310-420876/5	Method Blank	102	110	99

**Surrogate Legend**  
 BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

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

**Lab Sample ID: MB 310-420620/5**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/03/24 22:43	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/03/24 22:43	1
Benzene	<0.500		0.500	0.220	ug/L			05/03/24 22:43	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/03/24 22:43	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/03/24 22:43	1
Bromoform	<5.00		5.00	0.780	ug/L			05/03/24 22:43	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/03/24 22:43	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/03/24 22:43	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/03/24 22:43	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/03/24 22:43	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/03/24 22:43	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/03/24 22:43	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/03/24 22:43	1
Chloroform	<3.00		3.00	1.30	ug/L			05/03/24 22:43	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/03/24 22:43	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/03/24 22:43	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/03/24 22:43	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/03/24 22:43	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/03/24 22:43	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/03/24 22:43	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/03/24 22:43	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/03/24 22:43	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/03/24 22:43	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/03/24 22:43	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/03/24 22:43	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/03/24 22:43	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/03/24 22:43	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/03/24 22:43	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/03/24 22:43	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/03/24 22:43	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/03/24 22:43	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/03/24 22:43	1
Styrene	<1.00		1.00	0.370	ug/L			05/03/24 22:43	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/03/24 22:43	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/03/24 22:43	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/03/24 22:43	1
Toluene	<1.00		1.00	0.430	ug/L			05/03/24 22:43	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/03/24 22:43	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/03/24 22:43	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/03/24 22:43	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/03/24 22:43	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/03/24 22:43	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/03/24 22:43	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/03/24 22:43	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/03/24 22:43	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/03/24 22:43	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/03/24 22:43	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/03/24 22:43	1

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-420620/5**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
4-Bromofluorobenzene (Surr)	99		80 - 120		05/03/24 22:43	1
Dibromofluoromethane (Surr)	115		73 - 130		05/03/24 22:43	1
Toluene-d8 (Surr)	102		80 - 120		05/03/24 22:43	1

**Lab Sample ID: LCS 310-420620/6**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

<u>Analyte</u>	<u>Spike Added</u>	<u>LCS Result</u>	<u>LCS Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec Limits</u>
Acetone	40.0	34.60		ug/L		86	50 - 150
Acrylonitrile	200	174.5		ug/L		87	50 - 150
Benzene	20.0	22.03		ug/L		110	72 - 124
Bromochloromethane	20.0	20.81		ug/L		104	73 - 130
Bromodichloromethane	20.0	22.45		ug/L		112	74 - 122
Bromoform	20.0	20.16		ug/L		101	61 - 122
2-Butanone (MEK)	40.0	34.38		ug/L		86	50 - 150
Carbon disulfide	20.0	21.43		ug/L		107	59 - 135
Carbon tetrachloride	20.0	27.07	*+	ug/L		135	67 - 132
Chlorobenzene	20.0	20.82		ug/L		104	76 - 120
Chlorodibromomethane	20.0	21.37		ug/L		107	71 - 121
Chloroform	20.0	23.37		ug/L		117	72 - 125
cis-1,2-Dichloroethene	20.0	20.40		ug/L		102	74 - 123
cis-1,3-Dichloropropene	20.0	21.92		ug/L		110	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	19.23		ug/L		96	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.63		ug/L		108	75 - 125
Dibromomethane	20.0	21.75		ug/L		109	74 - 125
1,2-Dichlorobenzene	20.0	20.40		ug/L		102	74 - 120
1,4-Dichlorobenzene	20.0	19.59		ug/L		98	72 - 120
1,1-Dichloroethane	20.0	20.45		ug/L		102	70 - 127
1,2-Dichloroethane	20.0	23.19		ug/L		116	71 - 125
1,1-Dichloroethene	20.0	20.86		ug/L		104	63 - 132
1,2-Dichloropropane	20.0	21.31		ug/L		107	73 - 124
Ethylbenzene	20.0	21.75		ug/L		109	74 - 122
2-Hexanone	40.0	32.70		ug/L		82	60 - 140
Iodomethane	20.0	23.70		ug/L		118	10 - 150
Methylene Chloride	20.0	21.01		ug/L		105	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	34.12		ug/L		85	60 - 139
Styrene	20.0	21.22		ug/L		106	74 - 121
1,1,1,2-Tetrachloroethane	20.0	21.73		ug/L		109	71 - 120
1,1,2,2-Tetrachloroethane	20.0	20.02		ug/L		100	68 - 124
Tetrachloroethene	20.0	21.74		ug/L		109	71 - 130
Toluene	20.0	20.68		ug/L		103	74 - 123
trans-1,4-Dichloro-2-butene	20.0	19.99		ug/L		100	50 - 150
trans-1,2-Dichloroethene	20.0	21.18		ug/L		106	70 - 126
trans-1,3-Dichloropropene	20.0	21.38		ug/L		107	69 - 123
1,1,1-Trichloroethane	20.0	23.43		ug/L		117	73 - 129
1,1,2-Trichloroethane	20.0	22.43		ug/L		112	73 - 123
Trichloroethene	20.0	21.21		ug/L		106	72 - 126

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-420620/6**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	20.09		ug/L		100	65 - 127
Vinyl acetate	40.0	46.96		ug/L		117	50 - 150
Xylenes, Total	40.0	41.27		ug/L		103	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	99		73 - 130
Toluene-d8 (Surr)	101		80 - 120

**Lab Sample ID: LCS 310-420620/7**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	24.35		ug/L		122	23 - 150
Chloroethane	20.0	26.83		ug/L		134	54 - 136
Chloromethane	20.0	18.50		ug/L		92	38 - 150
Dichlorodifluoromethane	20.0	22.38		ug/L		112	39 - 150
Trichlorofluoromethane	20.0	26.67		ug/L		133	54 - 149
Vinyl chloride	20.0	26.73		ug/L		134	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	118		73 - 130
Toluene-d8 (Surr)	101		80 - 120

**Lab Sample ID: 310-280197-1 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 420620**

**Client Sample ID: MW-1A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	<10.0		40.0	33.55		ug/L		84	31 - 150
Acrylonitrile	<5.00		200	163.4		ug/L		82	40 - 150
Benzene	<0.500		20.0	20.61		ug/L		103	46 - 130
Bromochloromethane	<5.00		20.0	19.59		ug/L		98	57 - 130
Bromodichloromethane	<1.00		20.0	21.57		ug/L		108	57 - 130
Bromoform	<5.00		20.0	20.23		ug/L		101	44 - 130
2-Butanone (MEK)	<10.0		40.0	32.33		ug/L		81	38 - 150
Carbon disulfide	<1.00		20.0	19.72		ug/L		99	38 - 135
Carbon tetrachloride	<2.00	*+	20.0	25.48		ug/L		127	45 - 132
Chlorobenzene	<1.00		20.0	19.11		ug/L		96	59 - 130
Chlorodibromomethane	<5.00		20.0	21.23		ug/L		106	54 - 130
Chloroform	<3.00		20.0	21.49		ug/L		107	51 - 130
cis-1,2-Dichloroethene	<1.00		20.0	19.16		ug/L		96	45 - 130
cis-1,3-Dichloropropene	<5.00		20.0	20.29		ug/L		101	53 - 130
1,2-Dibromo-3-Chloropropane	<1.20		20.0	16.54		ug/L		83	38 - 150
1,2-Dibromoethane (EDB)	<0.340		20.0	20.47		ug/L		102	60 - 130
Dibromomethane	<1.00		20.0	20.75		ug/L		104	59 - 130

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 310-280197-1 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 420620**

**Client Sample ID: MW-1A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	<1.00		20.0	18.94		ug/L		95	59 - 130
1,4-Dichlorobenzene	<1.00		20.0	18.82		ug/L		94	57 - 130
1,1-Dichloroethane	<1.00		20.0	18.28		ug/L		91	49 - 130
1,2-Dichloroethane	<1.00		20.0	22.99		ug/L		115	51 - 130
1,1-Dichloroethene	<2.00		20.0	18.19		ug/L		91	37 - 132
1,2-Dichloropropane	<1.00		20.0	19.14		ug/L		96	57 - 130
Ethylbenzene	<1.00		20.0	20.33		ug/L		102	45 - 130
2-Hexanone	<10.0		40.0	32.50		ug/L		81	46 - 140
Iodomethane	<10.0		20.0	16.44		ug/L		82	10 - 150
Methylene Chloride	<5.00		20.0	20.00		ug/L		100	37 - 150
4-Methyl-2-pentanone (MIBK)	<10.0		40.0	33.35		ug/L		83	47 - 139
Styrene	<1.00		20.0	19.56		ug/L		98	47 - 130
1,1,1,2-Tetrachloroethane	<1.00		20.0	21.17		ug/L		106	55 - 130
1,1,2,2-Tetrachloroethane	<1.00		20.0	20.11		ug/L		101	54 - 130
Tetrachloroethene	<1.00		20.0	19.66		ug/L		98	47 - 130
Toluene	<1.00		20.0	18.82		ug/L		94	51 - 130
trans-1,4-Dichloro-2-butene	<10.0		20.0	17.14		ug/L		86	26 - 150
trans-1,2-Dichloroethene	<1.00		20.0	19.15		ug/L		96	48 - 130
trans-1,3-Dichloropropene	<5.00		20.0	20.39		ug/L		102	50 - 130
1,1,1-Trichloroethane	<1.00		20.0	21.46		ug/L		107	52 - 130
1,1,2-Trichloroethane	<1.00		20.0	21.20		ug/L		106	58 - 130
Trichloroethene	<1.00		20.0	19.12		ug/L		96	51 - 130
1,2,3-Trichloropropane	<1.00		20.0	20.34		ug/L		102	49 - 130
Vinyl acetate	<10.0		40.0	41.14		ug/L		103	29 - 150
Xylenes, Total	<3.00		40.0	38.48		ug/L		96	43 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	104		73 - 130
Toluene-d8 (Surr)	102		80 - 120

**Lab Sample ID: 310-280197-1 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 420620**

**Client Sample ID: MW-1A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	<10.0		40.0	34.15		ug/L		85	31 - 150	2	29
Acrylonitrile	<5.00		200	163.0		ug/L		82	40 - 150	0	20
Benzene	<0.500		20.0	20.19		ug/L		101	46 - 130	2	20
Bromochloromethane	<5.00		20.0	19.21		ug/L		96	57 - 130	2	20
Bromodichloromethane	<1.00		20.0	21.45		ug/L		107	57 - 130	1	20
Bromoform	<5.00		20.0	19.20		ug/L		96	44 - 130	5	20
2-Butanone (MEK)	<10.0		40.0	32.23		ug/L		81	38 - 150	0	20
Carbon disulfide	<1.00		20.0	18.10		ug/L		91	38 - 135	9	30
Carbon tetrachloride	<2.00	*+	20.0	25.12		ug/L		126	45 - 132	1	20
Chlorobenzene	<1.00		20.0	18.75		ug/L		94	59 - 130	2	20
Chlorodibromomethane	<5.00		20.0	20.27		ug/L		101	54 - 130	5	20
Chloroform	<3.00		20.0	20.70		ug/L		104	51 - 130	4	20

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 310-280197-1 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 420620**

**Client Sample ID: MW-1A**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
cis-1,2-Dichloroethene	<1.00		20.0	18.07		ug/L		90	45 - 130	6	20
cis-1,3-Dichloropropene	<5.00		20.0	19.55		ug/L		98	53 - 130	4	20
1,2-Dibromo-3-Chloropropane	<1.20		20.0	19.22		ug/L		96	38 - 150	15	20
1,2-Dibromoethane (EDB)	<0.340		20.0	20.94		ug/L		105	60 - 130	2	20
Dibromomethane	<1.00		20.0	21.39		ug/L		107	59 - 130	3	20
1,2-Dichlorobenzene	<1.00		20.0	19.07		ug/L		95	59 - 130	1	20
1,4-Dichlorobenzene	<1.00		20.0	18.33		ug/L		92	57 - 130	3	20
1,1-Dichloroethane	<1.00		20.0	18.33		ug/L		92	49 - 130	0	20
1,2-Dichloroethane	<1.00		20.0	22.59		ug/L		113	51 - 130	2	20
1,1-Dichloroethene	<2.00		20.0	18.04		ug/L		90	37 - 132	1	26
1,2-Dichloropropane	<1.00		20.0	19.17		ug/L		96	57 - 130	0	20
Ethylbenzene	<1.00		20.0	19.60		ug/L		98	45 - 130	4	20
2-Hexanone	<10.0		40.0	30.86		ug/L		77	46 - 140	5	20
Iodomethane	<10.0		20.0	17.90		ug/L		89	10 - 150	8	35
Methylene Chloride	<5.00		20.0	19.96		ug/L		100	37 - 150	0	24
4-Methyl-2-pentanone (MIBK)	<10.0		40.0	33.13		ug/L		83	47 - 139	1	20
Styrene	<1.00		20.0	19.02		ug/L		95	47 - 130	3	20
1,1,1,2-Tetrachloroethane	<1.00		20.0	20.25		ug/L		101	55 - 130	4	20
1,1,1,2,2-Tetrachloroethane	<1.00		20.0	19.95		ug/L		100	54 - 130	1	20
Tetrachloroethene	<1.00		20.0	19.68		ug/L		98	47 - 130	0	20
Toluene	<1.00		20.0	18.32		ug/L		92	51 - 130	3	20
trans-1,4-Dichloro-2-butene	<10.0		20.0	15.24		ug/L		76	26 - 150	12	23
trans-1,2-Dichloroethene	<1.00		20.0	18.45		ug/L		92	48 - 130	4	22
trans-1,3-Dichloropropene	<5.00		20.0	20.05		ug/L		100	50 - 130	2	20
1,1,1-Trichloroethane	<1.00		20.0	21.05		ug/L		105	52 - 130	2	20
1,1,2-Trichloroethane	<1.00		20.0	20.57		ug/L		103	58 - 130	3	20
Trichloroethene	<1.00		20.0	19.10		ug/L		95	51 - 130	0	20
1,2,3-Trichloropropane	<1.00		20.0	20.45		ug/L		102	49 - 130	1	26
Vinyl acetate	<10.0		40.0	41.71		ug/L		104	29 - 150	1	23
Xylenes, Total	<3.00		40.0	37.31		ug/L		93	43 - 130	3	20

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	100		73 - 130
Toluene-d8 (Surr)	100		80 - 120

**Lab Sample ID: MB 310-420876/5**  
**Matrix: Water**  
**Analysis Batch: 420876**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/07/24 12:40	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/07/24 12:40	1
Benzene	<0.500		0.500	0.220	ug/L			05/07/24 12:40	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/07/24 12:40	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/07/24 12:40	1
Bromoform	<5.00		5.00	0.780	ug/L			05/07/24 12:40	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/07/24 12:40	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-420876/5**  
**Matrix: Water**  
**Analysis Batch: 420876**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/07/24 12:40	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/07/24 12:40	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/07/24 12:40	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/07/24 12:40	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/07/24 12:40	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/07/24 12:40	1
Chloroform	<3.00		3.00	1.30	ug/L			05/07/24 12:40	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/07/24 12:40	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/07/24 12:40	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/07/24 12:40	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/07/24 12:40	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/07/24 12:40	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/07/24 12:40	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/07/24 12:40	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/07/24 12:40	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/07/24 12:40	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/07/24 12:40	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/07/24 12:40	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/07/24 12:40	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/07/24 12:40	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/07/24 12:40	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/07/24 12:40	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/07/24 12:40	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/07/24 12:40	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/07/24 12:40	1
Styrene	<1.00		1.00	0.370	ug/L			05/07/24 12:40	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/07/24 12:40	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/07/24 12:40	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/07/24 12:40	1
Toluene	<1.00		1.00	0.430	ug/L			05/07/24 12:40	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/07/24 12:40	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/07/24 12:40	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/07/24 12:40	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/07/24 12:40	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/07/24 12:40	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/07/24 12:40	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/07/24 12:40	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/07/24 12:40	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/07/24 12:40	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/07/24 12:40	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/07/24 12:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/07/24 12:40	1
Dibromofluoromethane (Surr)	110		73 - 130		05/07/24 12:40	1
Toluene-d8 (Surr)	99		80 - 120		05/07/24 12:40	1

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-420876/6**  
**Matrix: Water**  
**Analysis Batch: 420876**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	35.24		ug/L		88	50 - 150
Acrylonitrile	200	185.5		ug/L		93	50 - 150
Benzene	20.0	18.61		ug/L		93	72 - 124
Bromochloromethane	20.0	18.63		ug/L		93	73 - 130
Bromodichloromethane	20.0	18.20		ug/L		91	74 - 122
Bromoform	20.0	18.39		ug/L		92	61 - 122
2-Butanone (MEK)	40.0	37.85		ug/L		95	50 - 150
Carbon disulfide	20.0	17.71		ug/L		89	59 - 135
Carbon tetrachloride	20.0	20.45		ug/L		102	67 - 132
Chlorobenzene	20.0	18.39		ug/L		92	76 - 120
Chlorodibromomethane	20.0	18.90		ug/L		95	71 - 121
Chloroform	20.0	18.94		ug/L		95	72 - 125
cis-1,2-Dichloroethene	20.0	18.34		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	19.56		ug/L		98	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	18.19		ug/L		91	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.22		ug/L		96	75 - 125
Dibromomethane	20.0	18.51		ug/L		93	74 - 125
1,2-Dichlorobenzene	20.0	17.93		ug/L		90	74 - 120
1,4-Dichlorobenzene	20.0	18.34		ug/L		92	72 - 120
1,1-Dichloroethane	20.0	18.49		ug/L		92	70 - 127
1,2-Dichloroethane	20.0	18.60		ug/L		93	71 - 125
1,1-Dichloroethene	20.0	18.51		ug/L		93	63 - 132
1,2-Dichloropropane	20.0	19.28		ug/L		96	73 - 124
Ethylbenzene	20.0	18.78		ug/L		94	74 - 122
2-Hexanone	40.0	35.53		ug/L		89	60 - 140
Iodomethane	20.0	18.82		ug/L		94	10 - 150
Methylene Chloride	20.0	18.32		ug/L		92	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	35.94		ug/L		90	60 - 139
Styrene	20.0	18.67		ug/L		93	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.76		ug/L		99	71 - 120
1,1,2,2-Tetrachloroethane	20.0	17.69		ug/L		88	68 - 124
Tetrachloroethene	20.0	19.53		ug/L		98	71 - 130
Toluene	20.0	18.12		ug/L		91	74 - 123
trans-1,4-Dichloro-2-butene	20.0	18.06		ug/L		90	50 - 150
trans-1,2-Dichloroethene	20.0	18.76		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	19.01		ug/L		95	69 - 123
1,1,1-Trichloroethane	20.0	19.86		ug/L		99	73 - 129
1,1,2-Trichloroethane	20.0	18.97		ug/L		95	73 - 123
Trichloroethene	20.0	19.11		ug/L		96	72 - 126
1,2,3-Trichloropropane	20.0	18.29		ug/L		91	65 - 127
Vinyl acetate	40.0	40.09		ug/L		100	50 - 150
Xylenes, Total	40.0	37.74		ug/L		94	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		73 - 130
Toluene-d8 (Surr)	100		80 - 120

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** LCS 310-420876/7  
**Matrix:** Water  
**Analysis Batch:** 420876

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	18.22		ug/L		91	23 - 150
Chloroethane	20.0	20.59		ug/L		103	54 - 136
Chloromethane	20.0	19.40		ug/L		97	38 - 150
Dichlorodifluoromethane	20.0	21.81		ug/L		109	39 - 150
Trichlorofluoromethane	20.0	22.32		ug/L		112	54 - 149
Vinyl chloride	20.0	20.86		ug/L		104	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	115		73 - 130
Toluene-d8 (Surr)	99		80 - 120

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID:** MB 310-420478/3  
**Matrix:** Water  
**Analysis Batch:** 420478

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/01/24 12:32	1

**Lab Sample ID:** LCS 310-420478/4  
**Matrix:** Water  
**Analysis Batch:** 420478

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.00	2.112		mg/L		106	90 - 110

**Lab Sample ID:** MB 310-420605/3  
**Matrix:** Water  
**Analysis Batch:** 420605

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/01/24 17:38	1

**Lab Sample ID:** LCS 310-420605/4  
**Matrix:** Water  
**Analysis Batch:** 420605

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.00	2.099		mg/L		105	90 - 110

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

**Lab Sample ID:** MB 310-420511/1-A  
**Matrix:** Water  
**Analysis Batch:** 421121

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 420511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200	0.000660	mg/L		05/03/24 09:00	05/08/24 17:34	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

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

**Lab Sample ID: MB 310-420511/1-A**  
**Matrix: Water**  
**Analysis Batch: 421121**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 420511**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/08/24 17:54	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 17:54	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/08/24 17:54	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/08/24 17:54	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/08/24 17:54	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/08/24 17:54	1
Iron	<0.100		0.100	0.0360	mg/L		05/03/24 09:00	05/08/24 17:54	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/08/24 17:54	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/08/24 17:54	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/08/24 17:54	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/08/24 17:54	1
Manganese	<0.0100		0.0100	0.00360	mg/L		05/03/24 09:00	05/08/24 17:54	1

**Lab Sample ID: MB 310-420511/1-A**  
**Matrix: Water**  
**Analysis Batch: 421266**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 420511**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 13:26	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 13:26	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 13:26	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 13:26	1

**Lab Sample ID: LCS 310-420511/2-A**  
**Matrix: Water**  
**Analysis Batch: 421121**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 420511**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.1018		mg/L		102	80 - 120
Beryllium	0.100	0.09637		mg/L		96	80 - 120
Cobalt	0.100	0.09579		mg/L		96	80 - 120
Copper	0.200	0.1961		mg/L		98	80 - 120
Lead	0.200	0.2011		mg/L		101	80 - 120
Nickel	0.200	0.2009		mg/L		100	80 - 120
Selenium	0.400	0.3610		mg/L		90	80 - 120
Iron	0.200	0.2033		mg/L		102	80 - 120
Silver	0.100	0.09956		mg/L		100	80 - 120
Vanadium	0.100	0.09643		mg/L		96	80 - 120
Zinc	0.200	0.1839		mg/L		92	80 - 120
Manganese	0.100	0.09861		mg/L		99	80 - 120

**Lab Sample ID: LCS 310-420511/2-A**  
**Matrix: Water**  
**Analysis Batch: 421266**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 420511**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2154		mg/L		108	80 - 120
Arsenic	0.200	0.2015		mg/L		101	80 - 120
Cadmium	0.100	0.09941		mg/L		99	80 - 120

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

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

Lab Sample ID: LCS 310-420511/2-A  
 Matrix: Water  
 Analysis Batch: 421266

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 420511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	0.100	0.09107		mg/L		91	80 - 120
Thallium	0.100	0.1056		mg/L		106	80 - 120

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-766470/1  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00	0.231	mg/L			05/06/24 01:48	1

Lab Sample ID: LCS 500-766470/2  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	3.64	3.566		mg/L		98	80 - 120

## Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 310-420808/11  
 Matrix: Water  
 Analysis Batch: 420808

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<1.00		1.00	0.500	mg/L			05/06/24 14:24	1

Lab Sample ID: LCS 310-420808/12  
 Matrix: Water  
 Analysis Batch: 420808

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	9.99	10.76		mg/L		108	85 - 115

Lab Sample ID: 310-280197-7 DU  
 Matrix: Groundwater  
 Analysis Batch: 421115

Client Sample ID: MW-6B  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	12.1		12.11		mg/L		0	15

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

Lab Sample ID: MB 310-420584/1  
 Matrix: Water  
 Analysis Batch: 420584

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/03/24 08:02	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

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

**Lab Sample ID: LCS 310-420584/2**  
**Matrix: Water**  
**Analysis Batch: 420584**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116

**Lab Sample ID: 310-280197-6 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 420584**

**Client Sample ID: MW-212A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	24.5		25.50		mg/L		4	35

**Lab Sample ID: MB 310-420598/1**  
**Matrix: Water**  
**Analysis Batch: 420598**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/03/24 08:54	1

**Lab Sample ID: LCS 310-420598/2**  
**Matrix: Water**  
**Analysis Batch: 420598**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	88.00		mg/L		88	75 - 116

**Lab Sample ID: 310-280197-8 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 420598**

**Client Sample ID: MW-11B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	42.3		46.00		mg/L		8	35

**Lab Sample ID: 310-280197-9 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 420598**

**Client Sample ID: MW-211B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	42.3		43.33		mg/L		2	35

**Lab Sample ID: MB 310-420689/1**  
**Matrix: Water**  
**Analysis Batch: 420689**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/04/24 09:40	1

**Lab Sample ID: LCS 310-420689/2**  
**Matrix: Water**  
**Analysis Batch: 420689**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	75 - 116

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

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

**Lab Sample ID: 310-280197-5 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 420689**

**Client Sample ID: MW-207A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	68.7		67.33		mg/L		2	35

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## GC/MS VOA

### Analysis Batch: 420620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	8260D	
310-280197-2	MW-2A-97	Total/NA	Groundwater	8260D	
310-280197-3	MW-16A	Total/NA	Groundwater	8260D	
310-280197-4	MW-206A	Total/NA	Groundwater	8260D	
310-280197-5	MW-207A	Total/NA	Groundwater	8260D	
310-280197-6	MW-212A	Total/NA	Groundwater	8260D	
310-280197-7	MW-6B	Total/NA	Groundwater	8260D	
310-280197-8	MW-11B	Total/NA	Groundwater	8260D	
310-280197-9	MW-211B	Total/NA	Groundwater	8260D	
310-280197-10	Trip Blank	Total/NA	Water	8260D	
MB 310-420620/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420620/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420620/7	Lab Control Sample	Total/NA	Water	8260D	
310-280197-1 MS	MW-1A	Total/NA	Groundwater	8260D	
310-280197-1 MSD	MW-1A	Total/NA	Groundwater	8260D	

### Analysis Batch: 420876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-3	MW-16A	Total/NA	Groundwater	8260D	
MB 310-420876/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420876/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420876/7	Lab Control Sample	Total/NA	Water	8260D	

## HPLC/IC

### Analysis Batch: 420478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	9056A	
310-280197-1	MW-1A	Total/NA	Groundwater	9056A	
310-280197-2	MW-2A-97	Total/NA	Groundwater	9056A	
310-280197-3	MW-16A	Total/NA	Groundwater	9056A	
310-280197-4	MW-206A	Total/NA	Groundwater	9056A	
310-280197-5	MW-207A	Total/NA	Groundwater	9056A	
310-280197-7	MW-6B	Total/NA	Groundwater	9056A	
310-280197-7	MW-6B	Total/NA	Groundwater	9056A	
310-280197-8	MW-11B	Total/NA	Groundwater	9056A	
310-280197-9	MW-211B	Total/NA	Groundwater	9056A	
MB 310-420478/3	Method Blank	Total/NA	Water	9056A	
LCS 310-420478/4	Lab Control Sample	Total/NA	Water	9056A	

### Analysis Batch: 420605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-6	MW-212A	Total/NA	Groundwater	9056A	
310-280197-6	MW-212A	Total/NA	Groundwater	9056A	
MB 310-420605/3	Method Blank	Total/NA	Water	9056A	
LCS 310-420605/4	Lab Control Sample	Total/NA	Water	9056A	

## Metals

### Prep Batch: 420511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	3005A	

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# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## Metals (Continued)

### Prep Batch: 420511 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-2	MW-2A-97	Total/NA	Groundwater	3005A	
310-280197-3	MW-16A	Total/NA	Groundwater	3005A	
310-280197-4	MW-206A	Total/NA	Groundwater	3005A	
310-280197-5	MW-207A	Total/NA	Groundwater	3005A	
310-280197-6	MW-212A	Total/NA	Groundwater	3005A	
310-280197-7	MW-6B	Total/NA	Groundwater	3005A	
310-280197-8	MW-11B	Total/NA	Groundwater	3005A	
310-280197-9	MW-211B	Total/NA	Groundwater	3005A	
MB 310-420511/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420511/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 421121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	6020B	420511
310-280197-2	MW-2A-97	Total/NA	Groundwater	6020B	420511
310-280197-3	MW-16A	Total/NA	Groundwater	6020B	420511
310-280197-4	MW-206A	Total/NA	Groundwater	6020B	420511
310-280197-5	MW-207A	Total/NA	Groundwater	6020B	420511
310-280197-6	MW-212A	Total/NA	Groundwater	6020B	420511
310-280197-7	MW-6B	Total/NA	Groundwater	6020B	420511
310-280197-8	MW-11B	Total/NA	Groundwater	6020B	420511
310-280197-9	MW-211B	Total/NA	Groundwater	6020B	420511
MB 310-420511/1-A	Method Blank	Total/NA	Water	6020B	420511
LCS 310-420511/2-A	Lab Control Sample	Total/NA	Water	6020B	420511

### Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	6020B	420511
310-280197-2	MW-2A-97	Total/NA	Groundwater	6020B	420511
310-280197-3	MW-16A	Total/NA	Groundwater	6020B	420511
310-280197-4	MW-206A	Total/NA	Groundwater	6020B	420511
310-280197-5	MW-207A	Total/NA	Groundwater	6020B	420511
310-280197-6	MW-212A	Total/NA	Groundwater	6020B	420511
310-280197-7	MW-6B	Total/NA	Groundwater	6020B	420511
310-280197-8	MW-11B	Total/NA	Groundwater	6020B	420511
310-280197-9	MW-211B	Total/NA	Groundwater	6020B	420511
MB 310-420511/1-A	Method Blank	Total/NA	Water	6020B	420511
LCS 310-420511/2-A	Lab Control Sample	Total/NA	Water	6020B	420511

## General Chemistry

### Analysis Batch: 420584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-6	MW-212A	Total/NA	Groundwater	I-3765-85	
MB 310-420584/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420584/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-280197-6 DU	MW-212A	Total/NA	Groundwater	I-3765-85	

### Analysis Batch: 420598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-4	MW-206A	Total/NA	Groundwater	I-3765-85	

Eurofins Cedar Falls

# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## General Chemistry (Continued)

### Analysis Batch: 420598 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-7	MW-6B	Total/NA	Groundwater	I-3765-85	
310-280197-8	MW-11B	Total/NA	Groundwater	I-3765-85	
310-280197-9	MW-211B	Total/NA	Groundwater	I-3765-85	
MB 310-420598/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420598/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-280197-8 DU	MW-11B	Total/NA	Groundwater	I-3765-85	
310-280197-9 DU	MW-211B	Total/NA	Groundwater	I-3765-85	

### Analysis Batch: 420689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	I-3765-85	
310-280197-2	MW-2A-97	Total/NA	Groundwater	I-3765-85	
310-280197-3	MW-16A	Total/NA	Groundwater	I-3765-85	
310-280197-5	MW-207A	Total/NA	Groundwater	I-3765-85	
MB 310-420689/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420689/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-280197-5 DU	MW-207A	Total/NA	Groundwater	I-3765-85	

### Analysis Batch: 420808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-1	MW-1A	Total/NA	Groundwater	9060A	
310-280197-2	MW-2A-97	Total/NA	Groundwater	9060A	
310-280197-3	MW-16A	Total/NA	Groundwater	9060A	
310-280197-4	MW-206A	Total/NA	Groundwater	9060A	
310-280197-5	MW-207A	Total/NA	Groundwater	9060A	
310-280197-6	MW-212A	Total/NA	Groundwater	9060A	
MB 310-420808/11	Method Blank	Total/NA	Water	9060A	
LCS 310-420808/12	Lab Control Sample	Total/NA	Water	9060A	

### Analysis Batch: 421115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-7	MW-6B	Total/NA	Groundwater	9060A	
310-280197-8	MW-11B	Total/NA	Groundwater	9060A	
310-280197-9	MW-211B	Total/NA	Groundwater	9060A	
310-280197-7 DU	MW-6B	Total/NA	Groundwater	9060A	

### Analysis Batch: 766470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280197-5	MW-207A	Total/NA	Groundwater	9034	
MB 500-766470/1	Method Blank	Total/NA	Water	9034	
LCS 500-766470/2	Lab Control Sample	Total/NA	Water	9034	

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-1A**  
**Date Collected: 04/30/24 10:05**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-1**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 02:53
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 00:38
Total/NA	Analysis	9056A		100	420478	QTZ5	EET CF	05/02/24 15:56
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:09
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:16
Total/NA	Analysis	9060A		1	420808	DGU1	EET CF	05/07/24 02:27
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

**Client Sample ID: MW-2A-97**  
**Date Collected: 04/30/24 09:28**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-2**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 03:16
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 00:26
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:26
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:18
Total/NA	Analysis	9060A		1	420808	DGU1	EET CF	05/07/24 03:03
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

**Client Sample ID: MW-16A**  
**Date Collected: 04/30/24 10:59**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-3**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 03:38
Total/NA	Analysis	8260D		1	420876	FE5V	EET CF	05/07/24 18:45
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 00:50
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:30
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:20
Total/NA	Analysis	9060A		1	420808	DGU1	EET CF	05/07/24 10:15
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
 SDG: Source Characterization

**Client Sample ID: MW-206A**  
**Date Collected: 04/30/24 13:02**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-4**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 04:01
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 01:26
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:33
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:22
Total/NA	Analysis	9060A		1	420808	DGU1	EET CF	05/07/24 10:51
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

**Client Sample ID: MW-207A**  
**Date Collected: 04/30/24 12:37**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-5**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 04:24
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 01:14
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:37
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:25
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:43 - 05/06/24 02:50 <sup>1</sup>
Total/NA	Analysis	9060A		1	420808	DGU1	EET CF	05/07/24 11:27
Total/NA	Analysis	I-3765-85		1	420689	ENB7	EET CF	05/04/24 09:40

**Client Sample ID: MW-212A**  
**Date Collected: 04/30/24 14:45**  
**Date Received: 05/01/24 15:20**

**Lab Sample ID: 310-280197-6**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 04:47
Total/NA	Analysis	9056A		1	420605	QTZ5	EET CF	05/01/24 22:27
Total/NA	Analysis	9056A		100	420605	QTZ5	EET CF	05/02/24 12:28
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:40
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		4	421266	NFT2	EET CF	05/09/24 14:27
Total/NA	Analysis	9060A		1	420808	DGU1	EET CF	05/07/24 12:03
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

# Lab Chronicle

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## Client Sample ID: MW-6B

Date Collected: 04/30/24 13:40

Date Received: 05/01/24 15:20

## Lab Sample ID: 310-280197-7

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 05:10
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 01:50
Total/NA	Analysis	9056A		100	420478	QTZ5	EET CF	05/02/24 15:44
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:44
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		4	421266	NFT2	EET CF	05/09/24 14:29
Total/NA	Analysis	9060A		1	421115	DGU1	EET CF	05/08/24 14:58
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

## Client Sample ID: MW-11B

Date Collected: 04/30/24 12:15

Date Received: 05/01/24 15:20

## Lab Sample ID: 310-280197-8

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 05:33
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 01:02
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:47
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:31
Total/NA	Analysis	9060A		1	421115	DGU1	EET CF	05/08/24 16:10
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

## Client Sample ID: MW-211B

Date Collected: 04/30/24 14:13

Date Received: 05/01/24 15:20

## Lab Sample ID: 310-280197-9

Matrix: Groundwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 05:55
Total/NA	Analysis	9056A		1	420478	QTZ5	EET CF	05/02/24 02:02
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 19:50
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		4	421266	NFT2	EET CF	05/09/24 14:42
Total/NA	Analysis	9060A		1	421115	DGU1	EET CF	05/08/24 16:46
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

## Client Sample ID: Trip Blank

Date Collected: 04/30/24 00:00

Date Received: 05/01/24 15:20

## Lab Sample ID: 310-280197-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 00:36

Eurofins Cedar Falls

# Lab Chronicle

Client: Iowa City Landfill

Project/Site: Iowa City Landfill 1st 2024

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Job ID: 310-280197-1  
SDG: Source Characterization

## Laboratory References:

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

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

## Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	05-27-24

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-26

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
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- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

#### Protocol References:

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

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

#### Laboratory References:

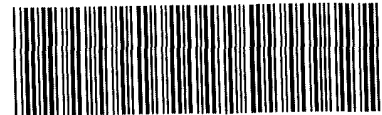
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





Environment Testing  
America



310-280197 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SJS</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
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 checked="" type="checkbox"/> Yes <input 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: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp. Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>280 ml plastic</u> ↔		
Uncorrected Temp (°C):	<u>5.8</u>	<u>3.8</u>	
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>			





Environment Testing  
America

Place COC scanning label  
here

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SJS</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
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 checked="" type="checkbox"/> Yes <input 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:	<u>T</u>	Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
	<u>250 ml plastic</u>	<u>↔</u>	
Uncorrected Temp (°C):	<u>5.0</u>	<u>4.2</u>	
Corrected Temp (°C):	<u>↓</u>	<u>↓</u>	
<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>			



**Eurofins Cedar Falls**  
 3019 Venture Way  
 Cedar Falls IA 50613  
 Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jen Jordan Company: Iowa City Landfill Address: City of Iowa City, 335 E. Iowa Ave City: Iowa City State, Zip: IA, 52240 Phone: Email: Jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill 1st 2024 Source Characterization Site: Iowa		Lab P/N: Hummel Matthew R E-Mail: Matthew.Hummel@eurofins.com Sample: Seal Furhewster Phone: 319-936-5194 PWSID:		Current Tracking No(s): State of Origin: Job #:		COC No: 310-91579-25212.1 Page: Page 1 of 1	
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No RG #: RFP23-14 WO #:		<b>Analysis Requested</b> 9060A (MOD) Dichlorodifluoromethane 9060B (MOD) Iron, Manganese 9060C (MOD) Beta BHC by Method 8081 9060D (MOD) Appendix I Volatiles 9060E (MOD) Total Suspended Solids 9060F (MOD) Total Organic Carbon 9060G (MOD) ORGM, ORGM, ORGM, 48H Sulfate, Nitrate 9060H (MOD) Beta BHC by Method 8081 9060I (MOD) Appendix I Volatiles 9060J (MOD) Beta BHC by Method 8081 9060K (MOD) Appendix I Volatiles		Preservation Codes: M Hexane N None O AS/NO2 P Na2SO4 Q Na2SO3 R NaHSO4 S MeOH T Acetone U Diethylhydrolyte V MCAA W pH 4-5 X EDTA Y Trizma Z other (specify) Other:		Special Instructions/Note: SHORT HOLD: Nitrate Sites and Events Source Characterization	
Sample Date Sample Time Sample Type (C=comp, G=grab) Matrix (W=water, S=solid, O=wastelo) Preservation Code:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Appendix 1		Total Number of Containers		Special Instructions/Note: SHORT HOLD: Nitrate Sites and Events Source Characterization	
MW-1A	4-30-24	10:05	G	Water			
MW-2A-97	4-30-24	9:29	G	Water			
MW-16A	4-30-24	10:59	G	Water			
MW-206A	4-30-24	13:02	G	Water			
MW-207A	4-30-24	12:37	G	Water			
MW-212A	4-30-24	14:45	G	Water			
MW-6B	4-30-24	13:40	G	Water			
MW-11B	4-30-24	12:15	G	Water			
MW-209B				Water			
MW-211B				Water			
Trip Blank				Water			
Possible Hazard Identification Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/>		Return To Client Disposal By Lab Archive For Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:		Method of Shipment:		Date/Time:	
Relinquished by:		Date/Time:		Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:		Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:		Relinquished by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.		Cooler Temperature(s) °C and Other Parameters:		Ver: 01/16/2019	



**Eurofins Cedar Falls**

3019 Venture Way  
 Cedar Falls, IA 50613  
 Phone 319-277-2401 Fax 319-277-2425

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler		Lab PM Yang, Mary E		Carrier Tracking No(s):		COC No: 310-71958 1	
Client Contact: Shipping/Receiving		Phone:		E-Mail Mary Yang@ET EurofinsUS com		State of Origin Iowa		Page Page 1 of 1	
Company: Eurofins Environment Testing North Centr		Address: 2417 Bond Street,		City: University Park		State, Zip: IL, 60484		310-280197 COC	
Phone: 708-534-5200(Tel) 708-534-5211(Fax)		Email		Project Name: Iowa City Landfill 1st 2024 Source Characterizatio		Project #: 31015832		Site: 310-Iowa City Landfill	
Accreditations Required (See note): State - Iowa, State Program - Iowa		Job #: 310-280197-1		Preservation Codes:		Analysis Requested		Other:	
Due Date Requested 5/14/2024		AT Requested (days)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		9034_Calc	
PO #:		WO #:		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Total Number of Containers	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Preservation Code:		Special Instructions/Note:	
MW-207A (310-280197-5)		4/30/24		12 37 Central		Water		1	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central LLC places the ownership of method analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing North Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central LLC.</p>									
<b>Possible Hazard Identification</b>					<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>				
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested I, II, III, IV, Other (specify)					Special Instructions/QC Requirements				
Empty Kit Relinquished by			Date		Time		Method of Shipment:		
Relinquished by: <i>[Signature]</i>			Date/Time: 5/22/24 1600		Company:		Received by: <i>[Signature]</i> Date/Time: 5/3/24 0940 Company: <i>[Signature]</i>		
Relinquished by:			Date/Time:		Company:		Received by: Date/Time: Company:		
Relinquished by:			Date/Time:		Company:		Received by: Date/Time: Company:		
Custody Seals Intact: Δ Yes Δ No		Custody Seal No			Cooler Temperature(s) °C and Other Remarks. 5.9 → 5.5				



# Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280197-1  
SDG Number: Source Characterization

**Login Number: 280197**

**List Number: 1**

**Creator: Bennett, Samantha**

**List Source: Eurofins Cedar Falls**

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



# Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280197-1  
SDG Number: Source Characterization

**Login Number: 280197**  
**List Number: 2**  
**Creator: Scott, Sherri L**

**List Source: Eurofins Chicago**  
**List Creation: 05/03/24 06:21 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	5.5
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	



# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024

Job ID: 310-280197-1  
SDG: Source Characterization

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 5/10/2024 11:18:25 AM

## JOB DESCRIPTION

Iowa City Landfill Semi-Annual Series A  
Series A

## JOB NUMBER

310-280207-1



# 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



Generated  
5/10/2024 11:18:25 AM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Job ID: 310-280207-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280207-1

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

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

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

### Receipt

The samples were received on 5/1/2024 3:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.1°C, 3.4°C and 3.6°C.

### GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-280207-14).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420650 recovered above the upper control limit for 4-Methyl-2-pentanone (23.7%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420650/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420650 recovered above the upper control limit for Vinyl chloride (24.0%D) and Chloroethane (21.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420650/4).

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

### Metals

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

### General Chemistry

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

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280207-1	MW-34A	Groundwater	04/29/24 09:49	05/01/24 15:20
310-280207-2	MW-38A	Groundwater	04/29/24 09:19	05/01/24 15:20
310-280207-3	MW-23A	Groundwater	04/29/24 14:28	05/01/24 15:20
310-280207-4	MW-24A	Groundwater	04/29/24 13:12	05/01/24 15:20
310-280207-5	MW-25A	Groundwater	04/29/24 08:08	05/01/24 15:20
310-280207-6	MW-213A	Groundwater	04/29/24 14:51	05/01/24 15:20
310-280207-7	MW-216A	Groundwater	04/29/24 08:31	05/01/24 15:20
310-280207-8	MW-217A	Groundwater	04/29/24 10:19	05/01/24 15:20
310-280207-9	MW-218A	Groundwater	04/29/24 10:48	05/01/24 15:20
310-280207-10	MW-219A	Groundwater	04/29/24 12:47	05/01/24 15:20
310-280207-11	MW-220A	Groundwater	04/29/24 13:51	05/01/24 15:20
310-280207-12	MW-410	Groundwater	04/29/24 16:06	05/01/24 15:20
310-280207-13	MW-DA	Groundwater	04/29/24 13:51	05/01/24 15:20
310-280207-14	Trip Blank	Water	04/29/24 00:00	05/01/24 15:20



# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Client Sample ID: MW-34A

Lab Sample ID: 310-280207-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000549	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.368	F1	0.00200	0.000660	mg/L	1		6020B	Total/NA

## Client Sample ID: MW-38A

Lab Sample ID: 310-280207-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.336		0.00200	0.000660	mg/L	1		6020B	Total/NA
Chromium	0.00219	J	0.00500	0.00120	mg/L	1		6020B	Total/NA
Vanadium	0.00135	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Total Suspended Solids	4.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-23A

Lab Sample ID: 310-280207-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.322		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	6.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-24A

Lab Sample ID: 310-280207-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00519		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.279		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00645		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	10.9		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-25A

Lab Sample ID: 310-280207-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.199		0.00200	0.000660	mg/L	1		6020B	Total/NA

## Client Sample ID: MW-213A

Lab Sample ID: 310-280207-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000768	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0384		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000426	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	11.4		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-216A

Lab Sample ID: 310-280207-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0539		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.00236	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	6.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-217A

Lab Sample ID: 310-280207-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0962		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.63	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-218A

Lab Sample ID: 310-280207-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.269		0.00200	0.000660	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Client Sample ID: MW-219A

Lab Sample ID: 310-280207-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.708		0.00200	0.000660	mg/L	1		6020B	Total/NA
Copper	0.00195	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Total Suspended Solids	17.1		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-220A

Lab Sample ID: 310-280207-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.317		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	3.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-410

Lab Sample ID: 310-280207-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0923		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000273	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.50	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-DA

Lab Sample ID: 310-280207-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.308		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.00		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank

Lab Sample ID: 310-280207-14

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-34A**

**Lab Sample ID: 310-280207-1**

Date Collected: 04/29/24 09:49

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 19:28	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 19:28	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 19:28	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 19:28	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 19:28	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 19:28	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 19:28	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 19:28	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 19:28	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 19:28	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 19:28	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 19:28	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 19:28	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 19:28	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 19:28	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 19:28	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 19:28	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 19:28	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 19:28	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 19:28	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 19:28	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 19:28	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 19:28	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 19:28	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 19:28	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 19:28	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 19:28	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 19:28	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 19:28	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 19:28	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 19:28	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 19:28	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 19:28	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 19:28	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 19:28	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 19:28	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 19:28	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 19:28	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 19:28	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 19:28	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 19:28	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 19:28	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 19:28	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 19:28	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 19:28	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 19:28	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 19:28	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-34A**

**Lab Sample ID: 310-280207-1**

Date Collected: 04/29/24 09:49

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	98		73 - 130		05/04/24 19:28	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 19:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:04	1
<b>Arsenic</b>	<b>0.000549</b>	<b>J</b>	0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:04	1
<b>Barium</b>	<b>0.368</b>	<b>F1</b>	0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:04	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:04	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:04	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:04	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:04	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:04	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:04	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:04	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:04	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:04	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:04	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:04	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:04	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/03/24 08:02	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-38A**

**Lab Sample ID: 310-280207-2**

Date Collected: 04/29/24 09:19

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 19:50	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 19:50	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 19:50	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 19:50	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 19:50	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 19:50	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 19:50	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 19:50	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 19:50	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 19:50	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 19:50	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 19:50	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 19:50	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 19:50	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 19:50	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 19:50	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 19:50	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 19:50	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 19:50	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 19:50	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 19:50	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 19:50	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 19:50	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 19:50	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 19:50	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 19:50	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 19:50	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 19:50	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 19:50	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 19:50	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 19:50	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 19:50	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 19:50	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 19:50	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 19:50	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 19:50	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 19:50	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 19:50	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 19:50	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 19:50	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 19:50	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 19:50	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 19:50	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 19:50	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 19:50	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 19:50	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 19:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		05/04/24 19:50	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-38A**

**Lab Sample ID: 310-280207-2**

Date Collected: 04/29/24 09:19

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		73 - 130		05/04/24 19:50	1
Toluene-d8 (Surr)	98		80 - 120		05/04/24 19:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:23	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:23	1
<b>Barium</b>	<b>0.336</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:23	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:23	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:23	1
<b>Chromium</b>	<b>0.00219</b>	<b>J</b>	0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:23	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:23	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:23	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:23	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:23	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:23	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:23	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:23	1
<b>Vanadium</b>	<b>0.00135</b>	<b>J</b>	0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:23	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:23	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>4.13</b>		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-23A**

**Lab Sample ID: 310-280207-3**

Date Collected: 04/29/24 14:28

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:25	1
<b>Barium</b>	<b>0.322</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:25	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:25	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:25	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:25	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>6.38</b>		1.88	1.39	mg/L			05/03/24 08:02	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-24A**

**Lab Sample ID: 310-280207-4**

Date Collected: 04/29/24 13:12

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00519</b>		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:28	1
<b>Barium</b>	<b>0.279</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:28	1
<b>Cobalt</b>	<b>0.00645</b>		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:28	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:28	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:28	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>10.9</b>		1.88	1.39	mg/L			05/03/24 08:02	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-25A**

**Lab Sample ID: 310-280207-5**

Date Collected: 04/29/24 08:08

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 20:12	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 20:12	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 20:12	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 20:12	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 20:12	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 20:12	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 20:12	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 20:12	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 20:12	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 20:12	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 20:12	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 20:12	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 20:12	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 20:12	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 20:12	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 20:12	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 20:12	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 20:12	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 20:12	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 20:12	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 20:12	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 20:12	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 20:12	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 20:12	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 20:12	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 20:12	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 20:12	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 20:12	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 20:12	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 20:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 20:12	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 20:12	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 20:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 20:12	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 20:12	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 20:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 20:12	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 20:12	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 20:12	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 20:12	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 20:12	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 20:12	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 20:12	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 20:12	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 20:12	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 20:12	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 20:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 20:12	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-25A**

**Lab Sample ID: 310-280207-5**

Date Collected: 04/29/24 08:08

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	100		73 - 130		05/04/24 20:12	1
Toluene-d8 (Surr)	101		80 - 120		05/04/24 20:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:30	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:30	1
<b>Barium</b>	<b>0.199</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:30	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:30	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:30	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:30	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:30	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:30	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:30	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:30	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:30	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:30	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:30	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:30	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-213A**

**Lab Sample ID: 310-280207-6**

Date Collected: 04/29/24 14:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000768	J	0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:32	1
Barium	0.0384		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:32	1
Cobalt	0.000426	J	0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:32	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:32	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:32	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	11.4		1.88	1.39	mg/L			05/03/24 08:54	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-216A**

**Lab Sample ID: 310-280207-7**

Date Collected: 04/29/24 08:31

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 20:34	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 20:34	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 20:34	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 20:34	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 20:34	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 20:34	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 20:34	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 20:34	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 20:34	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 20:34	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 20:34	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 20:34	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 20:34	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 20:34	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 20:34	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 20:34	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 20:34	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 20:34	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 20:34	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 20:34	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 20:34	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 20:34	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 20:34	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 20:34	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 20:34	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 20:34	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 20:34	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 20:34	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 20:34	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 20:34	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 20:34	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 20:34	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 20:34	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 20:34	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 20:34	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 20:34	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 20:34	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 20:34	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 20:34	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 20:34	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 20:34	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 20:34	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 20:34	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 20:34	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 20:34	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 20:34	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 20:34	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-216A**

**Lab Sample ID: 310-280207-7**

Date Collected: 04/29/24 08:31

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		05/04/24 20:34	1
Toluene-d8 (Surr)	101		80 - 120		05/04/24 20:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:34	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:34	1
<b>Barium</b>	<b>0.0539</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:34	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:34	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:34	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:34	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:34	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:34	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:34	1
<b>Nickel</b>	<b>0.00236</b>	<b>J</b>	0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:34	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:34	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:34	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:34	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:34	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:01	1
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>6.38</b>		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-217A**

**Lab Sample ID: 310-280207-8**

Date Collected: 04/29/24 10:19

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 20:56	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 20:56	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 20:56	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 20:56	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 20:56	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 20:56	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 20:56	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 20:56	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 20:56	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 20:56	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 20:56	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 20:56	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 20:56	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 20:56	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 20:56	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 20:56	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 20:56	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 20:56	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 20:56	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 20:56	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 20:56	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 20:56	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 20:56	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 20:56	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 20:56	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 20:56	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 20:56	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 20:56	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 20:56	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 20:56	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 20:56	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 20:56	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 20:56	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 20:56	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 20:56	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 20:56	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 20:56	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 20:56	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 20:56	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 20:56	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 20:56	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 20:56	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 20:56	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 20:56	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 20:56	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 20:56	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/04/24 20:56	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-217A**

**Lab Sample ID: 310-280207-8**

Date Collected: 04/29/24 10:19

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	100		73 - 130		05/04/24 20:56	1
Toluene-d8 (Surr)	99		80 - 120		05/04/24 20:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:36	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:36	1
<b>Barium</b>	<b>0.0962</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:36	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:36	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:36	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:36	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:36	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:36	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:36	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:36	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:36	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:36	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:36	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:36	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:36	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>1.63</b>	<b>J</b>	1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-218A**

**Lab Sample ID: 310-280207-9**

Date Collected: 04/29/24 10:48

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 21:17	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 21:17	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 21:17	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 21:17	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 21:17	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 21:17	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 21:17	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 21:17	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 21:17	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 21:17	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 21:17	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 21:17	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 21:17	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 21:17	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 21:17	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 21:17	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 21:17	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 21:17	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 21:17	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 21:17	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 21:17	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 21:17	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 21:17	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 21:17	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 21:17	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 21:17	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 21:17	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 21:17	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 21:17	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 21:17	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 21:17	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 21:17	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 21:17	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 21:17	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 21:17	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 21:17	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 21:17	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 21:17	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 21:17	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 21:17	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 21:17	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 21:17	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 21:17	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 21:17	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 21:17	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 21:17	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 21:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/04/24 21:17	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-218A**

**Lab Sample ID: 310-280207-9**

Date Collected: 04/29/24 10:48

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		73 - 130		05/04/24 21:17	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 21:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:47	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:47	1
<b>Barium</b>	<b>0.269</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:47	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:47	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:47	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:47	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:47	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:47	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:47	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:47	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:47	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:47	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:47	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:47	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:47	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:22	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-219A**

**Lab Sample ID: 310-280207-10**

Date Collected: 04/29/24 12:47

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 21:39	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 21:39	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 21:39	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 21:39	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 21:39	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 21:39	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 21:39	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 21:39	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 21:39	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 21:39	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 21:39	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 21:39	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 21:39	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 21:39	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 21:39	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 21:39	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 21:39	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 21:39	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 21:39	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 21:39	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 21:39	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 21:39	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 21:39	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 21:39	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 21:39	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 21:39	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 21:39	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 21:39	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 21:39	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 21:39	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 21:39	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 21:39	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 21:39	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 21:39	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 21:39	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 21:39	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 21:39	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 21:39	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 21:39	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 21:39	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 21:39	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 21:39	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 21:39	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 21:39	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 21:39	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 21:39	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 21:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/04/24 21:39	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-219A**

**Lab Sample ID: 310-280207-10**

Date Collected: 04/29/24 12:47

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		05/04/24 21:39	1
Toluene-d8 (Surr)	99		80 - 120		05/04/24 21:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:49	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:49	1
<b>Barium</b>	<b>0.708</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:49	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:49	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:49	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:49	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:49	1
<b>Copper</b>	<b>0.00195 J</b>		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:49	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:49	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:49	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:49	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:49	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:49	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:49	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:49	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:29	1
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>17.1</b>		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-220A**

**Lab Sample ID: 310-280207-11**

Date Collected: 04/29/24 13:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 22:01	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 22:01	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 22:01	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 22:01	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 22:01	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 22:01	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 22:01	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 22:01	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 22:01	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 22:01	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 22:01	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 22:01	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 22:01	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 22:01	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 22:01	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 22:01	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 22:01	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 22:01	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 22:01	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 22:01	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 22:01	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 22:01	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 22:01	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 22:01	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 22:01	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 22:01	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 22:01	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 22:01	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 22:01	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 22:01	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 22:01	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 22:01	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 22:01	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 22:01	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 22:01	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 22:01	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 22:01	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 22:01	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 22:01	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 22:01	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 22:01	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 22:01	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 22:01	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 22:01	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 22:01	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 22:01	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 22:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		05/04/24 22:01	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-220A**

**Lab Sample ID: 310-280207-11**

Date Collected: 04/29/24 13:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	97		73 - 130		05/04/24 22:01	1
Toluene-d8 (Surr)	99		80 - 120		05/04/24 22:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:52	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:52	1
<b>Barium</b>	<b>0.317</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:52	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:52	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:52	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:52	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:52	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:52	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:52	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:52	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:52	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:52	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:52	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:52	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:52	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>3.13</b>		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-410**

**Lab Sample ID: 310-280207-12**

Date Collected: 04/29/24 16:06

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 22:23	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 22:23	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 22:23	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 22:23	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 22:23	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 22:23	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 22:23	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 22:23	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 22:23	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 22:23	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 22:23	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 22:23	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 22:23	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 22:23	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 22:23	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 22:23	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 22:23	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 22:23	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 22:23	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 22:23	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 22:23	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 22:23	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 22:23	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 22:23	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 22:23	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 22:23	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 22:23	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 22:23	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 22:23	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 22:23	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 22:23	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 22:23	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 22:23	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 22:23	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 22:23	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 22:23	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 22:23	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 22:23	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 22:23	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 22:23	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 22:23	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 22:23	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 22:23	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 22:23	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 22:23	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 22:23	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 22:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		05/04/24 22:23	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-410**

**Lab Sample ID: 310-280207-12**

Date Collected: 04/29/24 16:06

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		05/04/24 22:23	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 22:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:56	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:56	1
<b>Barium</b>	<b>0.0923</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:56	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:56	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:56	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:56	1
<b>Cobalt</b>	<b>0.000273</b>	<b>J</b>	0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:56	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:56	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:56	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:56	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:56	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:56	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:56	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:56	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:56	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>1.50</b>	<b>J</b>	1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-DA**

**Lab Sample ID: 310-280207-13**

Date Collected: 04/29/24 13:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 22:45	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 22:45	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 22:45	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 22:45	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 22:45	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 22:45	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 22:45	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 22:45	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 22:45	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 22:45	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 22:45	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 22:45	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 22:45	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 22:45	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 22:45	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 22:45	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 22:45	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 22:45	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 22:45	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 22:45	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 22:45	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 22:45	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 22:45	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 22:45	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 22:45	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 22:45	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 22:45	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 22:45	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 22:45	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 22:45	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 22:45	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 22:45	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 22:45	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 22:45	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 22:45	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 22:45	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 22:45	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 22:45	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 22:45	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 22:45	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 22:45	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 22:45	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 22:45	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 22:45	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 22:45	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 22:45	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 22:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/04/24 22:45	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-DA**

**Lab Sample ID: 310-280207-13**

Date Collected: 04/29/24 13:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	100		73 - 130		05/04/24 22:45	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 22:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:58	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:58	1
<b>Barium</b>	<b>0.308</b>		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:58	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:58	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:58	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:58	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:58	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:58	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:58	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:58	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:58	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:58	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:58	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:58	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:58	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>2.00</b>		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280207-14**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 16:34	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 16:34	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 16:34	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 16:34	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 16:34	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 16:34	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 16:34	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 16:34	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 16:34	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 16:34	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 16:34	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 16:34	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 16:34	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 16:34	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 16:34	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 16:34	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 16:34	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 16:34	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 16:34	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 16:34	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 16:34	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 16:34	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 16:34	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 16:34	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 16:34	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 16:34	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 16:34	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 16:34	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 16:34	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 16:34	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 16:34	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 16:34	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 16:34	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 16:34	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 16:34	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 16:34	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 16:34	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 16:34	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 16:34	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 16:34	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 16:34	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 16:34	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 16:34	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 16:34	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 16:34	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 16:34	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/04/24 16:34	1

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# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280207-14**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Dibromofluoromethane (Surr)	98		73 - 130		05/04/24 16:34	1
Toluene-d8 (Surr)	101		80 - 120		05/04/24 16:34	1

- 1
- 2
- 3
- 4
- 5
- 6
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- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Definitions/Glossary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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



# Surrogate Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

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

Matrix: Groundwater

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(73-130)	(80-120)
310-280207-1	MW-34A	102	98	102
310-280207-2	MW-38A	100	99	98
310-280207-5	MW-25A	102	100	101
310-280207-7	MW-216A	102	103	101
310-280207-8	MW-217A	103	100	99
310-280207-9	MW-218A	101	102	100
310-280207-10	MW-219A	101	103	99
310-280207-11	MW-220A	104	97	99
310-280207-12	MW-410	104	103	100
310-280207-13	MW-DA	103	100	102

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(73-130)	(80-120)
310-280207-14	Trip Blank	102	98	101
LCS 310-420650/6	Lab Control Sample	101	94	106
LCS 310-420650/7	Lab Control Sample	103	99	102
MB 310-420650/5	Method Blank	103	95	102

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

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

Lab Sample ID: MB 310-420650/5  
 Matrix: Water  
 Analysis Batch: 420650

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/04/24 15:06	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/04/24 15:06	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 15:06	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/04/24 15:06	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/04/24 15:06	1
Bromoform	<5.00		5.00	0.780	ug/L			05/04/24 15:06	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/04/24 15:06	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/04/24 15:06	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/04/24 15:06	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/04/24 15:06	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/04/24 15:06	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/04/24 15:06	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/04/24 15:06	1
Chloroform	<3.00		3.00	1.30	ug/L			05/04/24 15:06	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/04/24 15:06	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/04/24 15:06	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/04/24 15:06	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/04/24 15:06	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/04/24 15:06	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/04/24 15:06	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/04/24 15:06	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/04/24 15:06	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/04/24 15:06	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/04/24 15:06	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/04/24 15:06	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/04/24 15:06	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/04/24 15:06	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/04/24 15:06	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/04/24 15:06	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/04/24 15:06	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/04/24 15:06	1
Styrene	<1.00		1.00	0.370	ug/L			05/04/24 15:06	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/04/24 15:06	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/04/24 15:06	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 15:06	1
Toluene	<1.00		1.00	0.430	ug/L			05/04/24 15:06	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/04/24 15:06	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/04/24 15:06	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/04/24 15:06	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/04/24 15:06	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/04/24 15:06	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 15:06	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/04/24 15:06	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/04/24 15:06	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/04/24 15:06	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 15:06	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/04/24 15:06	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-420650/5

Matrix: Water

Analysis Batch: 420650

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	103		80 - 120		05/04/24 15:06	1
Dibromofluoromethane (Surr)	95		73 - 130		05/04/24 15:06	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 15:06	1

Lab Sample ID: LCS 310-420650/6

Matrix: Water

Analysis Batch: 420650

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrylonitrile	200	218.0		ug/L		109	50 - 150
Benzene	20.0	18.37		ug/L		92	72 - 124
Bromochloromethane	20.0	16.66		ug/L		83	73 - 130
Bromodichloromethane	20.0	18.33		ug/L		92	74 - 122
Bromoform	20.0	15.49		ug/L		77	61 - 122
2-Butanone (MEK)	40.0	43.60		ug/L		109	50 - 150
Carbon disulfide	20.0	20.22		ug/L		101	59 - 135
Carbon tetrachloride	20.0	16.54		ug/L		83	67 - 132
Chlorobenzene	20.0	17.74		ug/L		89	76 - 120
Chlorodibromomethane	20.0	16.35		ug/L		82	71 - 121
Chloroform	20.0	19.19		ug/L		96	72 - 125
cis-1,2-Dichloroethene	20.0	18.45		ug/L		92	74 - 123
cis-1,3-Dichloropropene	20.0	18.07		ug/L		90	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	22.55		ug/L		113	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.57		ug/L		88	75 - 125
Dibromomethane	20.0	18.51		ug/L		93	74 - 125
1,2-Dichlorobenzene	20.0	18.64		ug/L		93	74 - 120
1,4-Dichlorobenzene	20.0	19.33		ug/L		97	72 - 120
1,1-Dichloroethane	20.0	20.44		ug/L		102	70 - 127
1,2-Dichloroethane	20.0	20.36		ug/L		102	71 - 125
1,1-Dichloroethene	20.0	19.00		ug/L		95	63 - 132
1,2-Dichloropropane	20.0	20.13		ug/L		101	73 - 124
Ethylbenzene	20.0	18.94		ug/L		95	74 - 122
2-Hexanone	40.0	46.84		ug/L		117	60 - 140
Iodomethane	20.0	15.90		ug/L		79	10 - 150
Methylene Chloride	20.0	20.01		ug/L		100	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	46.36		ug/L		116	60 - 139
Styrene	20.0	18.52		ug/L		93	74 - 121
1,1,1,2-Tetrachloroethane	20.0	16.94		ug/L		85	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.02		ug/L		95	68 - 124
Tetrachloroethene	20.0	15.66		ug/L		78	71 - 130
Toluene	20.0	18.01		ug/L		90	74 - 123
trans-1,4-Dichloro-2-butene	20.0	19.28		ug/L		96	50 - 150
trans-1,2-Dichloroethene	20.0	17.84		ug/L		89	70 - 126
trans-1,3-Dichloropropene	20.0	18.55		ug/L		93	69 - 123
1,1,1-Trichloroethane	20.0	18.14		ug/L		91	73 - 129
1,1,2-Trichloroethane	20.0	18.65		ug/L		93	73 - 123
Trichloroethene	20.0	18.69		ug/L		93	72 - 126

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-420650/6

Matrix: Water

Analysis Batch: 420650

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	18.35		ug/L		92	65 - 127
Vinyl acetate	40.0	33.08		ug/L		83	50 - 150
Xylenes, Total	40.0	35.47		ug/L		89	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	94		73 - 130
Toluene-d8 (Surr)	106		80 - 120

Lab Sample ID: LCS 310-420650/7

Matrix: Water

Analysis Batch: 420650

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	18.93		ug/L		95	23 - 150
Chloroethane	20.0	23.70		ug/L		118	54 - 136
Chloromethane	20.0	24.87		ug/L		124	38 - 150
Trichlorofluoromethane	20.0	20.50		ug/L		103	54 - 149
Vinyl chloride	20.0	24.68		ug/L		123	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	99		73 - 130
Toluene-d8 (Surr)	102		80 - 120

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

Lab Sample ID: MB 310-420515/1-A

Matrix: Water

Analysis Batch: 421266

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 420515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/03/24 09:00	05/09/24 16:00	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 16:00	1
Barium	<0.00200		0.00200	0.000660	mg/L		05/03/24 09:00	05/09/24 16:00	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/03/24 09:00	05/09/24 16:00	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/03/24 09:00	05/09/24 16:00	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/03/24 09:00	05/09/24 16:00	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 16:00	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/03/24 09:00	05/09/24 16:00	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/03/24 09:00	05/09/24 16:00	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/03/24 09:00	05/09/24 16:00	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/03/24 09:00	05/09/24 16:00	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/03/24 09:00	05/09/24 16:00	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/03/24 09:00	05/09/24 16:00	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/03/24 09:00	05/09/24 16:00	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/03/24 09:00	05/09/24 16:00	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

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

**Lab Sample ID: LCS 310-420515/2-A**  
**Matrix: Water**  
**Analysis Batch: 421266**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 420515**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2209		mg/L		110	80 - 120
Arsenic	0.200	0.2086		mg/L		104	80 - 120
Barium	0.100	0.1111		mg/L		111	80 - 120
Beryllium	0.100	0.09978		mg/L		100	80 - 120
Cadmium	0.100	0.1032		mg/L		103	80 - 120
Chromium	0.100	0.09442		mg/L		94	80 - 120
Cobalt	0.100	0.1055		mg/L		106	80 - 120
Copper	0.200	0.2091		mg/L		105	80 - 120
Lead	0.200	0.2079		mg/L		104	80 - 120
Nickel	0.200	0.2055		mg/L		103	80 - 120
Selenium	0.400	0.3954		mg/L		99	80 - 120
Silver	0.100	0.1066		mg/L		107	80 - 120
Thallium	0.100	0.1139		mg/L		114	80 - 120
Vanadium	0.100	0.09771		mg/L		98	80 - 120
Zinc	0.200	0.2011		mg/L		101	80 - 120

**Lab Sample ID: 310-280207-1 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 421266**

**Client Sample ID: MW-34A**  
**Prep Type: Total/NA**  
**Prep Batch: 420515**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200		0.200	0.2288		mg/L		114	75 - 125
Arsenic	0.000549	J	0.200	0.2146		mg/L		107	75 - 125
Barium	0.368	F1	0.100	0.5451	F1	mg/L		177	75 - 125
Beryllium	<0.00100		0.100	0.1053		mg/L		105	75 - 125
Cadmium	<0.000200		0.100	0.1057		mg/L		106	75 - 125
Chromium	<0.00500		0.100	0.09599		mg/L		96	75 - 125
Cobalt	<0.000500		0.100	0.1052		mg/L		105	75 - 125
Copper	<0.00500		0.200	0.2097		mg/L		105	75 - 125
Lead	<0.000500		0.200	0.2111		mg/L		106	75 - 125
Nickel	<0.00500		0.200	0.2033		mg/L		102	75 - 125
Selenium	<0.00500		0.400	0.4086		mg/L		102	75 - 125
Silver	<0.00100		0.100	0.1092		mg/L		109	75 - 125
Thallium	<0.00100		0.100	0.1129		mg/L		113	75 - 125
Vanadium	<0.00500		0.100	0.1018		mg/L		102	75 - 125
Zinc	<0.0200		0.200	0.2040		mg/L		102	75 - 125

**Lab Sample ID: 310-280207-1 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 421266**

**Client Sample ID: MW-34A**  
**Prep Type: Total/NA**  
**Prep Batch: 420515**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200		0.200	0.2257		mg/L		113	75 - 125	1	20
Arsenic	0.000549	J	0.200	0.2151		mg/L		107	75 - 125	0	20
Barium	0.368	F1	0.100	0.5404	F1	mg/L		172	75 - 125	1	20
Beryllium	<0.00100		0.100	0.1054		mg/L		105	75 - 125	0	20
Cadmium	<0.000200		0.100	0.1047		mg/L		105	75 - 125	1	20
Chromium	<0.00500		0.100	0.09643		mg/L		96	75 - 125	0	20
Cobalt	<0.000500		0.100	0.1047		mg/L		105	75 - 125	0	20

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

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

**Lab Sample ID: 310-280207-1 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 421266**

**Client Sample ID: MW-34A**  
**Prep Type: Total/NA**  
**Prep Batch: 420515**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier				Limits		Limit
Copper	<0.00500		0.200	0.2089		mg/L		104	75 - 125	0	20
Lead	<0.000500		0.200	0.2111		mg/L		106	75 - 125	0	20
Nickel	<0.00500		0.200	0.2047		mg/L		102	75 - 125	1	20
Selenium	<0.00500		0.400	0.4097		mg/L		102	75 - 125	0	20
Silver	<0.00100		0.100	0.1084		mg/L		108	75 - 125	1	20
Thallium	<0.00100		0.100	0.1145		mg/L		115	75 - 125	1	20
Vanadium	<0.00500		0.100	0.1011		mg/L		101	75 - 125	1	20
Zinc	<0.0200		0.200	0.2105		mg/L		105	75 - 125	3	20

**Lab Sample ID: 310-280207-11 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421266**

**Client Sample ID: MW-220A**  
**Prep Type: Total/NA**  
**Prep Batch: 420515**

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.317		0.2997		mg/L		6	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Nickel	<0.00500		<0.00500		mg/L		NC	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20
Zinc	<0.0200		<0.0200		mg/L		NC	20

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

**Lab Sample ID: MB 500-766470/1**  
**Matrix: Water**  
**Analysis Batch: 766470**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sulfide	<1.00		1.00	0.231	mg/L			05/06/24 01:48	1

**Lab Sample ID: LCS 500-766470/2**  
**Matrix: Water**  
**Analysis Batch: 766470**

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

Analyte	Spike	LCS LCS		Unit	D	%Rec	%Rec
		Added	Result				Qualifier
Sulfide	3.64	3.566		mg/L		98	80 - 120

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 310-280207-7 MS  
 Matrix: Groundwater  
 Analysis Batch: 766470

Client Sample ID: MW-216A  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	<1.00		9.09	8.555		mg/L		94	75 - 125

Lab Sample ID: 310-280207-7 MSD  
 Matrix: Groundwater  
 Analysis Batch: 766470

Client Sample ID: MW-216A  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	<1.00		9.09	8.996		mg/L		99	75 - 125	5	20

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

Lab Sample ID: MB 310-420584/1  
 Matrix: Water  
 Analysis Batch: 420584

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/03/24 08:02	1

Lab Sample ID: LCS 310-420584/2  
 Matrix: Water  
 Analysis Batch: 420584

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116

Lab Sample ID: MB 310-420598/1  
 Matrix: Water  
 Analysis Batch: 420598

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/03/24 08:54	1

Lab Sample ID: LCS 310-420598/2  
 Matrix: Water  
 Analysis Batch: 420598

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	88.00		mg/L		88	75 - 116

# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## GC/MS VOA

### Analysis Batch: 420650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-1	MW-34A	Total/NA	Groundwater	8260D	
310-280207-2	MW-38A	Total/NA	Groundwater	8260D	
310-280207-5	MW-25A	Total/NA	Groundwater	8260D	
310-280207-7	MW-216A	Total/NA	Groundwater	8260D	
310-280207-8	MW-217A	Total/NA	Groundwater	8260D	
310-280207-9	MW-218A	Total/NA	Groundwater	8260D	
310-280207-10	MW-219A	Total/NA	Groundwater	8260D	
310-280207-11	MW-220A	Total/NA	Groundwater	8260D	
310-280207-12	MW-410	Total/NA	Groundwater	8260D	
310-280207-13	MW-DA	Total/NA	Groundwater	8260D	
310-280207-14	Trip Blank	Total/NA	Water	8260D	
MB 310-420650/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420650/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420650/7	Lab Control Sample	Total/NA	Water	8260D	

## Metals

### Prep Batch: 420515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-1	MW-34A	Total/NA	Groundwater	3005A	
310-280207-2	MW-38A	Total/NA	Groundwater	3005A	
310-280207-3	MW-23A	Total/NA	Groundwater	3005A	
310-280207-4	MW-24A	Total/NA	Groundwater	3005A	
310-280207-5	MW-25A	Total/NA	Groundwater	3005A	
310-280207-6	MW-213A	Total/NA	Groundwater	3005A	
310-280207-7	MW-216A	Total/NA	Groundwater	3005A	
310-280207-8	MW-217A	Total/NA	Groundwater	3005A	
310-280207-9	MW-218A	Total/NA	Groundwater	3005A	
310-280207-10	MW-219A	Total/NA	Groundwater	3005A	
310-280207-11	MW-220A	Total/NA	Groundwater	3005A	
310-280207-12	MW-410	Total/NA	Groundwater	3005A	
310-280207-13	MW-DA	Total/NA	Groundwater	3005A	
MB 310-420515/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420515/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280207-1 MS	MW-34A	Total/NA	Groundwater	3005A	
310-280207-1 MSD	MW-34A	Total/NA	Groundwater	3005A	
310-280207-11 DU	MW-220A	Total/NA	Groundwater	3005A	

### Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-1	MW-34A	Total/NA	Groundwater	6020B	420515
310-280207-2	MW-38A	Total/NA	Groundwater	6020B	420515
310-280207-3	MW-23A	Total/NA	Groundwater	6020B	420515
310-280207-4	MW-24A	Total/NA	Groundwater	6020B	420515
310-280207-5	MW-25A	Total/NA	Groundwater	6020B	420515
310-280207-6	MW-213A	Total/NA	Groundwater	6020B	420515
310-280207-7	MW-216A	Total/NA	Groundwater	6020B	420515
310-280207-8	MW-217A	Total/NA	Groundwater	6020B	420515
310-280207-9	MW-218A	Total/NA	Groundwater	6020B	420515
310-280207-10	MW-219A	Total/NA	Groundwater	6020B	420515
310-280207-11	MW-220A	Total/NA	Groundwater	6020B	420515

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# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Metals (Continued)

### Analysis Batch: 421266 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-12	MW-410	Total/NA	Groundwater	6020B	420515
310-280207-13	MW-DA	Total/NA	Groundwater	6020B	420515
MB 310-420515/1-A	Method Blank	Total/NA	Water	6020B	420515
LCS 310-420515/2-A	Lab Control Sample	Total/NA	Water	6020B	420515
310-280207-1 MS	MW-34A	Total/NA	Groundwater	6020B	420515
310-280207-1 MSD	MW-34A	Total/NA	Groundwater	6020B	420515
310-280207-11 DU	MW-220A	Total/NA	Groundwater	6020B	420515

## General Chemistry

### Analysis Batch: 420584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-1	MW-34A	Total/NA	Groundwater	I-3765-85	
310-280207-2	MW-38A	Total/NA	Groundwater	I-3765-85	
310-280207-3	MW-23A	Total/NA	Groundwater	I-3765-85	
310-280207-4	MW-24A	Total/NA	Groundwater	I-3765-85	
310-280207-5	MW-25A	Total/NA	Groundwater	I-3765-85	
310-280207-7	MW-216A	Total/NA	Groundwater	I-3765-85	
310-280207-8	MW-217A	Total/NA	Groundwater	I-3765-85	
310-280207-9	MW-218A	Total/NA	Groundwater	I-3765-85	
310-280207-10	MW-219A	Total/NA	Groundwater	I-3765-85	
310-280207-11	MW-220A	Total/NA	Groundwater	I-3765-85	
310-280207-12	MW-410	Total/NA	Groundwater	I-3765-85	
310-280207-13	MW-DA	Total/NA	Groundwater	I-3765-85	
MB 310-420584/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420584/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 420598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-6	MW-213A	Total/NA	Groundwater	I-3765-85	
MB 310-420598/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420598/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 766470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280207-7	MW-216A	Total/NA	Groundwater	9034	
310-280207-9	MW-218A	Total/NA	Groundwater	9034	
310-280207-10	MW-219A	Total/NA	Groundwater	9034	
MB 500-766470/1	Method Blank	Total/NA	Water	9034	
LCS 500-766470/2	Lab Control Sample	Total/NA	Water	9034	
310-280207-7 MS	MW-216A	Total/NA	Groundwater	9034	
310-280207-7 MSD	MW-216A	Total/NA	Groundwater	9034	

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-34A**

**Lab Sample ID: 310-280207-1**

Date Collected: 04/29/24 09:49

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 19:28
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:04
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-38A**

**Lab Sample ID: 310-280207-2**

Date Collected: 04/29/24 09:19

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 19:50
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:23
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-23A**

**Lab Sample ID: 310-280207-3**

Date Collected: 04/29/24 14:28

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:25
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-24A**

**Lab Sample ID: 310-280207-4**

Date Collected: 04/29/24 13:12

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:28
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-25A**

**Lab Sample ID: 310-280207-5**

Date Collected: 04/29/24 08:08

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 20:12
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:30
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Client Sample ID: MW-213A

Lab Sample ID: 310-280207-6

Date Collected: 04/29/24 14:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:32
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

## Client Sample ID: MW-216A

Lab Sample ID: 310-280207-7

Date Collected: 04/29/24 08:31

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 20:34
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:34
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:01 - 05/06/24 02:08 <sup>1</sup>
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

## Client Sample ID: MW-217A

Lab Sample ID: 310-280207-8

Date Collected: 04/29/24 10:19

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 20:56
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:36
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

## Client Sample ID: MW-218A

Lab Sample ID: 310-280207-9

Date Collected: 04/29/24 10:48

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 21:17
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:47
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:22 - 05/06/24 02:29 <sup>1</sup>
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

## Client Sample ID: MW-219A

Lab Sample ID: 310-280207-10

Date Collected: 04/29/24 12:47

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 21:39
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:49
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:29 - 05/06/24 02:36 <sup>1</sup>

Eurofins Cedar Falls

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

**Client Sample ID: MW-219A**

**Lab Sample ID: 310-280207-10**

Date Collected: 04/29/24 12:47

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-220A**

**Lab Sample ID: 310-280207-11**

Date Collected: 04/29/24 13:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 22:01
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:52
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-410**

**Lab Sample ID: 310-280207-12**

Date Collected: 04/29/24 16:06

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 22:23
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:56
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-DA**

**Lab Sample ID: 310-280207-13**

Date Collected: 04/29/24 13:51

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 22:45
Total/NA	Prep	3005A			420515	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 16:58
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280207-14**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420650	WSE8	EET CF	05/04/24 16:34

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

**Laboratory References:**

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401  
 EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

## Laboratory: Eurofins Cedar Falls

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

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

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-24 *

- 1
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- 16

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

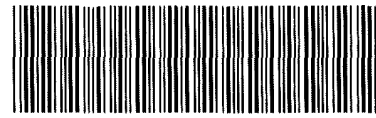
**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

**Laboratory References:**

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401  
EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SYS</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>3</u>
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 checked="" type="checkbox"/> Yes <input 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: <u>T</u>		Correction Factor (°C): <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):	
• <b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>250 ml plastic</u>	<u>↔</u>	
Uncorrected Temp (°C):	<u>3.6</u>	<u>3.7</u>	
Corrected Temp (°C):	<u>↓</u>	<u>↓</u>	
<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>			





Environment Testing  
America

Place COC scanning label  
here

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SJS</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>3</u>	
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 checked="" type="checkbox"/> Yes <input 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: <u>7</u>		Correction Factor (°C): <u>0</u>	
* Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>250 ml plastic</u> ↔		
Uncorrected Temp (°C):	<u>3.4</u>	<u>2.9</u>	
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>			







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America

Place COC scanning label  
here

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SJS</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>3</u>	
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 checked="" type="checkbox"/> Yes <input 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: <u>7</u>		Correction Factor (°C): <u>0</u>	
* Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>250 mL plastic</u> ↔		
Uncorrected Temp (°C):	<u>3.1</u>	<u>1.2</u>	
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>			



**Eurofins Cedar Falls**  
 3019 Venture Way  
 Cedar Falls, IA 50613  
 Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

**Client Information**  
 Client Contact: Jen Jordan  
 Company: Iowa City Landfill  
 Address: City of Iowa City 335 E. Iowa Ave  
 City: Iowa City  
 State: IA  
 Zip: 52240  
 Phone: IA 52240  
 Email: jenniferjordan@iowa-city.org  
 Project Name: Iowa City Landfill Semi-Annual Series A  
 Site: Iowa

Due Date Requested:  
 TAT Requested (days):  
 Compliance Project:  Yes  No  
 PO #: RFP23-14  
 WO #:  
 Project #: 31015832  
 SSO#:

Lab PK: Hummel Matthew R  
 E-Mail: Matthew.Hummel@eurofins.com

Carrier Tracking No(s):  
 State of Origin:  
 Job #:

GOC No: 310-91304-25155.1  
 Page: Page 1 of 3

Analysis Requested:  
 Metals List, TSS  
 Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide  
 Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide, Appendix I VOCs  
 Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide, Appendix I VOCs, Appendix I VOCs  
 Appendix I VOCs  
 Field Filtered Sample (Yes or No)  
 Form MS/MSD (Yes or No)

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp G=grab)	Matrix (W=water, S=solid, O=waste/liquid)	Field Filtered Sample (Yes or No)	Form MS/MSD (Yes or No)	Metals List, TSS	Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide	Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide, Appendix I VOCs	Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide, Appendix I VOCs, Appendix I VOCs	Special Instructions/Note
MW-34A	4-29-24	9:49	G	Water			X				
MW-38A	4-29-24	9:19	G	Water			X				
MW-17A-00				Water			X				
MW-18AR				Water			X				
MW-23A	4-29-24	1428	G	Water			X				
MW-24A	4-29-24	1312	G	Water			X				
MW-25A	4-29-24	8:08	G	Water			X				
MW-29A				Water				X			
MW-200A				Water					X		
MW-201A				Water					X		
MW-202A				Water					X		

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

Deliverable Requested:  I  II  III  IV  Other (specify)

Empty Kit Requisitioned by: [Signature] Date: 5-1-2024 Company: CEF

Requisitioned by: [Signature] Date/Time: [Signature] Company: Eurofins

Requisitioned by: [Signature] Date/Time: [Signature] Company: Eurofins

Requisitioned by: [Signature] Date/Time: [Signature] Company: Eurofins

Custody Seal No:  Yes  No

Special Instructions/OC Requirements:  
 Return To Client: [Signature] Disposal By Lab: [Signature] Archive For: Months  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)



**Eurofins Cedar Falls**

3019 Venture Way  
Cedar Falls, IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jen Jordan Company: Iowa City Landfill Address: City of Iowa City, 335 E. Iowa Ave City: Iowa City State/Zip: IA, 52240 Phone: 515-272-1111 Email: Jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill Semi-Annual Series A Site: Iowa		Lab No.: Hummel, Matthew R Lab Email: Matthew.Hummel@et.eurofins.com Lab Phone: 319-936-5194 PWSID:		Carrier Tracking No(s): State of Origin: Job #:		COC No.: 310-91304-25155.2 Page: Page 2 of 3			
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: RFP23-14 WO #: Project #: 31015832 SSO#:		<b>Analysis Requested</b>							
Sample Date Sample Time Sample Type (W=water, S=solid, G=grab) Preservation Code:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Metals List, TSS, App I VOCs, Dithionite/Sulfide Metals List, TSS, App I VOCs, Dithionite/Sulfide Metals List, TSS, App I VOCs, Dithionite/Sulfide Appendix I TSS Appendix I VOCs Appendix I VOCs Total Number of Containers		Special Instructions/Note			
MW-203A MW-204A MW-205A MW-213A MW-214A MW-215A MW-216A MW-217A MW-218A MW-219A MW-220A		Water Water Water Water Water Water Water Water Water		X X X X X X X X X		X X X X X X X X X		X X X X X X X X X	
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Deliverable Requested: I II III IV Other (specify)		Poison B Unknown Radiological		Return To Client Disposal By Lab Archive For:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Months			
Empty Kit Relinquished by:		Date:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:		Date/Time:			
Custody Seals Intact Yes <input type="checkbox"/> No <input type="checkbox"/>		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:		Company: Eurofins			

Ver 01/16/2019





Eurofins Cedar Falls

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

Chain of Custody Record



eurofins | Environment Testing

Form containing Client Information, Analysis Requested, Sample Identification, and various fields for sample details and tracking.

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories...

Form section for Possible Hazard Identification, Sample Disposal, Relinquished by, and Custody Seals.

## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280207-1

SDG Number:

**Login Number: 280207**

**List Number: 1**

**Creator: Homolar, Dana J**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280207-1

SDG Number:

**Login Number: 280207**

**List Number: 2**

**Creator: Scott, Sherri L**

**List Source: Eurofins Chicago**

**List Creation: 05/03/24 06:21 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	5.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Semi-Annual Series A

Job ID: 310-280207-1

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 5/10/2024 11:28:09 AM

## JOB DESCRIPTION

Iowa City Landfill Event Desc: Impact Delineation  
Impact Delineation

## JOB NUMBER

310-280208-1

# 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



Generated  
5/10/2024 11:28:09 AM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Job ID: 310-280208-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280208-1

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

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

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

### Receipt

The samples were received on 5/1/2024 3:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.6°C and 5.0°C.

### GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-420620 recovered above the upper control limit for Vinyl chloride (34.4%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-420620/4).

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

### Metals

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

### General Chemistry

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

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# Sample Summary

Client: Iowa City Landfill

Job ID: 310-280208-1

Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280208-1	MW-2C-97	Groundwater	04/30/24 09:05	05/01/24 15:20
310-280208-2	MW-7C	Groundwater	04/29/24 15:45	05/01/24 15:20
310-280208-3	MW-407	Groundwater	04/29/24 15:23	05/01/24 15:20
310-280208-4	MW-404	Groundwater	04/29/24 11:20	05/01/24 15:20
310-280208-5	Trip Blank	Water	04/29/24 00:00	05/01/24 15:20
310-280208-6	Trip Blank	Water	04/29/24 00:00	05/01/24 15:20

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15

# Detection Summary

Client: Iowa City Landfill

Job ID: 310-280208-1

Project/Site: Iowa City Landfill Event Desc: Impact Delineation

## Client Sample ID: MW-2C-97

Lab Sample ID: 310-280208-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Cobalt	0.00559		0.000500	0.000170	mg/L		1		6020B	Total/NA
Total Suspended Solids	7.13		1.88	1.39	mg/L		1		I-3765-85	Total/NA

## Client Sample ID: MW-7C

Lab Sample ID: 310-280208-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Arsenic	0.00243		0.00200	0.000530	mg/L		1		6020B	Total/NA
Total Suspended Solids	14.3		5.00	3.70	mg/L		1		I-3765-85	Total/NA

## Client Sample ID: MW-407

Lab Sample ID: 310-280208-3

No Detections.

## Client Sample ID: MW-404

Lab Sample ID: 310-280208-4

No Detections.

## Client Sample ID: Trip Blank

Lab Sample ID: 310-280208-5

No Detections.

## Client Sample ID: Trip Blank

Lab Sample ID: 310-280208-6

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: MW-2C-97**

**Lab Sample ID: 310-280208-1**

Date Collected: 04/30/24 09:05

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00559		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 18:55	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	7.13		1.88	1.39	mg/L			05/03/24 08:54	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: MW-7C**

**Lab Sample ID: 310-280208-2**

Date Collected: 04/29/24 15:45

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00243		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:01	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	14.3		5.00	3.70	mg/L			05/03/24 08:54	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: MW-407**

**Lab Sample ID: 310-280208-3**

Date Collected: 04/29/24 15:23

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 06:18	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Dibromofluoromethane (Surr)	109		73 - 130					05/04/24 06:18	1
Toluene-d8 (Surr)	101		80 - 120					05/04/24 06:18	1
4-Bromofluorobenzene (Surr)	104		80 - 120					05/04/24 06:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 14:12	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:36	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/03/24 08:02	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: MW-404**

**Lab Sample ID: 310-280208-4**

Date Collected: 04/29/24 11:20

Matrix: Groundwater

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 06:41	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 06:41	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 06:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	112		73 - 130		05/04/24 06:41	1
Toluene-d8 (Surr)	100		80 - 120		05/04/24 06:41	1
4-Bromofluorobenzene (Surr)	104		80 - 120		05/04/24 06:41	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280208-5**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 00:59	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 00:59	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 00:59	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 00:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	115		73 - 130		05/04/24 00:59	1
Toluene-d8 (Surr)	101		80 - 120		05/04/24 00:59	1
4-Bromofluorobenzene (Surr)	100		80 - 120		05/04/24 00:59	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280208-6**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/04/24 01:22	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/04/24 01:22	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/04/24 01:22	1
Benzene	<0.500		0.500	0.220	ug/L			05/04/24 01:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	116		73 - 130		05/04/24 01:22	1
Toluene-d8 (Surr)	102		80 - 120		05/04/24 01:22	1
4-Bromofluorobenzene (Surr)	101		80 - 120		05/04/24 01:22	1

## Definitions/Glossary

Client: Iowa City Landfill

Job ID: 310-280208-1

Project/Site: Iowa City Landfill Event Desc: Impact Delineation

### Glossary

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

# Surrogate Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

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

Matrix: Groundwater

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBFM	TOL	BFB
		(73-130)	(80-120)	(80-120)
310-280208-3	MW-407	109	101	104
310-280208-4	MW-404	112	100	104

#### Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBFM	TOL	BFB
		(73-130)	(80-120)	(80-120)
310-280208-5	Trip Blank	115	101	100
310-280208-6	Trip Blank	116	102	101
LCS 310-420620/6	Lab Control Sample	99	101	99
LCS 310-420620/7	Lab Control Sample	118	101	101
MB 310-420620/5	Method Blank	115	102	99

#### Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

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

**Lab Sample ID: MB 310-420620/5**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/03/24 22:43	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/03/24 22:43	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/03/24 22:43	1
Benzene	<0.500		0.500	0.220	ug/L			05/03/24 22:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	115		73 - 130		05/03/24 22:43	1
Toluene-d8 (Surr)	102		80 - 120		05/03/24 22:43	1
4-Bromofluorobenzene (Surr)	99		80 - 120		05/03/24 22:43	1

**Lab Sample ID: LCS 310-420620/6**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tetrachloroethene	20.0	21.74		ug/L		109	71 - 130
Trichloroethene	20.0	21.21		ug/L		106	72 - 126
Benzene	20.0	22.03		ug/L		110	72 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	99		73 - 130
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120

**Lab Sample ID: LCS 310-420620/7**  
**Matrix: Water**  
**Analysis Batch: 420620**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	26.73		ug/L		134	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	118		73 - 130
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120

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

**Lab Sample ID: MB 310-420511/1-A**  
**Matrix: Water**  
**Analysis Batch: 421121**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 420511**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/08/24 17:54	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

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

Lab Sample ID: MB 310-420511/1-A  
 Matrix: Water  
 Analysis Batch: 421266

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 420511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/03/24 09:00	05/09/24 13:26	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/03/24 09:00	05/09/24 13:26	1

Lab Sample ID: LCS 310-420511/2-A  
 Matrix: Water  
 Analysis Batch: 421121

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 420511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	0.100	0.09579		mg/L		96	80 - 120

Lab Sample ID: LCS 310-420511/2-A  
 Matrix: Water  
 Analysis Batch: 421266

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 420511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2015		mg/L		101	80 - 120
Cobalt	0.100	0.1028		mg/L		103	80 - 120

Lab Sample ID: 310-280208-3 DU  
 Matrix: Groundwater  
 Analysis Batch: 421121

Client Sample ID: MW-407  
 Prep Type: Total/NA  
 Prep Batch: 420511

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cobalt	<0.000500		<0.000500		mg/L		NC	20

Lab Sample ID: 310-280208-3 DU  
 Matrix: Groundwater  
 Analysis Batch: 421266

Client Sample ID: MW-407  
 Prep Type: Total/NA  
 Prep Batch: 420511

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.00200		<0.00200		mg/L		NC	20

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-766470/1  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00	0.231	mg/L			05/06/24 01:48	1

Lab Sample ID: LCS 500-766470/2  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	3.64	3.566		mg/L		98	80 - 120



# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

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

**Lab Sample ID: MB 310-420584/1**  
**Matrix: Water**  
**Analysis Batch: 420584**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/03/24 08:02	1

**Lab Sample ID: LCS 310-420584/2**  
**Matrix: Water**  
**Analysis Batch: 420584**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116

**Lab Sample ID: MB 310-420598/1**  
**Matrix: Water**  
**Analysis Batch: 420598**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/03/24 08:54	1

**Lab Sample ID: LCS 310-420598/2**  
**Matrix: Water**  
**Analysis Batch: 420598**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	88.00		mg/L		88	75 - 116

# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

## GC/MS VOA

### Analysis Batch: 420620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-3	MW-407	Total/NA	Groundwater	8260D	
310-280208-4	MW-404	Total/NA	Groundwater	8260D	
310-280208-5	Trip Blank	Total/NA	Water	8260D	
310-280208-6	Trip Blank	Total/NA	Water	8260D	
MB 310-420620/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420620/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420620/7	Lab Control Sample	Total/NA	Water	8260D	

## Metals

### Prep Batch: 420511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-1	MW-2C-97	Total/NA	Groundwater	3005A	
310-280208-2	MW-7C	Total/NA	Groundwater	3005A	
310-280208-3	MW-407	Total/NA	Groundwater	3005A	
MB 310-420511/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420511/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280208-3 DU	MW-407	Total/NA	Groundwater	3005A	

### Analysis Batch: 421121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-1	MW-2C-97	Total/NA	Groundwater	6020B	420511
MB 310-420511/1-A	Method Blank	Total/NA	Water	6020B	420511
LCS 310-420511/2-A	Lab Control Sample	Total/NA	Water	6020B	420511
310-280208-3 DU	MW-407	Total/NA	Groundwater	6020B	420511

### Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-2	MW-7C	Total/NA	Groundwater	6020B	420511
310-280208-3	MW-407	Total/NA	Groundwater	6020B	420511
MB 310-420511/1-A	Method Blank	Total/NA	Water	6020B	420511
LCS 310-420511/2-A	Lab Control Sample	Total/NA	Water	6020B	420511
310-280208-3 DU	MW-407	Total/NA	Groundwater	6020B	420511

## General Chemistry

### Analysis Batch: 420584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-3	MW-407	Total/NA	Groundwater	I-3765-85	
MB 310-420584/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420584/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 420598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-1	MW-2C-97	Total/NA	Groundwater	I-3765-85	
310-280208-2	MW-7C	Total/NA	Groundwater	I-3765-85	
MB 310-420598/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420598/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 766470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280208-3	MW-407	Total/NA	Groundwater	9034	

Eurofins Cedar Falls

# QC Association Summary

Client: Iowa City Landfill

Job ID: 310-280208-1

Project/Site: Iowa City Landfill Event Desc: Impact Delineation

## General Chemistry (Continued)

### Analysis Batch: 766470 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-766470/1	Method Blank	Total/NA	Water	9034	
LCS 500-766470/2	Lab Control Sample	Total/NA	Water	9034	

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# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

**Client Sample ID: MW-2C-97**

**Lab Sample ID: 310-280208-1**

Date Collected: 04/30/24 09:05

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 18:55
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

**Client Sample ID: MW-7C**

**Lab Sample ID: 310-280208-2**

Date Collected: 04/29/24 15:45

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:01
Total/NA	Analysis	I-3765-85		1	420598	ENB7	EET CF	05/03/24 08:54

**Client Sample ID: MW-407**

**Lab Sample ID: 310-280208-3**

Date Collected: 04/29/24 15:23

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 06:18
Total/NA	Prep	3005A			420511	KM3E	EET CF	05/03/24 09:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 14:12
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:36 - 05/06/24 02:43 <sup>1</sup>
Total/NA	Analysis	I-3765-85		1	420584	DGU1	EET CF	05/03/24 08:02

**Client Sample ID: MW-404**

**Lab Sample ID: 310-280208-4**

Date Collected: 04/29/24 11:20

Matrix: Groundwater

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 06:41

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280208-5**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 00:59

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280208-6**

Date Collected: 04/29/24 00:00

Matrix: Water

Date Received: 05/01/24 15:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420620	FE5V	EET CF	05/04/24 01:22

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

# Lab Chronicle

Client: Iowa City Landfill

Job ID: 310-280208-1

Project/Site: Iowa City Landfill Event Desc: Impact Delineation

**Laboratory References:**

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

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Job ID: 310-280208-1

## Laboratory: Eurofins Cedar Falls

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

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

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-24 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Iowa City Landfill

Job ID: 310-280208-1

Project/Site: Iowa City Landfill Event Desc: Impact Delineation

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

**Protocol References:**

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

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

**Laboratory References:**

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

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



Environment Testing  
America



310-280208 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SB</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>
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 checked="" type="checkbox"/> Yes <input 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: <u>7</u>		Correction Factor (°C): <u>0</u>	
*Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>250 ml plastic</u> ← →		
Uncorrected Temp (°C):	<u>3.6</u>	<u>3.7</u>	
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>			







Environment Testing  
America

Place COC scanning label  
here

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5/1/24</u>	<u>1520</u>	<u>SJS</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>
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 checked="" type="checkbox"/> Yes <input 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: <u>7</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>250 mL plastic</u> ↔		
Uncorrected Temp (°C):	<u>5.0</u>	<u>4.2</u>	
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>			



**Eurofins Cedar Falls**

3019 Venture Way  
 Cedar Falls IA 50613  
 Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Company: Iowa City Landfill Address: City of Iowa City 335 E. Iowa Ave City: Iowa City State: IA, Zip: 52240 Phone: RFP23-14 Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: 31015832 WO #: 31015832 Project Name: Iowa City Landfill/ Event Desc: Impact Delineation Site: Iowa		Lab P#: Hummel, Matthew R E-Mail: Matthew.Hummel@eurofinsus.com Carrier Tracking Note(s): State of Origin:		COC No.: 310-91580-25213.1 Page: Page 1 of 1 Job #:	
Sampler: <i>Saul Fuhmeister</i> Phone: <i>319-936-5194</i> FWSID:		<b>Analysis Requested</b> 602B Aromatic 602B Cobalt 1.3765.85 Total Suspended Solids 826D (MOD) Trichloroethene, Trichloroethene, Vinyl Chloride 9034 Calc Sulfide 826D (MOD) Benzene			
Due Date Requested: TAT Requested (days): Project #: SOW#:		Preservation Codes: A HCL B NaOH C Zn Acetate D Nitric Acid E NaHSO4 F MeOH G Amchlor H Ascorbic Acid I Ice J DI Water K EDTA L EDA Other			
Form MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filled Sample (Yes or No) <input checked="" type="checkbox"/> Total Number of Containers:		Special Instructions/Note: Sites and Events Impact Delineation			
Sample Identification MW-18A-07 MW-15A MW-2C-97 MW-7C MW-306A MW-407 MW-409 MW-11D MW-404 Trip Blank	Sample Type (C=comp O=waste/o G-grab) G G G G G G G	Sample Date 4-30-24 4-29-24 4-29-24 4-29-24 4-29-24 4-29-24 4-29-24 4-29-24 4-29-24	Sample Time 9:05 1545 1523 11:20	Preservation Code: Water Water Water Water Water Water Water Water Water	602B Aromatic 602B Cobalt 1.3765.85 Total Suspended Solids 826D (MOD) Trichloroethene, Trichloroethene, Vinyl Chloride 9034 Calc Sulfide 826D (MOD) Benzene
<b>Possible Hazard Identification</b> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/>					
Empty Kit Relinquished by:					
Relinquished by: <i>[Signature]</i> Date/Time: 5-1-2024 Company: COFC		Received by: <i>[Signature]</i> Date/Time: 5/1/24 Company:			
Relinquished by: <i>[Signature]</i> Date/Time: 5/1/24 Company:		Received by: <i>[Signature]</i> Date/Time: 5/1/24 Company:			
Relinquished by: <i>[Signature]</i> Date/Time: 5/1/24 Company:		Received by: <i>[Signature]</i> Date/Time: 5/1/24 Company:			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.					



**Eurofins Cedar Falls**

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

**Chain of Custody Record**



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<b>Client Information (Sub Contract Lab)</b>		Sampler Yang, Mary E		Lab PM. Yang, Mary E		Carrier Tracking No(s):		COC No: 310-71958 1					
Client Contact: Shipping/Receiving		Phone:		E-Mail: Mary Yang@ET EurofinsUS com		State of Origin. Iowa		Page: Page 1 of 1					
Company Eurofins Environment Testing North Centr		Address 2417 Bond Street,		City University Park		State Zip: IL, 60484		310-280208 COC					
Accreditations Required (See note) State - Iowa, State Program - Iowa		Job #: 310-280208-1		Preservation Codes:									
Due Date Requested 5/14/2024		TAT Requested (days)		<b>Analysis Requested</b>									
PO #:		WO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		9034_Calc		Total Number of containers		Other	
Project Name Iowa City Landfill Event Desc: Impact Delineation		Project #: 31015832		SSOW#:		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Preservation Code:		Special Instructions/Note:	
Site 310-Iowa City Landfill		Sample Date		Sample Time		MW-407 (310-280208-3)		4/29/24		15 23 Central		Water	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type		Matrix		Preservation Code		Special Instructions/Note	
MW-407 (310-280208-3)		4/29/24		15 23 Central				Water		X		1	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>													
<b>Possible Hazard Identification</b>						<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>							
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested I, II, III, IV, Other (specify)						Primary Deliverable Rank 2		Special Instructions/QC Requirements					
Empty Kit Relinquished by:				Date		Time		Method of Shipment:					
Relinquished by: <i>[Signature]</i>				Date/Time: 5/22/24 1600		Company:		Received by: <i>[Signature]</i>		Date/Time: 5/30/24 0940		Company: <i>[Signature]</i>	
Relinquished by:				Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:				Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact.		Custody Seal No		Cooler Temperature(s) °C and Other Remarks.									
Δ Yes Δ No				5.9 → 5.5									



## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280208-1

SDG Number:

**Login Number: 280208**

**List Number: 1**

**Creator: Homolar, Dana J**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280208-1

SDG Number:

**Login Number: 280208**

**List Number: 2**

**Creator: Scott, Sherri L**

**List Source: Eurofins Chicago**

**List Creation: 05/03/24 06:21 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	5.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240  
Generated 5/12/2024 9:08:26 PM

## JOB DESCRIPTION

Iowa City Landfill 1st 2024 Semi-Annual Series A  
Series A

## JOB NUMBER

310-280445-1

# 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



Generated  
5/12/2024 9:08:26 PM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Job ID: 310-280445-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280445-1

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

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

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

### Receipt

The samples were received on 5/3/2024 2:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.2°C and 5.4°C.

### GC/MS VOA

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

### Metals

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

### General Chemistry

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

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280445-1	MW-17A-00	Groundwater	05/01/24 10:56	05/03/24 14:25
310-280445-2	MW-18AR	Groundwater	05/01/24 08:48	05/03/24 14:25
310-280445-3	MW-29A	Groundwater	05/01/24 11:25	05/03/24 14:25
310-280445-4	MW-200A	Groundwater	05/01/24 09:50	05/03/24 14:25
310-280445-5	MW-201A	Groundwater	05/01/24 08:16	05/03/24 14:25
310-280445-6	MW-202A	Groundwater	05/01/24 10:32	05/03/24 14:25
310-280445-7	MW-310A	Groundwater	05/01/24 15:01	05/03/24 14:25
310-280445-8	MW-312A	Groundwater	05/01/24 15:23	05/03/24 14:25
310-280445-9	Trip Blank 1	Water	05/01/24 00:00	05/03/24 14:25
310-280445-10	Trip Blank 2	Water	05/01/24 00:00	05/03/24 14:25

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# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Client Sample ID: MW-17A-00

Lab Sample ID: 310-280445-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.487		0.00200	0.000660	mg/L	1		6020B	Total/NA

## Client Sample ID: MW-18AR

Lab Sample ID: 310-280445-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.48		1.00	0.210	ug/L	1		8260D	Total/NA
Dichlorodifluoromethane	7.21		3.00	0.250	ug/L	1		8260D	Total/NA
1,1-Dichloroethane	0.528	J	1.00	0.220	ug/L	1		8260D	Total/NA
Tetrachloroethene	3.67		1.00	0.480	ug/L	1		8260D	Total/NA
Trichloroethene	1.30		1.00	0.430	ug/L	1		8260D	Total/NA
Trichlorofluoromethane	2.74	J	4.00	0.380	ug/L	1		8260D	Total/NA
Barium	0.791		0.00200	0.000660	mg/L	1		6020B	Total/NA

## Client Sample ID: MW-29A

Lab Sample ID: 310-280445-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.151		0.00200	0.000660	mg/L	1		6020B	Total/NA
Copper	0.00189	J	0.00500	0.00180	mg/L	1		6020B	Total/NA

## Client Sample ID: MW-200A

Lab Sample ID: 310-280445-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	1.08	J	3.00	0.250	ug/L	1		8260D	Total/NA
Barium	0.934		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	3.87		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-201A

Lab Sample ID: 310-280445-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.154		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-202A

Lab Sample ID: 310-280445-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.232		0.00200	0.000660	mg/L	1		6020B	Total/NA

## Client Sample ID: MW-310A

Lab Sample ID: 310-280445-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0891		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-312A

Lab Sample ID: 310-280445-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.164		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.50	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank 1

Lab Sample ID: 310-280445-9

No Detections.

## Client Sample ID: Trip Blank 2

Lab Sample ID: 310-280445-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-17A-00**

**Lab Sample ID: 310-280445-1**

Date Collected: 05/01/24 10:56

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:01	1
<b>Barium</b>	<b>0.487</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 20:42	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 20:42	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 20:42	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 20:42	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 20:42	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/04/24 12:30	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-18AR**

**Lab Sample ID: 310-280445-2**

Date Collected: 05/01/24 08:48

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 16:25	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 16:25	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 16:25	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 16:25	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 16:25	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 16:25	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 16:25	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 16:25	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 16:25	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 16:25	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 16:25	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 16:25	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 16:25	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 16:25	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 16:25	1
<b>cis-1,2-Dichloroethene</b>	<b>1.48</b>		1.00	0.210	ug/L			05/08/24 16:25	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 16:25	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 16:25	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 16:25	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 16:25	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 16:25	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 16:25	1
<b>Dichlorodifluoromethane</b>	<b>7.21</b>		3.00	0.250	ug/L			05/08/24 16:25	1
<b>1,1-Dichloroethane</b>	<b>0.528 J</b>		1.00	0.220	ug/L			05/08/24 16:25	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 16:25	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 16:25	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 16:25	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 16:25	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 16:25	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 16:25	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 16:25	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 16:25	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 16:25	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 16:25	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 16:25	1
<b>Tetrachloroethene</b>	<b>3.67</b>		1.00	0.480	ug/L			05/08/24 16:25	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 16:25	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 16:25	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 16:25	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 16:25	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 16:25	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 16:25	1
<b>Trichloroethene</b>	<b>1.30</b>		1.00	0.430	ug/L			05/08/24 16:25	1
<b>Trichlorofluoromethane</b>	<b>2.74 J</b>		4.00	0.380	ug/L			05/08/24 16:25	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 16:25	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 16:25	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 16:25	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 16:25	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-18AR**

**Lab Sample ID: 310-280445-2**

Date Collected: 05/01/24 08:48

Matrix: Groundwater

Date Received: 05/03/24 14:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/08/24 16:25	1
Dibromofluoromethane (Surr)	113		73 - 130		05/08/24 16:25	1
Toluene-d8 (Surr)	96		80 - 120		05/08/24 16:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:03	1
<b>Barium</b>	<b>0.791</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 20:45	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 20:45	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 20:45	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 20:45	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 20:45	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:50	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-29A**

**Lab Sample ID: 310-280445-3**

Date Collected: 05/01/24 11:25

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 16:48	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 16:48	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 16:48	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 16:48	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 16:48	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 16:48	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 16:48	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 16:48	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 16:48	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 16:48	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 16:48	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 16:48	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 16:48	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 16:48	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 16:48	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 16:48	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 16:48	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 16:48	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 16:48	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 16:48	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 16:48	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 16:48	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 16:48	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 16:48	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 16:48	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 16:48	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 16:48	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 16:48	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 16:48	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 16:48	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 16:48	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 16:48	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 16:48	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 16:48	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 16:48	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 16:48	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 16:48	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 16:48	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 16:48	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 16:48	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 16:48	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 16:48	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 16:48	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 16:48	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 16:48	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 16:48	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/08/24 16:48	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-29A**

**Lab Sample ID: 310-280445-3**

Date Collected: 05/01/24 11:25

Matrix: Groundwater

Date Received: 05/03/24 14:25

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	115		73 - 130		05/08/24 16:48	1
Toluene-d8 (Surr)	95		80 - 120		05/08/24 16:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:14	1
<b>Barium</b>	<b>0.151</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 20:49	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 20:49	1
<b>Copper</b>	<b>0.00189 J</b>		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 20:49	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 20:49	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 20:49	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/04/24 12:30	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-200A**

**Lab Sample ID: 310-280445-4**

Date Collected: 05/01/24 09:50

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 17:10	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 17:10	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 17:10	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 17:10	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 17:10	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 17:10	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 17:10	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 17:10	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 17:10	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 17:10	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 17:10	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 17:10	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 17:10	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 17:10	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 17:10	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 17:10	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 17:10	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 17:10	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 17:10	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 17:10	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 17:10	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 17:10	1
<b>Dichlorodifluoromethane</b>	<b>1.08 J</b>		3.00	0.250	ug/L			05/08/24 17:10	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 17:10	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 17:10	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 17:10	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 17:10	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 17:10	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 17:10	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 17:10	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 17:10	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 17:10	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 17:10	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 17:10	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 17:10	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 17:10	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 17:10	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 17:10	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 17:10	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 17:10	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 17:10	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 17:10	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 17:10	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 17:10	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 17:10	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 17:10	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 17:10	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 17:10	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-200A**

**Lab Sample ID: 310-280445-4**

Date Collected: 05/01/24 09:50

Matrix: Groundwater

Date Received: 05/03/24 14:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/08/24 17:10	1
Dibromofluoromethane (Surr)	118		73 - 130		05/08/24 17:10	1
Toluene-d8 (Surr)	96		80 - 120		05/08/24 17:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:16	1
<b>Barium</b>	<b>0.934</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 21:06	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:06	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 21:06	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 21:06	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 21:06	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>3.87</b>		1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-201A**

**Lab Sample ID: 310-280445-5**

Date Collected: 05/01/24 08:16

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 17:33	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 17:33	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 17:33	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 17:33	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 17:33	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 17:33	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 17:33	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 17:33	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 17:33	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 17:33	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 17:33	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 17:33	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 17:33	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 17:33	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 17:33	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 17:33	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 17:33	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 17:33	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 17:33	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 17:33	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 17:33	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 17:33	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 17:33	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 17:33	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 17:33	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 17:33	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 17:33	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 17:33	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 17:33	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 17:33	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 17:33	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 17:33	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 17:33	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 17:33	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 17:33	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 17:33	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 17:33	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 17:33	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 17:33	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 17:33	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 17:33	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 17:33	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 17:33	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 17:33	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 17:33	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 17:33	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 17:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		05/08/24 17:33	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-201A**

**Lab Sample ID: 310-280445-5**

Date Collected: 05/01/24 08:16

Matrix: Groundwater

Date Received: 05/03/24 14:25

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	114		73 - 130		05/08/24 17:33	1
Toluene-d8 (Surr)	95		80 - 120		05/08/24 17:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:18	1
<b>Barium</b>	<b>0.154</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 21:09	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:09	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 21:09	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 21:09	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 21:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>2.38</b>		1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-202A**

**Lab Sample ID: 310-280445-6**

Date Collected: 05/01/24 10:32

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:21	1
<b>Barium</b>	<b>0.232</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 21:13	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:13	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 21:13	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 21:13	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 21:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/04/24 12:30	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-310A**

**Lab Sample ID: 310-280445-7**

Date Collected: 05/01/24 15:01

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 17:56	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 17:56	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 17:56	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 17:56	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 17:56	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 17:56	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 17:56	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 17:56	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 17:56	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 17:56	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 17:56	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 17:56	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 17:56	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 17:56	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 17:56	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 17:56	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 17:56	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 17:56	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 17:56	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 17:56	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 17:56	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 17:56	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 17:56	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 17:56	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 17:56	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 17:56	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 17:56	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 17:56	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 17:56	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 17:56	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 17:56	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 17:56	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 17:56	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 17:56	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 17:56	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 17:56	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 17:56	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 17:56	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 17:56	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 17:56	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 17:56	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 17:56	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 17:56	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 17:56	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 17:56	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 17:56	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 17:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/08/24 17:56	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-310A**

**Lab Sample ID: 310-280445-7**

Date Collected: 05/01/24 15:01

Matrix: Groundwater

Date Received: 05/03/24 14:25

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	117		73 - 130		05/08/24 17:56	1
Toluene-d8 (Surr)	96		80 - 120		05/08/24 17:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/06/24 10:00	05/09/24 15:23	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:23	1
<b>Barium</b>	<b>0.0891</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 21:16	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/06/24 10:00	05/08/24 21:16	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/06/24 10:00	05/09/24 15:23	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/06/24 10:00	05/09/24 15:23	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:16	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 21:16	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 21:16	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 21:16	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/06/24 10:00	05/08/24 21:16	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/06/24 10:00	05/08/24 21:16	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/06/24 10:00	05/08/24 21:16	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/06/24 10:00	05/08/24 21:16	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/06/24 10:00	05/08/24 21:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>2.25</b>		1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-312A**

**Lab Sample ID: 310-280445-8**

Date Collected: 05/01/24 15:23

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 18:19	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 18:19	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 18:19	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 18:19	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 18:19	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 18:19	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 18:19	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 18:19	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 18:19	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 18:19	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 18:19	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 18:19	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 18:19	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 18:19	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 18:19	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 18:19	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 18:19	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 18:19	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 18:19	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 18:19	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 18:19	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 18:19	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 18:19	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 18:19	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 18:19	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 18:19	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 18:19	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 18:19	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 18:19	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 18:19	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 18:19	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 18:19	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 18:19	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 18:19	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 18:19	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 18:19	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 18:19	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 18:19	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 18:19	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 18:19	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 18:19	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 18:19	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 18:19	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 18:19	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 18:19	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 18:19	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 18:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/08/24 18:19	1

Eurofins Cedar Falls



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-312A**

**Lab Sample ID: 310-280445-8**

Date Collected: 05/01/24 15:23

Matrix: Groundwater

Date Received: 05/03/24 14:25

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	118		73 - 130		05/08/24 18:19	1
Toluene-d8 (Surr)	96		80 - 120		05/08/24 18:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/06/24 10:00	05/09/24 15:25	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:25	1
<b>Barium</b>	<b>0.164</b>		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 21:20	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/06/24 10:00	05/08/24 21:20	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/06/24 10:00	05/09/24 15:25	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/06/24 10:00	05/09/24 15:25	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:20	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 21:20	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 21:20	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 21:20	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/06/24 10:00	05/08/24 21:20	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/06/24 10:00	05/08/24 21:20	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/06/24 10:00	05/09/24 15:25	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/06/24 10:00	05/08/24 21:20	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/06/24 10:00	05/08/24 21:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>1.50</b>	<b>J</b>	1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: Trip Blank 1**

**Lab Sample ID: 310-280445-9**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 14:31	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 14:31	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 14:31	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 14:31	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 14:31	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 14:31	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 14:31	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 14:31	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 14:31	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 14:31	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 14:31	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 14:31	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 14:31	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 14:31	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 14:31	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 14:31	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 14:31	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 14:31	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 14:31	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 14:31	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 14:31	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 14:31	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/08/24 14:31	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 14:31	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 14:31	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 14:31	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 14:31	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 14:31	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 14:31	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 14:31	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 14:31	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 14:31	1
m,p-Xylene	<2.00		2.00	0.380	ug/L			05/08/24 14:31	1
o-Xylene	<1.00		1.00	0.400	ug/L			05/08/24 14:31	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 14:31	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 14:31	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 14:31	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 14:31	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 14:31	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 14:31	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 14:31	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 14:31	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 14:31	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 14:31	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 14:31	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 14:31	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 14:31	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 14:31	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 14:31	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: Trip Blank 1**

**Lab Sample ID: 310-280445-9**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 14:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					05/08/24 14:31	1
Dibromofluoromethane (Surr)	114		73 - 130					05/08/24 14:31	1
Toluene-d8 (Surr)	96		80 - 120					05/08/24 14:31	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280445-10**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 14:54	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 14:54	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 14:54	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 14:54	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 14:54	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 14:54	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 14:54	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 14:54	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 14:54	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 14:54	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 14:54	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 14:54	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 14:54	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 14:54	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 14:54	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 14:54	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 14:54	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 14:54	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 14:54	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 14:54	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 14:54	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 14:54	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/08/24 14:54	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 14:54	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 14:54	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 14:54	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 14:54	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 14:54	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 14:54	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 14:54	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 14:54	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 14:54	1
m,p-Xylene	<2.00		2.00	0.380	ug/L			05/08/24 14:54	1
o-Xylene	<1.00		1.00	0.400	ug/L			05/08/24 14:54	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 14:54	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 14:54	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 14:54	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 14:54	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 14:54	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 14:54	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 14:54	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 14:54	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 14:54	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 14:54	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 14:54	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 14:54	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 14:54	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 14:54	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 14:54	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280445-10**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 14:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					05/08/24 14:54	1
Dibromofluoromethane (Surr)	112		73 - 130					05/08/24 14:54	1
Toluene-d8 (Surr)	96		80 - 120					05/08/24 14:54	1

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# Definitions/Glossary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

# Surrogate Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

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

Matrix: Groundwater

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(73-130)	(80-120)
310-280445-2	MW-18AR	103	113	96
310-280445-2 MS	MW-18AR	100	105	98
310-280445-2 MSD	MW-18AR	101	105	98
310-280445-3	MW-29A	103	115	95
310-280445-4	MW-200A	103	118	96
310-280445-5	MW-201A	104	114	95
310-280445-7	MW-310A	102	117	96
310-280445-8	MW-312A	103	118	96

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)  
DBFM = Dibromofluoromethane (Surr)  
TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(73-130)	(80-120)
310-280445-9	Trip Blank 1	103	114	96
310-280445-10	Trip Blank 2	102	112	96
LCS 310-421017/6	Lab Control Sample	102	102	99
LCS 310-421017/7	Lab Control Sample	100	115	98
MB 310-421017/5	Method Blank	102	113	97

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)  
DBFM = Dibromofluoromethane (Surr)  
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

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

Lab Sample ID: MB 310-421017/5

Matrix: Water

Analysis Batch: 421017

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/08/24 12:15	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/08/24 12:15	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 12:15	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/08/24 12:15	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/08/24 12:15	1
Bromoform	<5.00		5.00	0.780	ug/L			05/08/24 12:15	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/08/24 12:15	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/08/24 12:15	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/08/24 12:15	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/08/24 12:15	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/08/24 12:15	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/08/24 12:15	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/08/24 12:15	1
Chloroform	<3.00		3.00	1.30	ug/L			05/08/24 12:15	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/08/24 12:15	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/08/24 12:15	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/08/24 12:15	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/08/24 12:15	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/08/24 12:15	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/08/24 12:15	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/08/24 12:15	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/08/24 12:15	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			05/08/24 12:15	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/08/24 12:15	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/08/24 12:15	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/08/24 12:15	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/08/24 12:15	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/08/24 12:15	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/08/24 12:15	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/08/24 12:15	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/08/24 12:15	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/08/24 12:15	1
m,p-Xylene	<2.00		2.00	0.380	ug/L			05/08/24 12:15	1
o-Xylene	<1.00		1.00	0.400	ug/L			05/08/24 12:15	1
Styrene	<1.00		1.00	0.370	ug/L			05/08/24 12:15	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/08/24 12:15	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/08/24 12:15	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 12:15	1
Toluene	<1.00		1.00	0.430	ug/L			05/08/24 12:15	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/08/24 12:15	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/08/24 12:15	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/08/24 12:15	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/08/24 12:15	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/08/24 12:15	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 12:15	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/08/24 12:15	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/08/24 12:15	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/08/24 12:15	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-421017/5

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421017

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 12:15	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/08/24 12:15	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	102		80 - 120		05/08/24 12:15	1
Dibromofluoromethane (Surr)	113		73 - 130		05/08/24 12:15	1
Toluene-d8 (Surr)	97		80 - 120		05/08/24 12:15	1

Lab Sample ID: LCS 310-421017/6

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421017

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Acetone	40.0	38.00		ug/L		95	50 - 150
Acrylonitrile	200	198.0		ug/L		99	50 - 150
Benzene	20.0	20.14		ug/L		101	72 - 124
Bromochloromethane	20.0	20.09		ug/L		100	73 - 130
Bromodichloromethane	20.0	19.49		ug/L		97	74 - 122
Bromoform	20.0	18.76		ug/L		94	61 - 122
2-Butanone (MEK)	40.0	39.83		ug/L		100	50 - 150
Carbon disulfide	20.0	19.12		ug/L		96	59 - 135
Carbon tetrachloride	20.0	23.73		ug/L		119	67 - 132
Chlorobenzene	20.0	18.91		ug/L		95	76 - 120
Chlorodibromomethane	20.0	19.56		ug/L		98	71 - 121
Chloroform	20.0	20.69		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	19.35		ug/L		97	74 - 123
cis-1,3-Dichloropropene	20.0	20.35		ug/L		102	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	18.09		ug/L		90	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.06		ug/L		100	75 - 125
Dibromomethane	20.0	20.08		ug/L		100	74 - 125
1,2-Dichlorobenzene	20.0	18.73		ug/L		94	74 - 120
1,4-Dichlorobenzene	20.0	18.92		ug/L		95	72 - 120
1,1-Dichloroethane	20.0	19.59		ug/L		98	70 - 127
1,2-Dichloroethane	20.0	20.03		ug/L		100	71 - 125
1,1-Dichloroethene	20.0	20.26		ug/L		101	63 - 132
1,2-Dichloropropane	20.0	20.97		ug/L		105	73 - 124
Ethylbenzene	20.0	19.51		ug/L		98	74 - 122
2-Hexanone	40.0	37.59		ug/L		94	60 - 140
Iodomethane	20.0	19.40		ug/L		97	10 - 150
Methylene Chloride	20.0	19.37		ug/L		97	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	38.11		ug/L		95	60 - 139
Styrene	20.0	19.29		ug/L		96	74 - 121
1,1,1,2-Tetrachloroethane	20.0	20.07		ug/L		100	71 - 120
1,1,2,2-Tetrachloroethane	20.0	18.62		ug/L		93	68 - 124
Tetrachloroethene	20.0	20.89		ug/L		104	71 - 130
Toluene	20.0	18.55		ug/L		93	74 - 123
trans-1,4-Dichloro-2-butene	20.0	17.95		ug/L		90	50 - 150
trans-1,2-Dichloroethene	20.0	20.05		ug/L		100	70 - 126

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421017/6

Matrix: Water

Analysis Batch: 421017

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
trans-1,3-Dichloropropene	20.0	20.57		ug/L		103	69 - 123
1,1,1-Trichloroethane	20.0	21.44		ug/L		107	73 - 129
1,1,2-Trichloroethane	20.0	19.79		ug/L		99	73 - 123
Trichloroethene	20.0	21.09		ug/L		105	72 - 126
1,2,3-Trichloropropane	20.0	19.24		ug/L		96	65 - 127
Vinyl acetate	40.0	43.51		ug/L		109	50 - 150
Xylenes, Total	40.0	38.58		ug/L		96	73 - 123

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	102		73 - 130
Toluene-d8 (Surr)	99		80 - 120

Lab Sample ID: LCS 310-421017/7

Matrix: Water

Analysis Batch: 421017

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Bromomethane	20.0	19.26		ug/L		96	23 - 150
Chloroethane	20.0	21.12		ug/L		106	54 - 136
Chloromethane	20.0	20.02		ug/L		100	38 - 150
Trichlorofluoromethane	20.0	23.77		ug/L		119	54 - 149
Vinyl chloride	20.0	21.16		ug/L		106	56 - 140

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	115		73 - 130
Toluene-d8 (Surr)	98		80 - 120

Lab Sample ID: 310-280445-2 MS

Matrix: Groundwater

Analysis Batch: 421017

Client Sample ID: MW-18AR

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Acetone	<10.0		40.0	30.25		ug/L		76	31 - 150
Acrylonitrile	<5.00		200	157.5		ug/L		79	40 - 150
Benzene	<0.500		20.0	15.15		ug/L		76	46 - 130
Bromochloromethane	<5.00		20.0	16.13		ug/L		81	57 - 130
Bromodichloromethane	<1.00		20.0	15.22		ug/L		76	57 - 130
Bromoform	<5.00		20.0	13.42		ug/L		67	44 - 130
2-Butanone (MEK)	<10.0		40.0	30.17		ug/L		75	38 - 150
Carbon disulfide	<1.00		20.0	14.28		ug/L		71	38 - 135
Carbon tetrachloride	<2.00		20.0	15.37		ug/L		77	45 - 132
Chlorobenzene	<1.00		20.0	13.39		ug/L		67	59 - 130
Chlorodibromomethane	<5.00		20.0	14.43		ug/L		72	54 - 130
Chloroform	<3.00		20.0	15.52		ug/L		78	51 - 130
cis-1,2-Dichloroethene	1.48		20.0	16.55		ug/L		75	45 - 130
cis-1,3-Dichloropropene	<5.00		20.0	14.48		ug/L		72	53 - 130

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280445-2 MS

Client Sample ID: MW-18AR

Matrix: Groundwater

Prep Type: Total/NA

Analysis Batch: 421017

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
1,2-Dibromo-3-Chloropropane	<1.20		20.0	12.59		ug/L		63	38 - 150
1,2-Dibromoethane (EDB)	<0.340		20.0	14.66		ug/L		73	60 - 130
Dibromomethane	<1.00		20.0	15.95		ug/L		80	59 - 130
1,2-Dichlorobenzene	<1.00		20.0	12.49		ug/L		62	59 - 130
1,4-Dichlorobenzene	<1.00		20.0	12.61		ug/L		63	57 - 130
1,1-Dichloroethane	0.528	J	20.0	15.93		ug/L		77	49 - 130
1,2-Dichloroethane	<1.00		20.0	16.12		ug/L		81	51 - 130
1,1-Dichloroethane	<2.00		20.0	14.69		ug/L		73	37 - 132
1,2-Dichloropropane	<1.00		20.0	15.83		ug/L		79	57 - 130
Ethylbenzene	<1.00		20.0	12.86		ug/L		64	45 - 130
2-Hexanone	<10.0		40.0	27.85		ug/L		70	46 - 140
Iodomethane	<10.0		20.0	15.44		ug/L		77	10 - 150
Methylene Chloride	<5.00		20.0	15.51		ug/L		78	37 - 150
4-Methyl-2-pentanone (MIBK)	<10.0		40.0	28.51		ug/L		71	47 - 139
Styrene	<1.00		20.0	13.23		ug/L		66	47 - 130
1,1,1,2-Tetrachloroethane	<1.00		20.0	13.94		ug/L		70	55 - 130
1,1,2,2-Tetrachloroethane	<1.00		20.0	13.93		ug/L		70	54 - 130
Tetrachloroethene	3.67		20.0	15.65		ug/L		60	47 - 130
Toluene	<1.00		20.0	13.07		ug/L		65	51 - 130
trans-1,4-Dichloro-2-butene	<10.0		20.0	13.21		ug/L		66	26 - 150
trans-1,2-Dichloroethene	<1.00		20.0	15.40		ug/L		77	48 - 130
trans-1,3-Dichloropropene	<5.00		20.0	15.07		ug/L		75	50 - 130
1,1,1-Trichloroethane	<1.00		20.0	15.02		ug/L		75	52 - 130
1,1,2-Trichloroethane	<1.00		20.0	15.00		ug/L		75	58 - 130
Trichloroethene	1.30		20.0	15.66		ug/L		72	51 - 130
1,2,3-Trichloropropane	<1.00		20.0	14.61		ug/L		73	49 - 130
Vinyl acetate	<10.0		40.0	31.95		ug/L		80	29 - 150
Xylenes, Total	<3.00		40.0	26.15		ug/L		65	43 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	105		73 - 130
Toluene-d8 (Surr)	98		80 - 120

Lab Sample ID: 310-280445-2 MSD

Client Sample ID: MW-18AR

Matrix: Groundwater

Prep Type: Total/NA

Analysis Batch: 421017

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Acetone	<10.0		40.0	29.79		ug/L		74	31 - 150	2	29
Acrylonitrile	<5.00		200	159.7		ug/L		80	40 - 150	1	20
Benzene	<0.500		20.0	14.85		ug/L		74	46 - 130	2	20
Bromochloromethane	<5.00		20.0	15.94		ug/L		80	57 - 130	1	20
Bromodichloromethane	<1.00		20.0	14.97		ug/L		75	57 - 130	2	20
Bromoform	<5.00		20.0	13.75		ug/L		69	44 - 130	2	20
2-Butanone (MEK)	<10.0		40.0	30.09		ug/L		75	38 - 150	0	20
Carbon disulfide	<1.00		20.0	13.28		ug/L		66	38 - 135	7	30
Carbon tetrachloride	<2.00		20.0	15.33		ug/L		77	45 - 132	0	20

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-280445-2 MSD  
 Matrix: Groundwater  
 Analysis Batch: 421017

Client Sample ID: MW-18AR  
 Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Chlorobenzene	<1.00		20.0	13.33		ug/L		67	59 - 130	0	20
Chlorodibromomethane	<5.00		20.0	14.56		ug/L		73	54 - 130	1	20
Chloroform	<3.00		20.0	15.41		ug/L		77	51 - 130	1	20
cis-1,2-Dichloroethene	1.48		20.0	16.31		ug/L		74	45 - 130	1	20
cis-1,3-Dichloropropene	<5.00		20.0	14.65		ug/L		73	53 - 130	1	20
1,2-Dibromo-3-Chloropropane	<1.20		20.0	13.82		ug/L		69	38 - 150	9	20
1,2-Dibromoethane (EDB)	<0.340		20.0	14.87		ug/L		74	60 - 130	1	20
Dibromomethane	<1.00		20.0	16.39		ug/L		82	59 - 130	3	20
1,2-Dichlorobenzene	<1.00		20.0	12.85		ug/L		64	59 - 130	3	20
1,4-Dichlorobenzene	<1.00		20.0	12.94		ug/L		65	57 - 130	3	20
1,1-Dichloroethane	0.528	J	20.0	15.66		ug/L		76	49 - 130	2	20
1,2-Dichloroethane	<1.00		20.0	15.95		ug/L		80	51 - 130	1	20
1,1-Dichloroethene	<2.00		20.0	14.47		ug/L		72	37 - 132	1	26
1,2-Dichloropropane	<1.00		20.0	15.69		ug/L		78	57 - 130	1	20
Ethylbenzene	<1.00		20.0	12.80		ug/L		64	45 - 130	0	20
2-Hexanone	<10.0		40.0	28.73		ug/L		72	46 - 140	3	20
Iodomethane	<10.0		20.0	15.81		ug/L		79	10 - 150	2	35
Methylene Chloride	<5.00		20.0	15.22		ug/L		76	37 - 150	2	24
4-Methyl-2-pentanone (MIBK)	<10.0		40.0	28.33		ug/L		71	47 - 139	1	20
Styrene	<1.00		20.0	13.27		ug/L		66	47 - 130	0	20
1,1,1,2-Tetrachloroethane	<1.00		20.0	13.85		ug/L		69	55 - 130	1	20
1,1,2,2-Tetrachloroethane	<1.00		20.0	13.96		ug/L		70	54 - 130	0	20
Tetrachloroethene	3.67		20.0	15.85		ug/L		61	47 - 130	1	20
Toluene	<1.00		20.0	12.80		ug/L		64	51 - 130	2	20
trans-1,4-Dichloro-2-butene	<10.0		20.0	13.86		ug/L		69	26 - 150	5	23
trans-1,2-Dichloroethene	<1.00		20.0	15.02		ug/L		75	48 - 130	2	22
trans-1,3-Dichloropropene	<5.00		20.0	15.26		ug/L		76	50 - 130	1	20
1,1,1-Trichloroethane	<1.00		20.0	14.90		ug/L		75	52 - 130	1	20
1,1,2-Trichloroethane	<1.00		20.0	14.86		ug/L		74	58 - 130	1	20
Trichloroethene	1.30		20.0	15.28		ug/L		70	51 - 130	2	20
1,2,3-Trichloropropane	<1.00		20.0	14.52		ug/L		73	49 - 130	1	26
Vinyl acetate	<10.0		40.0	31.48		ug/L		79	29 - 150	1	23
Xylenes, Total	<3.00		40.0	25.70		ug/L		64	43 - 130	2	20

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	105		73 - 130
Toluene-d8 (Surr)	98		80 - 120

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

Lab Sample ID: MB 310-420672/1-A  
 Matrix: Water  
 Analysis Batch: 421121

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 420672

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	<0.00200		0.00200	0.000660	mg/L		05/06/24 10:00	05/08/24 19:57	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/06/24 10:00	05/08/24 19:57	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 19:57	1

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

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

**Lab Sample ID: MB 310-420672/1-A**  
**Matrix: Water**  
**Analysis Batch: 421121**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 420672**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Copper	<0.00500		0.00500	0.00180	mg/L		05/06/24 10:00	05/08/24 19:57	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/06/24 10:00	05/08/24 19:57	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/06/24 10:00	05/08/24 19:57	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/06/24 10:00	05/08/24 19:57	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/06/24 10:00	05/08/24 19:57	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/06/24 10:00	05/08/24 19:57	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/06/24 10:00	05/08/24 19:57	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/06/24 10:00	05/08/24 19:57	1

**Lab Sample ID: MB 310-420672/1-A**  
**Matrix: Water**  
**Analysis Batch: 421266**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 420672**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.00200		0.00200	0.00100	mg/L		05/06/24 10:00	05/09/24 14:46	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 14:46	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/06/24 10:00	05/09/24 14:46	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/06/24 10:00	05/09/24 14:46	1

**Lab Sample ID: LCS 310-420672/2-A**  
**Matrix: Water**  
**Analysis Batch: 421121**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 420672**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Barium	0.100	0.1040		mg/L		104	80 - 120
Cobalt	0.100	0.09912		mg/L		99	80 - 120
Copper	0.200	0.2001		mg/L		100	80 - 120
Lead	0.200	0.2075		mg/L		104	80 - 120
Nickel	0.200	0.2087		mg/L		104	80 - 120

**Lab Sample ID: LCS 310-420672/2-A**  
**Matrix: Water**  
**Analysis Batch: 421266**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 420672**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Antimony	0.200	0.2260		mg/L		113	80 - 120
Arsenic	0.200	0.2131		mg/L		107	80 - 120
Cadmium	0.100	0.1058		mg/L		106	80 - 120
Chromium	0.100	0.09655		mg/L		97	80 - 120
Thallium	0.100	0.1110		mg/L		111	80 - 120

**Lab Sample ID: 310-280445-8 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421121**

**Client Sample ID: MW-312A**  
**Prep Type: Total/NA**  
**Prep Batch: 420672**

Analyte	Sample Sample		DU DU		Unit	D	RPD	
	Result	Qualifier	Result	Qualifier			RPD	Limit
Barium	0.164		0.1617		mg/L		1	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

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

Lab Sample ID: 310-280445-8 DU  
 Matrix: Groundwater  
 Analysis Batch: 421121

Client Sample ID: MW-312A  
 Prep Type: Total/NA  
 Prep Batch: 420672

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Lead	<0.000500		<0.000500		mg/L		NC	20
Nickel	<0.00500		<0.00500		mg/L		NC	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20
Zinc	<0.0200		<0.0200		mg/L		NC	20

Lab Sample ID: 310-280445-8 DU  
 Matrix: Groundwater  
 Analysis Batch: 421266

Client Sample ID: MW-312A  
 Prep Type: Total/NA  
 Prep Batch: 420672

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	<0.00500		<0.00500		mg/L		NC	20

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-766470/1  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sulfide	<1.00		1.00	0.231	mg/L			05/06/24 01:48	1

Lab Sample ID: LCS 500-766470/2  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

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

Lab Sample ID: MB 310-420693/1  
 Matrix: Water  
 Analysis Batch: 420693

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/04/24 12:30	1

Lab Sample ID: LCS 310-420693/2  
 Matrix: Water  
 Analysis Batch: 420693

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## GC/MS VOA

### Analysis Batch: 421017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-2	MW-18AR	Total/NA	Groundwater	8260D	
310-280445-3	MW-29A	Total/NA	Groundwater	8260D	
310-280445-4	MW-200A	Total/NA	Groundwater	8260D	
310-280445-5	MW-201A	Total/NA	Groundwater	8260D	
310-280445-7	MW-310A	Total/NA	Groundwater	8260D	
310-280445-8	MW-312A	Total/NA	Groundwater	8260D	
310-280445-9	Trip Blank 1	Total/NA	Water	8260D	
310-280445-10	Trip Blank 2	Total/NA	Water	8260D	
MB 310-421017/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421017/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421017/7	Lab Control Sample	Total/NA	Water	8260D	
310-280445-2 MS	MW-18AR	Total/NA	Groundwater	8260D	
310-280445-2 MSD	MW-18AR	Total/NA	Groundwater	8260D	

## Metals

### Prep Batch: 420672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-1	MW-17A-00	Total/NA	Groundwater	3005A	
310-280445-2	MW-18AR	Total/NA	Groundwater	3005A	
310-280445-3	MW-29A	Total/NA	Groundwater	3005A	
310-280445-4	MW-200A	Total/NA	Groundwater	3005A	
310-280445-5	MW-201A	Total/NA	Groundwater	3005A	
310-280445-6	MW-202A	Total/NA	Groundwater	3005A	
310-280445-7	MW-310A	Total/NA	Groundwater	3005A	
310-280445-8	MW-312A	Total/NA	Groundwater	3005A	
MB 310-420672/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280445-8 DU	MW-312A	Total/NA	Groundwater	3005A	

### Analysis Batch: 421121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-1	MW-17A-00	Total/NA	Groundwater	6020B	420672
310-280445-2	MW-18AR	Total/NA	Groundwater	6020B	420672
310-280445-3	MW-29A	Total/NA	Groundwater	6020B	420672
310-280445-4	MW-200A	Total/NA	Groundwater	6020B	420672
310-280445-5	MW-201A	Total/NA	Groundwater	6020B	420672
310-280445-6	MW-202A	Total/NA	Groundwater	6020B	420672
310-280445-7	MW-310A	Total/NA	Groundwater	6020B	420672
310-280445-8	MW-312A	Total/NA	Groundwater	6020B	420672
MB 310-420672/1-A	Method Blank	Total/NA	Water	6020B	420672
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	6020B	420672
310-280445-8 DU	MW-312A	Total/NA	Groundwater	6020B	420672

### Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-1	MW-17A-00	Total/NA	Groundwater	6020B	420672
310-280445-2	MW-18AR	Total/NA	Groundwater	6020B	420672
310-280445-3	MW-29A	Total/NA	Groundwater	6020B	420672
310-280445-4	MW-200A	Total/NA	Groundwater	6020B	420672
310-280445-5	MW-201A	Total/NA	Groundwater	6020B	420672

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# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Metals (Continued)

### Analysis Batch: 421266 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-6	MW-202A	Total/NA	Groundwater	6020B	420672
310-280445-7	MW-310A	Total/NA	Groundwater	6020B	420672
310-280445-8	MW-312A	Total/NA	Groundwater	6020B	420672
MB 310-420672/1-A	Method Blank	Total/NA	Water	6020B	420672
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	6020B	420672
310-280445-8 DU	MW-312A	Total/NA	Groundwater	6020B	420672

## General Chemistry

### Analysis Batch: 420693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-1	MW-17A-00	Total/NA	Groundwater	I-3765-85	
310-280445-2	MW-18AR	Total/NA	Groundwater	I-3765-85	
310-280445-3	MW-29A	Total/NA	Groundwater	I-3765-85	
310-280445-4	MW-200A	Total/NA	Groundwater	I-3765-85	
310-280445-5	MW-201A	Total/NA	Groundwater	I-3765-85	
310-280445-6	MW-202A	Total/NA	Groundwater	I-3765-85	
310-280445-7	MW-310A	Total/NA	Groundwater	I-3765-85	
310-280445-8	MW-312A	Total/NA	Groundwater	I-3765-85	
MB 310-420693/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420693/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 766470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280445-2	MW-18AR	Total/NA	Groundwater	9034	
MB 500-766470/1	Method Blank	Total/NA	Water	9034	
LCS 500-766470/2	Lab Control Sample	Total/NA	Water	9034	



# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

**Client Sample ID: MW-17A-00**

**Lab Sample ID: 310-280445-1**

Date Collected: 05/01/24 10:56

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 20:42
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:01
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

**Client Sample ID: MW-18AR**

**Lab Sample ID: 310-280445-2**

Date Collected: 05/01/24 08:48

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 16:25
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 20:45
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:03
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:50 - 05/06/24 02:57 <sup>1</sup>
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

**Client Sample ID: MW-29A**

**Lab Sample ID: 310-280445-3**

Date Collected: 05/01/24 11:25

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 16:48
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 20:49
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:14
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

**Client Sample ID: MW-200A**

**Lab Sample ID: 310-280445-4**

Date Collected: 05/01/24 09:50

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 17:10
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:06
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:16
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

# Lab Chronicle

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Client Sample ID: MW-201A

Lab Sample ID: 310-280445-5

Date Collected: 05/01/24 08:16

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 17:33
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:09
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:18
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

## Client Sample ID: MW-202A

Lab Sample ID: 310-280445-6

Date Collected: 05/01/24 10:32

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:13
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:21
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

## Client Sample ID: MW-310A

Lab Sample ID: 310-280445-7

Date Collected: 05/01/24 15:01

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 17:56
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:16
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:23
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

## Client Sample ID: MW-312A

Lab Sample ID: 310-280445-8

Date Collected: 05/01/24 15:23

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 18:19
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:20
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:25
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

# Lab Chronicle

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## Client Sample ID: Trip Blank 1

Lab Sample ID: 310-280445-9

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 14:31

## Client Sample ID: Trip Blank 2

Lab Sample ID: 310-280445-10

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421017	FE5V	EET CF	05/08/24 14:54

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

### Laboratory References:

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

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

## 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	12-01-25

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

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	m,p-Xylene
8260D		Water	o-Xylene

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-24 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

**Laboratory References:**

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401  
EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





Environment Testing  
America



310-280445 Chain of Custody

Cooler/Sample Receipt and Temperature

<b>Client Information</b>			
Client: Iowa City Landfill			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	5-3-24	1425	MY
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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
MW-18A-07, MW-201A; MW-312A; MW-310A; MW-200A			
<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:		X	Correction Factor (°C): 0
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	Plastic 250 HNO <sub>3</sub>	→	
Uncorrected Temp (°C):	4.2	2.6	
Corrected Temp (°C):	4.2	2.6	
<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>			



Environment Testing  
America

Place COC scanning label  
here

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information:</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information:</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-3-24</u>	<u>1425</u>	<u>MY</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<u>MW-18AR; MW-306A; MW-29A</u>			
<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:	<u>X</u>	Correction Factor (°C):	<u>0</u>
* Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1 <u>Plastic 250 HNO<sub>3</sub></u>	CONTAINER 2 <u>→</u>	
Uncorrected Temp (°C):	<u>4</u>	<u>2.5</u>	
Corrected Temp (°C):	<u>5.4</u>	<u>2.5</u>	
<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>			

**Eurofins Cedar Falls**

3019 Venture Way  
Cedar Falls IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b>		Carrier Tracking No(s):	COC No: 310-91304-25155.1	
Client Contact: Jen Jordan		State of Origin:	Page: Page 1 of 3	
Company: Iowa City Landfill		Job #:		
Address: City of Iowa City 335 E. Iowa Ave Iowa City Iowa City Iowa City State, Zip: IA, 52240 Phone:		Analysis Requested		
Due Date Requested: TAT Requested (days)		Preservation Codes: M Hexane N Naphthalene O Ash/KO2 P Ni2SO3 Q - Ni2SO3 R Ni2SO3 S H2SO4 T TSP Dodecahydral U Acetone V MCAA W pH 4-5 Y Triaza Z other (specify)		
Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Total Number of Containers		
PO #: RFP23-14		Appendix I VOCs		
WO #:		Metals List, TSS, App I VOCs, Dichlorodifluoromethane		
Project Name: Iowa City Landfill Semi-Annual Series A		Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide		
Site: Iowa		Metals List, TSS		
		Appendix I, TSS		
		Permit MS/MSD (Yes or No)		
		Field Filtered Sample (Yes or No)		
		Appendix I, TSS		
		Metals List, TSS, App I VOCs		
		Metals List, TSS, App I VOCs, Dichlorodifluoromethane		
		Appendix I VOCs		
		Special Instructions/Note: Sites and Events Series A		
<b>Sample Identification</b>		Special Instructions/Note: Sites and Events Series A		
Sample ID	Sample Date	Sample Time	Sample Type (W=water, S=solid, O=waste/oil, C=comp, G=grab)	Preservation Code
MW-17A-00	5-1-24	10:56	G	
MW-18A	5-1-24	8:43	G	
MW-29A	5-1-24	11:25	G	
MW-200A	5-1-24	9:50	G	
MW-201A	5-1-24	8:16	G	
MW-202A	5-1-24	10:32	G	
<b>Possible Hazard Identification</b>		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		
Non-Hazard		Return To Client		
Flammable		Disposal By Lab		
Skin Irritant		Archive For		
Deliverable Requested: I, II, III, IV, Other (specify)		Months		
Empty Kit Relinquished by:		Method of Shipment:		
Relinquished by:		Date/Time:		
Relinquished by:		Date/Time:		
Relinquished by:		Date/Time:		
Custody Seals Intact:		Cooler Temperature(s) °C and Other Remarks:		
A Yes <input type="checkbox"/> No <input type="checkbox"/>		Ver 01/16/2019		





**Eurofins Cedar Falls**

3019 Venture Way  
Cedar Falls, IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<p><b>Client Information</b>                  Client Contact: Jen Jordan                  Company: Iowa City Landfill                  Address: City of Iowa City 335 E. Iowa Ave                  City: Iowa City                  State: IA                  Zip: 52240                  Phone: [Redacted]                  Email: jennifer-jordan@iowa-city.org                  Project Name: Iowa City Landfill Semi-Annual Series A                  Site: Iowa</p>		<p><b>Sampler:</b> <i>Jen Jordan</i>                  Lab Pkt: Hummel, Matthew R                  Phone: 319-936-5194                  E-Mail: Matthew.Hummel@eurofins.com                  PWSID:</p>		<p><b>Carrier Tracking No(s):</b>                  State of Origin:                  Page: 3 of 3                  Job #:</p>		<p><b>Analysis Requested</b></p> <p>Appendix I TSS                  Metals List, TSS App I VOCs, Dichlorodifluoromethane, Sulfide                  Metals List, TSS, App I VOCs, Dichlorodifluoromethane                  Appendix I VOCs                  Appendix I VOCs</p>		<p><b>Preservation Codes:</b>                  A HCl                  B HNO<sub>3</sub>                  C H<sub>2</sub>O<sub>2</sub>                  D Nitric Acid                  E H<sub>2</sub>SO<sub>4</sub>                  F MeOH                  G - Amcher                  H Ascorbic Acid                  I Ice                  J DI Water                  K EDTA                  L EDA                  Other:</p>	
<p><b>Due Date Requested:</b>                  TAT Requested (days)                  Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No                  PO #: RFP23-14                  WO #:                  Project #: 31015832                  SSOV#:</p>		<p><b>Field Filled Sample (Yes or No)</b>                  Appendix I TSS                  Metals List, TSS App I VOCs, Dichlorodifluoromethane, Sulfide                  Metals List, TSS, App I VOCs                  Metals List, TSS, App I VOCs, Dichlorodifluoromethane                  Appendix I VOCs</p>		<p><b>Form MS/MSD (Yes or No)</b>                  Appendix I TSS                  Metals List, TSS, App I VOCs, Dichlorodifluoromethane, Sulfide                  Metals List, TSS, App I VOCs                  Appendix I VOCs</p>		<p><b>Total Number of Containers</b></p>		<p><b>Special Instructions/Note:</b></p>	
<p><b>Sample Identification</b></p> <p>Sample Date: 5-1-24 1501 G                  5-1-24 1523 G</p>		<p><b>Sample Type</b>                  (C=comp, O=waste/lo, G=grab)                  Preservation Code:                  matrix                  W=water, S=solid, O=waste/lo, G=grab</p>		<p><b>Field Filled Sample (Yes or No)</b>                  Appendix I TSS                  Metals List, TSS App I VOCs, Dichlorodifluoromethane, Sulfide                  Metals List, TSS, App I VOCs                  Metals List, TSS, App I VOCs, Dichlorodifluoromethane                  Appendix I VOCs</p>		<p><b>Total Number of Containers</b></p>		<p><b>Special Instructions/Note:</b></p>	
<p>MW-310A                  MW-312A                  MW-408                  Trip Blank 1                  Trip Blank 2                  Trip Blank 3                  Trip Blank 4</p>		<p>Water                  Water                  Water                  Water                  Water                  Water                  Water                  Water</p>		<p>X                  X                  X                  X                  X</p>		<p>X                  X                  X                  X                  X</p>		<p>X                  X                  X                  X                  X</p>	
<p><b>Possible Hazard Identification</b>                  Non-Hazard Flammable Skin Irritant                  Deliverable Requested: I II III IV, Other (specify)</p>		<p>Poison B Unknown Radiological</p>		<p>Return To Client                  Disposal By Lab                  Archive For</p>		<p>Months</p>		<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p>	
<p><b>Empty Kit Relinquished by:</b>                  Relinquished by: [Signature]                  Date/Time: [Redacted]                  Relinquished by: [Signature]                  Date/Time: [Redacted]                  Relinquished by: [Signature]                  Date/Time: [Redacted]</p>		<p><b>Date:</b>                  Date/Time: [Redacted]                  Date/Time: [Redacted]                  Date/Time: [Redacted]</p>		<p><b>Time:</b>                  Date/Time: [Redacted]                  Date/Time: [Redacted]                  Date/Time: [Redacted]</p>		<p><b>Method of Shipment:</b>                  Date/Time: [Redacted]                  Date/Time: [Redacted]                  Date/Time: [Redacted]</p>		<p><b>Company:</b>                  Company: [Redacted]                  Company: [Redacted]                  Company: [Redacted]</p>	
<p><b>Custody Seal Intact:</b>  <input type="checkbox"/> Yes <input type="checkbox"/> No</p>		<p><b>Custody Seal No.</b></p>		<p><b>Cooler Temperature(s) °C and Other Remarks:</b></p>		<p>Ver 01/16/2019</p>		<p>Var 01/16/2019</p>	





## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280445-1

**Login Number: 280445**

**List Source: Eurofins Cedar Falls**

**List Number: 1**

**Creator: Costello, Mackenzie K**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280445-1

**Login Number: 280445**

**List Number: 2**

**Creator: Hernandez, Stephanie**

**List Source: Eurofins Chicago**

**List Creation: 05/04/24 12:35 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual Series A

Job ID: 310-280445-1

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 5/10/2024 11:28:33 AM

## JOB DESCRIPTION

Iowa City Landfill 1st 2024 Semi-Annual  
Impact Delineation  
Impact Delineation

## JOB NUMBER

310-280448-1

# 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



Generated  
5/10/2024 11:28:33 AM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1

**Job ID: 310-280448-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280448-1

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

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

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

### Receipt

The samples were received on 5/3/2024 2:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.2°C and 5.4°C.

### GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank 2 (310-280448-7).

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: Trip Blank 1 (310-280448-6). This sample did not contain any target analytes; therefore, re-analysis was not performed.

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.

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280448-1	MW-18A-07	Groundwater	05/01/24 09:20	05/03/24 14:25
310-280448-2	MW-15A	Groundwater	05/01/24 14:31	05/03/24 14:25
310-280448-3	MW-306A	Groundwater	05/01/24 13:47	05/03/24 14:25
310-280448-4	MW-409	Groundwater	05/01/24 13:32	05/03/24 14:25
310-280448-5	MW-11D	Groundwater	05/01/24 14:09	05/03/24 14:25
310-280448-6	Trip Blank 1	Water	05/01/24 00:00	05/03/24 14:25
310-280448-7	Trip Blank 2	Water	05/01/24 00:00	05/03/24 14:25

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# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

## Client Sample ID: MW-18A-07

Lab Sample ID: 310-280448-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.97		0.500	0.220	ug/L	1		8260D	Total/NA
Tetrachloroethene	28.9		1.00	0.480	ug/L	1		8260D	Total/NA
Trichloroethene	29.3		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	21.8		1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.000677	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Cobalt	0.00126		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-15A

Lab Sample ID: 310-280448-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00648		0.00200	0.000530	mg/L	1		6020B	Total/NA
Total Suspended Solids	8.37		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-306A

Lab Sample ID: 310-280448-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	3.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-409

Lab Sample ID: 310-280448-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0340		0.00200	0.000530	mg/L	1		6020B	Total/NA
Cobalt	0.00822		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	76.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-11D

Lab Sample ID: 310-280448-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000853	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Total Suspended Solids	4.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank 1

Lab Sample ID: 310-280448-6

No Detections.

## Client Sample ID: Trip Blank 2

Lab Sample ID: 310-280448-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-18A-07**

**Lab Sample ID: 310-280448-1**

Date Collected: 05/01/24 09:20

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.97		0.500	0.220	ug/L			05/09/24 04:04	1
Tetrachloroethene	28.9		1.00	0.480	ug/L			05/09/24 04:04	1
Trichloroethene	29.3		1.00	0.430	ug/L			05/09/24 04:04	1
Vinyl chloride	21.8		1.00	0.180	ug/L			05/09/24 04:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	129		73 - 130		05/09/24 04:04	1
Toluene-d8 (Surr)	93		80 - 120		05/09/24 04:04	1
4-Bromofluorobenzene (Surr)	103		80 - 120		05/09/24 04:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000677	J	0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:29	1
Cobalt	0.00126		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:27	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L			05/06/24 02:57	1
Total Suspended Solids (USGS I-3765-85)	2.13		1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-15A**

**Lab Sample ID: 310-280448-2**

Date Collected: 05/01/24 14:31

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00648		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:31	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	8.37		1.88	1.39	mg/L			05/04/24 12:30	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-306A**

**Lab Sample ID: 310-280448-3**

Date Collected: 05/01/24 13:47

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			05/09/24 04:27	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Dibromofluoromethane (Surr)	128		73 - 130					05/09/24 04:27	1
Toluene-d8 (Surr)	94		80 - 120					05/09/24 04:27	1
4-Bromofluorobenzene (Surr)	100		80 - 120					05/09/24 04:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	3.75		1.88	1.39	mg/L			05/04/24 12:30	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-409**

**Lab Sample ID: 310-280448-4**

Date Collected: 05/01/24 13:32

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0340		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:44	1
Cobalt	0.00822		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 21:37	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	76.0		15.0	11.1	mg/L			05/06/24 14:44	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-11D**

**Lab Sample ID: 310-280448-5**

Date Collected: 05/01/24 14:09

Matrix: Groundwater

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000853	J	0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 15:47	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	4.38		1.88	1.39	mg/L			05/06/24 14:44	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: Trip Blank 1**

**Lab Sample ID: 310-280448-6**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 23:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 23:11	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 23:11	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 23:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	131	S1+	73 - 130		05/08/24 23:11	1
Toluene-d8 (Surr)	96		80 - 120		05/08/24 23:11	1
4-Bromofluorobenzene (Surr)	101		80 - 120		05/08/24 23:11	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280448-7**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 23:34	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 23:34	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 23:34	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 23:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	126		73 - 130		05/08/24 23:34	1
Toluene-d8 (Surr)	94		80 - 120		05/08/24 23:34	1
4-Bromofluorobenzene (Surr)	103		80 - 120		05/08/24 23:34	1

# Definitions/Glossary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Surrogate Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

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

Matrix: Groundwater

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBFM	TOL	BFB
		(73-130)	(80-120)	(80-120)
310-280448-1	MW-18A-07	129	93	103
310-280448-3	MW-306A	128	94	100

#### Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBFM	TOL	BFB
		(73-130)	(80-120)	(80-120)
310-280448-6	Trip Blank 1	131 S1+	96	101
310-280448-7	Trip Blank 2	126	94	103
LCS 310-420992/6	Lab Control Sample	103	101	101
LCS 310-420992/7	Lab Control Sample	125	93	106
MB 310-420992/5	Method Blank	123	91	104

#### Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

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

**Lab Sample ID: MB 310-420992/5**  
**Matrix: Water**  
**Analysis Batch: 420992**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/08/24 22:04	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/08/24 22:04	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/08/24 22:04	1
Benzene	<0.500		0.500	0.220	ug/L			05/08/24 22:04	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	123		73 - 130		05/08/24 22:04	1
Toluene-d8 (Surr)	91		80 - 120		05/08/24 22:04	1
4-Bromofluorobenzene (Surr)	104		80 - 120		05/08/24 22:04	1

**Lab Sample ID: LCS 310-420992/6**  
**Matrix: Water**  
**Analysis Batch: 420992**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Tetrachloroethene	20.0	17.15		ug/L		86	71 - 130
Trichloroethene	20.0	18.86		ug/L		94	72 - 126
Benzene	20.0	17.67		ug/L		88	72 - 124

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	103		73 - 130
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120

**Lab Sample ID: LCS 310-420992/7**  
**Matrix: Water**  
**Analysis Batch: 420992**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Vinyl chloride	20.0	21.10		ug/L		105	56 - 140

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	125		73 - 130
Toluene-d8 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	106		80 - 120

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

**Lab Sample ID: MB 310-420672/1-A**  
**Matrix: Water**  
**Analysis Batch: 421121**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 420672**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/06/24 10:00	05/08/24 19:57	1

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

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

Lab Sample ID: MB 310-420672/1-A  
 Matrix: Water  
 Analysis Batch: 421266

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 420672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/06/24 10:00	05/09/24 14:46	1

Lab Sample ID: LCS 310-420672/2-A  
 Matrix: Water  
 Analysis Batch: 421121

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 420672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	0.100	0.09912		mg/L		99	80 - 120

Lab Sample ID: LCS 310-420672/2-A  
 Matrix: Water  
 Analysis Batch: 421266

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 420672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2131		mg/L		107	80 - 120

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-766470/1  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00	0.231	mg/L			05/06/24 01:48	1

Lab Sample ID: LCS 500-766470/2  
 Matrix: Water  
 Analysis Batch: 766470

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	3.64	3.566		mg/L		98	80 - 120

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

Lab Sample ID: MB 310-420693/1  
 Matrix: Water  
 Analysis Batch: 420693

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/04/24 12:30	1

Lab Sample ID: LCS 310-420693/2  
 Matrix: Water  
 Analysis Batch: 420693

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	75 - 116

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

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

**Lab Sample ID: MB 310-420787/1**  
**Matrix: Water**  
**Analysis Batch: 420787**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/06/24 14:44	1

**Lab Sample ID: LCS 310-420787/2**  
**Matrix: Water**  
**Analysis Batch: 420787**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	75 - 116

# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

## GC/MS VOA

### Analysis Batch: 420992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-1	MW-18A-07	Total/NA	Groundwater	8260D	
310-280448-3	MW-306A	Total/NA	Groundwater	8260D	
310-280448-6	Trip Blank 1	Total/NA	Water	8260D	
310-280448-7	Trip Blank 2	Total/NA	Water	8260D	
MB 310-420992/5	Method Blank	Total/NA	Water	8260D	
LCS 310-420992/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-420992/7	Lab Control Sample	Total/NA	Water	8260D	

## Metals

### Prep Batch: 420672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-1	MW-18A-07	Total/NA	Groundwater	3005A	
310-280448-2	MW-15A	Total/NA	Groundwater	3005A	
310-280448-3	MW-306A	Total/NA	Groundwater	3005A	
310-280448-4	MW-409	Total/NA	Groundwater	3005A	
310-280448-5	MW-11D	Total/NA	Groundwater	3005A	
MB 310-420672/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 421121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-1	MW-18A-07	Total/NA	Groundwater	6020B	420672
310-280448-4	MW-409	Total/NA	Groundwater	6020B	420672
MB 310-420672/1-A	Method Blank	Total/NA	Water	6020B	420672
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	6020B	420672

### Analysis Batch: 421266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-1	MW-18A-07	Total/NA	Groundwater	6020B	420672
310-280448-2	MW-15A	Total/NA	Groundwater	6020B	420672
310-280448-3	MW-306A	Total/NA	Groundwater	6020B	420672
310-280448-4	MW-409	Total/NA	Groundwater	6020B	420672
310-280448-5	MW-11D	Total/NA	Groundwater	6020B	420672
MB 310-420672/1-A	Method Blank	Total/NA	Water	6020B	420672
LCS 310-420672/2-A	Lab Control Sample	Total/NA	Water	6020B	420672

## General Chemistry

### Analysis Batch: 420693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-1	MW-18A-07	Total/NA	Groundwater	I-3765-85	
310-280448-2	MW-15A	Total/NA	Groundwater	I-3765-85	
310-280448-3	MW-306A	Total/NA	Groundwater	I-3765-85	
MB 310-420693/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-420693/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 420787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-4	MW-409	Total/NA	Groundwater	I-3765-85	
310-280448-5	MW-11D	Total/NA	Groundwater	I-3765-85	
MB 310-420787/1	Method Blank	Total/NA	Water	I-3765-85	

Eurofins Cedar Falls



# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

## General Chemistry (Continued)

### Analysis Batch: 420787 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-420787/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 766470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280448-1	MW-18A-07	Total/NA	Groundwater	9034	
MB 500-766470/1	Method Blank	Total/NA	Water	9034	
LCS 500-766470/2	Lab Control Sample	Total/NA	Water	9034	

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# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-18A-07**

**Lab Sample ID: 310-280448-1**

Date Collected: 05/01/24 09:20

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420992	WSE8	EET CF	05/09/24 04:04
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:27
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:29
Total/NA	Analysis	9034		1	766470	CLB	EET CHI	05/06/24 02:57 - 05/06/24 03:04 <sup>1</sup>
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

**Client Sample ID: MW-15A**

**Lab Sample ID: 310-280448-2**

Date Collected: 05/01/24 14:31

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:31
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

**Client Sample ID: MW-306A**

**Lab Sample ID: 310-280448-3**

Date Collected: 05/01/24 13:47

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420992	WSE8	EET CF	05/09/24 04:27
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:34
Total/NA	Analysis	I-3765-85		1	420693	ENB7	EET CF	05/04/24 12:30

**Client Sample ID: MW-409**

**Lab Sample ID: 310-280448-4**

Date Collected: 05/01/24 13:32

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421121	NFT2	EET CF	05/08/24 21:37
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:44
Total/NA	Analysis	I-3765-85		1	420787	DGU1	EET CF	05/06/24 14:44

**Client Sample ID: MW-11D**

**Lab Sample ID: 310-280448-5**

Date Collected: 05/01/24 14:09

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			420672	KM3E	EET CF	05/06/24 10:00
Total/NA	Analysis	6020B		1	421266	NFT2	EET CF	05/09/24 15:47

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
 SDG: Impact Delineation

**Client Sample ID: MW-11D**

**Lab Sample ID: 310-280448-5**

Date Collected: 05/01/24 14:09

Matrix: Groundwater

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	420787	DGU1	EET CF	05/06/24 14:44

**Client Sample ID: Trip Blank 1**

**Lab Sample ID: 310-280448-6**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420992	WSE8	EET CF	05/08/24 23:11

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280448-7**

Date Collected: 05/01/24 00:00

Matrix: Water

Date Received: 05/03/24 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420992	WSE8	EET CF	05/08/24 23:34

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

**Laboratory References:**

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401  
 EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

## Laboratory: Eurofins Cedar Falls

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

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

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-24 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill 1st 2024 Semi-Annual

Job ID: 310-280448-1  
SDG: Impact Delineation

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

**Laboratory References:**

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401  
EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





Environment Testing  
America



310-280448 Chain of Custody

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>5-3-24</u>	TIME <u>1425</u>	Received By: <u>MY</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
<u>MW-18A-07; MW-201A; MW-312A; MW-310A; MW-200A</u>			
<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: <u>X</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 <u>Plastic 250 HNO<sub>3</sub></u>	CONTAINER 2 <u>→</u>	
Uncorrected Temp (°C):	<u>4.2</u>	<u>2.6</u>	
Corrected Temp (°C):	<u>4.2</u>	<u>2.6</u>	
<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>			



Environment Testing  
America

Place COC scanning label  
here

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: Iowa City Landfill			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	5-3-24	1425	MY
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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
MW-18AR; MW-306A; MW-29A			
<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: X		Correction Factor (°C): 0	
Temp Blank Temperature: If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	Plastic 250 ANO <sub>3</sub>	→	
Uncorrected Temp (°C):	5.4	2.5	
Corrected Temp (°C):	5.4	2.5	
<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>			

**Eurofins Cedar Falls**

3019 Venture Way  
Cedar Falls IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jen Jordan Company: Iowa City Landfill Address: Iowa City, IA 52240 City: Iowa City State, Zip: IA, 52240 Phone: [Redacted] Email: jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill/ Event Desc: Impact Delineation Site: Iowa		Lab PI#: Hummel, Matthew R E-Mail: Matthew.Hummel@et.eurofins.com Phone: 319-936-5194 PWSID:		Carrier Tracking Note: State of Origin:		COC No.: 310-91580-25213.1 Page: Page 1 of 1 Job #:			
<b>Analysis Requested</b> Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: RFP23-14 WC #: [Redacted] Project #: 31015832 SSW#: [Redacted]				Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - Nitric Acid F - MeOH G - Acetic Acid H - Ice I - Ice J - DI Water K - EDTA L - EDTA Other:				Preservation Codes: M - Heptane N - Hexane O - NaNO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Triuma Z - other (specify)	
<b>Sample Identification</b> Sample ID: MW-18A-07 MW-15A MW-306A MW-409 MW-11D Trip Blank		Sample Date: 5-1-24 Sample Time: 9:30 Sample Type (C=comp, G=grab): G Preservation Code: G Matrix (W=water, S=solid, O=waste/liquid): Water		Field Filled Sample (Yes or No): Perform MS/MSD (Yes or No): 6020B Arsenic 6020B Cobalt 1,365, 65 Total Suspended Solids 9260D (MOD) Tetrachloroethane, Trichloroethene, Vinyl Chloride 9034 Calc Sulfide 9260D (MOD) Benzene		Total Number of Containers: [Redacted]			
Special Instructions/Note: Sites and Events Impact Delineation									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): Return To Client: [Redacted] Disposal By Lab: [Redacted] Archive For: [Redacted] Months									
Special Instructions/OC Requirements:									
Relinquished by: [Signature] Date/Time: [Redacted]		Relinquished by: [Signature] Date/Time: 5/3/24 12:50 Company: TA		Relinquished by: [Signature] Date/Time: 5-3-24 1425 Company:		Relinquished by: [Signature] Date/Time: [Redacted]			
Empty Kit Relinquished by:		Date: [Redacted]		Date: [Redacted]		Date: [Redacted]			
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Custody Seal No.		Cooler Temperature(s) and Other Remarks:		Ver: 01/16/2019			





# Eurofins Cedar Falls

3019 Venture Way  
 Cedar Falls, IA 50613  
 Phone 319-277-2401 Fax 319-277-2425

## Chain of Custody Record



eurofins

Environment Testing

<b>Client Information (Sub Contract Lab)</b>		Sampler Yang, Mary E		Lab PM Yang, Mary E		Carrier Tracking No(s)		COC No: 310-72034 1																																			
Client Contact: Shipping/Receiving		Phone		E-Mail: Mary.Yang@ET EurofinsUS.com		State of Origin: Iowa		Page Page 1 of 1																																			
Company Eurofins Environment Testing North Centr				Accreditations Required (See note) State - Iowa, State Program - Iowa				Job #. 310-280448-1																																			
Address 2417 Bond Street,		Due Date Requested 5/16/2024		<table border="1"> <thead> <tr> <th colspan="10">Analysis Requested</th> </tr> <tr> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>9034_Calc</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th rowspan="2">Total Number of Containers</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Analysis Requested										Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc								Total Number of Containers												Preservation Codes*	
Analysis Requested																																											
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc														Total Number of Containers																											
City: University Park		TAT Requested (days)		Other		 310-280448 COC																																					
State Zip: IL, 60484																																											
Phone: 708-534-5200(Tel) 708-534-5211(Fax)		PO #:																																									
Email		WO #:																																									
Project Name: Iowa City Landfill 1st 2024 Semi-Annual		Project #: 31015832																																									
Site: 310-Iowa City Landfill		SSOW#:																																									
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc										Special Instructions/Note:																									
MW-18A-07 (310-280448-1)		5/1/24	09 20 Central		Water			X																																			
Note: Since laboratory accreditations are subject to change Eurofins Environment Testing North Central LLC places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central LLC.																																											
<b>Possible Hazard Identification</b>					<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>																																						
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																						
Deliverable Requested I, II, III, IV, Other (specify)					Primary Deliverable Rank 2					Special Instructions/QC Requirements																																	
Empty Kit Relinquished by:			Date		Time		Method of Shipment:																																				
Relinquished by:			Date/Time:		Company		Received by:			Date/Time:		Company																															
Relinquished by:			Date/Time:		Company		Received by:			Date/Time:		Company																															
Relinquished by:			Date/Time:		Company		Received by:			Date/Time:		Company																															
Custody Seals Intact. Δ Yes Δ No		Custody Seal No			Cooler Temperature(s) °C and Other Remarks.																																						

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## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280448-1  
SDG Number: Impact Delineation

**Login Number: 280448**

**List Number: 1**

**Creator: Costello, Mackenzie K**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280448-1  
SDG Number: Impact Delineation

**Login Number: 280448**

**List Number: 2**

**Creator: Hernandez, Stephanie**

**List Source: Eurofins Chicago**

**List Creation: 05/04/24 12:35 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 5/21/2024 9:58:02 AM Revision 1

## JOB DESCRIPTION

Iowa City Landfill Spring 2024  
Groundwater Underdrains  
Groundwater Underdrains

## JOB NUMBER

310-280734-1

# 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



Generated  
5/21/2024 9:58:02 AM  
Revision 1

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Spring 2024

Job ID: 310-280734-1

**Job ID: 310-280734-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280734-1

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

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

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

### Receipt

The samples were received on 5/8/2024 3:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.4°C and 6.8°C.

### Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: WT-1 (310-280734-1), WT-2 (310-280734-2), WT-3 (310-280734-3), WT-4 (310-280734-4), WT-OF (310-280734-5), Trip Blank 1 (310-280734-6) and Trip Blank 2 (310-280734-7). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

### GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank 1 (310-280734-6).

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank 2 (310-280734-7).

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.

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# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280734-1	WT-1	Groundwater	05/07/24 08:06	05/08/24 15:10
310-280734-2	WT-2	Groundwater	05/07/24 08:16	05/08/24 15:10
310-280734-3	WT-3	Groundwater	05/07/24 08:24	05/08/24 15:10
310-280734-4	WT-4	Groundwater	05/07/24 08:33	05/08/24 15:10
310-280734-5	WT-OF	Groundwater	05/07/24 07:57	05/08/24 15:10
310-280734-6	Trip Blank 1	Water	05/07/24 00:00	05/08/24 15:10
310-280734-7	Trip Blank 2	Water	05/07/24 00:00	05/08/24 15:10

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# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

## Client Sample ID: WT-1

## Lab Sample ID: 310-280734-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	43.7		10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.231	J	0.500	0.220	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	32.7		10.0	2.10	ug/L	1		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	3.90	J	10.0	2.10	ug/L	1		8260D	Total/NA
Arsenic	0.00404		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.195		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.207		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000584		0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.129		0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	31.3		5.00	3.70	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: WT-2

## Lab Sample ID: 310-280734-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00396		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.163		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00239		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00269	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	12.9		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: WT-3

## Lab Sample ID: 310-280734-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.51	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.297	J	0.500	0.220	ug/L	1		8260D	Total/NA
Arsenic	0.0150		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.344		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00152		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00511		0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	58.0		5.00	3.70	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: WT-4

## Lab Sample ID: 310-280734-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0821		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.0111		0.00500	0.00210	mg/L	1		6020B	Total/NA

## Client Sample ID: WT-OF

## Lab Sample ID: 310-280734-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	13.6		10.0	3.10	ug/L	1		8260D	Total/NA
2-Butanone (MEK)	8.99	J	10.0	2.10	ug/L	1		8260D	Total/NA
Arsenic	0.00362		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.163		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.0633		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0483		0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	18.5		3.75	2.78	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank 1

## Lab Sample ID: 310-280734-6

No Detections.

This Detection Summary does not include radiochemical test results.

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# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280734-7**

No Detections.

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This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-1**  
**Date Collected: 05/07/24 08:06**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-1**  
**Matrix: Groundwater**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>43.7</b>		10.0	3.10	ug/L			05/15/24 02:31	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/15/24 02:31	1
<b>Benzene</b>	<b>0.231</b>	<b>J</b>	0.500	0.220	ug/L			05/15/24 02:31	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/15/24 02:31	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/15/24 02:31	1
Bromoform	<5.00		5.00	0.780	ug/L			05/15/24 02:31	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/15/24 02:31	1
<b>2-Butanone (MEK)</b>	<b>32.7</b>		10.0	2.10	ug/L			05/15/24 02:31	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/15/24 02:31	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/15/24 02:31	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/15/24 02:31	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/15/24 02:31	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/15/24 02:31	1
Chloroform	<3.00		3.00	1.30	ug/L			05/15/24 02:31	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/15/24 02:31	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/15/24 02:31	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/15/24 02:31	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/15/24 02:31	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/15/24 02:31	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/15/24 02:31	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/15/24 02:31	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/15/24 02:31	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/15/24 02:31	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/15/24 02:31	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/15/24 02:31	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/15/24 02:31	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/15/24 02:31	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/15/24 02:31	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/15/24 02:31	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/15/24 02:31	1
<b>4-Methyl-2-pentanone (MIBK)</b>	<b>3.90</b>	<b>J</b>	10.0	2.10	ug/L			05/15/24 02:31	1
Styrene	<1.00		1.00	0.370	ug/L			05/15/24 02:31	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/15/24 02:31	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/15/24 02:31	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/15/24 02:31	1
Toluene	<1.00		1.00	0.430	ug/L			05/15/24 02:31	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/15/24 02:31	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/15/24 02:31	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/15/24 02:31	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/15/24 02:31	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/15/24 02:31	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/15/24 02:31	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/15/24 02:31	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/15/24 02:31	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/15/24 02:31	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/15/24 02:31	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/15/24 02:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/15/24 02:31	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-1**  
 Date Collected: 05/07/24 08:06  
 Date Received: 05/08/24 15:10

**Lab Sample ID: 310-280734-1**  
 Matrix: Groundwater

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	108		73 - 130		05/15/24 02:31	1
Toluene-d8 (Surr)	98		80 - 120		05/15/24 02:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 13:52	1
<b>Arsenic</b>	<b>0.00404</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:13	1
<b>Barium</b>	<b>0.195</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:13	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:13	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 13:52	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:13	1
<b>Cobalt</b>	<b>0.207</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:13	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:13	1
<b>Lead</b>	<b>0.000584</b>		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:13	1
<b>Nickel</b>	<b>0.129</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:13	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:13	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:13	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:13	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:13	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>31.3</b>		5.00	3.70	mg/L			05/10/24 18:10	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-2**  
**Date Collected: 05/07/24 08:16**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-2**  
**Matrix: Groundwater**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/15/24 02:53	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/15/24 02:53	1
Benzene	<0.500		0.500	0.220	ug/L			05/15/24 02:53	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/15/24 02:53	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/15/24 02:53	1
Bromoform	<5.00		5.00	0.780	ug/L			05/15/24 02:53	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/15/24 02:53	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/15/24 02:53	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/15/24 02:53	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/15/24 02:53	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/15/24 02:53	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/15/24 02:53	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/15/24 02:53	1
Chloroform	<3.00		3.00	1.30	ug/L			05/15/24 02:53	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/15/24 02:53	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/15/24 02:53	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/15/24 02:53	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/15/24 02:53	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/15/24 02:53	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/15/24 02:53	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/15/24 02:53	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/15/24 02:53	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/15/24 02:53	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/15/24 02:53	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/15/24 02:53	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/15/24 02:53	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/15/24 02:53	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/15/24 02:53	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/15/24 02:53	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/15/24 02:53	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/15/24 02:53	1
Styrene	<1.00		1.00	0.370	ug/L			05/15/24 02:53	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/15/24 02:53	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/15/24 02:53	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/15/24 02:53	1
Toluene	<1.00		1.00	0.430	ug/L			05/15/24 02:53	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/15/24 02:53	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/15/24 02:53	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/15/24 02:53	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/15/24 02:53	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/15/24 02:53	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/15/24 02:53	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/15/24 02:53	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/15/24 02:53	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/15/24 02:53	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/15/24 02:53	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/15/24 02:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		05/15/24 02:53	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-2**  
 Date Collected: 05/07/24 08:16  
 Date Received: 05/08/24 15:10

**Lab Sample ID: 310-280734-2**  
 Matrix: Groundwater

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	105		73 - 130		05/15/24 02:53	1
Toluene-d8 (Surr)	96		80 - 120		05/15/24 02:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:08	1
<b>Arsenic</b>	<b>0.00396</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:33	1
<b>Barium</b>	<b>0.163</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:33	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:33	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:08	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:33	1
<b>Cobalt</b>	<b>0.00239</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:33	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:33	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:33	1
<b>Nickel</b>	<b>0.00269 J</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:33	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:33	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:33	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:33	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:33	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:33	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>12.9</b>		1.88	1.39	mg/L			05/10/24 18:10	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-3**  
**Date Collected: 05/07/24 08:24**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-3**  
**Matrix: Groundwater**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>3.51</b>	<b>J</b>	10.0	3.10	ug/L			05/14/24 13:27	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 13:27	1
<b>Benzene</b>	<b>0.297</b>	<b>J</b>	0.500	0.220	ug/L			05/14/24 13:27	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 13:27	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 13:27	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 13:27	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 13:27	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 13:27	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 13:27	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 13:27	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 13:27	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 13:27	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 13:27	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 13:27	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 13:27	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 13:27	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 13:27	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 13:27	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 13:27	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 13:27	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 13:27	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 13:27	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 13:27	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 13:27	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 13:27	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 13:27	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 13:27	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 13:27	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 13:27	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 13:27	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 13:27	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 13:27	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 13:27	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 13:27	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 13:27	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 13:27	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 13:27	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 13:27	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 13:27	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 13:27	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 13:27	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 13:27	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 13:27	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 13:27	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 13:27	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 13:27	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		05/14/24 13:27	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-3**  
**Date Collected: 05/07/24 08:24**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-3**  
**Matrix: Groundwater**

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		05/14/24 13:27	1
Toluene-d8 (Surr)	96		80 - 120		05/14/24 13:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:10	1
<b>Arsenic</b>	<b>0.0150</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:35	1
<b>Barium</b>	<b>0.344</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:35	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:35	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:10	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:35	1
<b>Cobalt</b>	<b>0.00152</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:35	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:35	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:35	1
<b>Nickel</b>	<b>0.00511</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:35	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:35	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:35	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:35	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:35	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>58.0</b>		5.00	3.70	mg/L			05/10/24 18:10	1



# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

**Client Sample ID: WT-4**  
**Date Collected: 05/07/24 08:33**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-4**  
**Matrix: Groundwater**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/14/24 13:49	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 13:49	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 13:49	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 13:49	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 13:49	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 13:49	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 13:49	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 13:49	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 13:49	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 13:49	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 13:49	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 13:49	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 13:49	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 13:49	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 13:49	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 13:49	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 13:49	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 13:49	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 13:49	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 13:49	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 13:49	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 13:49	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 13:49	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 13:49	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 13:49	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 13:49	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 13:49	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 13:49	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 13:49	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 13:49	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 13:49	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 13:49	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 13:49	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 13:49	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 13:49	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 13:49	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 13:49	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 13:49	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 13:49	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 13:49	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 13:49	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 13:49	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 13:49	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 13:49	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 13:49	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 13:49	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 13:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/14/24 13:49	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-4**  
 Date Collected: 05/07/24 08:33  
 Date Received: 05/08/24 15:10

**Lab Sample ID: 310-280734-4**  
 Matrix: Groundwater

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	104		73 - 130		05/14/24 13:49	1
Toluene-d8 (Surr)	95		80 - 120		05/14/24 13:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:12	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:37	1
<b>Barium</b>	<b>0.0821</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:37	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:37	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:12	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:37	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:37	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:37	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:37	1
<b>Nickel</b>	<b>0.0111</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:37	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:37	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:37	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:37	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:37	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:37	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.39	mg/L			05/10/24 12:28	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-OF**

**Lab Sample ID: 310-280734-5**

**Date Collected: 05/07/24 07:57**

**Matrix: Groundwater**

**Date Received: 05/08/24 15:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>13.6</b>		10.0	3.10	ug/L			05/14/24 14:11	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 14:11	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 14:11	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 14:11	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 14:11	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 14:11	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 14:11	1
<b>2-Butanone (MEK)</b>	<b>8.99 J</b>		10.0	2.10	ug/L			05/14/24 14:11	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 14:11	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 14:11	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 14:11	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 14:11	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 14:11	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 14:11	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 14:11	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 14:11	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 14:11	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 14:11	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 14:11	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 14:11	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 14:11	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 14:11	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 14:11	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 14:11	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 14:11	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 14:11	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 14:11	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 14:11	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 14:11	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 14:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 14:11	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 14:11	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 14:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 14:11	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 14:11	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 14:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 14:11	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 14:11	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 14:11	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 14:11	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 14:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 14:11	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 14:11	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 14:11	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 14:11	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 14:11	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		05/14/24 14:11	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-OF**  
**Date Collected: 05/07/24 07:57**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-5**  
**Matrix: Groundwater**

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	105		73 - 130		05/14/24 14:11	1
Toluene-d8 (Surr)	99		80 - 120		05/14/24 14:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:14	1
<b>Arsenic</b>	<b>0.00362</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:39	1
<b>Barium</b>	<b>0.163</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:39	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:39	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:14	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:39	1
<b>Cobalt</b>	<b>0.0633</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:39	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:39	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:39	1
<b>Nickel</b>	<b>0.0483</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:39	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:39	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:39	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:39	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:39	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>18.5</b>		3.75	2.78	mg/L			05/10/24 12:28	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: Trip Blank 1**

**Lab Sample ID: 310-280734-6**

Date Collected: 05/07/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/14/24 12:43	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 12:43	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 12:43	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 12:43	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 12:43	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 12:43	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 12:43	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 12:43	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 12:43	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 12:43	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 12:43	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 12:43	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 12:43	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 12:43	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 12:43	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 12:43	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 12:43	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 12:43	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 12:43	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 12:43	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 12:43	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 12:43	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 12:43	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 12:43	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 12:43	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 12:43	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 12:43	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 12:43	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 12:43	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 12:43	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 12:43	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 12:43	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 12:43	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 12:43	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 12:43	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 12:43	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 12:43	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 12:43	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 12:43	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 12:43	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 12:43	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 12:43	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 12:43	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 12:43	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 12:43	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 12:43	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 12:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/14/24 12:43	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

**Client Sample ID: Trip Blank 1**

**Lab Sample ID: 310-280734-6**

Date Collected: 05/07/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Dibromofluoromethane (Surr)	101		73 - 130		05/14/24 12:43	1
Toluene-d8 (Surr)	98		80 - 120		05/14/24 12:43	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280734-7**

Date Collected: 05/07/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/16/24 22:18	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/16/24 22:18	1
Benzene	<0.500		0.500	0.220	ug/L			05/16/24 22:18	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/16/24 22:18	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/16/24 22:18	1
Bromoform	<5.00		5.00	0.780	ug/L			05/16/24 22:18	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/16/24 22:18	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/16/24 22:18	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/16/24 22:18	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/16/24 22:18	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/16/24 22:18	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/16/24 22:18	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/16/24 22:18	1
Chloroform	<3.00		3.00	1.30	ug/L			05/16/24 22:18	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/16/24 22:18	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/16/24 22:18	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/16/24 22:18	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/16/24 22:18	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/16/24 22:18	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/16/24 22:18	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/16/24 22:18	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/16/24 22:18	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/16/24 22:18	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/16/24 22:18	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/16/24 22:18	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/16/24 22:18	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/16/24 22:18	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/16/24 22:18	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/16/24 22:18	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/16/24 22:18	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/16/24 22:18	1
Styrene	<1.00		1.00	0.370	ug/L			05/16/24 22:18	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/16/24 22:18	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/16/24 22:18	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/16/24 22:18	1
Toluene	<1.00		1.00	0.430	ug/L			05/16/24 22:18	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/16/24 22:18	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/16/24 22:18	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/16/24 22:18	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/16/24 22:18	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/16/24 22:18	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/16/24 22:18	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/16/24 22:18	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/16/24 22:18	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/16/24 22:18	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/16/24 22:18	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/16/24 22:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		80 - 120		05/16/24 22:18	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

**Client Sample ID: Trip Blank 2**

**Lab Sample ID: 310-280734-7**

Date Collected: 05/07/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Dibromofluoromethane (Surr)	99		73 - 130		05/16/24 22:18	1
Toluene-d8 (Surr)	97		80 - 120		05/16/24 22:18	1

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# Definitions/Glossary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Surrogate Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

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

Matrix: Groundwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280734-1	WT-1	101	108	98
310-280734-2	WT-2	100	105	96
310-280734-3	WT-3	100	103	96
310-280734-3 MS	WT-3	97	98	102
310-280734-3 MSD	WT-3	101	98	100
310-280734-4	WT-4	103	104	95
310-280734-5	WT-0F	100	105	99

**Surrogate Legend**

BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280734-6	Trip Blank 1	103	101	98
310-280734-7	Trip Blank 2	108	99	97
LCS 310-421433/6	Lab Control Sample	99	99	104
LCS 310-421433/7	Lab Control Sample	103	102	97
LCS 310-421436/6	Lab Control Sample	100	98	101
LCS 310-421436/7	Lab Control Sample	103	105	97
LCS 310-421866/6	Lab Control Sample	100	97	104
LCS 310-421866/7	Lab Control Sample	107	98	98
MB 310-421433/5	Method Blank	98	102	97
MB 310-421436/5	Method Blank	103	101	98
MB 310-421866/5	Method Blank	109	100	98

**Surrogate Legend**

BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

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

**Lab Sample ID: MB 310-421433/5**  
**Matrix: Water**  
**Analysis Batch: 421433**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/14/24 22:10	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 22:10	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 22:10	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 22:10	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 22:10	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 22:10	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 22:10	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 22:10	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 22:10	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 22:10	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 22:10	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 22:10	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 22:10	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 22:10	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 22:10	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 22:10	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 22:10	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 22:10	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 22:10	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 22:10	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 22:10	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 22:10	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 22:10	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 22:10	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 22:10	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 22:10	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 22:10	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 22:10	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 22:10	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 22:10	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 22:10	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 22:10	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 22:10	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 22:10	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 22:10	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 22:10	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 22:10	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 22:10	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 22:10	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 22:10	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 22:10	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 22:10	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 22:10	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 22:10	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 22:10	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 22:10	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 22:10	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421433/5**  
**Matrix: Water**  
**Analysis Batch: 421433**

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

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
4-Bromofluorobenzene (Surr)	98		80 - 120		05/14/24 22:10	1
Dibromofluoromethane (Surr)	102		73 - 130		05/14/24 22:10	1
Toluene-d8 (Surr)	97		80 - 120		05/14/24 22:10	1

**Lab Sample ID: LCS 310-421433/6**  
**Matrix: Water**  
**Analysis Batch: 421433**

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

<u>Analyte</u>	<u>Spike Added</u>	<u>LCS Result</u>	<u>LCS Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec Limits</u>
Acetone	40.0	39.61		ug/L		99	50 - 150
Acrylonitrile	200	202.6		ug/L		101	50 - 150
Benzene	20.0	19.54		ug/L		98	72 - 124
Bromochloromethane	20.0	19.95		ug/L		100	73 - 130
Bromodichloromethane	20.0	18.75		ug/L		94	74 - 122
Bromoform	20.0	19.80		ug/L		99	61 - 122
2-Butanone (MEK)	40.0	39.01		ug/L		98	50 - 150
Carbon disulfide	20.0	18.63		ug/L		93	59 - 135
Carbon tetrachloride	20.0	18.56		ug/L		93	67 - 132
Chlorobenzene	20.0	19.26		ug/L		96	76 - 120
Chlorodibromomethane	20.0	19.39		ug/L		97	71 - 121
Chloroform	20.0	19.03		ug/L		95	72 - 125
cis-1,2-Dichloroethene	20.0	19.61		ug/L		98	74 - 123
cis-1,3-Dichloropropene	20.0	19.90		ug/L		99	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	17.87		ug/L		89	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.23		ug/L		101	75 - 125
Dibromomethane	20.0	19.82		ug/L		99	74 - 125
1,2-Dichlorobenzene	20.0	18.91		ug/L		95	74 - 120
1,4-Dichlorobenzene	20.0	18.04		ug/L		90	72 - 120
1,1-Dichloroethane	20.0	19.85		ug/L		99	70 - 127
1,2-Dichloroethane	20.0	19.53		ug/L		98	71 - 125
1,1-Dichloroethene	20.0	19.86		ug/L		99	63 - 132
1,2-Dichloropropane	20.0	19.67		ug/L		98	73 - 124
Ethylbenzene	20.0	19.89		ug/L		99	74 - 122
2-Hexanone	40.0	39.87		ug/L		100	60 - 140
Iodomethane	20.0	16.50		ug/L		83	10 - 150
Methylene Chloride	20.0	20.11		ug/L		101	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	41.18		ug/L		103	60 - 139
Styrene	20.0	20.54		ug/L		103	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.08		ug/L		95	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.97		ug/L		100	68 - 124
Tetrachloroethene	20.0	18.15		ug/L		91	71 - 130
Toluene	20.0	19.23		ug/L		96	74 - 123
trans-1,4-Dichloro-2-butene	20.0	19.24		ug/L		96	50 - 150
trans-1,2-Dichloroethene	20.0	19.56		ug/L		98	70 - 126
trans-1,3-Dichloropropene	20.0	19.97		ug/L		100	69 - 123
1,1,1-Trichloroethane	20.0	19.36		ug/L		97	73 - 129
1,1,2-Trichloroethane	20.0	19.95		ug/L		100	73 - 123
Trichloroethene	20.0	19.37		ug/L		97	72 - 126

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-421433/6**  
**Matrix: Water**  
**Analysis Batch: 421433**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	20.10		ug/L		100	65 - 127
Vinyl acetate	40.0	36.62		ug/L		92	50 - 150
Xylenes, Total	40.0	39.59		ug/L		99	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	99		73 - 130
Toluene-d8 (Surr)	104		80 - 120

**Lab Sample ID: LCS 310-421433/7**  
**Matrix: Water**  
**Analysis Batch: 421433**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.08		ug/L		80	23 - 150
Chloroethane	20.0	18.39		ug/L		92	54 - 136
Chloromethane	20.0	19.52		ug/L		98	38 - 150
Trichlorofluoromethane	20.0	16.93		ug/L		85	54 - 149
Vinyl chloride	20.0	18.84		ug/L		94	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	102		73 - 130
Toluene-d8 (Surr)	97		80 - 120

**Lab Sample ID: MB 310-421436/5**  
**Matrix: Water**  
**Analysis Batch: 421436**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/14/24 11:38	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 11:38	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 11:38	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 11:38	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 11:38	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 11:38	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 11:38	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 11:38	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 11:38	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 11:38	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 11:38	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 11:38	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 11:38	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 11:38	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 11:38	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 11:38	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 11:38	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 11:38	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421436/5**  
**Matrix: Water**  
**Analysis Batch: 421436**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 11:38	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 11:38	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 11:38	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 11:38	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 11:38	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 11:38	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 11:38	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 11:38	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 11:38	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 11:38	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 11:38	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 11:38	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 11:38	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 11:38	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 11:38	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 11:38	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 11:38	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 11:38	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 11:38	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 11:38	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 11:38	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 11:38	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 11:38	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 11:38	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 11:38	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 11:38	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 11:38	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 11:38	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 11:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		05/14/24 11:38	1
Dibromofluoromethane (Surr)	101		73 - 130		05/14/24 11:38	1
Toluene-d8 (Surr)	98		80 - 120		05/14/24 11:38	1

**Lab Sample ID: LCS 310-421436/6**  
**Matrix: Water**  
**Analysis Batch: 421436**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	38.80		ug/L		97	50 - 150
Acrylonitrile	200	196.4		ug/L		98	50 - 150
Benzene	20.0	20.40		ug/L		102	72 - 124
Bromochloromethane	20.0	20.59		ug/L		103	73 - 130
Bromodichloromethane	20.0	18.94		ug/L		95	74 - 122
Bromoform	20.0	19.75		ug/L		99	61 - 122
2-Butanone (MEK)	40.0	37.55		ug/L		94	50 - 150
Carbon disulfide	20.0	20.51		ug/L		103	59 - 135

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-421436/6**  
**Matrix: Water**  
**Analysis Batch: 421436**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon tetrachloride	20.0	20.54		ug/L		103	67 - 132
Chlorobenzene	20.0	19.79		ug/L		99	76 - 120
Chlorodibromomethane	20.0	19.91		ug/L		100	71 - 121
Chloroform	20.0	19.58		ug/L		98	72 - 125
cis-1,2-Dichloroethene	20.0	20.56		ug/L		103	74 - 123
cis-1,3-Dichloropropene	20.0	20.85		ug/L		104	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	18.64		ug/L		93	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.44		ug/L		102	75 - 125
Dibromomethane	20.0	20.03		ug/L		100	74 - 125
1,2-Dichlorobenzene	20.0	18.94		ug/L		95	74 - 120
1,4-Dichlorobenzene	20.0	18.48		ug/L		92	72 - 120
1,1-Dichloroethane	20.0	20.41		ug/L		102	70 - 127
1,2-Dichloroethane	20.0	19.50		ug/L		97	71 - 125
1,1-Dichloroethene	20.0	21.25		ug/L		106	63 - 132
1,2-Dichloropropane	20.0	20.43		ug/L		102	73 - 124
Ethylbenzene	20.0	20.19		ug/L		101	74 - 122
2-Hexanone	40.0	39.47		ug/L		99	60 - 140
Iodomethane	20.0	14.99		ug/L		75	10 - 150
Methylene Chloride	20.0	20.68		ug/L		103	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	40.82		ug/L		102	60 - 139
Styrene	20.0	20.88		ug/L		104	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.42		ug/L		97	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.54		ug/L		98	68 - 124
Tetrachloroethene	20.0	19.49		ug/L		97	71 - 130
Toluene	20.0	19.94		ug/L		100	74 - 123
trans-1,4-Dichloro-2-butene	20.0	20.07		ug/L		100	50 - 150
trans-1,2-Dichloroethene	20.0	20.51		ug/L		103	70 - 126
trans-1,3-Dichloropropene	20.0	21.17		ug/L		106	69 - 123
1,1,1-Trichloroethane	20.0	20.56		ug/L		103	73 - 129
1,1,2-Trichloroethane	20.0	20.11		ug/L		101	73 - 123
Trichloroethene	20.0	20.24		ug/L		101	72 - 126
1,2,3-Trichloropropane	20.0	20.31		ug/L		102	65 - 127
Vinyl acetate	40.0	37.41		ug/L		94	50 - 150
Xylenes, Total	40.0	40.94		ug/L		102	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	98		73 - 130
Toluene-d8 (Surr)	101		80 - 120

**Lab Sample ID: LCS 310-421436/7**  
**Matrix: Water**  
**Analysis Batch: 421436**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	16.47		ug/L		82	23 - 150
Chloroethane	20.0	19.17		ug/L		96	54 - 136
Chloromethane	20.0	20.44		ug/L		102	38 - 150

Eurofins Cedar Falls



# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-421436/7**  
**Matrix: Water**  
**Analysis Batch: 421436**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	18.24		ug/L		91	54 - 149
Vinyl chloride	20.0	19.85		ug/L		99	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	105		73 - 130
Toluene-d8 (Surr)	97		80 - 120

**Lab Sample ID: 310-280734-3 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 421436**

**Client Sample ID: WT-3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	3.51	J	50.0	46.60		ug/L		86	31 - 150
Acrylonitrile	<5.00		250	226.6		ug/L		91	40 - 150
Benzene	0.297	J	25.0	21.87		ug/L		86	46 - 130
Bromochloromethane	<5.00		25.0	22.44		ug/L		90	57 - 130
Bromodichloromethane	<1.00		25.0	21.73		ug/L		87	57 - 130
Bromoform	<5.00		25.0	23.95		ug/L		96	44 - 130
2-Butanone (MEK)	<10.0		50.0	48.82		ug/L		98	38 - 150
Carbon disulfide	<1.00		25.0	22.83		ug/L		91	38 - 135
Carbon tetrachloride	<2.00		25.0	22.12		ug/L		88	45 - 132
Chlorobenzene	<1.00		25.0	22.55		ug/L		90	59 - 130
Chlorodibromomethane	<5.00		25.0	23.35		ug/L		93	54 - 130
Chloroform	<3.00		25.0	20.30		ug/L		81	51 - 130
cis-1,2-Dichloroethene	<1.00		25.0	21.96		ug/L		88	45 - 130
cis-1,3-Dichloropropene	<5.00		25.0	22.59		ug/L		90	53 - 130
1,2-Dibromo-3-Chloropropane	<1.20		25.0	23.23		ug/L		93	38 - 150
1,2-Dibromoethane (EDB)	<0.340		25.0	23.80		ug/L		95	60 - 130
Dibromomethane	<1.00		25.0	22.61		ug/L		90	59 - 130
1,2-Dichlorobenzene	<1.00		25.0	22.90		ug/L		92	59 - 130
1,4-Dichlorobenzene	<1.00		25.0	21.81		ug/L		87	57 - 130
1,1-Dichloroethane	<1.00		25.0	21.51		ug/L		86	49 - 130
1,2-Dichloroethane	<1.00		25.0	22.06		ug/L		88	51 - 130
1,1-Dichloroethene	<2.00		25.0	22.42		ug/L		90	37 - 132
1,2-Dichloropropane	<1.00		25.0	22.10		ug/L		88	57 - 130
Ethylbenzene	<1.00		25.0	22.90		ug/L		92	45 - 130
2-Hexanone	<10.0		50.0	47.83		ug/L		96	46 - 140
Iodomethane	<10.0		25.0	17.46		ug/L		70	10 - 150
Methylene Chloride	<5.00		25.0	22.21		ug/L		89	37 - 150
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	51.91		ug/L		104	47 - 139
Styrene	<1.00		25.0	24.69		ug/L		99	47 - 130
1,1,1,2-Tetrachloroethane	<1.00		25.0	22.99		ug/L		92	55 - 130
1,1,2,2-Tetrachloroethane	<1.00		25.0	24.77		ug/L		99	54 - 130
Tetrachloroethene	<1.00		25.0	21.15		ug/L		85	47 - 130
Toluene	<1.00		25.0	21.68		ug/L		87	51 - 130
trans-1,4-Dichloro-2-butene	<10.0		25.0	24.37		ug/L		97	26 - 150
trans-1,2-Dichloroethene	<1.00		25.0	21.71		ug/L		87	48 - 130

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 310-280734-3 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 421436**

**Client Sample ID: WT-3**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier					
trans-1,3-Dichloropropene	<5.00		25.0	23.36		ug/L		93	50 - 130	
1,1,1-Trichloroethane	<1.00		25.0	21.78		ug/L		87	52 - 130	
1,1,2-Trichloroethane	<1.00		25.0	23.17		ug/L		93	58 - 130	
Trichloroethene	<1.00		25.0	21.80		ug/L		87	51 - 130	
1,2,3-Trichloropropane	<1.00		25.0	25.14		ug/L		101	49 - 130	
Vinyl acetate	<10.0		50.0	41.48		ug/L		83	29 - 150	
Xylenes, Total	<3.00		50.0	46.17		ug/L		92	43 - 130	
<b>MS MS</b>										
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	97		80 - 120							
Dibromofluoromethane (Surr)	98		73 - 130							
Toluene-d8 (Surr)	102		80 - 120							

**Lab Sample ID: 310-280734-3 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 421436**

**Client Sample ID: WT-3**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Acetone	3.51	J	50.0	46.34		ug/L		86	31 - 150	1	29
Acrylonitrile	<5.00		25.0	224.8		ug/L		90	40 - 150	1	20
Benzene	0.297	J	25.0	21.11		ug/L		83	46 - 130	4	20
Bromochloromethane	<5.00		25.0	21.48		ug/L		86	57 - 130	4	20
Bromodichloromethane	<1.00		25.0	20.78		ug/L		83	57 - 130	4	20
Bromoform	<5.00		25.0	22.62		ug/L		90	44 - 130	6	20
2-Butanone (MEK)	<10.0		50.0	48.65		ug/L		97	38 - 150	0	20
Carbon disulfide	<1.00		25.0	21.04		ug/L		84	38 - 135	8	30
Carbon tetrachloride	<2.00		25.0	21.08		ug/L		84	45 - 132	5	20
Chlorobenzene	<1.00		25.0	21.37		ug/L		85	59 - 130	5	20
Chlorodibromomethane	<5.00		25.0	22.20		ug/L		89	54 - 130	5	20
Chloroform	<3.00		25.0	19.64		ug/L		79	51 - 130	3	20
cis-1,2-Dichloroethene	<1.00		25.0	20.85		ug/L		83	45 - 130	5	20
cis-1,3-Dichloropropene	<5.00		25.0	22.04		ug/L		88	53 - 130	2	20
1,2-Dibromo-3-Chloropropane	<1.20		25.0	23.15		ug/L		93	38 - 150	0	20
1,2-Dibromoethane (EDB)	<0.340		25.0	22.92		ug/L		92	60 - 130	4	20
Dibromomethane	<1.00		25.0	21.50		ug/L		86	59 - 130	5	20
1,2-Dichlorobenzene	<1.00		25.0	23.48		ug/L		94	59 - 130	3	20
1,4-Dichlorobenzene	<1.00		25.0	22.12		ug/L		88	57 - 130	1	20
1,1-Dichloroethane	<1.00		25.0	20.86		ug/L		83	49 - 130	3	20
1,2-Dichloroethane	<1.00		25.0	21.54		ug/L		86	51 - 130	2	20
1,1-Dichloroethene	<2.00		25.0	20.99		ug/L		84	37 - 132	7	26
1,2-Dichloropropane	<1.00		25.0	21.58		ug/L		86	57 - 130	2	20
Ethylbenzene	<1.00		25.0	21.83		ug/L		87	45 - 130	5	20
2-Hexanone	<10.0		50.0	48.57		ug/L		97	46 - 140	2	20
Iodomethane	<10.0		25.0	19.52		ug/L		78	10 - 150	11	35
Methylene Chloride	<5.00		25.0	21.51		ug/L		86	37 - 150	3	24
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	50.56		ug/L		101	47 - 139	3	20
Styrene	<1.00		25.0	23.21		ug/L		93	47 - 130	6	20
1,1,1,2-Tetrachloroethane	<1.00		25.0	21.60		ug/L		86	55 - 130	6	20

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 310-280734-3 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 421436**

**Client Sample ID: WT-3**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1,2,2-Tetrachloroethane	<1.00		25.0	23.68		ug/L		95	54 - 130	4	20
Tetrachloroethene	<1.00		25.0	20.74		ug/L		83	47 - 130	2	20
Toluene	<1.00		25.0	20.82		ug/L		83	51 - 130	4	20
trans-1,4-Dichloro-2-butene	<10.0		25.0	23.31		ug/L		93	26 - 150	4	23
trans-1,2-Dichloroethene	<1.00		25.0	20.83		ug/L		83	48 - 130	4	22
trans-1,3-Dichloropropene	<5.00		25.0	22.79		ug/L		91	50 - 130	2	20
1,1,1-Trichloroethane	<1.00		25.0	20.90		ug/L		84	52 - 130	4	20
1,1,2-Trichloroethane	<1.00		25.0	22.71		ug/L		91	58 - 130	2	20
Trichloroethene	<1.00		25.0	20.69		ug/L		83	51 - 130	5	20
1,2,3-Trichloropropane	<1.00		25.0	23.08		ug/L		92	49 - 130	9	26
Vinyl acetate	<10.0		50.0	40.65		ug/L		81	29 - 150	2	23
Xylenes, Total	<3.00		50.0	43.91		ug/L		88	43 - 130	5	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	98		73 - 130
Toluene-d8 (Surr)	100		80 - 120

**Lab Sample ID: MB 310-421866/5**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/16/24 21:13	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/16/24 21:13	1
Benzene	<0.500		0.500	0.220	ug/L			05/16/24 21:13	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/16/24 21:13	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/16/24 21:13	1
Bromoform	<5.00		5.00	0.780	ug/L			05/16/24 21:13	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/16/24 21:13	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/16/24 21:13	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/16/24 21:13	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/16/24 21:13	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/16/24 21:13	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/16/24 21:13	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/16/24 21:13	1
Chloroform	<3.00		3.00	1.30	ug/L			05/16/24 21:13	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/16/24 21:13	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/16/24 21:13	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/16/24 21:13	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/16/24 21:13	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/16/24 21:13	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/16/24 21:13	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/16/24 21:13	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/16/24 21:13	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/16/24 21:13	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/16/24 21:13	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/16/24 21:13	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421866/5**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/16/24 21:13	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/16/24 21:13	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/16/24 21:13	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/16/24 21:13	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/16/24 21:13	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/16/24 21:13	1
Styrene	<1.00		1.00	0.370	ug/L			05/16/24 21:13	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/16/24 21:13	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/16/24 21:13	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/16/24 21:13	1
Toluene	<1.00		1.00	0.430	ug/L			05/16/24 21:13	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/16/24 21:13	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/16/24 21:13	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/16/24 21:13	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/16/24 21:13	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/16/24 21:13	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/16/24 21:13	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/16/24 21:13	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/16/24 21:13	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/16/24 21:13	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/16/24 21:13	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/16/24 21:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120		05/16/24 21:13	1
Dibromofluoromethane (Surr)	100		73 - 130		05/16/24 21:13	1
Toluene-d8 (Surr)	98		80 - 120		05/16/24 21:13	1

**Lab Sample ID: LCS 310-421866/6**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	33.29		ug/L		83	50 - 150
Acrylonitrile	200	185.2		ug/L		93	50 - 150
Benzene	20.0	19.18		ug/L		96	72 - 124
Bromochloromethane	20.0	18.47		ug/L		92	73 - 130
Bromodichloromethane	20.0	18.34		ug/L		92	74 - 122
Bromoform	20.0	17.57		ug/L		88	61 - 122
2-Butanone (MEK)	40.0	36.62		ug/L		92	50 - 150
Carbon disulfide	20.0	19.99		ug/L		100	59 - 135
Carbon tetrachloride	20.0	19.19		ug/L		96	67 - 132
Chlorobenzene	20.0	19.38		ug/L		97	76 - 120
Chlorodibromomethane	20.0	18.32		ug/L		92	71 - 121
Chloroform	20.0	18.77		ug/L		94	72 - 125
cis-1,2-Dichloroethene	20.0	18.75		ug/L		94	74 - 123
cis-1,3-Dichloropropene	20.0	19.61		ug/L		98	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	19.58		ug/L		98	50 - 150

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-421866/6**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane (EDB)	20.0	18.80		ug/L		94	75 - 125
Dibromomethane	20.0	18.72		ug/L		94	74 - 125
1,2-Dichlorobenzene	20.0	20.04		ug/L		100	74 - 120
1,4-Dichlorobenzene	20.0	18.73		ug/L		94	72 - 120
1,1-Dichloroethane	20.0	19.20		ug/L		96	70 - 127
1,2-Dichloroethane	20.0	17.99		ug/L		90	71 - 125
1,1-Dichloroethene	20.0	19.58		ug/L		98	63 - 132
1,2-Dichloropropane	20.0	19.23		ug/L		96	73 - 124
Ethylbenzene	20.0	20.38		ug/L		102	74 - 122
2-Hexanone	40.0	37.54		ug/L		94	60 - 140
Iodomethane	20.0	14.16		ug/L		71	10 - 150
Methylene Chloride	20.0	21.09		ug/L		105	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	36.55		ug/L		91	60 - 139
Styrene	20.0	20.03		ug/L		100	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.51		ug/L		98	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.15		ug/L		96	68 - 124
Tetrachloroethene	20.0	19.18		ug/L		96	71 - 130
Toluene	20.0	18.75		ug/L		94	74 - 123
trans-1,4-Dichloro-2-butene	20.0	18.53		ug/L		93	50 - 150
trans-1,2-Dichloroethene	20.0	18.81		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	19.02		ug/L		95	69 - 123
1,1,1-Trichloroethane	20.0	19.30		ug/L		96	73 - 129
1,1,2-Trichloroethane	20.0	19.18		ug/L		96	73 - 123
Trichloroethene	20.0	19.62		ug/L		98	72 - 126
1,2,3-Trichloropropane	20.0	19.06		ug/L		95	65 - 127
Vinyl acetate	40.0	36.14		ug/L		90	50 - 150
Xylenes, Total	40.0	40.55		ug/L		101	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	97		73 - 130
Toluene-d8 (Surr)	104		80 - 120

**Lab Sample ID: LCS 310-421866/7**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.78		ug/L		99	23 - 150
Chloroethane	20.0	21.16		ug/L		106	54 - 136
Chloromethane	20.0	21.70		ug/L		109	38 - 150
Trichlorofluoromethane	20.0	20.95		ug/L		105	54 - 149
Vinyl chloride	20.0	22.13		ug/L		111	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		80 - 120
Dibromofluoromethane (Surr)	98		73 - 130
Toluene-d8 (Surr)	98		80 - 120

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

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

**Lab Sample ID: MB 310-421194/1-A**  
**Matrix: Water**  
**Analysis Batch: 421981**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:09	1
Barium	<0.00200		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:09	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:09	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:09	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:09	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:09	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:09	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:09	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:09	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:09	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:09	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:09	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:09	1

**Lab Sample ID: MB 310-421194/1-A**  
**Matrix: Water**  
**Analysis Batch: 422152**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 13:48	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 13:48	1

**Lab Sample ID: LCS 310-421194/2-A**  
**Matrix: Water**  
**Analysis Batch: 421981**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.1046		mg/L		105	80 - 120
Beryllium	0.100	0.09835		mg/L		98	80 - 120
Chromium	0.100	0.09551		mg/L		96	80 - 120
Cobalt	0.100	0.1103		mg/L		110	80 - 120
Copper	0.200	0.2213		mg/L		111	80 - 120
Lead	0.200	0.2083		mg/L		104	80 - 120
Nickel	0.200	0.2146		mg/L		107	80 - 120
Selenium	0.400	0.4099		mg/L		102	80 - 120
Silver	0.100	0.1177		mg/L		118	80 - 120
Thallium	0.100	0.1123		mg/L		112	80 - 120
Vanadium	0.100	0.09264		mg/L		93	80 - 120
Zinc	0.200	0.1977		mg/L		99	80 - 120

**Lab Sample ID: LCS 310-421194/2-A**  
**Matrix: Water**  
**Analysis Batch: 422152**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.100	0.1015		mg/L		101	80 - 120

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

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

**Lab Sample ID: 310-280734-1 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 421981**

**Client Sample ID: WT-1**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Sample	Sample Qualifier	Spike Added	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result			Result	Qualifier					
Arsenic	0.00404		0.200	0.2161		mg/L		106		75 - 125
Barium	0.195		0.100	0.3017		mg/L		107		75 - 125
Beryllium	<0.00100		0.100	0.1069		mg/L		107		75 - 125
Chromium	<0.00500		0.100	0.09411		mg/L		94		75 - 125
Cobalt	0.207		0.100	0.3127		mg/L		105		75 - 125
Copper	<0.00500		0.200	0.2157		mg/L		108		75 - 125
Lead	0.000584		0.200	0.2029		mg/L		101		75 - 125
Nickel	0.129		0.200	0.3408		mg/L		106		75 - 125
Selenium	<0.00500		0.400	0.4185		mg/L		105		75 - 125
Silver	<0.00100		0.100	0.1078		mg/L		108		75 - 125
Thallium	<0.00100		0.100	0.1161		mg/L		116		75 - 125
Vanadium	<0.00500		0.100	0.09572		mg/L		96		75 - 125
Zinc	<0.0200		0.200	0.2137		mg/L		107		75 - 125

**Lab Sample ID: 310-280734-1 MS**  
**Matrix: Groundwater**  
**Analysis Batch: 422152**

**Client Sample ID: WT-1**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Sample	Sample Qualifier	Spike Added	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result			Result	Qualifier					
Antimony	<0.00200		0.200	0.2209		mg/L		110		75 - 125
Cadmium	<0.000200		0.100	0.1048		mg/L		105		75 - 125

**Lab Sample ID: 310-280734-1 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 421981**

**Client Sample ID: WT-1**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Sample	Sample Qualifier	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD Limit
	Result			Result	Qualifier							
Arsenic	0.00404		0.200	0.2186		mg/L		107		75 - 125	1	20
Barium	0.195		0.100	0.3048		mg/L		110		75 - 125	1	20
Beryllium	<0.00100		0.100	0.1069		mg/L		107		75 - 125	0	20
Chromium	<0.00500		0.100	0.09531		mg/L		95		75 - 125	1	20
Cobalt	0.207		0.100	0.3090		mg/L		102		75 - 125	1	20
Copper	<0.00500		0.200	0.2142		mg/L		107		75 - 125	1	20
Lead	0.000584		0.200	0.2047		mg/L		102		75 - 125	1	20
Nickel	0.129		0.200	0.3387		mg/L		105		75 - 125	1	20
Selenium	<0.00500		0.400	0.4155		mg/L		104		75 - 125	1	20
Silver	<0.00100		0.100	0.1025		mg/L		103		75 - 125	5	20
Thallium	<0.00100		0.100	0.1165		mg/L		117		75 - 125	0	20
Vanadium	<0.00500		0.100	0.09561		mg/L		96		75 - 125	0	20
Zinc	<0.0200		0.200	0.2121		mg/L		106		75 - 125	1	20

**Lab Sample ID: 310-280734-1 MSD**  
**Matrix: Groundwater**  
**Analysis Batch: 422152**

**Client Sample ID: WT-1**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Sample	Sample Qualifier	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD Limit
	Result			Result	Qualifier							
Antimony	<0.00200		0.200	0.2159		mg/L		108		75 - 125	2	20
Cadmium	<0.000200		0.100	0.1051		mg/L		105		75 - 125	0	20

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

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

**Lab Sample ID: MB 310-421324/1**  
**Matrix: Water**  
**Analysis Batch: 421324**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/10/24 12:28	1

**Lab Sample ID: LCS 310-421324/2**  
**Matrix: Water**  
**Analysis Batch: 421324**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116

**Lab Sample ID: MB 310-421366/1**  
**Matrix: Water**  
**Analysis Batch: 421366**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/10/24 18:10	1

**Lab Sample ID: LCS 310-421366/2**  
**Matrix: Water**  
**Analysis Batch: 421366**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	75 - 116



# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

## GC/MS VOA

### Analysis Batch: 421433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-1	WT-1	Total/NA	Groundwater	8260D	
310-280734-2	WT-2	Total/NA	Groundwater	8260D	
MB 310-421433/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421433/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421433/7	Lab Control Sample	Total/NA	Water	8260D	

### Analysis Batch: 421436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-3	WT-3	Total/NA	Groundwater	8260D	
310-280734-4	WT-4	Total/NA	Groundwater	8260D	
310-280734-5	WT-OF	Total/NA	Groundwater	8260D	
310-280734-6	Trip Blank 1	Total/NA	Water	8260D	
MB 310-421436/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421436/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421436/7	Lab Control Sample	Total/NA	Water	8260D	
310-280734-3 MS	WT-3	Total/NA	Groundwater	8260D	
310-280734-3 MSD	WT-3	Total/NA	Groundwater	8260D	

### Analysis Batch: 421866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-7	Trip Blank 2	Total/NA	Water	8260D	
MB 310-421866/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421866/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421866/7	Lab Control Sample	Total/NA	Water	8260D	

## Metals

### Prep Batch: 421194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-1	WT-1	Total/NA	Groundwater	3005A	
310-280734-2	WT-2	Total/NA	Groundwater	3005A	
310-280734-3	WT-3	Total/NA	Groundwater	3005A	
310-280734-4	WT-4	Total/NA	Groundwater	3005A	
310-280734-5	WT-OF	Total/NA	Groundwater	3005A	
MB 310-421194/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280734-1 MS	WT-1	Total/NA	Groundwater	3005A	
310-280734-1 MSD	WT-1	Total/NA	Groundwater	3005A	

### Analysis Batch: 421981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-1	WT-1	Total/NA	Groundwater	6020B	421194
310-280734-2	WT-2	Total/NA	Groundwater	6020B	421194
310-280734-3	WT-3	Total/NA	Groundwater	6020B	421194
310-280734-4	WT-4	Total/NA	Groundwater	6020B	421194
310-280734-5	WT-OF	Total/NA	Groundwater	6020B	421194
MB 310-421194/1-A	Method Blank	Total/NA	Water	6020B	421194
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	6020B	421194
310-280734-1 MS	WT-1	Total/NA	Groundwater	6020B	421194
310-280734-1 MSD	WT-1	Total/NA	Groundwater	6020B	421194



# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

## Metals

### Analysis Batch: 422152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-1	WT-1	Total/NA	Groundwater	6020B	421194
310-280734-2	WT-2	Total/NA	Groundwater	6020B	421194
310-280734-3	WT-3	Total/NA	Groundwater	6020B	421194
310-280734-4	WT-4	Total/NA	Groundwater	6020B	421194
310-280734-5	WT-OF	Total/NA	Groundwater	6020B	421194
MB 310-421194/1-A	Method Blank	Total/NA	Water	6020B	421194
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	6020B	421194
310-280734-1 MS	WT-1	Total/NA	Groundwater	6020B	421194
310-280734-1 MSD	WT-1	Total/NA	Groundwater	6020B	421194

## General Chemistry

### Analysis Batch: 421324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-4	WT-4	Total/NA	Groundwater	I-3765-85	
310-280734-5	WT-OF	Total/NA	Groundwater	I-3765-85	
MB 310-421324/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421324/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 421366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280734-1	WT-1	Total/NA	Groundwater	I-3765-85	
310-280734-2	WT-2	Total/NA	Groundwater	I-3765-85	
310-280734-3	WT-3	Total/NA	Groundwater	I-3765-85	
MB 310-421366/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421366/2	Lab Control Sample	Total/NA	Water	I-3765-85	

# Lab Chronicle

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

**Client Sample ID: WT-1**  
**Date Collected: 05/07/24 08:06**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-1**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421433	WSE8	EET CF	05/15/24 02:31
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:13
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 13:52
Total/NA	Analysis	I-3765-85		1	421366	D7CP	EET CF	05/10/24 18:10

**Client Sample ID: WT-2**  
**Date Collected: 05/07/24 08:16**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-2**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421433	WSE8	EET CF	05/15/24 02:53
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:33
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:08
Total/NA	Analysis	I-3765-85		1	421366	D7CP	EET CF	05/10/24 18:10

**Client Sample ID: WT-3**  
**Date Collected: 05/07/24 08:24**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-3**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421436	WSE8	EET CF	05/14/24 13:27
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:35
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:10
Total/NA	Analysis	I-3765-85		1	421366	D7CP	EET CF	05/10/24 18:10

**Client Sample ID: WT-4**  
**Date Collected: 05/07/24 08:33**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-4**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421436	WSE8	EET CF	05/14/24 13:49
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:37
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:12
Total/NA	Analysis	I-3765-85		1	421324	DGU1	EET CF	05/10/24 12:28

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
 SDG: Groundwater Underdrains

**Client Sample ID: WT-OF**  
**Date Collected: 05/07/24 07:57**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-5**  
**Matrix: Groundwater**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421436	WSE8	EET CF	05/14/24 14:11
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:39
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:14
Total/NA	Analysis	I-3765-85		1	421324	DGU1	EET CF	05/10/24 12:28

**Client Sample ID: Trip Blank 1**  
**Date Collected: 05/07/24 00:00**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421436	WSE8	EET CF	05/14/24 12:43

**Client Sample ID: Trip Blank 2**  
**Date Collected: 05/07/24 00:00**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280734-7**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421866	WSE8	EET CF	05/16/24 22:18

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

## Laboratory: Eurofins Cedar Falls

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

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

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# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

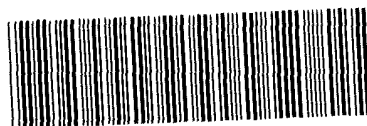
**Laboratory References:**

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





Environment Testing  
America



310-280734 Chain of Custody

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-8-24</u>	<u>1510</u>	<u>MY</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 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 type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<u>WT-1, -2, -3 &amp; MW-209B</u>			
<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:	<u>Y</u>	Correction Factor (°C): <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):	<u>NA</u>	Corrected Temp (°C):	
• <b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1 <u>Nitric 250ml</u>	CONTAINER 2 <u>250ml NT</u>	
Uncorrected Temp (°C):	<u>6.8</u>	<u>8.1</u>	
Corrected Temp (°C):	<u>6.8</u>	<u>8.1</u>	
<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>			





Environment Testing  
America

Place COC scanning label  
here

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-8-24</u>	<u>1510</u>	<u>MY</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 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 type="checkbox"/> No If yes: Cooler # <u>2</u> of <u>2</u>			
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓			
<u>MW-10B; WT-4; WT-0F; MW-1B</u>			
<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: <u>Y</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>NA</u>		Corrected Temp (°C): _____	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):	<u>6.2</u>	<u>2.4</u>	
Corrected Temp (°C):	<u>6.2</u>	<u>2.4</u>	
<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>			

**Eurofins Cedar Falls**

3019 Venture Way  
 Cedar Falls, IA 50613  
 Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b>		Lab P/N: Hummel, Matthew R		Center Tracking No(s):		GOC No: 310-91578-26211 1	
Client Contact: Jeff Jordan		E-Mail: Matthew.Hummel@eurofins.com		State of Origin:		Page: Page 1 of 1	
Company: Iowa City Landfill		PWSID:		Analysis Requested		Job #:	
Address: City of Iowa City 335 E. Iowa Ave		Due Date Requested:		6020B (MOD) Volatile Appendix 1 Sublet		Preservation Codes:	
City: Iowa City		TAT Requested (days):		6020A (MOD) Volatile Appendix 1 Sublet		M Hexane	
State: IA		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		6020C (MOD) Volatile Appendix 1 Sublet		N None	
City: IA, 52240		PO #: RFP23-14		6020D (MOD) Volatile Appendix 1 Sublet		O - AsNaO2	
Phone:		WO #:		6020E (MOD) Volatile Appendix 1 Sublet		P Na2O4S	
Email: jennifer-jordan@iowa-city.org		Project #:		6020F (MOD) Volatile Appendix 1 Sublet		Q Na2SO3	
Project Name: Iowa City Landfill Event Desc: Groundwater Underdrains		31015832		6020G (MOD) Volatile Appendix 1 Sublet		R - Na2SO3	
Site: Iowa		SSOW#:		6020H (MOD) Volatile Appendix 1 Sublet		S - H2SO4	
				6020I (MOD) Volatile Appendix 1 Sublet		T 7SP Doublehydroxide	
				6020J (MOD) Volatile Appendix 1 Sublet		U None	
				6020K (MOD) Volatile Appendix 1 Sublet		V MCA	
				6020L (MOD) Volatile Appendix 1 Sublet		W pH 4.5	
				6020M (MOD) Volatile Appendix 1 Sublet		Y Trizma	
				6020N (MOD) Volatile Appendix 1 Sublet		Z - other (specify)	
				6020O (MOD) Volatile Appendix 1 Sublet		Other	
				6020P (MOD) Volatile Appendix 1 Sublet		Total Number of Containers	
				6020Q (MOD) Volatile Appendix 1 Sublet		Special Instructions/Note:	
				6020R (MOD) Volatile Appendix 1 Sublet			
				6020S (MOD) Volatile Appendix 1 Sublet			
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# Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280734-1  
SDG Number: Groundwater Underdrains

**Login Number: 280734**

**List Number: 1**

**Creator: Costello, Mackenzie K**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280734-1  
SDG: Groundwater Underdrains

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 5/22/2024 11:05:04 AM

## JOB DESCRIPTION

Iowa City Landfill Spring 2024  
Source Characterization  
Source Characterization

## JOB NUMBER

310-280735-1

# 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



Generated  
5/22/2024 11:05:04 AM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Spring 2024

Job ID: 310-280735-1

**Job ID: 310-280735-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280735-1

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

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

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

### Receipt

The samples were received on 5/8/2024 3:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.8°C.

### Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: MW-209B (310-280735-1) and Trip Blank (310-280735-2). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

### GC/MS VOA

Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: MW-209B (310-280735-1).

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank (310-280735-2).

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

### Herbicides

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

### Pesticides

Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-421493. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

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

### HPLC/IC

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

### Metals

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-209B (310-280735-1). The sample(s) was preserved to the appropriate pH in the laboratory.

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

### General Chemistry

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

Eurofins Cedar Falls

# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Spring 2024

Job ID: 310-280735-1

**Job ID: 310-280735-2**

**Eurofins Cedar Falls**

## Job Narrative 310-280735-2

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

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

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

### Receipt

The samples were received on 5/8/2024 3:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.8°C.

### Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: MW-209B (310-280735-1) and Trip Blank (310-280735-2). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE\_ONE> proceed with/cancel analysis.

### HPLC/IC

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

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280735-1	MW-209B	Groundwater	05/07/24 09:01	05/08/24 15:10
310-280735-2	Trip Blank	Water	05/07/24 00:00	05/08/24 15:10

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# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

## Client Sample ID: MW-209B

## Lab Sample ID: 310-280735-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	8.43		0.500	0.220	ug/L	1		8260D	Total/NA
Chlorobenzene	0.677	J	1.00	0.400	ug/L	1		8260D	Total/NA
Xylenes, Total	4.68		3.00	0.400	ug/L	1		8260D	Total/NA
Silvex (2,4,5-TP)	1.43		0.0541	0.0238	ug/L	1		8151A	Total/NA
Nitrate as N	1.27		0.200	0.0780	mg/L	1		9056A	Total/NA
Arsenic	0.0360		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.803		0.00200	0.000660	mg/L	1		6020B	Total/NA
Chromium	0.00133	J	0.00500	0.00120	mg/L	1		6020B	Total/NA
Cobalt	0.00227		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0560		0.00500	0.00210	mg/L	1		6020B	Total/NA
Iron	60.3		0.100	0.0360	mg/L	1		6020B	Total/NA
Silver	0.00911		0.00100	0.000500	mg/L	1		6020B	Total/NA
Vanadium	0.00337	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Manganese	4.88		0.0100	0.00360	mg/L	1		6020B	Total/NA
Sulfide	0.450	J	1.00	0.231	mg/L	1		9034	Total/NA
Total Organic Carbon	21.0		1.00	0.500	mg/L	1		9060A	Total/NA
Total Suspended Solids	132		30.0	22.2	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank

## Lab Sample ID: 310-280735-2

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

**Client Sample ID: MW-209B**

**Lab Sample ID: 310-280735-1**

**Date Collected: 05/07/24 09:01**

**Matrix: Groundwater**

**Date Received: 05/08/24 15:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/17/24 05:12	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/17/24 05:12	1
<b>Benzene</b>	<b>8.43</b>		0.500	0.220	ug/L			05/17/24 05:12	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/17/24 05:12	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/17/24 05:12	1
Bromoform	<5.00		5.00	0.780	ug/L			05/17/24 05:12	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/17/24 05:12	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/17/24 05:12	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/17/24 05:12	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/17/24 05:12	1
<b>Chlorobenzene</b>	<b>0.677 J</b>		1.00	0.400	ug/L			05/17/24 05:12	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/17/24 05:12	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/17/24 05:12	1
Chloroform	<3.00		3.00	1.30	ug/L			05/17/24 05:12	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/17/24 05:12	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/17/24 05:12	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/17/24 05:12	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/17/24 05:12	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/17/24 05:12	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/17/24 05:12	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/17/24 05:12	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/17/24 05:12	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/17/24 05:12	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/17/24 05:12	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/17/24 05:12	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/17/24 05:12	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/17/24 05:12	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/17/24 05:12	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/17/24 05:12	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/17/24 05:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/17/24 05:12	1
Styrene	<1.00		1.00	0.370	ug/L			05/17/24 05:12	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/17/24 05:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/17/24 05:12	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/17/24 05:12	1
Toluene	<1.00		1.00	0.430	ug/L			05/17/24 05:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/17/24 05:12	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/17/24 05:12	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/17/24 05:12	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/17/24 05:12	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/17/24 05:12	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/17/24 05:12	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/17/24 05:12	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/17/24 05:12	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/17/24 05:12	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/17/24 05:12	1
<b>Xylenes, Total</b>	<b>4.68</b>		3.00	0.400	ug/L			05/17/24 05:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/17/24 05:12	1

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# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

**Client Sample ID: MW-209B**

**Lab Sample ID: 310-280735-1**

Date Collected: 05/07/24 09:01

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	105		73 - 130		05/17/24 05:12	1
Toluene-d8 (Surr)	99		80 - 120		05/17/24 05:12	1

**Method: SW846 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0800		0.0800	0.0463	ug/L		05/13/24 13:14	05/14/24 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	60		10 - 136	05/13/24 13:14	05/14/24 15:59	1
Tetrachloro-m-xylene	66		10 - 130	05/13/24 13:14	05/14/24 15:59	1

**Method: SW846 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	1.43		0.0541	0.0238	ug/L		05/13/24 19:34	05/15/24 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	76		34 - 142	05/13/24 19:34	05/15/24 15:32	1
DCAA	110		34 - 142	05/13/24 19:34	05/15/24 15:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.27		0.200	0.0780	mg/L			05/08/24 22:32	1
Sulfate	<1.00		1.00	0.420	mg/L			05/08/24 22:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:16	1
Arsenic	0.0360		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:41	1
Barium	0.803		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:41	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:41	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:16	1
Chromium	0.00133	J	0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:41	1
Cobalt	0.00227		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:41	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:41	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:41	1
Nickel	0.0560		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:41	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:41	1
Iron	60.3		0.100	0.0360	mg/L		05/10/24 09:00	05/16/24 18:41	1
Silver	0.00911		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:41	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:41	1
Vanadium	0.00337	J	0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:41	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:41	1
Manganese	4.88		0.0100	0.00360	mg/L		05/10/24 09:00	05/16/24 18:41	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	0.450	J	1.00	0.231	mg/L			05/14/24 22:05	1
Total Organic Carbon (SW846 9060A)	21.0		1.00	0.500	mg/L			05/14/24 22:26	1
Total Suspended Solids (USGS I-3765-85)	132		30.0	22.2	mg/L			05/10/24 13:54	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280735-2**

Date Collected: 05/07/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/16/24 22:40	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/16/24 22:40	1
Benzene	<0.500		0.500	0.220	ug/L			05/16/24 22:40	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/16/24 22:40	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/16/24 22:40	1
Bromoform	<5.00		5.00	0.780	ug/L			05/16/24 22:40	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/16/24 22:40	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/16/24 22:40	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/16/24 22:40	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/16/24 22:40	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/16/24 22:40	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/16/24 22:40	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/16/24 22:40	1
Chloroform	<3.00		3.00	1.30	ug/L			05/16/24 22:40	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/16/24 22:40	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/16/24 22:40	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/16/24 22:40	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/16/24 22:40	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/16/24 22:40	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/16/24 22:40	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/16/24 22:40	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/16/24 22:40	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/16/24 22:40	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/16/24 22:40	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/16/24 22:40	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/16/24 22:40	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/16/24 22:40	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/16/24 22:40	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/16/24 22:40	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/16/24 22:40	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/16/24 22:40	1
Styrene	<1.00		1.00	0.370	ug/L			05/16/24 22:40	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/16/24 22:40	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/16/24 22:40	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/16/24 22:40	1
Toluene	<1.00		1.00	0.430	ug/L			05/16/24 22:40	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/16/24 22:40	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/16/24 22:40	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/16/24 22:40	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/16/24 22:40	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/16/24 22:40	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/16/24 22:40	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/16/24 22:40	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/16/24 22:40	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/16/24 22:40	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/16/24 22:40	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/16/24 22:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120		05/16/24 22:40	1

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# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

**Client Sample ID: Trip Blank**

**Date Collected: 05/07/24 00:00**

**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280735-2**

**Matrix: Water**

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Dibromofluoromethane (Surr)	101		73 - 130		05/16/24 22:40	1
Toluene-d8 (Surr)	97		80 - 120		05/16/24 22:40	1

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# Definitions/Glossary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

# Surrogate Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

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

Matrix: Groundwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280735-1	MW-209B	101	105	99
<b>Surrogate Legend</b>				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				
TOL = Toluene-d8 (Surr)				

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280735-2	Trip Blank	109	101	97
LCS 310-421866/6	Lab Control Sample	100	97	104
LCS 310-421866/7	Lab Control Sample	107	98	98
MB 310-421866/5	Method Blank	109	100	98
<b>Surrogate Legend</b>				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				
TOL = Toluene-d8 (Surr)				

## Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Groundwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (10-136)	TCX2 (10-130)
310-280735-1	MW-209B	60	66
<b>Surrogate Legend</b>			
DCB = DCB Decachlorobiphenyl (Surr)			
TCX = Tetrachloro-m-xylene			

## Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (10-136)	TCX2 (10-130)
LCS 310-421493/2-A	Lab Control Sample	96	59
LCSD 310-421493/3-A	Lab Control Sample Dup	99	57
MB 310-421493/1-A	Method Blank	84	49
<b>Surrogate Legend</b>			
DCB = DCB Decachlorobiphenyl (Surr)			
TCX = Tetrachloro-m-xylene			

# Surrogate Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

**Method: 8151A - Herbicides (GC)**

**Matrix: Groundwater**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)
310-280735-1	MW-209B	76	110

### Surrogate Legend

DCPAA = DCAA

**Method: 8151A - Herbicides (GC)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)
LCS 410-505638/2-A	Lab Control Sample	84	101
LCSD 410-505638/3-A	Lab Control Sample Dup	79	96
MB 410-505638/1-A	Method Blank	81	95

### Surrogate Legend

DCPAA = DCAA



# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

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

**Lab Sample ID: MB 310-421866/5**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/16/24 21:13	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/16/24 21:13	1
Benzene	<0.500		0.500	0.220	ug/L			05/16/24 21:13	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/16/24 21:13	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/16/24 21:13	1
Bromoform	<5.00		5.00	0.780	ug/L			05/16/24 21:13	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/16/24 21:13	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/16/24 21:13	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/16/24 21:13	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/16/24 21:13	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/16/24 21:13	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/16/24 21:13	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/16/24 21:13	1
Chloroform	<3.00		3.00	1.30	ug/L			05/16/24 21:13	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/16/24 21:13	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/16/24 21:13	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/16/24 21:13	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/16/24 21:13	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/16/24 21:13	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/16/24 21:13	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/16/24 21:13	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/16/24 21:13	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/16/24 21:13	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/16/24 21:13	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/16/24 21:13	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/16/24 21:13	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/16/24 21:13	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/16/24 21:13	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/16/24 21:13	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/16/24 21:13	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/16/24 21:13	1
Styrene	<1.00		1.00	0.370	ug/L			05/16/24 21:13	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/16/24 21:13	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/16/24 21:13	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/16/24 21:13	1
Toluene	<1.00		1.00	0.430	ug/L			05/16/24 21:13	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/16/24 21:13	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/16/24 21:13	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/16/24 21:13	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/16/24 21:13	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/16/24 21:13	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/16/24 21:13	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/16/24 21:13	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/16/24 21:13	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/16/24 21:13	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/16/24 21:13	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/16/24 21:13	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421866/5**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
4-Bromofluorobenzene (Surr)	109		80 - 120		05/16/24 21:13	1
Dibromofluoromethane (Surr)	100		73 - 130		05/16/24 21:13	1
Toluene-d8 (Surr)	98		80 - 120		05/16/24 21:13	1

**Lab Sample ID: LCS 310-421866/6**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

<u>Analyte</u>	<u>Spike Added</u>	<u>LCS Result</u>	<u>LCS Qualifier</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec Limits</u>
Acetone	40.0	33.29		ug/L		83	50 - 150
Acrylonitrile	200	185.2		ug/L		93	50 - 150
Benzene	20.0	19.18		ug/L		96	72 - 124
Bromochloromethane	20.0	18.47		ug/L		92	73 - 130
Bromodichloromethane	20.0	18.34		ug/L		92	74 - 122
Bromoform	20.0	17.57		ug/L		88	61 - 122
2-Butanone (MEK)	40.0	36.62		ug/L		92	50 - 150
Carbon disulfide	20.0	19.99		ug/L		100	59 - 135
Carbon tetrachloride	20.0	19.19		ug/L		96	67 - 132
Chlorobenzene	20.0	19.38		ug/L		97	76 - 120
Chlorodibromomethane	20.0	18.32		ug/L		92	71 - 121
Chloroform	20.0	18.77		ug/L		94	72 - 125
cis-1,2-Dichloroethene	20.0	18.75		ug/L		94	74 - 123
cis-1,3-Dichloropropene	20.0	19.61		ug/L		98	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	19.58		ug/L		98	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.80		ug/L		94	75 - 125
Dibromomethane	20.0	18.72		ug/L		94	74 - 125
1,2-Dichlorobenzene	20.0	20.04		ug/L		100	74 - 120
1,4-Dichlorobenzene	20.0	18.73		ug/L		94	72 - 120
1,1-Dichloroethane	20.0	19.20		ug/L		96	70 - 127
1,2-Dichloroethane	20.0	17.99		ug/L		90	71 - 125
1,1-Dichloroethene	20.0	19.58		ug/L		98	63 - 132
1,2-Dichloropropane	20.0	19.23		ug/L		96	73 - 124
Ethylbenzene	20.0	20.38		ug/L		102	74 - 122
2-Hexanone	40.0	37.54		ug/L		94	60 - 140
Iodomethane	20.0	14.16		ug/L		71	10 - 150
Methylene Chloride	20.0	21.09		ug/L		105	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	36.55		ug/L		91	60 - 139
Styrene	20.0	20.03		ug/L		100	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.51		ug/L		98	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.15		ug/L		96	68 - 124
Tetrachloroethene	20.0	19.18		ug/L		96	71 - 130
Toluene	20.0	18.75		ug/L		94	74 - 123
trans-1,4-Dichloro-2-butene	20.0	18.53		ug/L		93	50 - 150
trans-1,2-Dichloroethene	20.0	18.81		ug/L		94	70 - 126
trans-1,3-Dichloropropene	20.0	19.02		ug/L		95	69 - 123
1,1,1-Trichloroethane	20.0	19.30		ug/L		96	73 - 129
1,1,2-Trichloroethane	20.0	19.18		ug/L		96	73 - 123
Trichloroethene	20.0	19.62		ug/L		98	72 - 126

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 310-421866/6**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	19.06		ug/L		95	65 - 127
Vinyl acetate	40.0	36.14		ug/L		90	50 - 150
Xylenes, Total	40.0	40.55		ug/L		101	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	97		73 - 130
Toluene-d8 (Surr)	104		80 - 120

**Lab Sample ID: LCS 310-421866/7**  
**Matrix: Water**  
**Analysis Batch: 421866**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	19.78		ug/L		99	23 - 150
Chloroethane	20.0	21.16		ug/L		106	54 - 136
Chloromethane	20.0	21.70		ug/L		109	38 - 150
Trichlorofluoromethane	20.0	20.95		ug/L		105	54 - 149
Vinyl chloride	20.0	22.13		ug/L		111	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		80 - 120
Dibromofluoromethane (Surr)	98		73 - 130
Toluene-d8 (Surr)	98		80 - 120

## Method: 8081B - Organochlorine Pesticides (GC)

**Lab Sample ID: MB 310-421493/1-A**  
**Matrix: Water**  
**Analysis Batch: 421597**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421493**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
beta-BHC	<0.0640		0.0640	0.0370	ug/L		05/13/24 13:14	05/14/24 12:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	84		10 - 136	05/13/24 13:14	05/14/24 12:11	1
Tetrachloro-m-xylene	49		10 - 130	05/13/24 13:14	05/14/24 12:11	1

**Lab Sample ID: LCS 310-421493/2-A**  
**Matrix: Water**  
**Analysis Batch: 421597**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421493**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
beta-BHC	1.00	0.7716		ug/L		77	37 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	96		10 - 136
Tetrachloro-m-xylene	59		10 - 130

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

## Method: 8081B - Organochlorine Pesticides (GC)

**Lab Sample ID: LCSD 310-421493/3-A**  
**Matrix: Water**  
**Analysis Batch: 421597**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 421493**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
beta-BHC	1.00	0.8243		ug/L		82	37 - 136	7	35
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
DCB Decachlorobiphenyl (Surr)	99		10 - 136						
Tetrachloro-m-xylene	57		10 - 130						

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 410-505638/1-A**  
**Matrix: Water**  
**Analysis Batch: 506239**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 505638**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	<0.0500		0.0500	0.0220	ug/L		05/13/24 19:34	05/15/24 13:11	1
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCAA	81		34 - 142				05/13/24 19:34	05/15/24 13:11	1
DCAA	95		34 - 142				05/13/24 19:34	05/15/24 13:11	1

**Lab Sample ID: LCS 410-505638/2-A**  
**Matrix: Water**  
**Analysis Batch: 506239**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 505638**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silvex (2,4,5-TP)	0.250	0.2790		ug/L		112	62 - 170		
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
DCAA	84		34 - 142						
DCAA	101		34 - 142						

**Lab Sample ID: LCSD 410-505638/3-A**  
**Matrix: Water**  
**Analysis Batch: 506239**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 505638**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silvex (2,4,5-TP)	0.250	0.2966		ug/L		119	62 - 170	6	30
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
DCAA	79		34 - 142						
DCAA	96		34 - 142						

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 310-421186/22**  
**Matrix: Water**  
**Analysis Batch: 421186**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			05/08/24 20:43	1
Sulfate	<1.00		1.00	0.420	mg/L			05/08/24 20:43	1

**Lab Sample ID: LCS 310-421186/23**  
**Matrix: Water**  
**Analysis Batch: 421186**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.00	2.042		mg/L		102	90 - 110
Sulfate	10.0	9.563		mg/L		96	90 - 110

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

**Lab Sample ID: MB 310-421194/1-A**  
**Matrix: Water**  
**Analysis Batch: 421981**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:09	1
Barium	<0.00200		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:09	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:09	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:09	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:09	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:09	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:09	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:09	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:09	1
Iron	<0.100		0.100	0.0360	mg/L		05/10/24 09:00	05/16/24 18:09	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:09	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:09	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:09	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:09	1
Manganese	<0.0100		0.0100	0.00360	mg/L		05/10/24 09:00	05/16/24 18:09	1

**Lab Sample ID: MB 310-421194/1-A**  
**Matrix: Water**  
**Analysis Batch: 422152**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 13:48	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 13:48	1

**Lab Sample ID: LCS 310-421194/2-A**  
**Matrix: Water**  
**Analysis Batch: 421981**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2079		mg/L		104	80 - 120
Barium	0.100	0.1046		mg/L		105	80 - 120
Beryllium	0.100	0.09835		mg/L		98	80 - 120

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

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

Lab Sample ID: LCS 310-421194/2-A  
 Matrix: Water  
 Analysis Batch: 421981

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 421194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	0.100	0.09551		mg/L		96	80 - 120
Cobalt	0.100	0.1103		mg/L		110	80 - 120
Copper	0.200	0.2213		mg/L		111	80 - 120
Lead	0.200	0.2083		mg/L		104	80 - 120
Nickel	0.200	0.2146		mg/L		107	80 - 120
Selenium	0.400	0.4099		mg/L		102	80 - 120
Iron	0.200	0.2184		mg/L		109	80 - 120
Silver	0.100	0.1177		mg/L		118	80 - 120
Thallium	0.100	0.1123		mg/L		112	80 - 120
Vanadium	0.100	0.09264		mg/L		93	80 - 120
Zinc	0.200	0.1977		mg/L		99	80 - 120
Manganese	0.100	0.09838		mg/L		98	80 - 120

Lab Sample ID: LCS 310-421194/2-A  
 Matrix: Water  
 Analysis Batch: 422152

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 421194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2097		mg/L		105	80 - 120
Cadmium	0.100	0.1015		mg/L		101	80 - 120

## Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-767932/1  
 Matrix: Water  
 Analysis Batch: 767932

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00	0.231	mg/L			05/14/24 21:52	1

Lab Sample ID: LCS 500-767932/2  
 Matrix: Water  
 Analysis Batch: 767932

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	3.64	3.406		mg/L		94	80 - 120

## Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 310-421682/12  
 Matrix: Water  
 Analysis Batch: 421682

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<1.00		1.00	0.500	mg/L			05/14/24 13:24	1

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

## Method: 9060A - Organic Carbon, Total (TOC) (Continued)

**Lab Sample ID: LCS 310-421682/13**  
**Matrix: Water**  
**Analysis Batch: 421682**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	9.99	10.88		mg/L		109	85 - 115

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

**Lab Sample ID: MB 310-421338/1**  
**Matrix: Water**  
**Analysis Batch: 421338**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/10/24 13:54	1

**Lab Sample ID: LCS 310-421338/2**  
**Matrix: Water**  
**Analysis Batch: 421338**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	75 - 116

**Lab Sample ID: 310-280735-1 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421338**

**Client Sample ID: MW-209B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	132		142.0		mg/L		7	35

# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

## GC/MS VOA

### Analysis Batch: 421866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	8260D	
310-280735-2	Trip Blank	Total/NA	Water	8260D	
MB 310-421866/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421866/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421866/7	Lab Control Sample	Total/NA	Water	8260D	

## GC Semi VOA

### Prep Batch: 421493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	3510C	
MB 310-421493/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-421493/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-421493/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 421597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	8081B	421493
MB 310-421493/1-A	Method Blank	Total/NA	Water	8081B	421493
LCS 310-421493/2-A	Lab Control Sample	Total/NA	Water	8081B	421493
LCSD 310-421493/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	421493

### Prep Batch: 505638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	8151A	
MB 410-505638/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-505638/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-505638/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 506239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	8151A	505638
MB 410-505638/1-A	Method Blank	Total/NA	Water	8151A	505638
LCS 410-505638/2-A	Lab Control Sample	Total/NA	Water	8151A	505638
LCSD 410-505638/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	505638

## HPLC/IC

### Analysis Batch: 421186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	9056A	
MB 310-421186/22	Method Blank	Total/NA	Water	9056A	
LCS 310-421186/23	Lab Control Sample	Total/NA	Water	9056A	

## Metals

### Prep Batch: 421194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	3005A	
MB 310-421194/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	3005A	

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# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

## Metals

### Analysis Batch: 421981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	6020B	421194
MB 310-421194/1-A	Method Blank	Total/NA	Water	6020B	421194
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	6020B	421194

### Analysis Batch: 422152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	6020B	421194
MB 310-421194/1-A	Method Blank	Total/NA	Water	6020B	421194
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	6020B	421194

## General Chemistry

### Analysis Batch: 421338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	I-3765-85	
MB 310-421338/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421338/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-280735-1 DU	MW-209B	Total/NA	Groundwater	I-3765-85	

### Analysis Batch: 421682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	9060A	
MB 310-421682/12	Method Blank	Total/NA	Water	9060A	
LCS 310-421682/13	Lab Control Sample	Total/NA	Water	9060A	

### Analysis Batch: 767932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280735-1	MW-209B	Total/NA	Groundwater	9034	
MB 500-767932/1	Method Blank	Total/NA	Water	9034	
LCS 500-767932/2	Lab Control Sample	Total/NA	Water	9034	

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

**Client Sample ID: MW-209B**

**Lab Sample ID: 310-280735-1**

**Date Collected: 05/07/24 09:01**

**Matrix: Groundwater**

**Date Received: 05/08/24 15:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421866	WSE8	EET CF	05/17/24 05:12
Total/NA	Prep	3510C			421493	JT8P	EET CF	05/13/24 13:14
Total/NA	Analysis	8081B		1	421597	BW2O	EET CF	05/14/24 15:59
Total/NA	Prep	8151A			505638	UKL2	ELLE	05/13/24 19:34
Total/NA	Analysis	8151A		1	506239	UAMZ	ELLE	05/15/24 15:32
Total/NA	Analysis	9056A		1	421186	QTZ5	EET CF	05/08/24 22:32
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:41
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:16
Total/NA	Analysis	9034		1	767932	CLB	EET CHI	05/14/24 22:05 - 05/14/24 22:12 <sup>1</sup>
Total/NA	Analysis	9060A		1	421682	DGU1	EET CF	05/14/24 22:26
Total/NA	Analysis	I-3765-85		1	421338	DGU1	EET CF	05/10/24 13:54

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280735-2**

**Date Collected: 05/07/24 00:00**

**Matrix: Water**

**Date Received: 05/08/24 15:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421866	WSE8	EET CF	05/16/24 22:40

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

**Laboratory References:**

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

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
 SDG: Source Characterization

## Laboratory: Eurofins Cedar Falls

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

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

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-24 *

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-25
Alaska	State	PA00009	06-30-24
Alaska (UST)	State	17-027	02-28-25
Arizona	State	AZ0780	03-12-25
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	11-30-24
Colorado	State	PA00009	06-30-24
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-25
Delaware (DW)	State	N/A	01-31-25
Florida	NELAP	E87997	06-30-24
Georgia (DW)	State	C048	01-31-25
Hawaii	State	N/A	01-31-25
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-24 *
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23 *
Louisiana (All)	NELAP	02055	06-30-24
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-25
Massachusetts	State	M-PA009	06-30-24
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-25
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-24
New York	NELAP	10670	04-01-25
North Carolina (DW)	State	42705	07-31-24
North Carolina (WW/SW)	State	521	12-31-24
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-24 *
Tennessee	State	02838	01-31-25
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24 *
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-25
Wyoming	State	8TMS-L	01-31-25
Wyoming (UST)	A2LA	0001.01	11-30-24

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE

#### Protocol References:

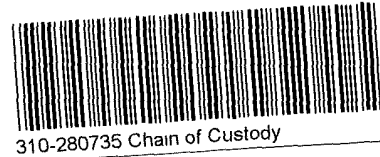
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

#### Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401  
EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200  
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Environment Testing  
America



**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>			
Client: Iowa City Landfill			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	5-8-24	1510	MY
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 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 # <u>1</u> of <u>1</u>	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
WT-1, -2, -3 & MW-209B			
<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:	Y	Correction Factor (°C):	0
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	NA	Corrected Temp (°C):	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 Nitric 250ml	CONTAINER 2 250ml NT	
Uncorrected Temp (°C):	6.8	8.1	
Corrected Temp (°C):	6.8	8.1	
<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>			

**Eurofins Cedar Falls**

3019 Venture Way,  
Cedar Falls, IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

Carrier Tracking Note: 310-91579-25212.1

Page: Page 1 of 1  
Job #:

Client Information Client Contact: Jen Jordan Company: Iowa City Landfill Address: City of Iowa City 335 E. Iowa Ave City: Iowa City State, Zip: IA, 52240 Phone: 515-273-5994 Email: Jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill 1st 2024 Source Characterization Site: Iowa		Lab P/N: Hummel, Matthew R E-Mail: Matthew.Hummel@eurofins.us.com State of Origin:		Analysis Requested Appendix 1 1.765.95 Total Suspended Solids 9060A Total Organic Carbon 9056A ORGM_28D, 9056A_ORGM_49H Sulfate, Nitrate 9028B - (MOD) Iron, Manganese 9260D - (MOD) Dichlorodifluoromethane 9034 Calc Sulfide 8151A 2,4,5-TP 9081B (MOD) Beta BHC by Method 8081 9260D (MOD) Appendix 1 Volatiles Total Number of Containers:		Preservation Codes: A HCL B NaOH C Zn Acetate D Nitric Acid E NH4SO4 F MeOH G Anichlor H Ascorbic Acid I Ice J DI Water K EDTA L EDA Other: M Hexane N None O Acetic P NH4AS Q Na2SO3 R Na2SO4 S H2SO4 T TSP Dodecahydrate U Acetone V MCAA W pH 4-5 X Trizma Y other (specify) Z	
Due Date Requested: TAT Requested (days) Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: RFP23-14 WO #: Project #: 31016832 SSOW#:	Field Filled Sample (Yes or No) Form MS/MSD (Yes or No)	Sample Date Sample Time Sample Type (C-comp, G-grab) Matrix (W=water, S=solid, O=waste/other) Preservation Code:	Special Instructions/Note: SHORT HOLD: Nitrate Sites and Events Source Characterization	Return To Client Disposal By Lab Archive For Months	Method of Shipment: Date/Time: 5-7-24 9:01 Received by: MLC Date/Time: 5-8-24 18:10 Received by: Date/Time: Received by: Date/Time: Cooler Temperature(s) °C and Other Remarks:	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Special Instructions/QC Requirements:	





**Eurofins Cedar Falls**

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

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Yang, Mary E		Carrier Tracking No(s):		COC No: 310-72190.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: Mary.Yang@ET.EurofinsUS.com		State of Origin: Iowa		Page: Page 1 of 1			
Company: Eurofins Lancaster Laboratories Environm				Accreditations Required (See note): State - Iowa; State Program - Iowa				Job #: 310-280735-1			
Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601 Phone: 717-656-2300(Tel) Email:		Due Date Requested: 5/21/2024 TAT Requested (days):		<b>Analysis Requested</b>						Preservation Codes:	
Project Name: Iowa City Landfill Spring 2024 Site: 310-Iowa City Landfill		Project #: 31015832 SSOW#:								Other:	
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Trace, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/8151A_AP 2,4,5-TP	Total Number of containers	Special Instructions/Note:	
MW-209B (310-280735-1)		5/7/24	09:01 Central		Water	X	X	2			
Preservation Code:		X	X								
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>											
<b>Possible Hazard Identification</b>					<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>						
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:						
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:				
Relinquished by: <i>TR</i>			Date/Time: 5/24 1140		Company:		Received by:		Date/Time:	Company:	
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time:	Company:	
Relinquished by:			Date/Time:		Company:		Received by: <i>[Signature]</i>		Date/Time: 5/20/24 10:10	Company: ECUET	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: R: 4.3, 2.7 C: 4.4, 2.8						







# Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280735-1  
SDG Number: Source Characterization

**Login Number: 280735**

**List Number: 1**

**Creator: Costello, Mackenzie K**

**List Source: Eurofins Cedar Falls**

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



# Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280735-1  
SDG Number: Source Characterization

**Login Number: 280735**  
**List Number: 3**  
**Creator: Scott, Sherri L**

**List Source: Eurofins Chicago**  
**List Creation: 05/10/24 05:58 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	2.1
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

# Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280735-1  
SDG Number: Source Characterization

**Login Number: 280735**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 2**

**List Creation: 05/10/24 03:06 PM**

**Creator: McBeth, Jessica**

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable, where thermal pres is required (<math>\leq 6C</math>, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temp acceptable, where thermal pres is required (<math>\leq 6C</math>, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280735-1  
SDG: Source Characterization

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240

Generated 5/22/2024 12:09:12 AM

## JOB DESCRIPTION

Iowa City Landfill Spring 2024  
Series B  
Series B

## JOB NUMBER

310-280736-1

# 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



Generated  
5/22/2024 12:09:12 AM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Spring 2024

Job ID: 310-280736-1

**Job ID: 310-280736-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280736-1

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

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

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

### Receipt

The samples were received on 5/8/2024 3:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.3°C, 0.7°C and 2.4°C.

### GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-421105 recovered above the upper control limit for 2-Hexanone (34.0%D) and 4-Methyl-2-pentanone (35.5%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-421105/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-421352 recovered above the upper control limit for 2-Hexanone (32.9%D) and 4-Methyl-2-pentanone (31.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-421352/3).

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

### GC/MS Semi VOA

Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-421270. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

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

### Pesticides

Method 8081B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-421493. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

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.

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280736-1	MW-39B	Groundwater	05/06/24 07:40	05/08/24 15:10
310-280736-2	MW-1B	Groundwater	05/06/24 13:10	05/08/24 15:10
310-280736-3	MW-5B	Groundwater	05/03/24 14:08	05/08/24 15:10
310-280736-4	MW-7B1	Groundwater	05/06/24 10:07	05/08/24 15:10
310-280736-5	MW-8B	Groundwater	05/06/24 09:44	05/08/24 15:10
310-280736-6	MW-10B	Groundwater	05/03/24 13:38	05/08/24 15:10
310-280736-7	MW-12B	Groundwater	05/03/24 10:26	05/08/24 15:10
310-280736-8	MW-14B	Groundwater	05/06/24 08:20	05/08/24 15:10
310-280736-9	MW-31B	Groundwater	05/07/24 09:54	05/08/24 15:10
310-280736-10	MW-208B	Groundwater	05/06/24 08:47	05/08/24 15:10
310-280736-11	MW-210B	Groundwater	05/06/24 10:31	05/08/24 15:10
310-280736-12	MW-DB	Groundwater	05/06/24 10:31	05/08/24 15:10
310-280736-13	Trip Blank	Water	05/06/24 00:00	05/08/24 15:10
310-280736-14	MW-12B	Groundwater	05/06/24 08:26	05/08/24 15:10

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# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

## Client Sample ID: MW-39B

## Lab Sample ID: 310-280736-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.247	J	1.00	0.220	ug/L	1		8260D	Total/NA
Barium	0.180		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000136	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.000950		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00239	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Vanadium	0.00144	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Total Suspended Solids	61.3		3.75	2.78	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-1B

## Lab Sample ID: 310-280736-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00255		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.521		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000348	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	34.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-5B

## Lab Sample ID: 310-280736-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.170		0.00200	0.000660	mg/L	1		6020B	Total/NA
Copper	0.00188	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-7B1

## Lab Sample ID: 310-280736-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00737		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.645		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	53.0		15.0	11.1	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-8B

## Lab Sample ID: 310-280736-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0704		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.289		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00941		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00206	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.00101		0.000500	0.000260	mg/L	1		6020B	Total/NA
Nickel	0.0106		0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	52.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-10B

## Lab Sample ID: 310-280736-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.150		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000334		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.000299	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Selenium	0.00375	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.00176	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Total Suspended Solids	48.4		1.88	1.39	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Client Sample ID: MW-12B

## Lab Sample ID: 310-280736-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000594	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.346		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000328	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00299	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	4.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-14B

## Lab Sample ID: 310-280736-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00109	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.330		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00118		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00346	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	5.37		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-31B

## Lab Sample ID: 310-280736-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.483		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000195	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000441	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Total Suspended Solids	63.5		3.75	2.78	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-208B

## Lab Sample ID: 310-280736-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00165	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0557		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000297	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00324	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-210B

## Lab Sample ID: 310-280736-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00243		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.118		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00432		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00964		0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	7.13		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-DB

## Lab Sample ID: 310-280736-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00252		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.115		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00427		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00938		0.00500	0.00210	mg/L	1		6020B	Total/NA
Total Suspended Solids	4.88		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: Trip Blank

## Lab Sample ID: 310-280736-13

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

**Client Sample ID: MW-12B**

**Lab Sample ID: 310-280736-14**

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-39B**

**Lab Sample ID: 310-280736-1**

Date Collected: 05/06/24 07:40

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/15/24 04:13	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/15/24 04:13	1
Benzene	<0.500		0.500	0.220	ug/L			05/15/24 04:13	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/15/24 04:13	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/15/24 04:13	1
Bromoform	<5.00		5.00	0.780	ug/L			05/15/24 04:13	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/15/24 04:13	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/15/24 04:13	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/15/24 04:13	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/15/24 04:13	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/15/24 04:13	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/15/24 04:13	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/15/24 04:13	1
Chloroform	<3.00		3.00	1.30	ug/L			05/15/24 04:13	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/15/24 04:13	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/15/24 04:13	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/15/24 04:13	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/15/24 04:13	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/15/24 04:13	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/15/24 04:13	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/15/24 04:13	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/15/24 04:13	1
<b>1,1-Dichloroethane</b>	<b>0.247</b>	<b>J</b>	1.00	0.220	ug/L			05/15/24 04:13	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/15/24 04:13	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/15/24 04:13	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/15/24 04:13	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/15/24 04:13	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/15/24 04:13	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/15/24 04:13	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/15/24 04:13	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/15/24 04:13	1
Styrene	<1.00		1.00	0.370	ug/L			05/15/24 04:13	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/15/24 04:13	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/15/24 04:13	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/15/24 04:13	1
Toluene	<1.00		1.00	0.430	ug/L			05/15/24 04:13	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/15/24 04:13	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/15/24 04:13	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/15/24 04:13	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/15/24 04:13	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/15/24 04:13	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/15/24 04:13	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/15/24 04:13	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/15/24 04:13	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/15/24 04:13	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/15/24 04:13	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/15/24 04:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/15/24 04:13	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-39B**

**Lab Sample ID: 310-280736-1**

Date Collected: 05/06/24 07:40

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		73 - 130		05/15/24 04:13	1
Toluene-d8 (Surr)	98		80 - 120		05/15/24 04:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:18	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:44	1
<b>Barium</b>	<b>0.180</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:44	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:44	1
<b>Cadmium</b>	<b>0.000136 J</b>		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:18	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:44	1
<b>Cobalt</b>	<b>0.000950</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:44	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:44	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:44	1
<b>Nickel</b>	<b>0.00239 J</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:44	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:44	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:44	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:44	1
<b>Vanadium</b>	<b>0.00144 J</b>		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:44	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:44	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>61.3</b>		3.75	2.78	mg/L			05/10/24 11:27	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-1B**  
**Date Collected: 05/06/24 13:10**  
**Date Received: 05/08/24 15:10**

**Lab Sample ID: 310-280736-2**  
**Matrix: Groundwater**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/10/24 08:11	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/10/24 08:11	1
Benzene	<0.500		0.500	0.220	ug/L			05/10/24 08:11	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/10/24 08:11	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/10/24 08:11	1
Bromoform	<5.00		5.00	0.780	ug/L			05/10/24 08:11	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/10/24 08:11	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/10/24 08:11	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/10/24 08:11	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/10/24 08:11	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/10/24 08:11	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/10/24 08:11	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/10/24 08:11	1
Chloroform	<3.00		3.00	1.30	ug/L			05/10/24 08:11	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/10/24 08:11	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/10/24 08:11	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/10/24 08:11	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/10/24 08:11	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/10/24 08:11	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/10/24 08:11	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/10/24 08:11	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/10/24 08:11	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/10/24 08:11	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/10/24 08:11	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/10/24 08:11	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/10/24 08:11	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/10/24 08:11	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/10/24 08:11	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/10/24 08:11	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/10/24 08:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/10/24 08:11	1
Styrene	<1.00		1.00	0.370	ug/L			05/10/24 08:11	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/10/24 08:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/10/24 08:11	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/10/24 08:11	1
Toluene	<1.00		1.00	0.430	ug/L			05/10/24 08:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/10/24 08:11	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/10/24 08:11	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/10/24 08:11	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/10/24 08:11	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/10/24 08:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/10/24 08:11	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/10/24 08:11	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/10/24 08:11	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/10/24 08:11	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/10/24 08:11	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/10/24 08:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/10/24 08:11	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-1B**  
 Date Collected: 05/06/24 13:10  
 Date Received: 05/08/24 15:10

**Lab Sample ID: 310-280736-2**  
 Matrix: Groundwater

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		73 - 130		05/10/24 08:11	1
Toluene-d8 (Surr)	100		80 - 120		05/10/24 08:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:21	1
<b>Arsenic</b>	<b>0.00255</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:54	1
<b>Barium</b>	<b>0.521</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:54	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:54	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:21	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:54	1
<b>Cobalt</b>	<b>0.000348</b>	<b>J</b>	0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:54	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:54	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:54	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:54	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:54	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:54	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:54	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:54	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:54	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>34.5</b>		7.50	5.55	mg/L			05/10/24 11:27	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-5B**  
 Date Collected: 05/03/24 14:08  
 Date Received: 05/08/24 15:10

**Lab Sample ID: 310-280736-3**  
 Matrix: Groundwater

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:57	1
<b>Barium</b>	<b>0.170</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:57	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:57	1
<b>Copper</b>	<b>0.00188</b>	<b>J</b>	0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:57	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:57	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>2.75</b>		1.88	1.39	mg/L			05/09/24 13:18	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-7B1**

**Lab Sample ID: 310-280736-4**

Date Collected: 05/06/24 10:07

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00737</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:59	1
<b>Barium</b>	<b>0.645</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:59	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:59	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:59	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:59	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:59	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>53.0</b>		15.0	11.1	mg/L			05/10/24 11:27	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-8B**

**Lab Sample ID: 310-280736-5**

Date Collected: 05/06/24 09:44

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0704		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:01	1
Barium	0.289		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:01	1
Cobalt	0.00941		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:01	1
Copper	0.00206	J	0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:01	1
Lead	0.00101		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:01	1
Nickel	0.0106		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:01	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	52.0		7.50	5.55	mg/L			05/10/24 11:27	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-10B**

**Lab Sample ID: 310-280736-6**

Date Collected: 05/03/24 13:38

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/10/24 08:32	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/10/24 08:32	1
Benzene	<0.500		0.500	0.220	ug/L			05/10/24 08:32	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/10/24 08:32	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/10/24 08:32	1
Bromoform	<5.00		5.00	0.780	ug/L			05/10/24 08:32	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/10/24 08:32	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/10/24 08:32	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/10/24 08:32	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/10/24 08:32	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/10/24 08:32	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/10/24 08:32	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/10/24 08:32	1
Chloroform	<3.00		3.00	1.30	ug/L			05/10/24 08:32	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/10/24 08:32	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/10/24 08:32	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/10/24 08:32	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/10/24 08:32	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/10/24 08:32	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/10/24 08:32	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/10/24 08:32	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/10/24 08:32	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/10/24 08:32	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/10/24 08:32	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/10/24 08:32	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/10/24 08:32	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/10/24 08:32	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/10/24 08:32	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/10/24 08:32	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/10/24 08:32	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/10/24 08:32	1
Styrene	<1.00		1.00	0.370	ug/L			05/10/24 08:32	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/10/24 08:32	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/10/24 08:32	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/10/24 08:32	1
Toluene	<1.00		1.00	0.430	ug/L			05/10/24 08:32	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/10/24 08:32	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/10/24 08:32	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/10/24 08:32	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/10/24 08:32	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/10/24 08:32	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/10/24 08:32	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/10/24 08:32	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/10/24 08:32	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/10/24 08:32	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/10/24 08:32	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/10/24 08:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/10/24 08:32	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-10B**

**Lab Sample ID: 310-280736-6**

Date Collected: 05/03/24 13:38

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	100		73 - 130		05/10/24 08:32	1
Toluene-d8 (Surr)	99		80 - 120		05/10/24 08:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:27	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:05	1
<b>Barium</b>	<b>0.150</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:05	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 19:05	1
<b>Cadmium</b>	<b>0.000334</b>		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:27	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 19:05	1
<b>Cobalt</b>	<b>0.000299</b>	<b>J</b>	0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:05	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:05	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:05	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:05	1
<b>Selenium</b>	<b>0.00375</b>	<b>J</b>	0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 19:05	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 19:05	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 19:05	1
<b>Vanadium</b>	<b>0.00176</b>	<b>J</b>	0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 19:05	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 19:05	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>48.4</b>		1.88	1.39	mg/L			05/09/24 13:18	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-12B**

**Lab Sample ID: 310-280736-7**

Date Collected: 05/03/24 10:26

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000594	J	0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:08	1
Barium	0.346		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:08	1
Cobalt	0.000328	J	0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:08	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:08	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:08	1
Nickel	0.00299	J	0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:08	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	4.13		1.88	1.39	mg/L			05/09/24 13:18	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-14B**

**Lab Sample ID: 310-280736-8**

Date Collected: 05/06/24 08:20

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00109</b>	<b>J</b>	0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:10	1
<b>Barium</b>	<b>0.330</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:10	1
<b>Cobalt</b>	<b>0.00118</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:10	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:10	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:10	1
<b>Nickel</b>	<b>0.00346</b>	<b>J</b>	0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:10	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>5.37</b>		1.88	1.39	mg/L			05/10/24 11:27	1





# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-31B**

**Lab Sample ID: 310-280736-9**

Date Collected: 05/07/24 09:54

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/10/24 22:37	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/10/24 22:37	1
Benzene	<0.500		0.500	0.220	ug/L			05/10/24 22:37	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/10/24 22:37	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/10/24 22:37	1
Bromoform	<5.00		5.00	0.780	ug/L			05/10/24 22:37	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/10/24 22:37	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/10/24 22:37	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/10/24 22:37	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/10/24 22:37	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/10/24 22:37	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/10/24 22:37	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/10/24 22:37	1
Chloroform	<3.00		3.00	1.30	ug/L			05/10/24 22:37	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/10/24 22:37	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/10/24 22:37	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/10/24 22:37	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/10/24 22:37	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/10/24 22:37	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/10/24 22:37	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/10/24 22:37	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/10/24 22:37	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/10/24 22:37	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/10/24 22:37	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/10/24 22:37	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/10/24 22:37	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/10/24 22:37	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/10/24 22:37	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/10/24 22:37	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/10/24 22:37	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/10/24 22:37	1
Styrene	<1.00		1.00	0.370	ug/L			05/10/24 22:37	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/10/24 22:37	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/10/24 22:37	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/10/24 22:37	1
Toluene	<1.00		1.00	0.430	ug/L			05/10/24 22:37	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/10/24 22:37	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/10/24 22:37	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/10/24 22:37	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/10/24 22:37	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/10/24 22:37	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/10/24 22:37	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/10/24 22:37	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/10/24 22:37	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/10/24 22:37	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/10/24 22:37	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/10/24 22:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/10/24 22:37	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-31B**

**Lab Sample ID: 310-280736-9**

Date Collected: 05/07/24 09:54

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	95		73 - 130		05/10/24 22:37	1
Toluene-d8 (Surr)	101		80 - 120		05/10/24 22:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 14:38	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:12	1
<b>Barium</b>	<b>0.483</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:12	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 19:12	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 14:38	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 19:12	1
<b>Cobalt</b>	<b>0.000195</b>	<b>J</b>	0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:12	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:12	1
<b>Lead</b>	<b>0.000441</b>	<b>J</b>	0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:12	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:12	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 19:12	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 19:12	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 19:12	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 19:12	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 19:12	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>63.5</b>		3.75	2.78	mg/L			05/10/24 14:33	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-208B**

**Lab Sample ID: 310-280736-10**

Date Collected: 05/06/24 08:47

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8081B - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.0800		0.0800	0.0525	ug/L		05/13/24 13:14	05/14/24 13:32	1
Endrin	<0.0800		0.0800	0.0325	ug/L		05/13/24 13:14	05/14/24 13:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	89		10 - 136				05/13/24 13:14	05/14/24 13:32	1
Tetrachloro-m-xylene	68		10 - 130				05/13/24 13:14	05/14/24 13:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00165	J	0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:14	1
Barium	0.0557		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:14	1
Cobalt	0.000297	J	0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:14	1
Copper	0.00324	J	0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:14	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:14	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.25		1.88	1.39	mg/L			05/10/24 11:27	1

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-210B**

**Lab Sample ID: 310-280736-11**

Date Collected: 05/06/24 10:31

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00243</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:25	1
<b>Barium</b>	<b>0.118</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:25	1
<b>Cobalt</b>	<b>0.00432</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:25	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:25	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:25	1
<b>Nickel</b>	<b>0.00964</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>7.13</b>		1.88	1.39	mg/L			05/10/24 11:27	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-DB**

**Lab Sample ID: 310-280736-12**

Date Collected: 05/06/24 10:31

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00252</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 19:27	1
<b>Barium</b>	<b>0.115</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 19:27	1
<b>Cobalt</b>	<b>0.00427</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 19:27	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 19:27	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 19:27	1
<b>Nickel</b>	<b>0.00938</b>		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 19:27	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>4.88</b>		1.88	1.39	mg/L			05/10/24 11:27	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280736-13**

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/10/24 04:11	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/10/24 04:11	1
Benzene	<0.500		0.500	0.220	ug/L			05/10/24 04:11	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/10/24 04:11	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/10/24 04:11	1
Bromoform	<5.00		5.00	0.780	ug/L			05/10/24 04:11	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/10/24 04:11	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/10/24 04:11	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/10/24 04:11	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/10/24 04:11	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/10/24 04:11	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/10/24 04:11	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/10/24 04:11	1
Chloroform	<3.00		3.00	1.30	ug/L			05/10/24 04:11	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/10/24 04:11	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/10/24 04:11	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/10/24 04:11	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/10/24 04:11	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/10/24 04:11	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/10/24 04:11	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/10/24 04:11	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/10/24 04:11	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/10/24 04:11	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/10/24 04:11	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/10/24 04:11	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/10/24 04:11	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/10/24 04:11	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/10/24 04:11	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/10/24 04:11	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/10/24 04:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/10/24 04:11	1
Styrene	<1.00		1.00	0.370	ug/L			05/10/24 04:11	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/10/24 04:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/10/24 04:11	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/10/24 04:11	1
Toluene	<1.00		1.00	0.430	ug/L			05/10/24 04:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/10/24 04:11	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/10/24 04:11	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/10/24 04:11	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/10/24 04:11	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/10/24 04:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/10/24 04:11	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/10/24 04:11	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/10/24 04:11	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/10/24 04:11	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/10/24 04:11	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/10/24 04:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		05/10/24 04:11	1

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# Client Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280736-13**

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Dibromofluoromethane (Surr)	98		73 - 130		05/10/24 04:11	1
Toluene-d8 (Surr)	103		80 - 120		05/10/24 04:11	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-12B**

**Lab Sample ID: 310-280736-14**

Date Collected: 05/06/24 08:26

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<10.0		10.0	5.50	ug/L		05/10/24 08:43	05/14/24 17:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	85		45 - 129				05/10/24 08:43	05/14/24 17:01	1
2-Fluorobiphenyl (Surr)	71		39 - 118				05/10/24 08:43	05/14/24 17:01	1
Terphenyl-d14 (Surr)	73		12 - 144				05/10/24 08:43	05/14/24 17:01	1

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# Definitions/Glossary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

# Surrogate Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

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

Matrix: Groundwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280736-1	MW-39B	102	111	98
310-280736-2	MW-1B	102	102	100
310-280736-6	MW-10B	102	100	99
310-280736-9	MW-31B	102	95	101

**Surrogate Legend**

BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280736-13	Trip Blank	101	98	103
LCS 310-421105/6	Lab Control Sample	98	96	104
LCS 310-421105/7	Lab Control Sample	98	94	102
LCS 310-421352/6	Lab Control Sample	98	95	106
LCS 310-421352/7	Lab Control Sample	102	98	103
LCS 310-421593/6	Lab Control Sample	101	100	100
LCS 310-421593/7	Lab Control Sample	101	115	98
MB 310-421105/5	Method Blank	101	97	101
MB 310-421352/5	Method Blank	101	97	100
MB 310-421593/5	Method Blank	101	113	98

**Surrogate Legend**

BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

## Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Groundwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (45-129)	FBP (39-118)	TPHL (12-144)
310-280736-14	MW-12B	85	71	73

**Surrogate Legend**

NBZ = Nitrobenzene-d5 (Surr)  
 FBP = 2-Fluorobiphenyl (Surr)  
 TPHL = Terphenyl-d14 (Surr)

## Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (45-129)	FBP (39-118)	TPHL (12-144)
LCS 310-421270/2-A	Lab Control Sample	111	95	116

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# Surrogate Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	NBZ (45-129)	FBP (39-118)	TPHL (12-144)
LCS 310-421270/2-A	Lab Control Sample	93	89	105
LCS 310-421270/3-A	Lab Control Sample	98	89	110
MB 310-421270/1-A	Method Blank	117	97	113
MB 310-421270/1-A	Method Blank	97	89	98

**Surrogate Legend**

NBZ = Nitrobenzene-d5 (Surr)  
 FBP = 2-Fluorobiphenyl (Surr)  
 TPHL = Terphenyl-d14 (Surr)

## Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Groundwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (10-136)	TCX2 (10-130)
310-280736-10	MW-208B	89	68

**Surrogate Legend**

DCB = DCB Decachlorobiphenyl (Surr)  
 TCX = Tetrachloro-m-xylene

## Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (10-136)	TCX2 (10-130)
LCS 310-421493/2-A	Lab Control Sample	96	59
LCS 310-421493/3-A	Lab Control Sample Dup	99	57
MB 310-421493/1-A	Method Blank	84	49

**Surrogate Legend**

DCB = DCB Decachlorobiphenyl (Surr)  
 TCX = Tetrachloro-m-xylene

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

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

Lab Sample ID: MB 310-421105/5  
 Matrix: Water  
 Analysis Batch: 421105

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/10/24 02:00	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/10/24 02:00	1
Benzene	<0.500		0.500	0.220	ug/L			05/10/24 02:00	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/10/24 02:00	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/10/24 02:00	1
Bromoform	<5.00		5.00	0.780	ug/L			05/10/24 02:00	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/10/24 02:00	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/10/24 02:00	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/10/24 02:00	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/10/24 02:00	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/10/24 02:00	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/10/24 02:00	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/10/24 02:00	1
Chloroform	<3.00		3.00	1.30	ug/L			05/10/24 02:00	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/10/24 02:00	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/10/24 02:00	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/10/24 02:00	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/10/24 02:00	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/10/24 02:00	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/10/24 02:00	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/10/24 02:00	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/10/24 02:00	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/10/24 02:00	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/10/24 02:00	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/10/24 02:00	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/10/24 02:00	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/10/24 02:00	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/10/24 02:00	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/10/24 02:00	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/10/24 02:00	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/10/24 02:00	1
Styrene	<1.00		1.00	0.370	ug/L			05/10/24 02:00	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/10/24 02:00	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/10/24 02:00	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/10/24 02:00	1
Toluene	<1.00		1.00	0.430	ug/L			05/10/24 02:00	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/10/24 02:00	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/10/24 02:00	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/10/24 02:00	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/10/24 02:00	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/10/24 02:00	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/10/24 02:00	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/10/24 02:00	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/10/24 02:00	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/10/24 02:00	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/10/24 02:00	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/10/24 02:00	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421105/5**  
**Matrix: Water**  
**Analysis Batch: 421105**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		80 - 120		05/10/24 02:00	1
Dibromofluoromethane (Surr)	97		73 - 130		05/10/24 02:00	1
Toluene-d8 (Surr)	101		80 - 120		05/10/24 02:00	1

**Lab Sample ID: LCS 310-421105/6**  
**Matrix: Water**  
**Analysis Batch: 421105**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrylonitrile	200	235.1		ug/L		118	50 - 150
Benzene	20.0	19.47		ug/L		97	72 - 124
Bromochloromethane	20.0	17.53		ug/L		88	73 - 130
Bromodichloromethane	20.0	19.21		ug/L		96	74 - 122
Bromoform	20.0	15.96		ug/L		80	61 - 122
2-Butanone (MEK)	40.0	47.71		ug/L		119	50 - 150
Carbon disulfide	20.0	22.16		ug/L		111	59 - 135
Carbon tetrachloride	20.0	17.98		ug/L		90	67 - 132
Chlorobenzene	20.0	18.29		ug/L		91	76 - 120
Chlorodibromomethane	20.0	17.52		ug/L		88	71 - 121
Chloroform	20.0	20.53		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	19.28		ug/L		96	74 - 123
cis-1,3-Dichloropropene	20.0	19.80		ug/L		99	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	23.44		ug/L		117	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.21		ug/L		96	75 - 125
Dibromomethane	20.0	19.76		ug/L		99	74 - 125
1,2-Dichlorobenzene	20.0	19.47		ug/L		97	74 - 120
1,4-Dichlorobenzene	20.0	20.06		ug/L		100	72 - 120
1,1-Dichloroethane	20.0	21.39		ug/L		107	70 - 127
1,2-Dichloroethane	20.0	21.06		ug/L		105	71 - 125
1,1-Dichloroethene	20.0	20.93		ug/L		105	63 - 132
1,2-Dichloropropane	20.0	21.46		ug/L		107	73 - 124
Ethylbenzene	20.0	19.77		ug/L		99	74 - 122
2-Hexanone	40.0	48.06		ug/L		120	60 - 140
Iodomethane	20.0	15.48		ug/L		77	10 - 150
Methylene Chloride	20.0	22.11		ug/L		111	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	48.71		ug/L		122	60 - 139
Styrene	20.0	18.93		ug/L		95	74 - 121
1,1,1,2-Tetrachloroethane	20.0	17.82		ug/L		89	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.55		ug/L		98	68 - 124
Tetrachloroethene	20.0	16.81		ug/L		84	71 - 130
Toluene	20.0	19.39		ug/L		97	74 - 123
trans-1,4-Dichloro-2-butene	20.0	20.47		ug/L		102	50 - 150
trans-1,2-Dichloroethene	20.0	19.08		ug/L		95	70 - 126
trans-1,3-Dichloropropene	20.0	20.63		ug/L		103	69 - 123
1,1,1-Trichloroethane	20.0	19.22		ug/L		96	73 - 129
1,1,2-Trichloroethane	20.0	20.29		ug/L		101	73 - 123
Trichloroethene	20.0	19.45		ug/L		97	72 - 126

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** LCS 310-421105/6  
**Matrix:** Water  
**Analysis Batch:** 421105

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,2,3-Trichloropropane	20.0	18.84		ug/L		94	65 - 127
Vinyl acetate	40.0	37.40		ug/L		93	50 - 150
Xylenes, Total	40.0	37.62		ug/L		94	73 - 123

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	96		73 - 130
Toluene-d8 (Surr)	104		80 - 120

**Lab Sample ID:** LCS 310-421105/7  
**Matrix:** Water  
**Analysis Batch:** 421105

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Bromomethane	20.0	12.98		ug/L		65	23 - 150
Chloroethane	20.0	17.26		ug/L		86	54 - 136
Chloromethane	20.0	16.51		ug/L		83	38 - 150
Trichlorofluoromethane	20.0	17.90		ug/L		89	54 - 149
Vinyl chloride	20.0	17.65		ug/L		88	56 - 140

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	94		73 - 130
Toluene-d8 (Surr)	102		80 - 120

**Lab Sample ID:** MB 310-421352/5  
**Matrix:** Water  
**Analysis Batch:** 421352

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/10/24 17:10	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/10/24 17:10	1
Benzene	<0.500		0.500	0.220	ug/L			05/10/24 17:10	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/10/24 17:10	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/10/24 17:10	1
Bromoform	<5.00		5.00	0.780	ug/L			05/10/24 17:10	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/10/24 17:10	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/10/24 17:10	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/10/24 17:10	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/10/24 17:10	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/10/24 17:10	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/10/24 17:10	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/10/24 17:10	1
Chloroform	<3.00		3.00	1.30	ug/L			05/10/24 17:10	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/10/24 17:10	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/10/24 17:10	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/10/24 17:10	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/10/24 17:10	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421352/5**  
**Matrix: Water**  
**Analysis Batch: 421352**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/10/24 17:10	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/10/24 17:10	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/10/24 17:10	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/10/24 17:10	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/10/24 17:10	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/10/24 17:10	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/10/24 17:10	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/10/24 17:10	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/10/24 17:10	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/10/24 17:10	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/10/24 17:10	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/10/24 17:10	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/10/24 17:10	1
Styrene	<1.00		1.00	0.370	ug/L			05/10/24 17:10	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/10/24 17:10	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/10/24 17:10	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/10/24 17:10	1
Toluene	<1.00		1.00	0.430	ug/L			05/10/24 17:10	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/10/24 17:10	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/10/24 17:10	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/10/24 17:10	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/10/24 17:10	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/10/24 17:10	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/10/24 17:10	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/10/24 17:10	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/10/24 17:10	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/10/24 17:10	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/10/24 17:10	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/10/24 17:10	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		80 - 120		05/10/24 17:10	1
Dibromofluoromethane (Surr)	97		73 - 130		05/10/24 17:10	1
Toluene-d8 (Surr)	100		80 - 120		05/10/24 17:10	1

**Lab Sample ID: LCS 310-421352/6**  
**Matrix: Water**  
**Analysis Batch: 421352**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrylonitrile	200	231.8		ug/L		116	50 - 150
Benzene	20.0	19.51		ug/L		98	72 - 124
Bromochloromethane	20.0	18.08		ug/L		90	73 - 130
Bromodichloromethane	20.0	18.94		ug/L		95	74 - 122
Bromoform	20.0	15.15		ug/L		76	61 - 122
2-Butanone (MEK)	40.0	48.10		ug/L		120	50 - 150
Carbon disulfide	20.0	21.48		ug/L		107	59 - 135

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** LCS 310-421352/6  
**Matrix:** Water  
**Analysis Batch:** 421352

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon tetrachloride	20.0	17.62		ug/L		88	67 - 132
Chlorobenzene	20.0	18.59		ug/L		93	76 - 120
Chlorodibromomethane	20.0	16.98		ug/L		85	71 - 121
Chloroform	20.0	20.41		ug/L		102	72 - 125
cis-1,2-Dichloroethene	20.0	19.33		ug/L		97	74 - 123
cis-1,3-Dichloropropene	20.0	20.33		ug/L		102	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	23.89		ug/L		119	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.90		ug/L		95	75 - 125
Dibromomethane	20.0	19.31		ug/L		97	74 - 125
1,2-Dichlorobenzene	20.0	19.51		ug/L		98	74 - 120
1,4-Dichlorobenzene	20.0	20.56		ug/L		103	72 - 120
1,1-Dichloroethane	20.0	21.42		ug/L		107	70 - 127
1,2-Dichloroethane	20.0	21.26		ug/L		106	71 - 125
1,1-Dichloroethene	20.0	20.43		ug/L		102	63 - 132
1,2-Dichloropropane	20.0	21.65		ug/L		108	73 - 124
Ethylbenzene	20.0	19.67		ug/L		98	74 - 122
2-Hexanone	40.0	49.07		ug/L		123	60 - 140
Iodomethane	20.0	15.65		ug/L		78	10 - 150
Methylene Chloride	20.0	21.24		ug/L		106	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	49.06		ug/L		123	60 - 139
Styrene	20.0	19.28		ug/L		96	74 - 121
1,1,1,2-Tetrachloroethane	20.0	18.00		ug/L		90	71 - 120
1,1,2,2-Tetrachloroethane	20.0	20.01		ug/L		100	68 - 124
Tetrachloroethene	20.0	17.17		ug/L		86	71 - 130
Toluene	20.0	19.51		ug/L		98	74 - 123
trans-1,4-Dichloro-2-butene	20.0	21.12		ug/L		106	50 - 150
trans-1,2-Dichloroethene	20.0	19.50		ug/L		97	70 - 126
trans-1,3-Dichloropropene	20.0	21.43		ug/L		107	69 - 123
1,1,1-Trichloroethane	20.0	19.33		ug/L		97	73 - 129
1,1,2-Trichloroethane	20.0	19.66		ug/L		98	73 - 123
Trichloroethene	20.0	19.20		ug/L		96	72 - 126
1,2,3-Trichloropropane	20.0	19.63		ug/L		98	65 - 127
Vinyl acetate	40.0	37.10		ug/L		93	50 - 150
Xylenes, Total	40.0	37.34		ug/L		93	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	95		73 - 130
Toluene-d8 (Surr)	106		80 - 120

**Lab Sample ID:** LCS 310-421352/7  
**Matrix:** Water  
**Analysis Batch:** 421352

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	14.87		ug/L		74	23 - 150
Chloroethane	20.0	19.21		ug/L		96	54 - 136
Chloromethane	20.0	18.51		ug/L		93	38 - 150

Eurofins Cedar Falls



# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421352/7

Matrix: Water

Analysis Batch: 421352

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	20.0	18.27		ug/L		91	54 - 149
Vinyl chloride	20.0	19.10		ug/L		95	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	98		73 - 130
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: MB 310-421593/5

Matrix: Water

Analysis Batch: 421593

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/14/24 23:17	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 23:17	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 23:17	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 23:17	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 23:17	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 23:17	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 23:17	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 23:17	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 23:17	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 23:17	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 23:17	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 23:17	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 23:17	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 23:17	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 23:17	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 23:17	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 23:17	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 23:17	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 23:17	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 23:17	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 23:17	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 23:17	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 23:17	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 23:17	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 23:17	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 23:17	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 23:17	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 23:17	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 23:17	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 23:17	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 23:17	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 23:17	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 23:17	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 23:17	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 23:17	1

Eurofins Cedar Falls

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-421593/5

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421593

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 23:17	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 23:17	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 23:17	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 23:17	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 23:17	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 23:17	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 23:17	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 23:17	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 23:17	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 23:17	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 23:17	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 23:17	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		80 - 120		05/14/24 23:17	1
Dibromofluoromethane (Surr)	113		73 - 130		05/14/24 23:17	1
Toluene-d8 (Surr)	98		80 - 120		05/14/24 23:17	1

Lab Sample ID: LCS 310-421593/6

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421593

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Acetone	40.0	38.41		ug/L		96	50 - 150
Acrylonitrile	200	201.7		ug/L		101	50 - 150
Benzene	20.0	20.75		ug/L		104	72 - 124
Bromochloromethane	20.0	20.58		ug/L		103	73 - 130
Bromodichloromethane	20.0	20.46		ug/L		102	74 - 122
Bromoform	20.0	20.57		ug/L		103	61 - 122
2-Butanone (MEK)	40.0	41.48		ug/L		104	50 - 150
Carbon disulfide	20.0	19.22		ug/L		96	59 - 135
Carbon tetrachloride	20.0	21.50		ug/L		108	67 - 132
Chlorobenzene	20.0	20.85		ug/L		104	76 - 120
Chlorodibromomethane	20.0	20.93		ug/L		105	71 - 121
Chloroform	20.0	20.57		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	20.08		ug/L		100	74 - 123
cis-1,3-Dichloropropene	20.0	21.78		ug/L		109	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	21.25		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.95		ug/L		110	75 - 125
Dibromomethane	20.0	20.15		ug/L		101	74 - 125
1,2-Dichlorobenzene	20.0	20.74		ug/L		104	74 - 120
1,4-Dichlorobenzene	20.0	20.50		ug/L		102	72 - 120
1,1-Dichloroethane	20.0	19.87		ug/L		99	70 - 127
1,2-Dichloroethane	20.0	20.54		ug/L		103	71 - 125
1,1-Dichloroethene	20.0	19.77		ug/L		99	63 - 132
1,2-Dichloropropane	20.0	21.41		ug/L		107	73 - 124
Ethylbenzene	20.0	20.97		ug/L		105	74 - 122
2-Hexanone	40.0	41.60		ug/L		104	60 - 140

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# QC Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-421593/6

Matrix: Water

Analysis Batch: 421593

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iodomethane	20.0	20.28		ug/L		101	10 - 150
Methylene Chloride	20.0	19.44		ug/L		97	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	41.68		ug/L		104	60 - 139
Styrene	20.0	21.36		ug/L		107	74 - 121
1,1,1,2-Tetrachloroethane	20.0	20.91		ug/L		105	71 - 120
1,1,2,2-Tetrachloroethane	20.0	20.29		ug/L		101	68 - 124
Tetrachloroethene	20.0	20.87		ug/L		104	71 - 130
Toluene	20.0	20.24		ug/L		101	74 - 123
trans-1,4-Dichloro-2-butene	20.0	19.04		ug/L		95	50 - 150
trans-1,2-Dichloroethene	20.0	20.03		ug/L		100	70 - 126
trans-1,3-Dichloropropene	20.0	20.68		ug/L		103	69 - 123
1,1,1-Trichloroethane	20.0	21.14		ug/L		106	73 - 129
1,1,2-Trichloroethane	20.0	21.24		ug/L		106	73 - 123
Trichloroethene	20.0	21.15		ug/L		106	72 - 126
1,2,3-Trichloropropane	20.0	20.46		ug/L		102	65 - 127
Vinyl acetate	40.0	40.54		ug/L		101	50 - 150
Xylenes, Total	40.0	41.81		ug/L		105	73 - 123

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	100		73 - 130
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCS 310-421593/7

Matrix: Water

Analysis Batch: 421593

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	21.02		ug/L		105	23 - 150
Chloroethane	20.0	23.15		ug/L		116	54 - 136
Chloromethane	20.0	22.89		ug/L		114	38 - 150
Trichlorofluoromethane	20.0	24.30		ug/L		122	54 - 149
Vinyl chloride	20.0	24.34		ug/L		122	56 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	115		73 - 130
Toluene-d8 (Surr)	98		80 - 120

## Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-421270/1-A

Matrix: Water

Analysis Batch: 421595

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 421270

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bis(2-ethylhexyl) phthalate	6.573	J	10.0	5.50	ug/L		05/10/24 08:43	05/14/24 14:09	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 310-421270/1-A**  
**Matrix: Water**  
**Analysis Batch: 421595**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421270**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	97		45 - 129	05/10/24 08:43	05/14/24 14:09	1
2-Fluorobiphenyl (Surr)	89		39 - 118	05/10/24 08:43	05/14/24 14:09	1
Terphenyl-d14 (Surr)	98		12 - 144	05/10/24 08:43	05/14/24 14:09	1

**Lab Sample ID: MB 310-421270/1-A**  
**Matrix: Water**  
**Analysis Batch: 421589**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421270**

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	117		45 - 129	05/10/24 08:43	05/14/24 15:46	1
2-Fluorobiphenyl (Surr)	97		39 - 118	05/10/24 08:43	05/14/24 15:46	1
Terphenyl-d14 (Surr)	113		12 - 144	05/10/24 08:43	05/14/24 15:46	1

**Lab Sample ID: LCS 310-421270/2-A**  
**Matrix: Water**  
**Analysis Batch: 421595**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421270**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	93		45 - 129
2-Fluorobiphenyl (Surr)	89		39 - 118
Terphenyl-d14 (Surr)	105		12 - 144

**Lab Sample ID: LCS 310-421270/2-A**  
**Matrix: Water**  
**Analysis Batch: 421589**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421270**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	111		45 - 129
2-Fluorobiphenyl (Surr)	95		39 - 118
Terphenyl-d14 (Surr)	116		12 - 144

**Lab Sample ID: LCS 310-421270/3-A**  
**Matrix: Water**  
**Analysis Batch: 421595**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421270**

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	98		45 - 129
2-Fluorobiphenyl (Surr)	89		39 - 118

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-421270/3-A  
 Matrix: Water  
 Analysis Batch: 421595

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 421270

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	110		12 - 144

## Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-421493/1-A  
 Matrix: Water  
 Analysis Batch: 421597

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 421493

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.0640		0.0640	0.0420	ug/L		05/13/24 13:14	05/14/24 12:11	1
Endrin	<0.0640		0.0640	0.0260	ug/L		05/13/24 13:14	05/14/24 12:11	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
DCB Decachlorobiphenyl (Surr)	84		10 - 136	05/13/24 13:14	05/14/24 12:11	1
Tetrachloro-m-xylene	49		10 - 130	05/13/24 13:14	05/14/24 12:11	1

Lab Sample ID: LCS 310-421493/2-A  
 Matrix: Water  
 Analysis Batch: 421597

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 421493

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDT	1.00	0.7862		ug/L		79	23 - 150
Endrin	1.00	0.7817		ug/L		78	39 - 140

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	96		10 - 136
Tetrachloro-m-xylene	59		10 - 130

Lab Sample ID: LCSD 310-421493/3-A  
 Matrix: Water  
 Analysis Batch: 421597

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 421493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
4,4'-DDT	1.00	0.8460		ug/L		85	23 - 150	7	35
Endrin	1.00	0.8383		ug/L		84	39 - 140	7	35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	99		10 - 136
Tetrachloro-m-xylene	57		10 - 130

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

Lab Sample ID: MB 310-421194/1-A  
 Matrix: Water  
 Analysis Batch: 421981

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 421194

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/16/24 18:09	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

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

**Lab Sample ID: MB 310-421194/1-A**  
**Matrix: Water**  
**Analysis Batch: 421981**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	<0.00200		0.00200	0.000660	mg/L		05/10/24 09:00	05/16/24 18:09	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/16/24 18:09	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/16/24 18:09	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/16/24 18:09	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/16/24 18:09	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/16/24 18:09	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/16/24 18:09	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/10/24 09:00	05/16/24 18:09	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/10/24 09:00	05/16/24 18:09	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/16/24 18:09	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/10/24 09:00	05/16/24 18:09	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/16/24 18:09	1

**Lab Sample ID: MB 310-421194/1-A**  
**Matrix: Water**  
**Analysis Batch: 422152**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/17/24 13:48	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		05/10/24 09:00	05/17/24 13:48	1

**Lab Sample ID: LCS 310-421194/2-A**  
**Matrix: Water**  
**Analysis Batch: 421981**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Arsenic	0.200	0.2079		mg/L		104	80 - 120
Barium	0.100	0.1046		mg/L		105	80 - 120
Beryllium	0.100	0.09835		mg/L		98	80 - 120
Chromium	0.100	0.09551		mg/L		96	80 - 120
Cobalt	0.100	0.1103		mg/L		110	80 - 120
Copper	0.200	0.2213		mg/L		111	80 - 120
Lead	0.200	0.2083		mg/L		104	80 - 120
Nickel	0.200	0.2146		mg/L		107	80 - 120
Selenium	0.400	0.4099		mg/L		102	80 - 120
Silver	0.100	0.1177		mg/L		118	80 - 120
Thallium	0.100	0.1123		mg/L		112	80 - 120
Vanadium	0.100	0.09264		mg/L		93	80 - 120
Zinc	0.200	0.1977		mg/L		99	80 - 120

**Lab Sample ID: LCS 310-421194/2-A**  
**Matrix: Water**  
**Analysis Batch: 422152**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Antimony	0.200	0.2097		mg/L		105	80 - 120
Cadmium	0.100	0.1015		mg/L		101	80 - 120

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

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

**Lab Sample ID: 310-280736-5 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421981**

**Client Sample ID: MW-8B**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	0.0704		0.08274		mg/L		16	20
Barium	0.289		0.2949		mg/L		2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Chromium	<0.00500		0.006564		mg/L		NC	20
Cobalt	0.00941		0.009364		mg/L		0.5	20
Copper	0.00206	J	0.002304	J	mg/L		11	20
Lead	0.00101		0.001041		mg/L		3	20
Nickel	0.0106		0.01456	F5	mg/L		32	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	0.00293		<0.00100		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20
Vanadium	0.00509		0.005558		mg/L		9	20
Zinc	<0.0200		<0.0200		mg/L		NC	20

**Lab Sample ID: 310-280736-5 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 422152**

**Client Sample ID: MW-8B**  
**Prep Type: Total/NA**  
**Prep Batch: 421194**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Antimony	<0.00200		<0.00200		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20

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

**Lab Sample ID: MB 310-421182/1**  
**Matrix: Water**  
**Analysis Batch: 421182**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/09/24 13:18	1

**Lab Sample ID: LCS 310-421182/2**  
**Matrix: Water**  
**Analysis Batch: 421182**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

**Lab Sample ID: MB 310-421304/1**  
**Matrix: Water**  
**Analysis Batch: 421304**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/10/24 11:27	1

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

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

**Lab Sample ID: LCS 310-421304/2**  
**Matrix: Water**  
**Analysis Batch: 421304**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	75 - 116

**Lab Sample ID: 310-280736-4 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421304**

**Client Sample ID: MW-7B1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	53.0		52.00		mg/L		2	35

**Lab Sample ID: 310-280736-5 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421304**

**Client Sample ID: MW-8B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	52.0		47.50		mg/L		9	35

**Lab Sample ID: MB 310-421342/1**  
**Matrix: Water**  
**Analysis Batch: 421342**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/10/24 14:33	1

**Lab Sample ID: LCS 310-421342/2**  
**Matrix: Water**  
**Analysis Batch: 421342**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116



# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## GC/MS VOA

### Analysis Batch: 421105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-2	MW-1B	Total/NA	Groundwater	8260D	
310-280736-6	MW-10B	Total/NA	Groundwater	8260D	
310-280736-13	Trip Blank	Total/NA	Water	8260D	
MB 310-421105/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421105/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421105/7	Lab Control Sample	Total/NA	Water	8260D	

### Analysis Batch: 421352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-9	MW-31B	Total/NA	Groundwater	8260D	
MB 310-421352/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421352/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421352/7	Lab Control Sample	Total/NA	Water	8260D	

### Analysis Batch: 421593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-1	MW-39B	Total/NA	Groundwater	8260D	
MB 310-421593/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421593/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421593/7	Lab Control Sample	Total/NA	Water	8260D	

## GC/MS Semi VOA

### Prep Batch: 421270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-14	MW-12B	Total/NA	Groundwater	3510C	
MB 310-421270/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-421270/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 310-421270/3-A	Lab Control Sample	Total/NA	Water	3510C	

### Analysis Batch: 421589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-14	MW-12B	Total/NA	Groundwater	8270E	421270
MB 310-421270/1-A	Method Blank	Total/NA	Water	8270E	421270
LCS 310-421270/2-A	Lab Control Sample	Total/NA	Water	8270E	421270

### Analysis Batch: 421595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-421270/1-A	Method Blank	Total/NA	Water	8270E	421270
LCS 310-421270/2-A	Lab Control Sample	Total/NA	Water	8270E	421270
LCS 310-421270/3-A	Lab Control Sample	Total/NA	Water	8270E	421270

## GC Semi VOA

### Prep Batch: 421493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-10	MW-208B	Total/NA	Groundwater	3510C	
MB 310-421493/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-421493/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-421493/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## GC Semi VOA

### Analysis Batch: 421597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-10	MW-208B	Total/NA	Groundwater	8081B	421493
MB 310-421493/1-A	Method Blank	Total/NA	Water	8081B	421493
LCS 310-421493/2-A	Lab Control Sample	Total/NA	Water	8081B	421493
LCSD 310-421493/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	421493

## Metals

### Prep Batch: 421194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-1	MW-39B	Total/NA	Groundwater	3005A	
310-280736-2	MW-1B	Total/NA	Groundwater	3005A	
310-280736-3	MW-5B	Total/NA	Groundwater	3005A	
310-280736-4	MW-7B1	Total/NA	Groundwater	3005A	
310-280736-5	MW-8B	Total/NA	Groundwater	3005A	
310-280736-6	MW-10B	Total/NA	Groundwater	3005A	
310-280736-7	MW-12B	Total/NA	Groundwater	3005A	
310-280736-8	MW-14B	Total/NA	Groundwater	3005A	
310-280736-9	MW-31B	Total/NA	Groundwater	3005A	
310-280736-10	MW-208B	Total/NA	Groundwater	3005A	
310-280736-11	MW-210B	Total/NA	Groundwater	3005A	
310-280736-12	MW-DB	Total/NA	Groundwater	3005A	
MB 310-421194/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280736-5 DU	MW-8B	Total/NA	Groundwater	3005A	

### Analysis Batch: 421981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-1	MW-39B	Total/NA	Groundwater	6020B	421194
310-280736-2	MW-1B	Total/NA	Groundwater	6020B	421194
310-280736-3	MW-5B	Total/NA	Groundwater	6020B	421194
310-280736-4	MW-7B1	Total/NA	Groundwater	6020B	421194
310-280736-5	MW-8B	Total/NA	Groundwater	6020B	421194
310-280736-6	MW-10B	Total/NA	Groundwater	6020B	421194
310-280736-7	MW-12B	Total/NA	Groundwater	6020B	421194
310-280736-8	MW-14B	Total/NA	Groundwater	6020B	421194
310-280736-9	MW-31B	Total/NA	Groundwater	6020B	421194
310-280736-10	MW-208B	Total/NA	Groundwater	6020B	421194
310-280736-11	MW-210B	Total/NA	Groundwater	6020B	421194
310-280736-12	MW-DB	Total/NA	Groundwater	6020B	421194
MB 310-421194/1-A	Method Blank	Total/NA	Water	6020B	421194
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	6020B	421194
310-280736-5 DU	MW-8B	Total/NA	Groundwater	6020B	421194

### Analysis Batch: 422152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-1	MW-39B	Total/NA	Groundwater	6020B	421194
310-280736-2	MW-1B	Total/NA	Groundwater	6020B	421194
310-280736-6	MW-10B	Total/NA	Groundwater	6020B	421194
310-280736-9	MW-31B	Total/NA	Groundwater	6020B	421194
MB 310-421194/1-A	Method Blank	Total/NA	Water	6020B	421194
LCS 310-421194/2-A	Lab Control Sample	Total/NA	Water	6020B	421194

Eurofins Cedar Falls

# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Metals (Continued)

### Analysis Batch: 422152 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-5 DU	MW-8B	Total/NA	Groundwater	6020B	421194

## General Chemistry

### Analysis Batch: 421182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-3	MW-5B	Total/NA	Groundwater	I-3765-85	
310-280736-6	MW-10B	Total/NA	Groundwater	I-3765-85	
310-280736-7	MW-12B	Total/NA	Groundwater	I-3765-85	
MB 310-421182/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421182/2	Lab Control Sample	Total/NA	Water	I-3765-85	

### Analysis Batch: 421304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-1	MW-39B	Total/NA	Groundwater	I-3765-85	
310-280736-2	MW-1B	Total/NA	Groundwater	I-3765-85	
310-280736-4	MW-7B1	Total/NA	Groundwater	I-3765-85	
310-280736-5	MW-8B	Total/NA	Groundwater	I-3765-85	
310-280736-8	MW-14B	Total/NA	Groundwater	I-3765-85	
310-280736-10	MW-208B	Total/NA	Groundwater	I-3765-85	
310-280736-11	MW-210B	Total/NA	Groundwater	I-3765-85	
310-280736-12	MW-DB	Total/NA	Groundwater	I-3765-85	
MB 310-421304/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421304/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-280736-4 DU	MW-7B1	Total/NA	Groundwater	I-3765-85	
310-280736-5 DU	MW-8B	Total/NA	Groundwater	I-3765-85	

### Analysis Batch: 421342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280736-9	MW-31B	Total/NA	Groundwater	I-3765-85	
MB 310-421342/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421342/2	Lab Control Sample	Total/NA	Water	I-3765-85	

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-39B**

**Lab Sample ID: 310-280736-1**

Date Collected: 05/06/24 07:40

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421593	FE5V	EET CF	05/15/24 04:13
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:44
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:18
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Client Sample ID: MW-1B**

**Lab Sample ID: 310-280736-2**

Date Collected: 05/06/24 13:10

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421105	WSE8	EET CF	05/10/24 08:11
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:54
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:21
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Client Sample ID: MW-5B**

**Lab Sample ID: 310-280736-3**

Date Collected: 05/03/24 14:08

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:57
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

**Client Sample ID: MW-7B1**

**Lab Sample ID: 310-280736-4**

Date Collected: 05/06/24 10:07

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 18:59
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Client Sample ID: MW-8B**

**Lab Sample ID: 310-280736-5**

Date Collected: 05/06/24 09:44

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:01
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

## Client Sample ID: MW-10B

## Lab Sample ID: 310-280736-6

Date Collected: 05/03/24 13:38

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421105	WSE8	EET CF	05/10/24 08:32
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:05
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:27
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

## Client Sample ID: MW-12B

## Lab Sample ID: 310-280736-7

Date Collected: 05/03/24 10:26

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:08
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

## Client Sample ID: MW-14B

## Lab Sample ID: 310-280736-8

Date Collected: 05/06/24 08:20

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:10
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

## Client Sample ID: MW-31B

## Lab Sample ID: 310-280736-9

Date Collected: 05/07/24 09:54

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421352	WSE8	EET CF	05/10/24 22:37
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:12
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	422152	NFT2	EET CF	05/17/24 14:38
Total/NA	Analysis	I-3765-85		1	421342	DGU1	EET CF	05/10/24 14:33

## Client Sample ID: MW-208B

## Lab Sample ID: 310-280736-10

Date Collected: 05/06/24 08:47

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			421493	JT8P	EET CF	05/13/24 13:14
Total/NA	Analysis	8081B		1	421597	BW2O	EET CF	05/14/24 13:32

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
 SDG: Series B

**Client Sample ID: MW-208B**

**Lab Sample ID: 310-280736-10**

Date Collected: 05/06/24 08:47

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:14
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Client Sample ID: MW-210B**

**Lab Sample ID: 310-280736-11**

Date Collected: 05/06/24 10:31

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:25
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Client Sample ID: MW-DB**

**Lab Sample ID: 310-280736-12**

Date Collected: 05/06/24 10:31

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421194	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421981	NFT2	EET CF	05/16/24 19:27
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Client Sample ID: Trip Blank**

**Lab Sample ID: 310-280736-13**

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421105	WSE8	EET CF	05/10/24 04:11

**Client Sample ID: MW-12B**

**Lab Sample ID: 310-280736-14**

Date Collected: 05/06/24 08:26

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			421270	JT8P	EET CF	05/10/24 08:43
Total/NA	Analysis	8270E		1	421589	L0FS	EET CF	05/14/24 17:01

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

## Laboratory: Eurofins Cedar Falls

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

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

**Laboratory References:**

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







Environment Testing  
America

Please



310-280736 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Fo

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-8-24</u>	<u>1510</u>	<u>MY</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>3</u>	
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? ↓	
<u>MW-12B 5-3-24 10:26 AM</u>			
<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: <u>Y</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.7 - 0.3 MY</u>		Corrected Temp (°C): <u>0.7 - 0.3 MY</u>	
• Sample Container Temperature			
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>			





Environment Testing  
America

Place COC scanning label  
here

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>			
Client: Iowa City Landfill			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE 5-8-24	TIME 1510	Received By: MY
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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>3</u>	
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: Y		Correction Factor (°C): 0	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 0.7		Corrected Temp (°C): 0.7	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):	6.8 MY	8 MY	
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>			



Environment Testing  
America

Place COC scanning label  
here

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-8-24</u>	<u>1510</u>	<u>MY</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u> <u>3</u> of <u>3</u>	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<u>MW-10B; WT-4; WT-0F; MW-1B; MW-12B 5-6-24 8:26AM</u>			
<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:	<u>4</u>	Correction Factor (°C): <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):	<u>NA</u>	Corrected Temp (°C):	
• <b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):	<u>6.2</u>	<u>2.4</u>	
Corrected Temp (°C):	<u>6.2</u>	<u>2.4</u>	
<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>			

**Eurofins Cedar Falls**

3019 Venture Way  
 Cedar Falls IA 50813  
 Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jen Jordan Company: Iowa City Landfill Address: City of Iowa City, 335 E. Iowa Ave City: Iowa City State, Zip: IA, 52240 Phone: Email: jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill/ Event Desc: Series B Site: Iowa		Lab P/N: Hummel, Matthew R E-Mail: Matthew.Hummel@steturofins.com PWSID: Due Date Requested: TAT Requested (days) Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: RFP23-14 WO #: Project #: 31015832 SSO#: Sample #: Seal Fuhmmlster Phone: 319-976-5194		Carrier Tracking No(s): State of Origin: Analysis Requested: 6020B (MOD) Metals List 6020B (MOD) Bi2-ethylhexylphthalate 6081B (MOD) 4-BDT, Endrin 6260D (MOD) Volatile Appendix 1 Sublist Appendix I 1,395.85 Total Suspended Solids Field Filtered Sample (Yes or No) Performed MS/MSD (Yes or No)		DOC No: 310-S1576-25210.1 Page: Page 1 of 2 Job #: Preservation Codes: A HCL B NaOH C Zn Acetate D Nitric Acid E NaOH F NaOH G Ascorbic Acid H Ascorbic Acid I Ice J DI Water K EDTA L EDA Other: M - Hexane N - None O AsNaO2 P Na2O4S Q Na2SO3 R Na2SO3 S H2SO4 T TSP Dodecahydrate U - Acetone V MCA W PH-5 X Irons Y - other (specify) Z - other (specify)							
Sample Identification	Sample Date	Sample Time	Sample Type (C-comp G-grab)	matrix (W=water, S=solid, O=waste/Oil)	Field Filtered Sample (Yes or No)	Performed MS/MSD (Yes or No)	Appendix I	6020B (MOD) Metals List	6020B (MOD) Bi2-ethylhexylphthalate	6081B (MOD) 4-BDT, Endrin	6260D (MOD) Volatile Appendix 1 Sublist	Total Number of Containers	Special Instructions/Note:
MW-39B	5-6-24	7:40	G	Water			X	X					Sites and Events Series B
MW-1B	5-6-24	13:0	G	Water			X	X					*Metals List: Arsenic, Barium Cobalt, Copper, Lead, Nickel
MW-5B	5-3-24	14:08	G	Water			X	X					
MW-7B1	5-6-24	10:07	G	Water			X	X					
MW-8B	5-6-24	9:44	G	Water			X	X					
MW-10B	5-3-24	13:38	G	Water			X	X					
MW-12B	5-3-24	10:26	G	Water			X	X					
MW-14B	5-6-24	8:20	G	Water			X	X					
MW-31B	5-7-24	9:54	G	Water			X	X					
MW-208B	5-6-24	8:47	G	Water			X	X					
MW-210B	5-6-24	10:51	G	Water			X	X					
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Deliverable Requested: I, II, III, IV Other (specify)													
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months													
Special Instructions/QC Requirements:													
Method of Shipment:													
Date/Time:													
Received by:													
Date/Time:													
Received by:													
Date/Time:													
Received by:													
Date/Time:													
Cooler Temperature(s) and Other Remarks:													
Custody Seals intact: <input type="checkbox"/> Yes <input type="checkbox"/> No													
Custody Seal No.													



**Eurofins Cedar Falls**

3019 Venture Way  
 Cedar Falls IA 50613  
 Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Company: Iowa City Landfill Address: City of Iowa City 335 E. Iowa Ave City: Iowa City State: IA Zip: 52240 Phone: RFP23-14 Email: jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill, Event Desc: Series B Site: Iowa		Lab P/N: Hummel, Matthew R E-Mail: Matthew.Hummel@eurofins.com Sampler: Joel Schmeister Phone: 319-936-5194 PWSID:		Carrier Tracking No(s): State of Origin:		COC No: 310-91576-25210.2 Page: Page 2 of 2 Job #:			
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: RFP23-14 WO #:				Analysis Requested 6028 (MOD) Metals List 6028 (MOD) Metals List 6028 (MOD) Metals List 8070E (MOD) Bis(2-ethylhexyl)phthalate 8081B (MOD) 4,4-DT Endrin 8260D (MOD) Volatile Appendix 1 Sublet Appendix 1 1,3765_65 Total Suspended Solids Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No)				Preservation Codes: A. HCL B. NaOH C. Zn Acetate D. Nitric Acid E. NaHSO4 F. MeOH G. Amchlor H. Ascorbic Acid I. Ice J. DI Water K. EDTA L. EDA M. Hexane N. None O. Ash/O2 P. Na2O4S Q. Na2SO3 R. Na2SO3 S. H2SO4 T. Hydroquinone U. MCAA V. pH 4-5 W. Triene Y. Triene Z. other (specify) Other:	
Sample Identification MW-DB Trip Blank		Sample Date 5-24-2021		Sample Type W=water, S=solid, C=comp, O=wastelo, G=grab Preservation Code: G		Total Number of Containers X			
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Deliverable Requested: I II III IV Other (specify)		Poison B Unknown Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months		Special Instructions/Note			
Empty Kit Relinquished by:		Date:		Method of Shipment:		Date/Time:			
Relinquished by:		Date/Time:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Received by:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.		Cooler Temperature(s) and Other Remarks:		Ver-01/16/2019			





**Eurofins Cedar Falls**

3019 Venture Way  
Cedar Falls, IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jen Jordan Company: Iowa City Landfill Address: City of Iowa City 335 E. Iowa Ave City: Iowa City State: Zip: IA, 52240 Phone: PO #: RFP23-14 Email: jennifer-jordan@iowa-city.org Project Name: Iowa City Landfill/ Event Desc: Series B Site: Iowa		Lab Pk: Hummel, Matthew R E-Mail: Matthew.Hummel@eurofins.com Lab Pk: Hummel, Matthew R E-Mail: Matthew.Hummel@eurofins.com		Carrier Tracking No(s): State of Origin: Job #:		COC No: 310-91576-25210.1 Page: Page 1 of 2	
Due Date Requested: TAT Requested (days): Compliance Project: Δ Yes Δ No PO #: RFP23-14 WO #: 31015832 Project #: 31015832 SSO# #:		<b>Analysis Requested</b> 6028 (MOD) Metals List 8270E (MOD) Bis(2-ethylhexyl)phthalate 80818 (MOD) 4,4'-DDT Endrin 8260D (MOD) Volatile Appendix 1 Sublist		Preservation Codes: A. HCL B. NaOH C. Zn Acetate D. Nitric Acid E. NaHSO4 F. MeOH G. Anchlor H. Ascorbic Acid I. Ice J. DI Water K. EDTA L. EDA Other:		Preservation Codes: M. Hexane N. None O. AsHClO2 P. Na2CO3 Q. Na2SO3 R. Na2SO4 S. TSP Dodecahydrate T. Acetone U. MCA V. NCA W. pH 4-5 Y. Trizma Z. other (specify)	
Sample: <i>See File above</i> Phone: <i>319-736-594</i> PWSID:		Total Number of Containers:		Special Instructions/Note: Shie and Events Series B Metals List: Arsenic, Barium, Cobalt, Copper, Lead, Nickel		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months	
Sample Identification MW-09B MW-10B MW-11B MW-12B MW-13B MW-14B MW-15B MW-16B MW-17B MW-18B MW-19B MW-20B		Field Filtered Sample (Yes or No) Appendix I 1,376,88 Total Suspended Solids 6028 (MOD) Metals List 8270E (MOD) Bis(2-ethylhexyl)phthalate 80818 (MOD) 4,4'-DDT Endrin 8260D (MOD) Volatile Appendix 1 Sublist		Perform MS/MSD (Yes or No) Appendix I 1,376,88 Total Suspended Solids 6028 (MOD) Metals List 8270E (MOD) Bis(2-ethylhexyl)phthalate 80818 (MOD) 4,4'-DDT Endrin 8260D (MOD) Volatile Appendix 1 Sublist		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months	
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological Deliverable Requested: I II III IV Other (specify)		Sample Date MW-12B: 5-6-24 MW-15B: 8-26-24		Sample Type (W=water, S=solid, O=waste/liquid, G=grab) MW-09B: Water MW-10B: Water MW-11B: Water MW-12B: Water MW-13B: Water MW-14B: Water MW-15B: Water MW-16B: Water MW-17B: Water MW-18B: Water MW-19B: Water MW-20B: Water		Preservation Code: MW-09B: Water MW-10B: Water MW-11B: Water MW-12B: Water MW-13B: Water MW-14B: Water MW-15B: Water MW-16B: Water MW-17B: Water MW-18B: Water MW-19B: Water MW-20B: Water	
Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Date: MW-12B: 5-6-24 MW-15B: 8-26-24		Date/Time: MW-12B: 5-6-24 15:00 MW-15B: 8-26-24 15:00		Date/Time: MW-12B: 5-6-24 15:00 MW-15B: 8-26-24 15:00	
Custody Seals Intact: Δ Yes Δ No C: C T: T S: S I: I N: N T: T S: S I: I N: N		Cooler Temperature(s) °C and Other Remarks:		Method of Shipment:		Company:	

Var 01/16/2019



## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280736-1

SDG Number: Series B

**Login Number: 280736**

**List Number: 1**

**Creator: Costello, Mackenzie K**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	The testing for 12B was split into two different samples.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280736-1  
SDG: Series B

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Jen Jordan  
Iowa City Landfill  
City of Iowa City  
335 E. Iowa Ave  
Iowa City, Iowa 52240  
Generated 5/23/2024 4:14:16 PM

## JOB DESCRIPTION

Iowa City Landfill Spring 2024  
Series A  
Series A

## JOB NUMBER

310-280737-1

# 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



Generated  
5/23/2024 4:14:16 PM

Authorized for release by  
Mary Yang, Project Management Assistant I  
[Mary.Yang@ET.EurofinsUS.com](mailto:Mary.Yang@ET.EurofinsUS.com)  
(319)277-2401



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# Case Narrative

Client: Iowa City Landfill  
Project: Iowa City Landfill Spring 2024

Job ID: 310-280737-1

**Job ID: 310-280737-1**

**Eurofins Cedar Falls**

## Job Narrative 310-280737-1

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

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

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

### Receipt

The samples were received on 5/8/2024 3:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3°C and 0.7°C.

### GC/MS VOA

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

### Metals

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

### General Chemistry

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

Eurofins Cedar Falls

# Sample Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-280737-1	MW-203A	Groundwater	05/03/24 08:36	05/08/24 15:10
310-280737-2	MW-204A	Groundwater	05/03/24 09:08	05/08/24 15:10
310-280737-3	MW-205A	Groundwater	05/03/24 09:58	05/08/24 15:10
310-280737-4	MW-214A	Groundwater	05/03/24 12:58	05/08/24 15:10
310-280737-5	MW-215A	Groundwater	05/03/24 13:08	05/08/24 15:10
310-280737-6	MW-408	Groundwater	05/06/24 12:47	05/08/24 15:10

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# Detection Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

## Client Sample ID: MW-203A

## Lab Sample ID: 310-280737-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.311		0.00200	0.000660	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.75	J	1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-204A

## Lab Sample ID: 310-280737-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00251		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0996		0.00200	0.000660	mg/L	1		6020B	Total/NA
Copper	0.00924		0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.000489	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Total Suspended Solids	5.25		1.88	1.39	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-205A

## Lab Sample ID: 310-280737-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00574		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.180		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000319	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00240	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.000461	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Total Suspended Solids	31.5		7.50	5.55	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-214A

## Lab Sample ID: 310-280737-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.255		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000263	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000957		0.000500	0.000260	mg/L	1		6020B	Total/NA
Total Suspended Solids	590		15.0	11.1	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-215A

## Lab Sample ID: 310-280737-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000593	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.139		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000539		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000890		0.000500	0.000260	mg/L	1		6020B	Total/NA
Total Suspended Solids	75.0		3.75	2.78	mg/L	1		I-3765-85	Total/NA

## Client Sample ID: MW-408

## Lab Sample ID: 310-280737-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.157		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000150	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.000179	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Selenium	0.0371		0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.00279	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Total Suspended Solids	9.38		1.88	1.39	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-203A**

**Lab Sample ID: 310-280737-1**

Date Collected: 05/03/24 08:36

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 21:16	1
<b>Barium</b>	<b>0.311</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 21:16	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 21:16	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 21:16	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 21:16	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 21:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>1.75</b>	<b>J</b>	1.88	1.39	mg/L			05/09/24 13:18	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-204A**

**Lab Sample ID: 310-280737-2**

Date Collected: 05/03/24 09:08

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00251</b>		0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 21:19	1
<b>Barium</b>	<b>0.0996</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 21:19	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 21:19	1
<b>Copper</b>	<b>0.00924</b>		0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 21:19	1
<b>Lead</b>	<b>0.000489</b>	<b>J</b>	0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 21:19	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 21:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>5.25</b>		1.88	1.39	mg/L			05/09/24 13:18	1





# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-205A**

**Lab Sample ID: 310-280737-3**

Date Collected: 05/03/24 09:58

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00574		0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 21:32	1
Barium	0.180		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 21:32	1
Cobalt	0.000319	J	0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 21:32	1
Copper	0.00240	J	0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 21:32	1
Lead	0.000461	J	0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 21:32	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 21:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	31.5		7.50	5.55	mg/L			05/09/24 13:18	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-214A**

**Lab Sample ID: 310-280737-4**

Date Collected: 05/03/24 12:58

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 21:34	1
<b>Barium</b>	<b>0.255</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 21:34	1
<b>Cobalt</b>	<b>0.000263</b>	<b>J</b>	0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 21:34	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 21:34	1
<b>Lead</b>	<b>0.000957</b>		0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 21:34	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 21:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>590</b>		15.0	11.1	mg/L			05/09/24 13:18	1



# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-215A**

**Lab Sample ID: 310-280737-5**

Date Collected: 05/03/24 13:08

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.000593</b>	<b>J</b>	0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 21:36	1
<b>Barium</b>	<b>0.139</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 21:36	1
<b>Cobalt</b>	<b>0.000539</b>		0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 21:36	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 21:36	1
<b>Lead</b>	<b>0.000890</b>		0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 21:36	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 21:36	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>75.0</b>		3.75	2.78	mg/L			05/09/24 13:18	1

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# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-408**

**Lab Sample ID: 310-280737-6**

Date Collected: 05/06/24 12:47

Matrix: Groundwater

Date Received: 05/08/24 15:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			05/15/24 04:36	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/15/24 04:36	1
Benzene	<0.500		0.500	0.220	ug/L			05/15/24 04:36	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/15/24 04:36	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/15/24 04:36	1
Bromoform	<5.00		5.00	0.780	ug/L			05/15/24 04:36	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/15/24 04:36	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/15/24 04:36	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/15/24 04:36	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/15/24 04:36	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/15/24 04:36	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/15/24 04:36	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/15/24 04:36	1
Chloroform	<3.00		3.00	1.30	ug/L			05/15/24 04:36	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/15/24 04:36	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/15/24 04:36	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/15/24 04:36	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/15/24 04:36	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/15/24 04:36	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/15/24 04:36	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/15/24 04:36	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/15/24 04:36	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/15/24 04:36	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/15/24 04:36	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/15/24 04:36	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/15/24 04:36	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/15/24 04:36	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/15/24 04:36	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/15/24 04:36	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/15/24 04:36	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/15/24 04:36	1
Styrene	<1.00		1.00	0.370	ug/L			05/15/24 04:36	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/15/24 04:36	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/15/24 04:36	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/15/24 04:36	1
Toluene	<1.00		1.00	0.430	ug/L			05/15/24 04:36	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/15/24 04:36	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/15/24 04:36	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/15/24 04:36	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/15/24 04:36	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/15/24 04:36	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/15/24 04:36	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/15/24 04:36	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/15/24 04:36	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/15/24 04:36	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/15/24 04:36	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/15/24 04:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		05/15/24 04:36	1

Eurofins Cedar Falls

# Client Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-408**

**Lab Sample ID: 310-280737-6**

Date Collected: 05/06/24 12:47

Matrix: Groundwater

Date Received: 05/08/24 15:10

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		73 - 130		05/15/24 04:36	1
Toluene-d8 (Surr)	98		80 - 120		05/15/24 04:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		05/10/24 09:00	05/10/24 21:38	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 21:38	1
<b>Barium</b>	<b>0.157</b>		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 21:38	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/10/24 09:00	05/10/24 21:38	1
<b>Cadmium</b>	<b>0.000150</b>	<b>J</b>	0.000200	0.000100	mg/L		05/10/24 09:00	05/10/24 21:38	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/10/24 09:00	05/10/24 21:38	1
<b>Cobalt</b>	<b>0.000179</b>	<b>J</b>	0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 21:38	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 21:38	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 21:38	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 21:38	1
<b>Selenium</b>	<b>0.0371</b>		0.00500	0.00140	mg/L		05/10/24 09:00	05/10/24 21:38	1
Silver	<0.00100		0.00100	0.000500	mg/L		05/22/24 09:30	05/23/24 14:19	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/10/24 09:00	05/10/24 21:38	1
<b>Vanadium</b>	<b>0.00279</b>	<b>J</b>	0.00500	0.00110	mg/L		05/10/24 09:00	05/10/24 21:38	1
Zinc	<0.0200		0.0200	0.00970	mg/L		05/10/24 09:00	05/10/24 21:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids (USGS I-3765-85)</b>	<b>9.38</b>		1.88	1.39	mg/L			05/10/24 11:27	1

# Definitions/Glossary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

## Qualifiers

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Surrogate Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

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

Matrix: Groundwater

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-280737-6	MW-408	102	111	98

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)  
DBFM = Dibromofluoromethane (Surr)  
TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (80-120)	DBFM (73-130)	TOL (80-120)
LCS 310-421593/6	Lab Control Sample	101	100	100
LCS 310-421593/7	Lab Control Sample	101	115	98
MB 310-421593/5	Method Blank	101	113	98

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)  
DBFM = Dibromofluoromethane (Surr)  
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

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

Lab Sample ID: MB 310-421593/5  
 Matrix: Water  
 Analysis Batch: 421593

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0	3.10	ug/L			05/14/24 23:17	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			05/14/24 23:17	1
Benzene	<0.500		0.500	0.220	ug/L			05/14/24 23:17	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			05/14/24 23:17	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			05/14/24 23:17	1
Bromoform	<5.00		5.00	0.780	ug/L			05/14/24 23:17	1
Bromomethane	<4.00		4.00	1.10	ug/L			05/14/24 23:17	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			05/14/24 23:17	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			05/14/24 23:17	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			05/14/24 23:17	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			05/14/24 23:17	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			05/14/24 23:17	1
Chloroethane	<4.00		4.00	0.790	ug/L			05/14/24 23:17	1
Chloroform	<3.00		3.00	1.30	ug/L			05/14/24 23:17	1
Chloromethane	<3.00		3.00	0.610	ug/L			05/14/24 23:17	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/14/24 23:17	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			05/14/24 23:17	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			05/14/24 23:17	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			05/14/24 23:17	1
Dibromomethane	<1.00		1.00	0.330	ug/L			05/14/24 23:17	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			05/14/24 23:17	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			05/14/24 23:17	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/14/24 23:17	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/14/24 23:17	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/14/24 23:17	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			05/14/24 23:17	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			05/14/24 23:17	1
2-Hexanone	<10.0		10.0	2.00	ug/L			05/14/24 23:17	1
Iodomethane	<10.0		10.0	7.00	ug/L			05/14/24 23:17	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			05/14/24 23:17	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			05/14/24 23:17	1
Styrene	<1.00		1.00	0.370	ug/L			05/14/24 23:17	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/14/24 23:17	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/14/24 23:17	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/14/24 23:17	1
Toluene	<1.00		1.00	0.430	ug/L			05/14/24 23:17	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			05/14/24 23:17	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/14/24 23:17	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			05/14/24 23:17	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/14/24 23:17	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/14/24 23:17	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/14/24 23:17	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			05/14/24 23:17	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			05/14/24 23:17	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			05/14/24 23:17	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/14/24 23:17	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			05/14/24 23:17	1

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 310-421593/5**  
**Matrix: Water**  
**Analysis Batch: 421593**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		80 - 120		05/14/24 23:17	1
Dibromofluoromethane (Surr)	113		73 - 130		05/14/24 23:17	1
Toluene-d8 (Surr)	98		80 - 120		05/14/24 23:17	1

**Lab Sample ID: LCS 310-421593/6**  
**Matrix: Water**  
**Analysis Batch: 421593**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acrylonitrile	200	201.7		ug/L		101	50 - 150
Benzene	20.0	20.75		ug/L		104	72 - 124
Bromochloromethane	20.0	20.58		ug/L		103	73 - 130
Bromodichloromethane	20.0	20.46		ug/L		102	74 - 122
Bromoform	20.0	20.57		ug/L		103	61 - 122
2-Butanone (MEK)	40.0	41.48		ug/L		104	50 - 150
Carbon disulfide	20.0	19.22		ug/L		96	59 - 135
Carbon tetrachloride	20.0	21.50		ug/L		108	67 - 132
Chlorobenzene	20.0	20.85		ug/L		104	76 - 120
Chlorodibromomethane	20.0	20.93		ug/L		105	71 - 121
Chloroform	20.0	20.57		ug/L		103	72 - 125
cis-1,2-Dichloroethene	20.0	20.08		ug/L		100	74 - 123
cis-1,3-Dichloropropene	20.0	21.78		ug/L		109	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	21.25		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.95		ug/L		110	75 - 125
Dibromomethane	20.0	20.15		ug/L		101	74 - 125
1,2-Dichlorobenzene	20.0	20.74		ug/L		104	74 - 120
1,4-Dichlorobenzene	20.0	20.50		ug/L		102	72 - 120
1,1-Dichloroethane	20.0	19.87		ug/L		99	70 - 127
1,2-Dichloroethane	20.0	20.54		ug/L		103	71 - 125
1,1-Dichloroethene	20.0	19.77		ug/L		99	63 - 132
1,2-Dichloropropane	20.0	21.41		ug/L		107	73 - 124
Ethylbenzene	20.0	20.97		ug/L		105	74 - 122
2-Hexanone	40.0	41.60		ug/L		104	60 - 140
Iodomethane	20.0	20.28		ug/L		101	10 - 150
Methylene Chloride	20.0	19.44		ug/L		97	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	41.68		ug/L		104	60 - 139
Styrene	20.0	21.36		ug/L		107	74 - 121
1,1,1,2-Tetrachloroethane	20.0	20.91		ug/L		105	71 - 120
1,1,2,2-Tetrachloroethane	20.0	20.29		ug/L		101	68 - 124
Tetrachloroethene	20.0	20.87		ug/L		104	71 - 130
Toluene	20.0	20.24		ug/L		101	74 - 123
trans-1,4-Dichloro-2-butene	20.0	19.04		ug/L		95	50 - 150
trans-1,2-Dichloroethene	20.0	20.03		ug/L		100	70 - 126
trans-1,3-Dichloropropene	20.0	20.68		ug/L		103	69 - 123
1,1,1-Trichloroethane	20.0	21.14		ug/L		106	73 - 129
1,1,2-Trichloroethane	20.0	21.24		ug/L		106	73 - 123
Trichloroethene	20.0	21.15		ug/L		106	72 - 126

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** LCS 310-421593/6  
**Matrix:** Water  
**Analysis Batch:** 421593

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec Limits
	Added	Result	Qualifier				
1,2,3-Trichloropropane	20.0	20.46		ug/L		102	65 - 127
Vinyl acetate	40.0	40.54		ug/L		101	50 - 150
Xylenes, Total	40.0	41.81		ug/L		105	73 - 123

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	100		73 - 130
Toluene-d8 (Surr)	100		80 - 120

**Lab Sample ID:** LCS 310-421593/7  
**Matrix:** Water  
**Analysis Batch:** 421593

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec Limits
	Added	Result	Qualifier				
Bromomethane	20.0	21.02		ug/L		105	23 - 150
Chloroethane	20.0	23.15		ug/L		116	54 - 136
Chloromethane	20.0	22.89		ug/L		114	38 - 150
Trichlorofluoromethane	20.0	24.30		ug/L		122	54 - 149
Vinyl chloride	20.0	24.34		ug/L		122	56 - 140

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	115		73 - 130
Toluene-d8 (Surr)	98		80 - 120

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

**Lab Sample ID:** MB 310-421205/1-A  
**Matrix:** Water  
**Analysis Batch:** 421416

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 421205

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/10/24 09:00	05/10/24 20:35	1
Barium	<0.00200		0.00200	0.000660	mg/L		05/10/24 09:00	05/10/24 20:35	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/10/24 09:00	05/10/24 20:35	1
Copper	<0.00500		0.00500	0.00180	mg/L		05/10/24 09:00	05/10/24 20:35	1
Lead	<0.000500		0.000500	0.000260	mg/L		05/10/24 09:00	05/10/24 20:35	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/10/24 09:00	05/10/24 20:35	1

**Lab Sample ID:** LCS 310-421205/2-A  
**Matrix:** Water  
**Analysis Batch:** 421416

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 421205

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec Limits
	Added	Result	Qualifier				
Arsenic	0.200	0.1995		mg/L		100	80 - 120
Barium	0.100	0.09995		mg/L		100	80 - 120
Cobalt	0.100	0.1061		mg/L		106	80 - 120
Copper	0.200	0.2074		mg/L		104	80 - 120
Lead	0.200	0.1998		mg/L		100	80 - 120

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

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

**Lab Sample ID: LCS 310-421205/2-A**  
**Matrix: Water**  
**Analysis Batch: 421416**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421205**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	0.200	0.2032		mg/L		102	80 - 120

**Lab Sample ID: 310-280737-2 DU**  
**Matrix: Groundwater**  
**Analysis Batch: 421416**

**Client Sample ID: MW-204A**  
**Prep Type: Total/NA**  
**Prep Batch: 421205**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.00251		0.002584		mg/L		3	20
Barium	0.0996		0.1009		mg/L		1	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	0.00924		0.009448		mg/L		2	20
Lead	0.000489	J	0.0004940	J	mg/L		1	20
Nickel	<0.00500		<0.00500		mg/L		NC	20

**Lab Sample ID: MB 310-421514/1-A**  
**Matrix: Water**  
**Analysis Batch: 421633**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 421514**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/14/24 09:30	05/14/24 15:52	1
Barium	<0.00200		0.00200	0.000660	mg/L		05/14/24 09:30	05/14/24 15:52	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		05/14/24 09:30	05/14/24 15:52	1
Chromium	<0.00500		0.00500	0.00120	mg/L		05/14/24 09:30	05/14/24 15:52	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/14/24 09:30	05/14/24 15:52	1
Copper	0.001916	J	0.00500	0.00180	mg/L		05/14/24 09:30	05/14/24 15:52	1
Lead	0.0005530		0.000500	0.000260	mg/L		05/14/24 09:30	05/14/24 15:52	1
Nickel	<0.00500		0.00500	0.00210	mg/L		05/14/24 09:30	05/14/24 15:52	1
Selenium	<0.00500		0.00500	0.00140	mg/L		05/14/24 09:30	05/14/24 15:52	1
Silver	0.02184		0.00100	0.000500	mg/L		05/14/24 09:30	05/14/24 15:52	1
Thallium	<0.00100		0.00100	0.000570	mg/L		05/14/24 09:30	05/14/24 15:52	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		05/14/24 09:30	05/14/24 15:52	1
Zinc	0.01335	J	0.0200	0.00970	mg/L		05/14/24 09:30	05/14/24 15:52	1

**Lab Sample ID: LCS 310-421514/2-A**  
**Matrix: Water**  
**Analysis Batch: 421633**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 421514**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2102		mg/L		105	80 - 120
Barium	0.100	0.1090		mg/L		109	80 - 120
Beryllium	0.100	0.1030		mg/L		103	80 - 120
Chromium	0.100	0.09655		mg/L		97	80 - 120
Cobalt	0.100	0.1010		mg/L		101	80 - 120
Copper	0.200	0.2146		mg/L		107	80 - 120
Lead	0.200	0.2135		mg/L		107	80 - 120
Nickel	0.200	0.2112		mg/L		106	80 - 120
Selenium	0.400	0.4007		mg/L		100	80 - 120
Thallium	0.100	0.1149		mg/L		115	80 - 120
Vanadium	0.100	0.09562		mg/L		96	80 - 120

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# QC Sample Results

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

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

Lab Sample ID: LCS 310-421514/2-A  
 Matrix: Water  
 Analysis Batch: 421633

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 421514

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	0.200	0.2276		mg/L		114	80 - 120

Lab Sample ID: MB 310-422364/1-A  
 Matrix: Water  
 Analysis Batch: 422605

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 422364

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.00100		0.00100	0.000500	mg/L		05/22/24 09:30	05/23/24 13:48	1

Lab Sample ID: LCS 310-422364/2-A  
 Matrix: Water  
 Analysis Batch: 422605

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 422364

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	0.100	0.1069		mg/L		107	80 - 120

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

Lab Sample ID: MB 310-421182/1  
 Matrix: Water  
 Analysis Batch: 421182

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/09/24 13:18	1

Lab Sample ID: LCS 310-421182/2  
 Matrix: Water  
 Analysis Batch: 421182

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	75 - 116

Lab Sample ID: 310-280737-5 DU  
 Matrix: Groundwater  
 Analysis Batch: 421182

Client Sample ID: MW-215A  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	75.0		76.75		mg/L		2	35

Lab Sample ID: MB 310-421304/1  
 Matrix: Water  
 Analysis Batch: 421304

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.70	mg/L			05/10/24 11:27	1

# QC Sample Results

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

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

Lab Sample ID: LCS 310-421304/2

Matrix: Water

Analysis Batch: 421304

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	75 - 116

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# QC Association Summary

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

## GC/MS VOA

### Analysis Batch: 421593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-6	MW-408	Total/NA	Groundwater	8260D	
MB 310-421593/5	Method Blank	Total/NA	Water	8260D	
LCS 310-421593/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-421593/7	Lab Control Sample	Total/NA	Water	8260D	

## Metals

### Prep Batch: 421205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-1	MW-203A	Total/NA	Groundwater	3005A	
310-280737-2	MW-204A	Total/NA	Groundwater	3005A	
310-280737-3	MW-205A	Total/NA	Groundwater	3005A	
310-280737-4	MW-214A	Total/NA	Groundwater	3005A	
310-280737-5	MW-215A	Total/NA	Groundwater	3005A	
310-280737-6	MW-408	Total/NA	Groundwater	3005A	
MB 310-421205/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421205/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-280737-2 DU	MW-204A	Total/NA	Groundwater	3005A	

### Analysis Batch: 421416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-1	MW-203A	Total/NA	Groundwater	6020B	421205
310-280737-2	MW-204A	Total/NA	Groundwater	6020B	421205
310-280737-3	MW-205A	Total/NA	Groundwater	6020B	421205
310-280737-4	MW-214A	Total/NA	Groundwater	6020B	421205
310-280737-5	MW-215A	Total/NA	Groundwater	6020B	421205
310-280737-6	MW-408	Total/NA	Groundwater	6020B	421205
MB 310-421205/1-A	Method Blank	Total/NA	Water	6020B	421205
LCS 310-421205/2-A	Lab Control Sample	Total/NA	Water	6020B	421205
310-280737-2 DU	MW-204A	Total/NA	Groundwater	6020B	421205

### Prep Batch: 421514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-421514/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-421514/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 421633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-421514/1-A	Method Blank	Total/NA	Water	6020B	421514
LCS 310-421514/2-A	Lab Control Sample	Total/NA	Water	6020B	421514

### Prep Batch: 422364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-6	MW-408	Total/NA	Groundwater	3005A	
MB 310-422364/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-422364/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 422605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-6	MW-408	Total/NA	Groundwater	6020B	422364
MB 310-422364/1-A	Method Blank	Total/NA	Water	6020B	422364

# QC Association Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

## Metals (Continued)

### Analysis Batch: 422605 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-422364/2-A	Lab Control Sample	Total/NA	Water	6020B	422364

## General Chemistry

### Analysis Batch: 421182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-1	MW-203A	Total/NA	Groundwater	I-3765-85	
310-280737-2	MW-204A	Total/NA	Groundwater	I-3765-85	
310-280737-3	MW-205A	Total/NA	Groundwater	I-3765-85	
310-280737-4	MW-214A	Total/NA	Groundwater	I-3765-85	
310-280737-5	MW-215A	Total/NA	Groundwater	I-3765-85	
MB 310-421182/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421182/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-280737-5 DU	MW-215A	Total/NA	Groundwater	I-3765-85	

### Analysis Batch: 421304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-280737-6	MW-408	Total/NA	Groundwater	I-3765-85	
MB 310-421304/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-421304/2	Lab Control Sample	Total/NA	Water	I-3765-85	

# Lab Chronicle

Client: Iowa City Landfill  
 Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
 SDG: Series A

**Client Sample ID: MW-203A**

**Lab Sample ID: 310-280737-1**

Date Collected: 05/03/24 08:36

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421205	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421416	DHM5	EET CF	05/10/24 21:16
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

**Client Sample ID: MW-204A**

**Lab Sample ID: 310-280737-2**

Date Collected: 05/03/24 09:08

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421205	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421416	DHM5	EET CF	05/10/24 21:19
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

**Client Sample ID: MW-205A**

**Lab Sample ID: 310-280737-3**

Date Collected: 05/03/24 09:58

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421205	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421416	DHM5	EET CF	05/10/24 21:32
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

**Client Sample ID: MW-214A**

**Lab Sample ID: 310-280737-4**

Date Collected: 05/03/24 12:58

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421205	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421416	DHM5	EET CF	05/10/24 21:34
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

**Client Sample ID: MW-215A**

**Lab Sample ID: 310-280737-5**

Date Collected: 05/03/24 13:08

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421205	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421416	DHM5	EET CF	05/10/24 21:36
Total/NA	Analysis	I-3765-85		1	421182	DGU1	EET CF	05/09/24 13:18

**Client Sample ID: MW-408**

**Lab Sample ID: 310-280737-6**

Date Collected: 05/06/24 12:47

Matrix: Groundwater

Date Received: 05/08/24 15:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421593	FE5V	EET CF	05/15/24 04:36



# Lab Chronicle

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

**Client Sample ID: MW-408**

**Lab Sample ID: 310-280737-6**

**Date Collected: 05/06/24 12:47**

**Matrix: Groundwater**

**Date Received: 05/08/24 15:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			421205	KM3E	EET CF	05/10/24 09:00
Total/NA	Analysis	6020B		1	421416	DHM5	EET CF	05/10/24 21:38
Total/NA	Prep	3005A			422364	KM3E	EET CF	05/22/24 09:30
Total/NA	Analysis	6020B		1	422605	NFT2	EET CF	05/23/24 14:19
Total/NA	Analysis	I-3765-85		1	421304	DGU1	EET CF	05/10/24 11:27

**Laboratory References:**

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



# Accreditation/Certification Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

## Laboratory: Eurofins Cedar Falls

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

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Method Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

**Laboratory References:**

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





Environment Testing  
America



310-280737 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY <u>Iowa City</u>	STATE <u>IA</u>	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>5-8-24</u>	TIME <u>1510</u>	Received By: <u>MY</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
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:	<u>Y</u>	Correction Factor (°C): <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):	<u>0.7 - 0.3 mY</u>	Corrected Temp (°C): <u>0.7 - 0.3 mY</u>	
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
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>			





Environment Testing  
America

Place COC scanning label  
here

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>Iowa City Landfill</u>			
City/State:	CITY	STATE	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-8-21</u>	<u>1510</u>	<u>MY</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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>2</u>	
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: <u>Y</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.7</u>		Corrected Temp (°C): <u>0.7</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):	<u>6.8 MY</u>	<u>8 MY</u>	
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>			

### Eurofins Cedar Falls

3019 Venture Way  
Cedar Falls IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

### Chain of Custody Record

**Client Information**  
 Client Contact: Jen Jordan  
 Company: Iowa City Landfill  
 Address: Iowa City, IA 52240  
 City: Iowa City  
 State, Zip: IA, 52240  
 Phone:  
 Email: jennifer-jordan@iowa-city.org  
 Project Name: Iowa City Landfill Semi-Annual Series A  
 Site: Iowa

Lab P#: Hummel Matthew R  
 E-Mail: Matthew.Hummel@eurofins.com  
 Carrier Tracking No(s):  
 State of Origin:  
 Lab #:  
 COC No: 310-91304-251552  
 Page: Page 2 of 3  
 Job #:

**Analysis Requested**

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, S=solid, O=waste/water, G=grab)	Preservation Code	Field Filled Sample (Yes or No)	Form MS/MSP (Yes or No)	Appendix I, TSS	Metals List, TSS	Metals List, TSS, App I VOCs, Dichlorodifluoromethane, sulfide	Metals List, TSS, App I VOCs	Metals List, TSS, App I VOCs, Dichlorodifluoromethane	Appendix I, TSS, sulfide	Appendix I VOCs	Total Number of Containers	Special Instructions/Note:
MW-203A	5-3-24	8:36	G	Water			X								
MW-204A	5-3-24	9:08	G	Water			X								
MW-205A	5-3-24	9:58	G	Water			X								
MW-214A	5-3-24	12:58	G	Water			X								
MW-215A	5-7-24	13:09	G	Water			X								
				Water				X							
				Water											
				Water											
				Water											
				Water											
				Water											
Possible Hazard Identification Non-Hazard: <input type="checkbox"/> Flammable: <input type="checkbox"/> Skin Irritant: <input type="checkbox"/> Deliverable Requested: I, II, III, IV, Other (specify):															
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____															
Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____															
Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____															
Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____															
Custody Seals Intact: <input type="checkbox"/> Custody Seal No. _____ Cooler Temperature(s) °C and Other Remarks: _____															

Ver 01/16/2019

**Eurofins Cedar Falls**

3019 Venture Way  
Cedar Falls, IA 50613  
Phone (319) 277-2401 Phone (319) 277-2425

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jen Jordan Phone: 319-9736-594 Email: Matthew Hummel@st.eurofinsus.com Job POC: Hummel, Matthew R Carrier Tracking No(s): 310-91304-25155.3 State of Origin:		Lab POC: Hummel, Matthew R E-Mail: Matthew.Hummel@st.eurofinsus.com Job #:	
Due Date Requested: TAT Requested (days): Compliance Project: A Yes I No PO #: RFP23-14 WO #:		Analysis Requested Metals List, TSS, App I VOCs, Dichlorodifluoromethane Metals List, TSS, App I VOCs Metals List, TSS, App I VOCs, Dichlorodifluoromethane Metals List, TSS, App I VOCs Appendix I, TSS, Sulfide Appendix I VOCs Total Number of Containers:	
Address: City of Iowa City 335 E. Iowa Ave City: Iowa City State, Zip: IA, 52240 Phone: Email: Jennifer-Jordan@iowa-city.org Project Name: Iowa City Landfill Semi-Annual Series A Site: Iowa		Preservation Codes: A - HCL B - NaOH C - Nitric Acid D - NH4SO4 E - MeOH F - Ascorbic Acid G - DI Water H - Ice I - WCKA J - PH4S K - EDTA L - EDA Other: M - Hexane N - N/A O - ASHRO2 P - Na2CO3 Q - Na2SO3 R - H2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - WCKA W - PH4S Y - TSP Z - other (specify)	
Sample Identification Sample (W=water, S=solid, C=comp, O=waste/liquid, G=grab) Sample Date: 5-6-24/1247 G Preservation Code:		Field Filled Sample (Yes or No) Appendix I, TSS Metals List, TSS, App I VOCs, Dichlorodifluoromethane Metals List, TSS, App I VOCs Metals List, TSS, App I VOCs, Dichlorodifluoromethane Appendix I, VOCs Special Instructions/Note:	
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Deliverable Requested: I, II, III, IV Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: [Signature] Date/Time:		Received by: [Signature] Date/Time: 5-8-24 15:12 Company:	
Relinquished by: [Signature] Date/Time:		Received by: [Signature] Date/Time:	
Relinquished by: [Signature] Date/Time:		Received by: [Signature] Date/Time:	
Custody Seals Intact: A Yes I No Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:	



## Login Sample Receipt Checklist

Client: Iowa City Landfill

Job Number: 310-280737-1

SDG Number: Series A

**Login Number: 280737**

**List Number: 1**

**Creator: Costello, Mackenzie K**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





# Quantitation Limit Exceptions Summary

Client: Iowa City Landfill  
Project/Site: Iowa City Landfill Spring 2024

Job ID: 310-280737-1  
SDG: Series A

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Groundwater	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Groundwater	Total/NA	ug/L	0.340	1

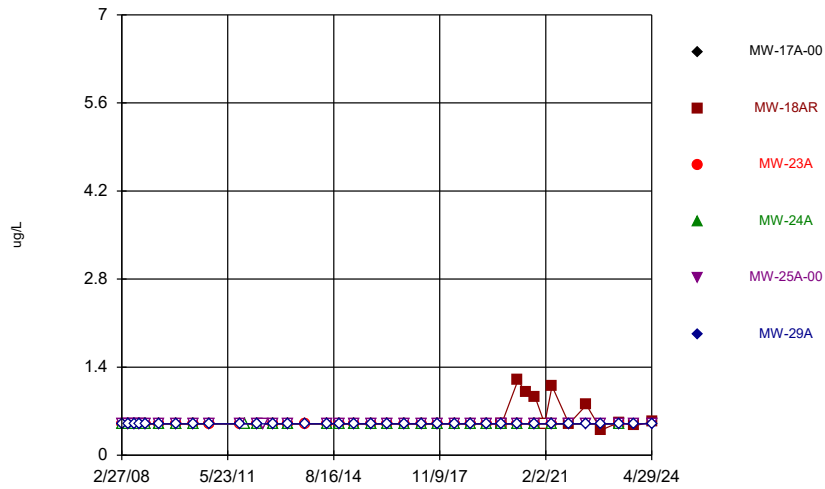
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

**Attachment D**  
**Statistical Graphical Output**  
**1<sup>st</sup> 2024 Statistical Evaluation**

## **Time Series Plots**

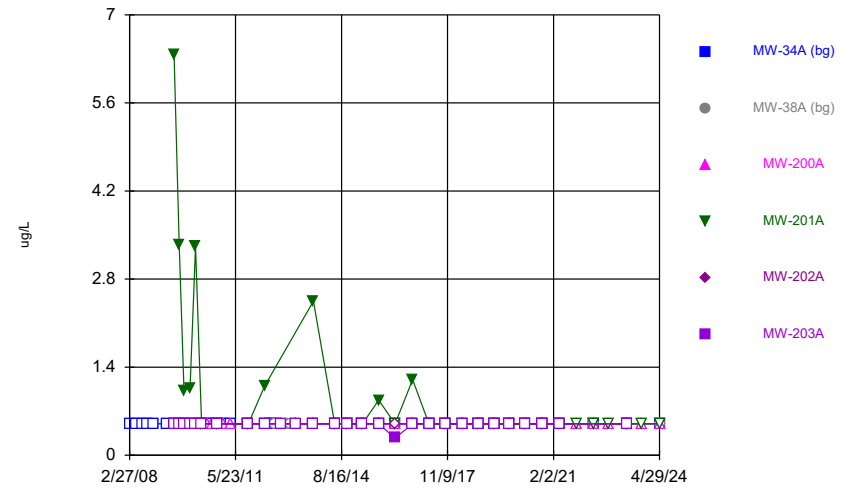
### **Series A**

### Time Series



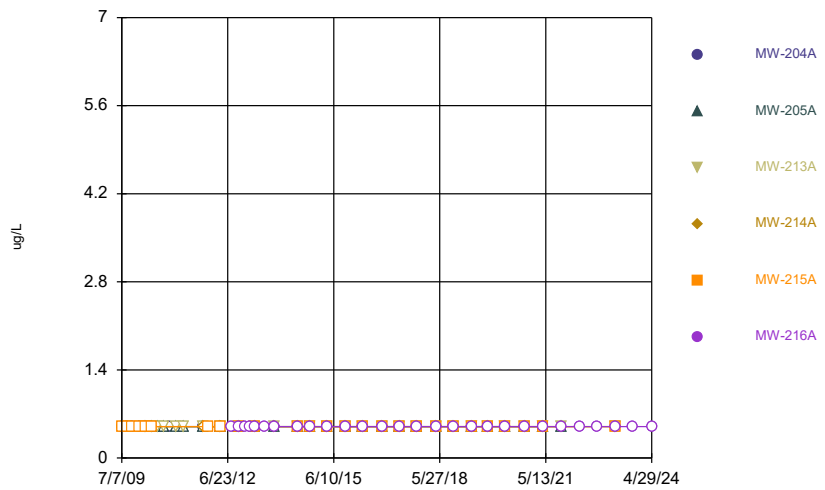
Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



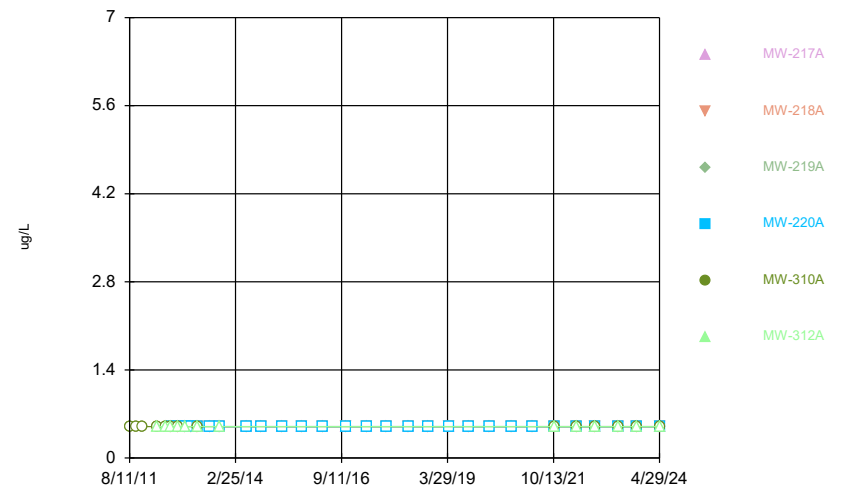
Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



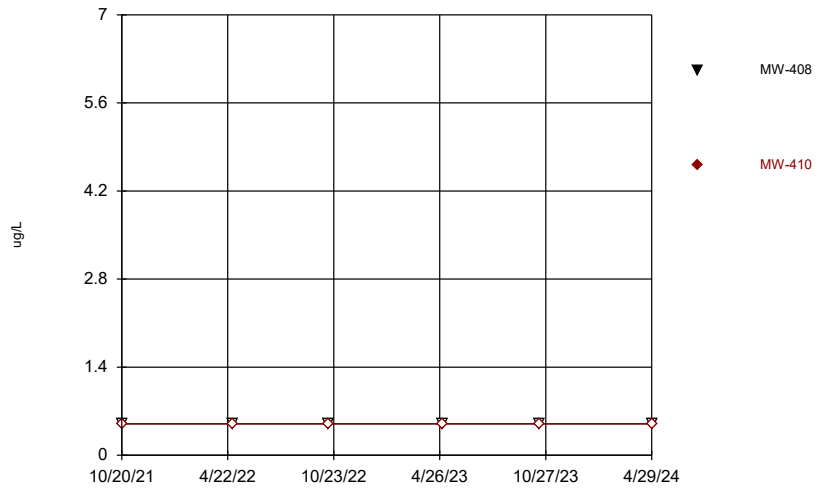
Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



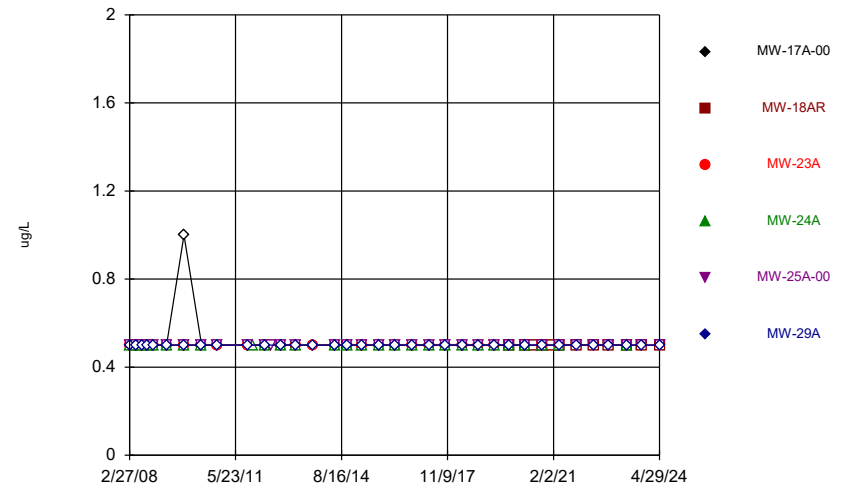
Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



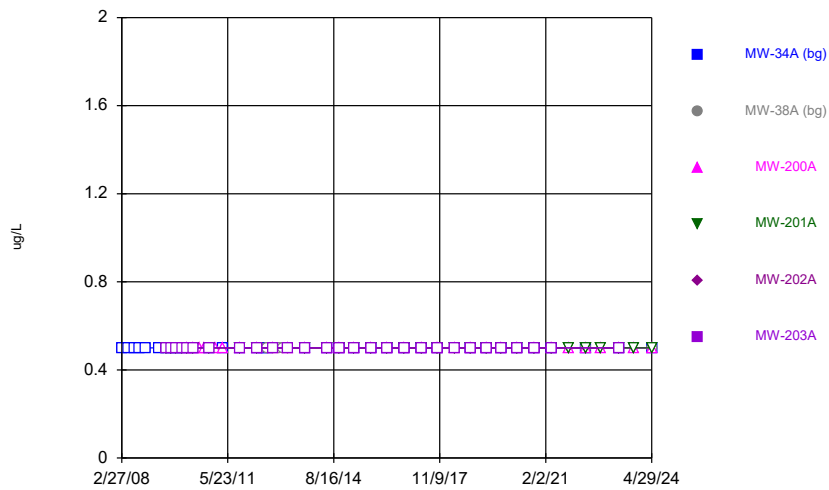
Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



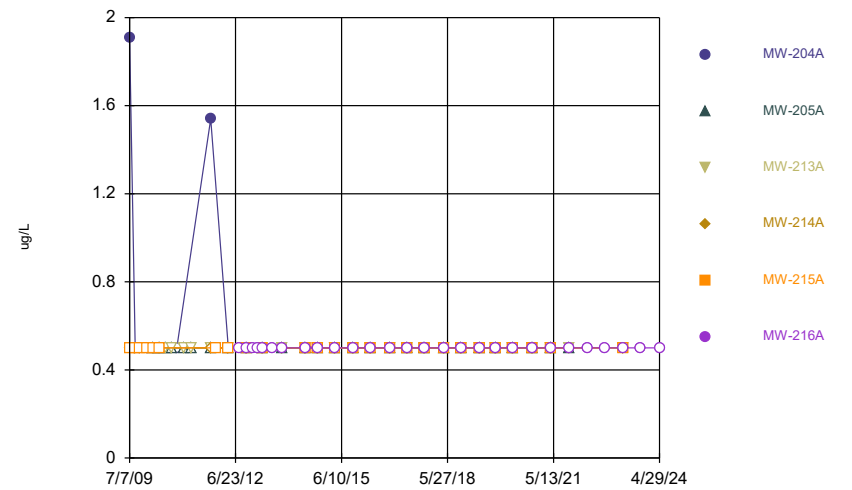
Constituent: 1,2-Dichloropropane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



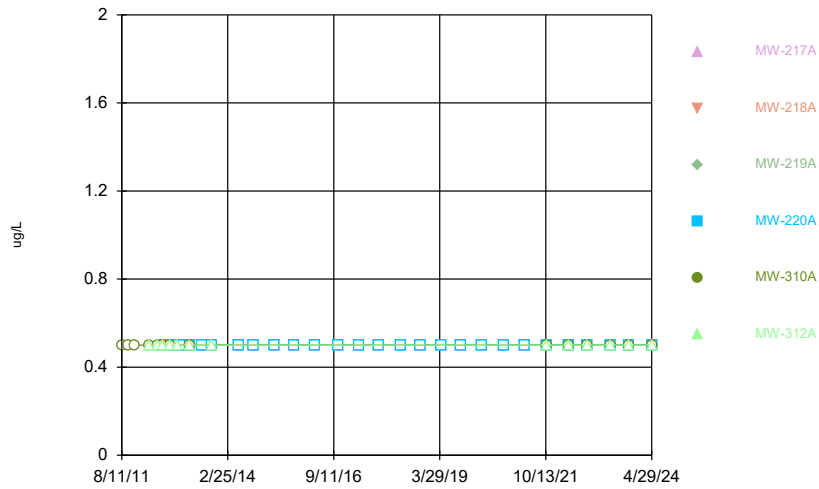
Constituent: 1,2-Dichloropropane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



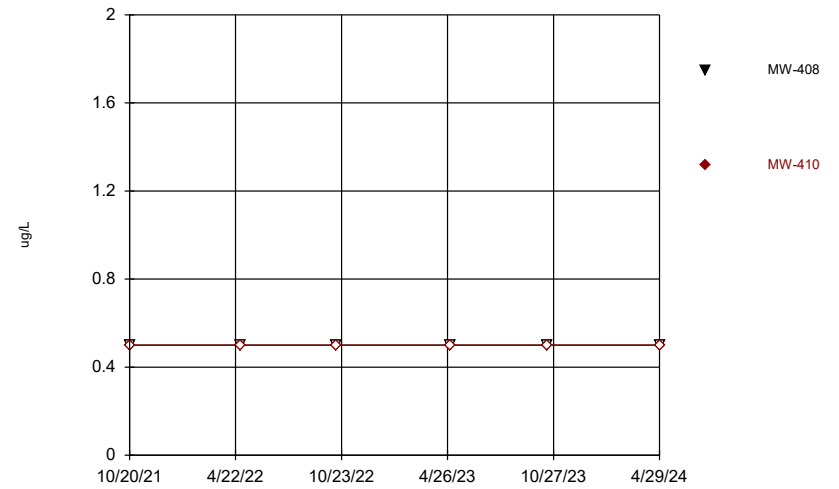
Constituent: 1,2-Dichloropropane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



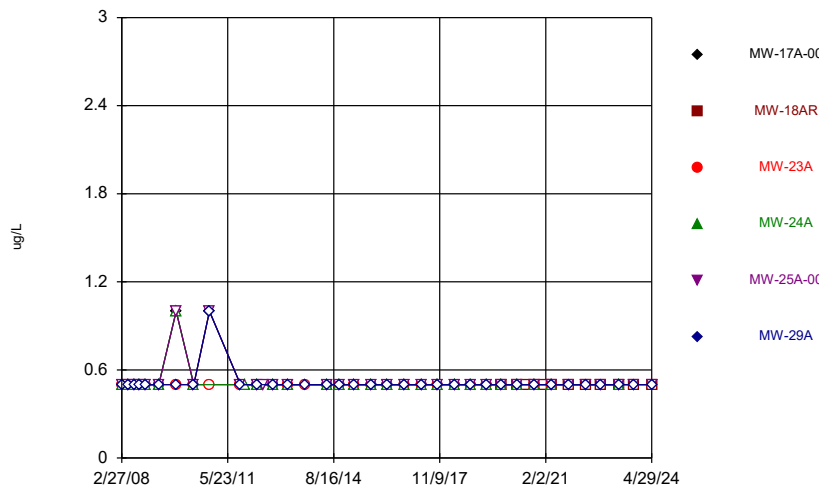
Constituent: 1,2-Dichloropropane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



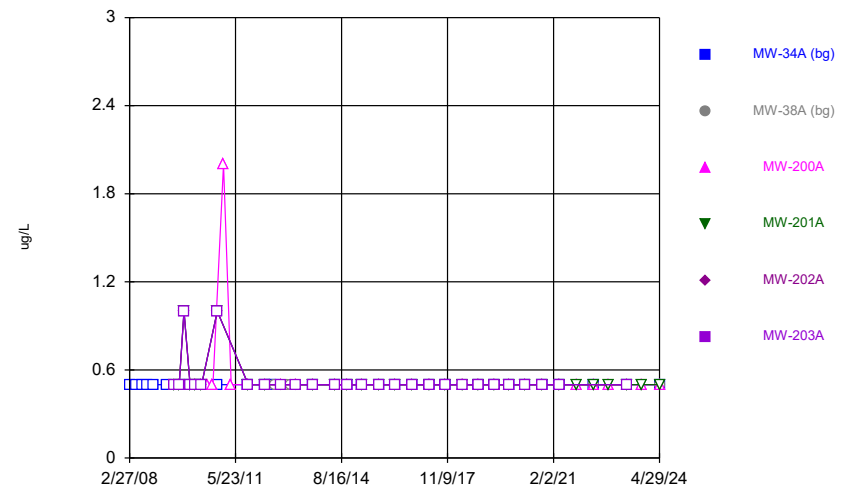
Constituent: 1,2-Dichloropropane Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



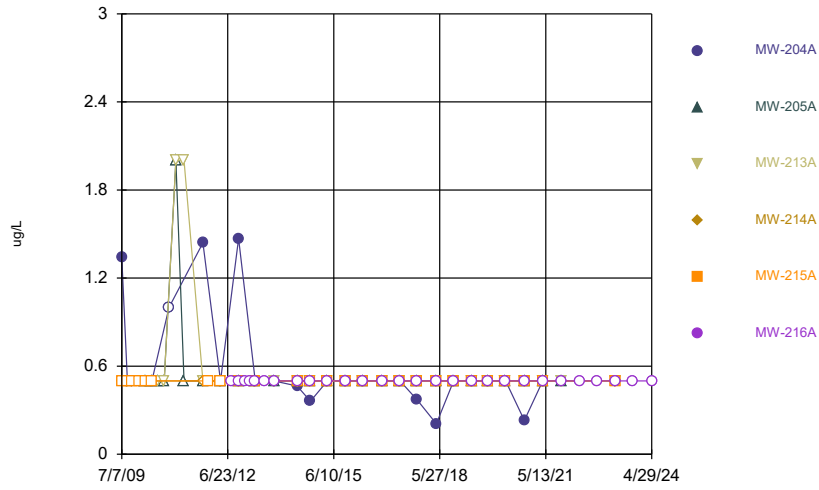
Constituent: 1,4-Dichlorobenzene Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



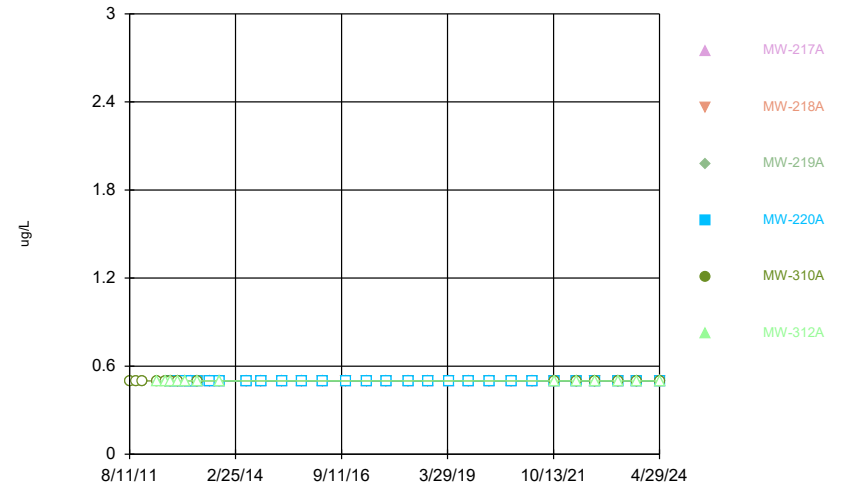
Constituent: 1,4-Dichlorobenzene Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



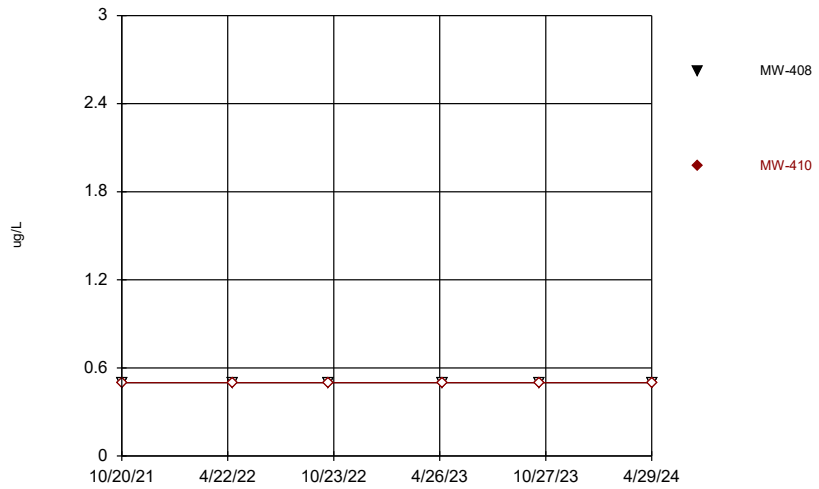
Constituent: 1,4-Dichlorobenzene Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Serie  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



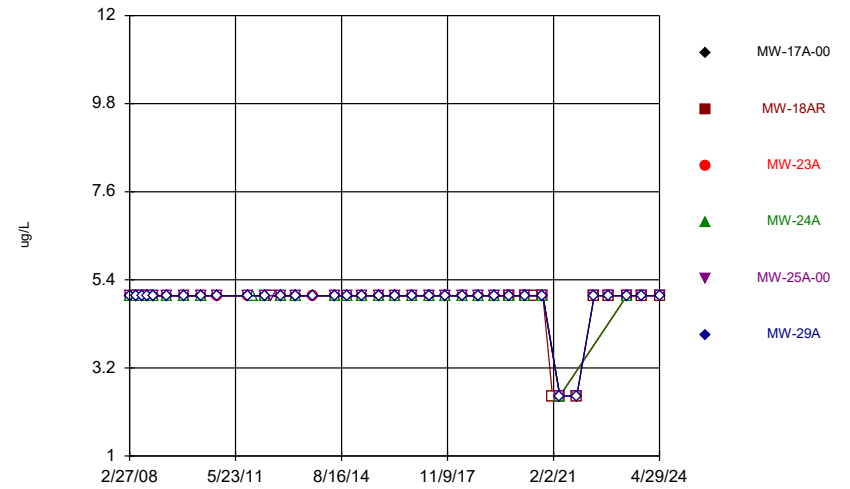
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



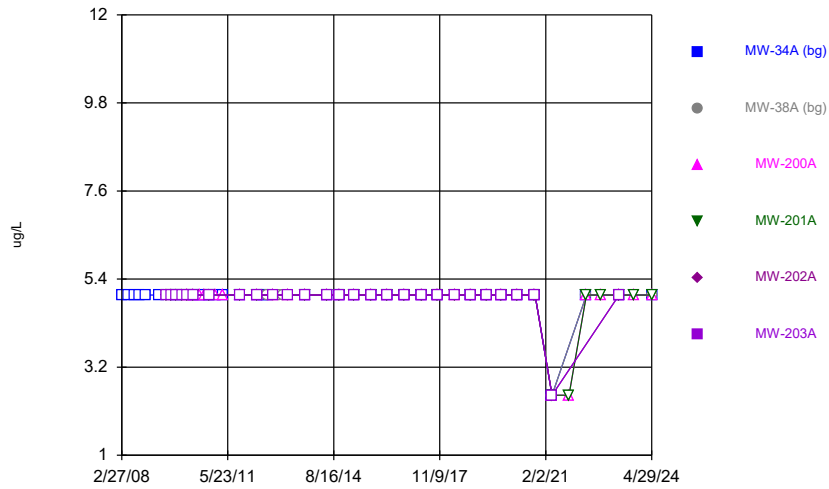
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



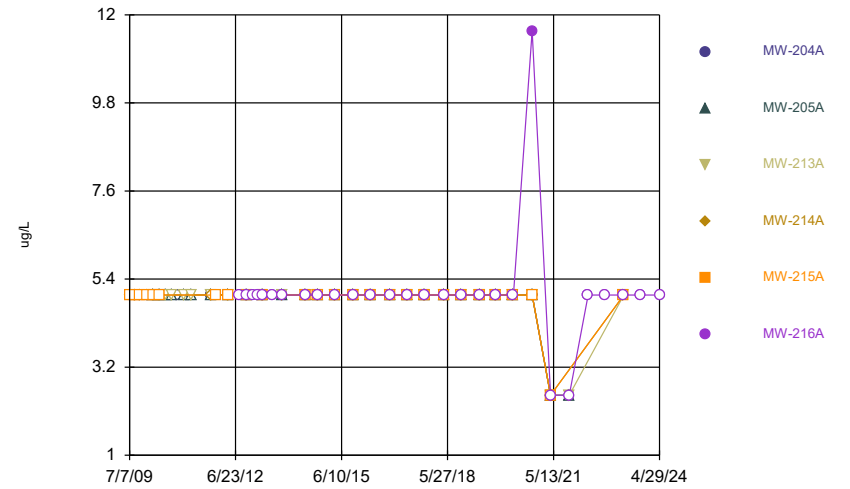
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



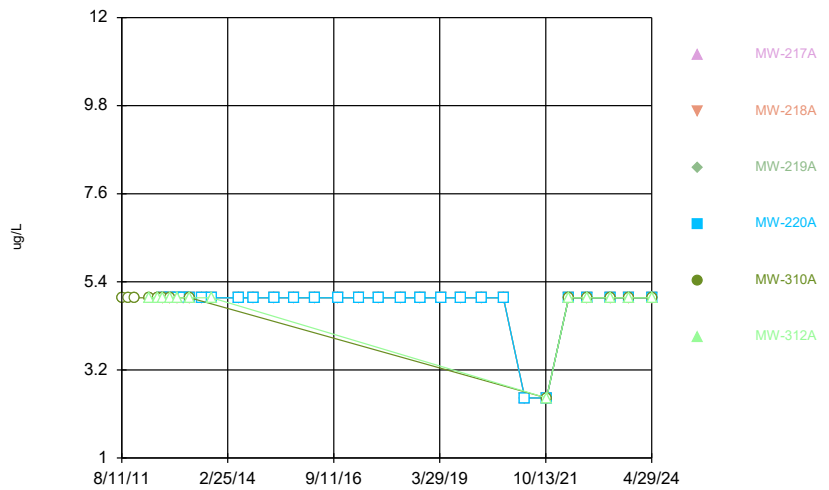
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



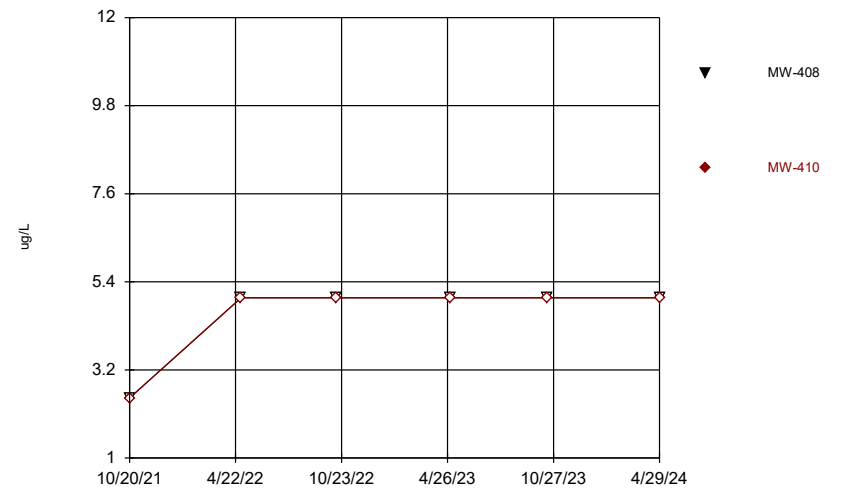
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



Constituent: 2-Butanone Analysis Run 5/31/2024 11:12 AM View: 2024SSN Time Series A\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

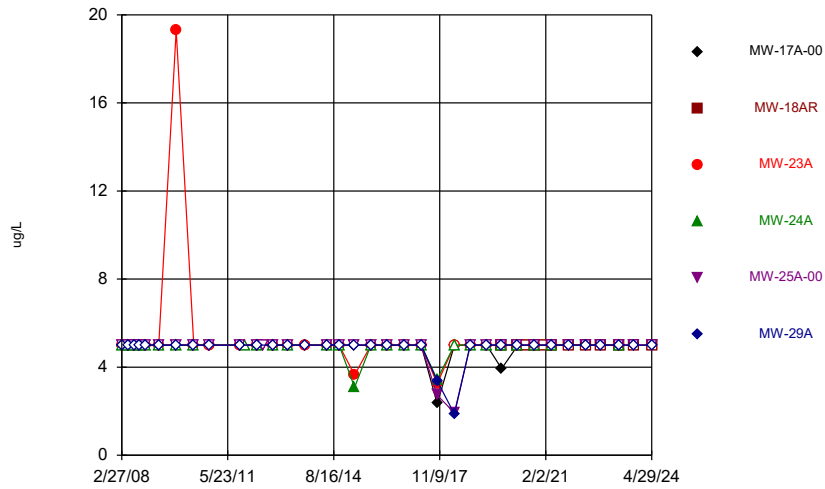
### Time Series



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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

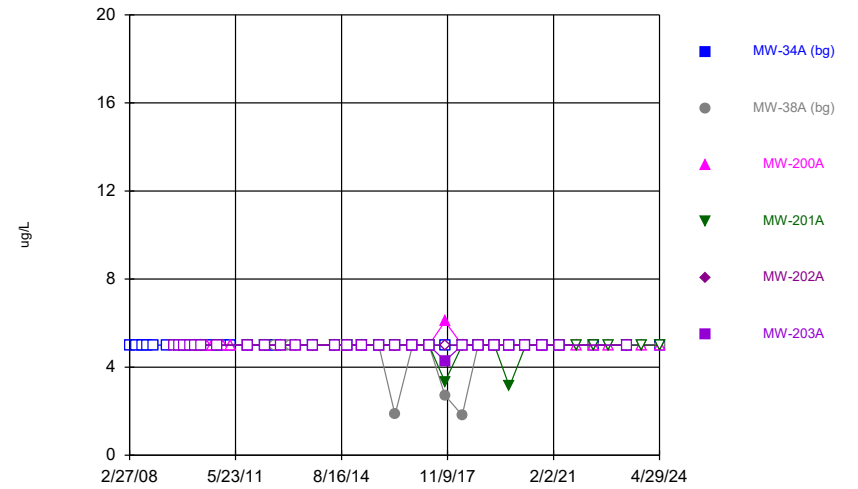


### Time Series



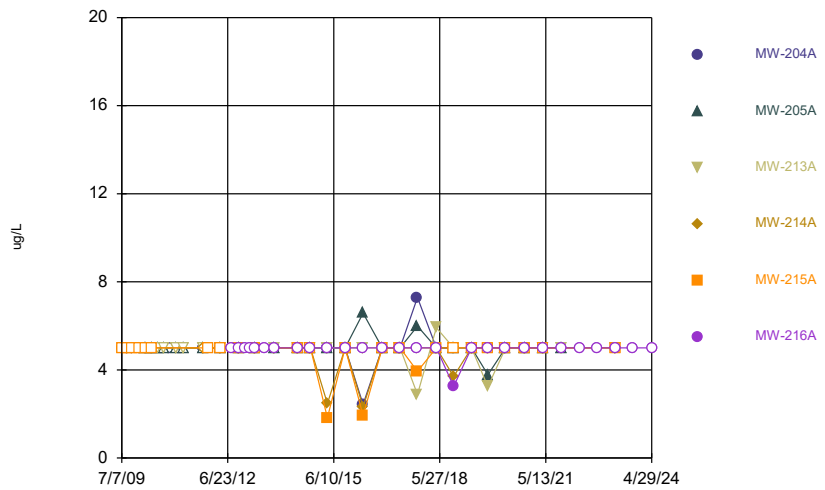
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



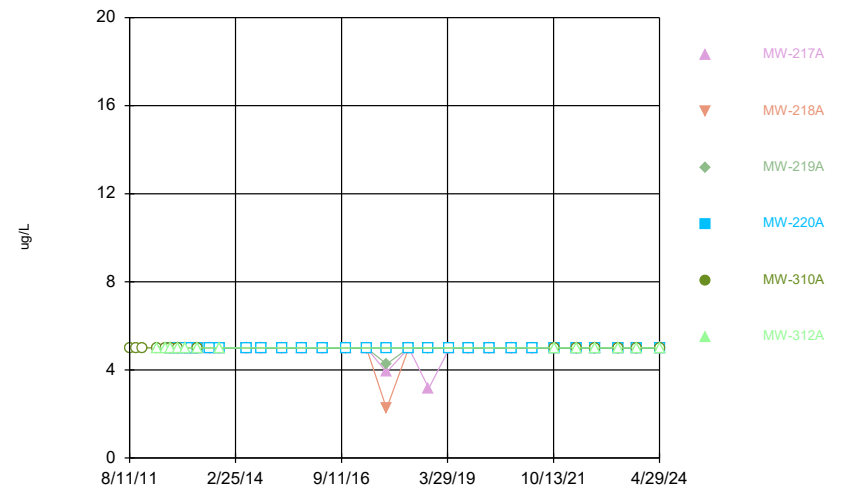
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



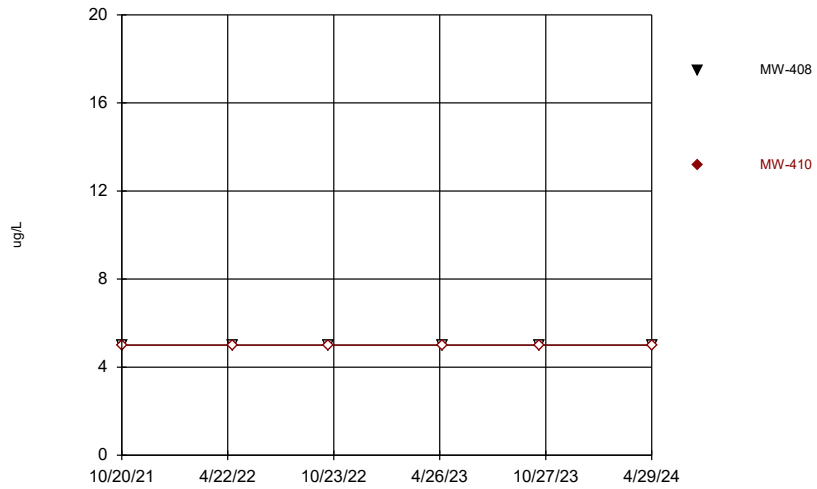
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



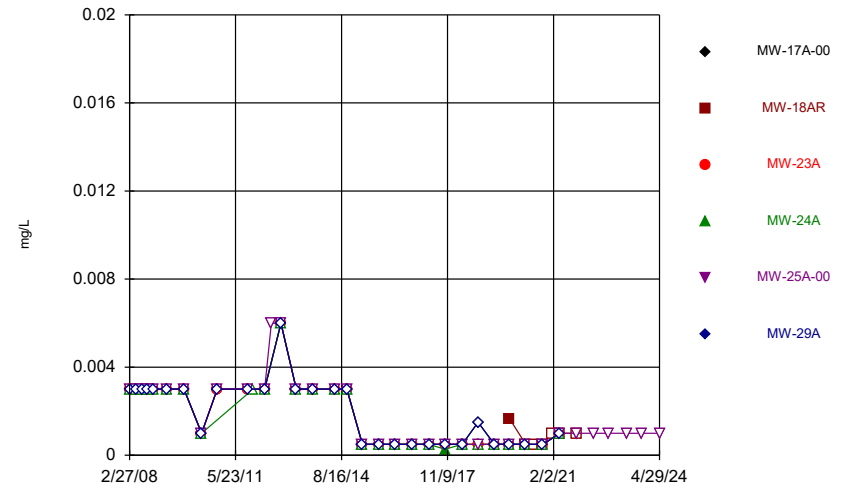
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



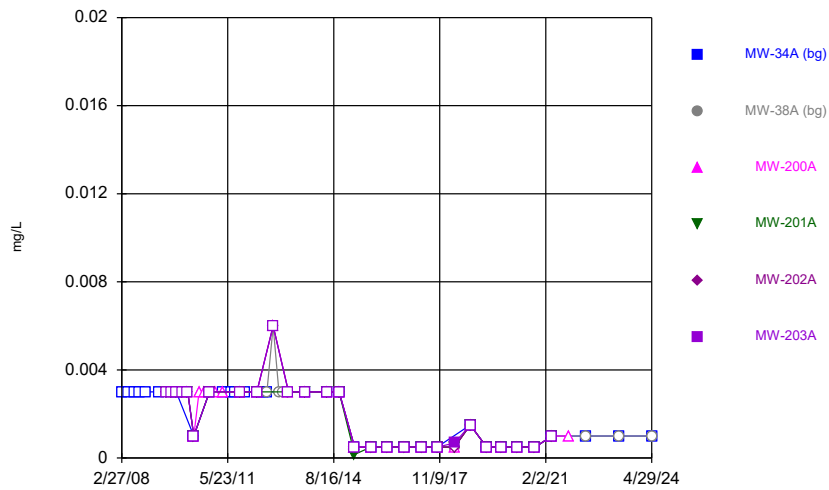
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

Time Series



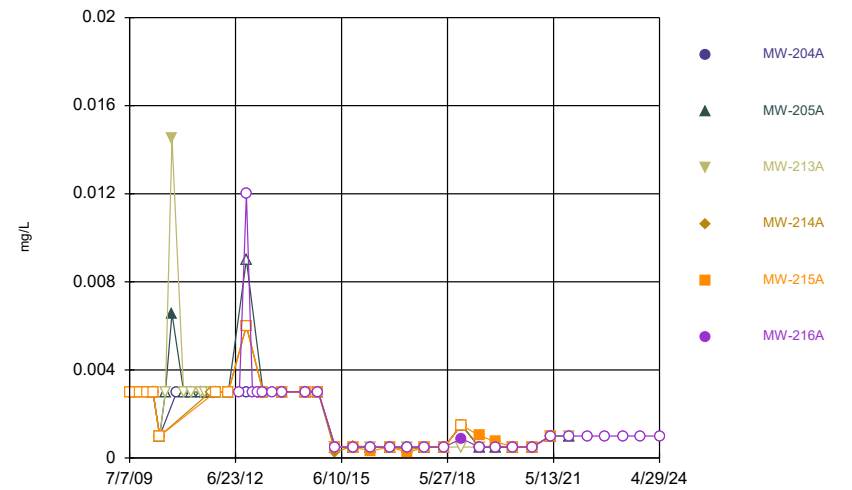
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

Time Series



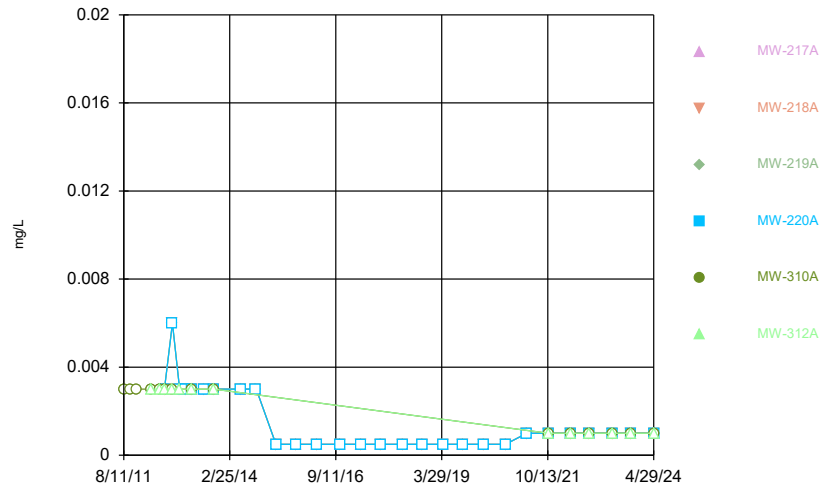
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Time Series



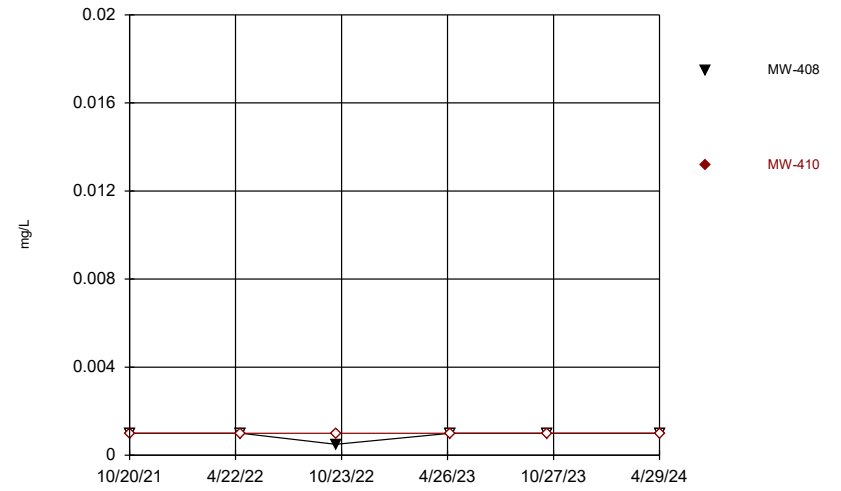
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



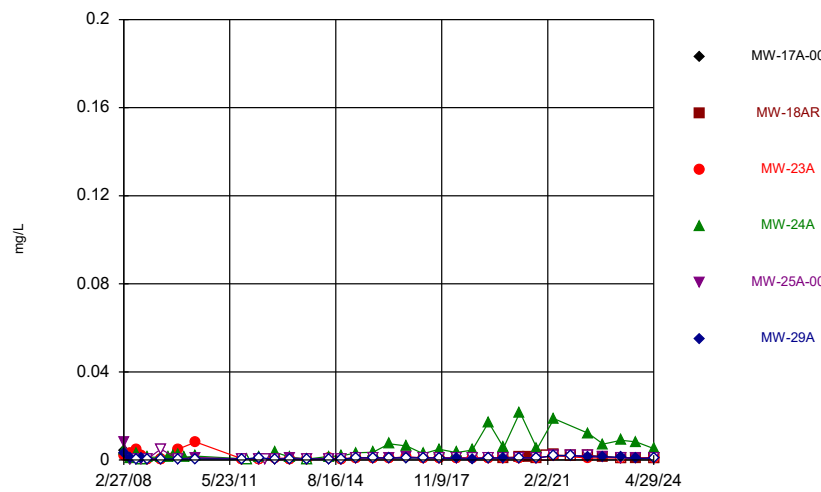
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



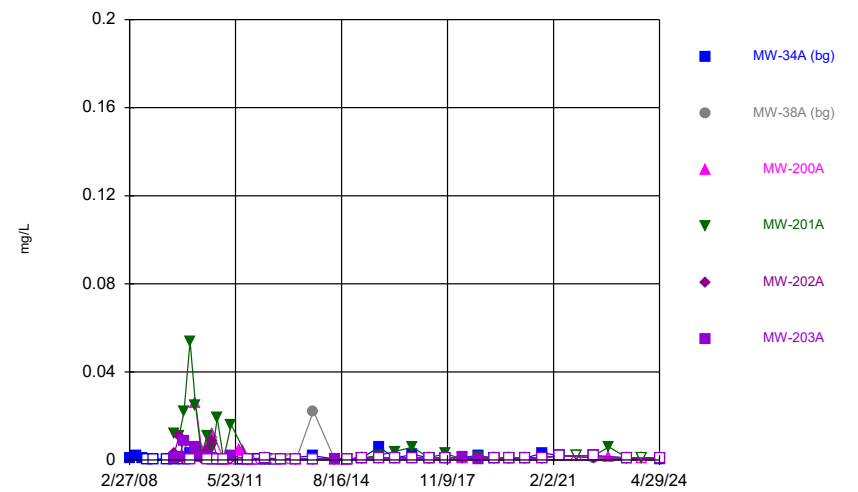
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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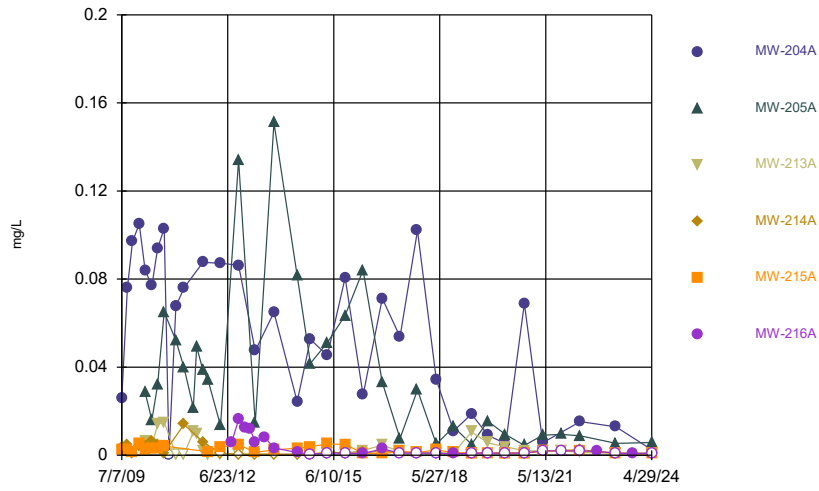
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



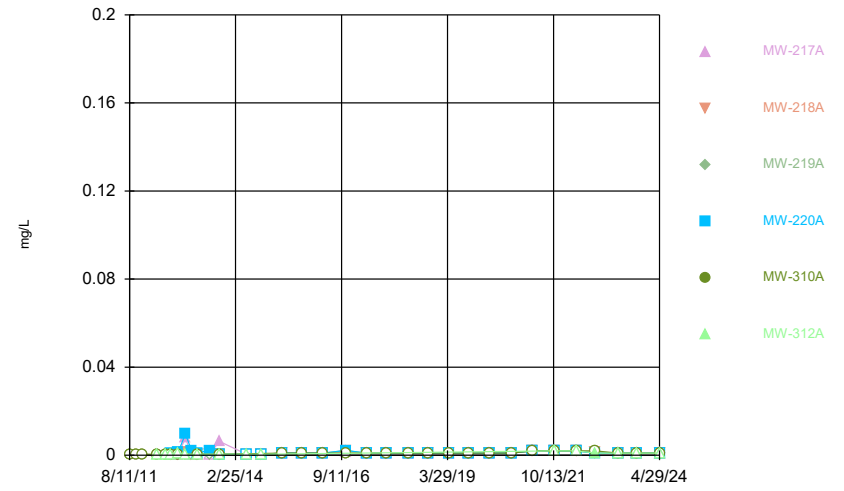
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



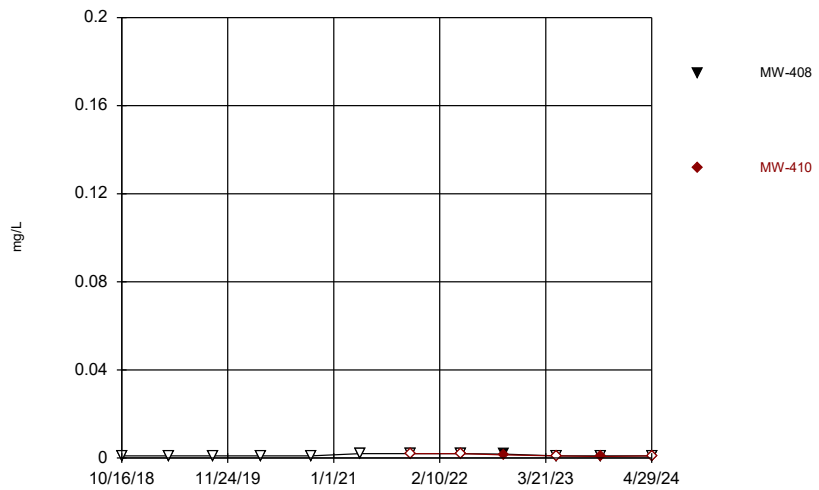
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



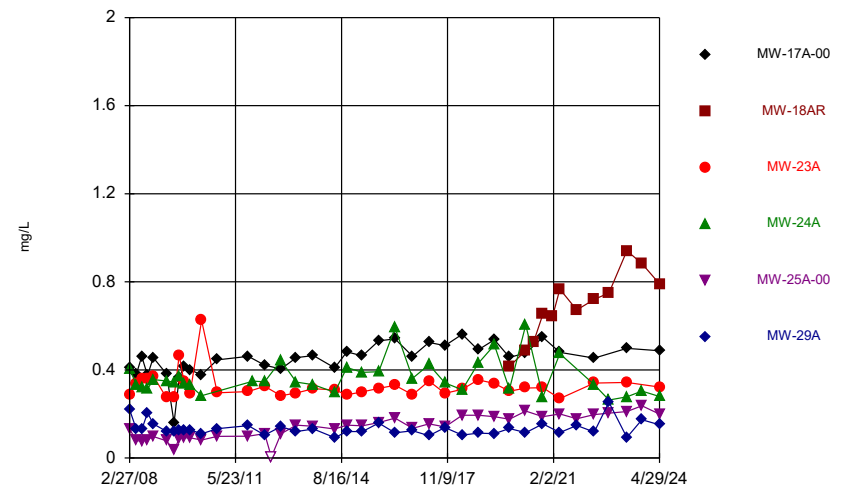
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



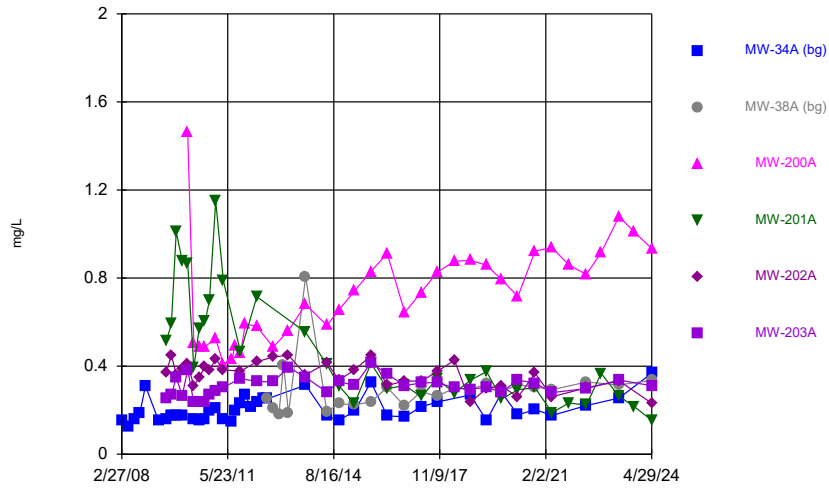
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



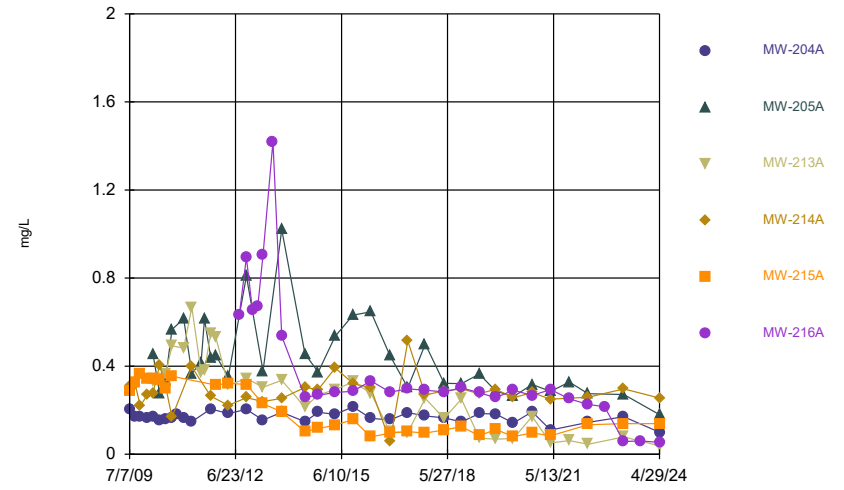
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



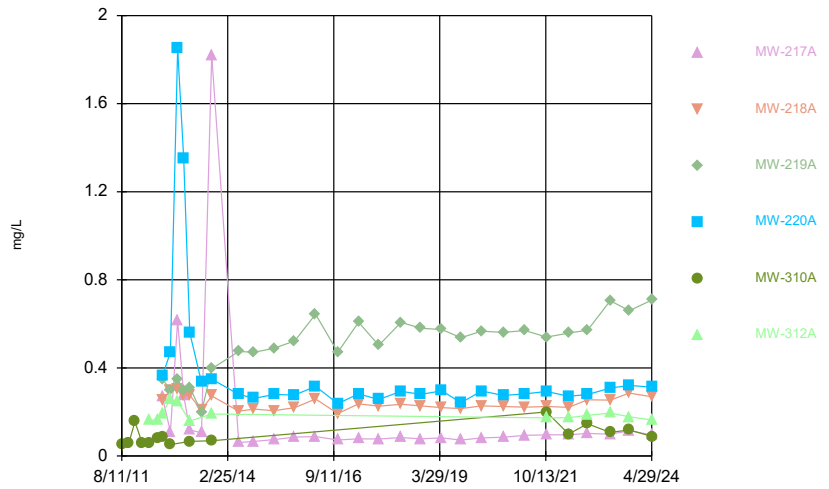
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 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



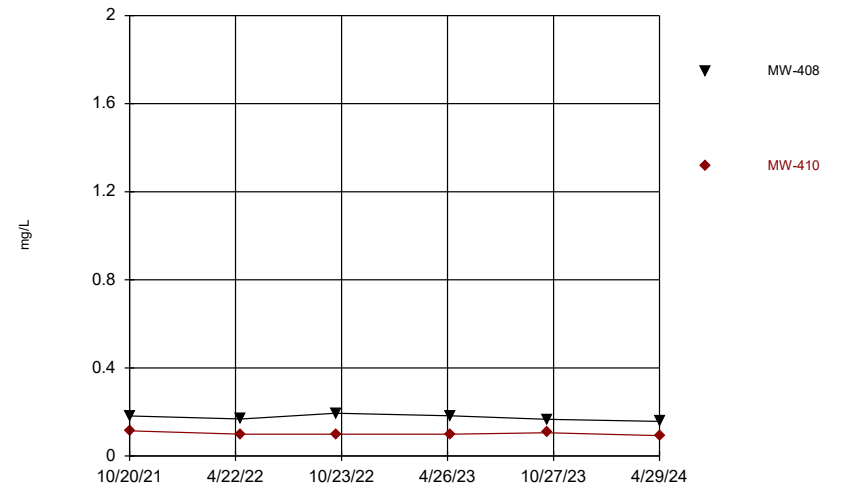
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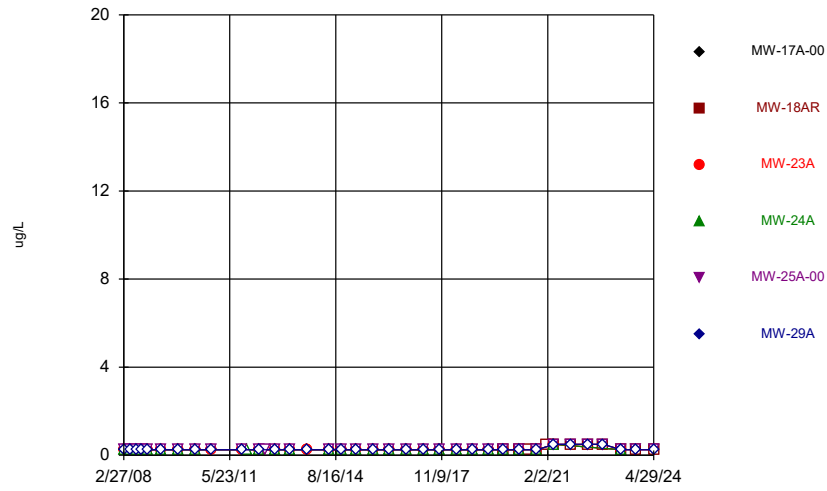
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### Time Series



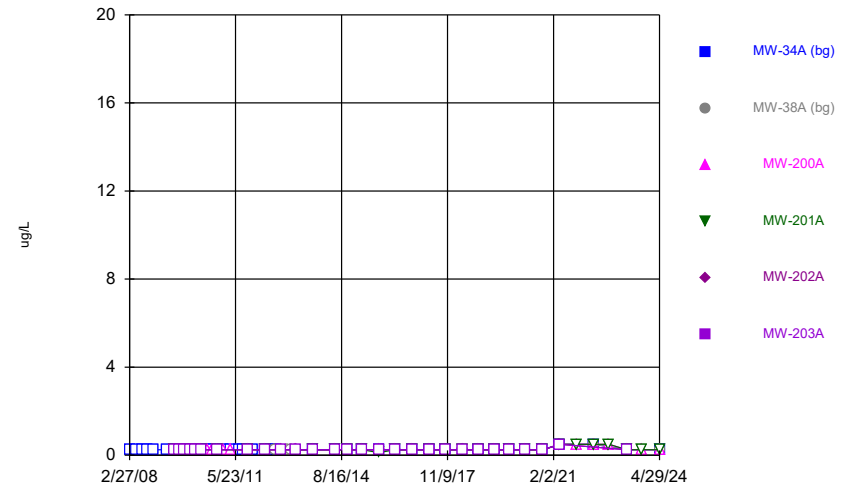
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### Time Series



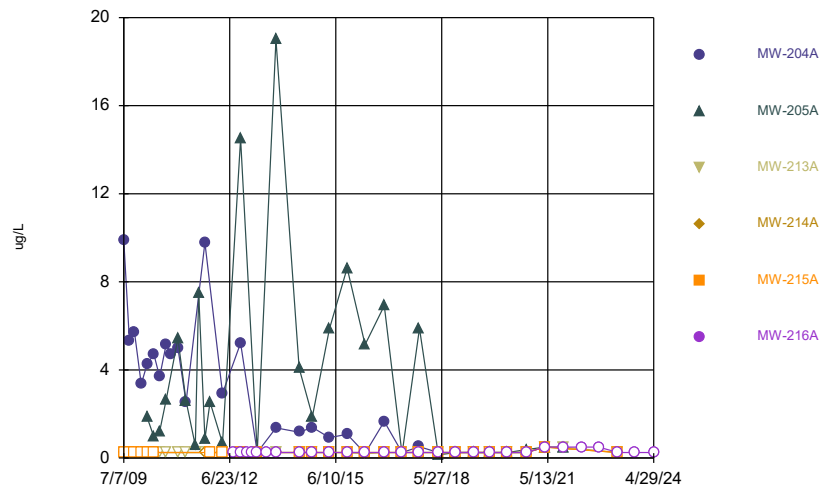
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



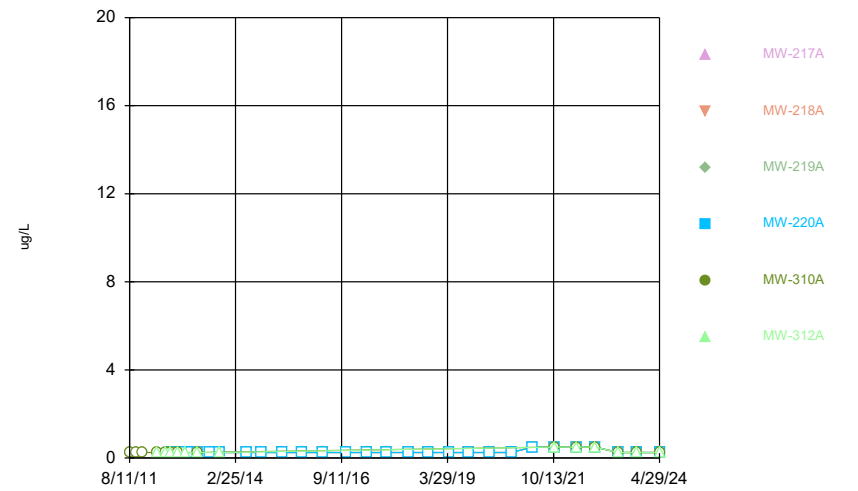
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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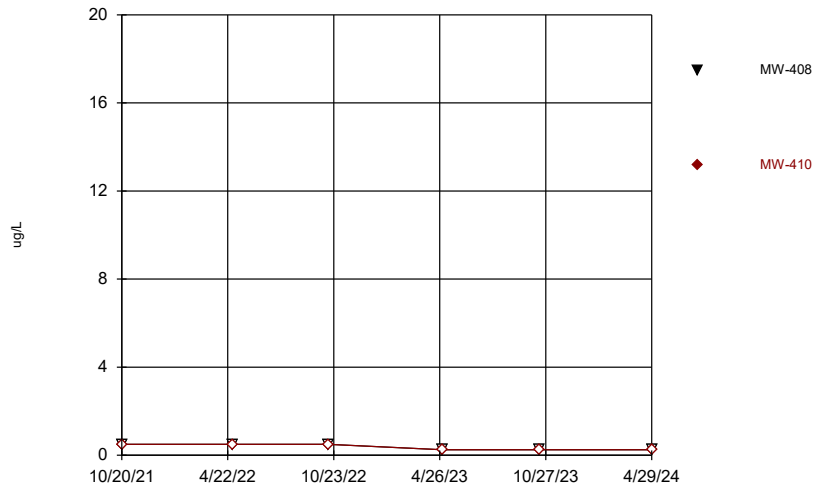
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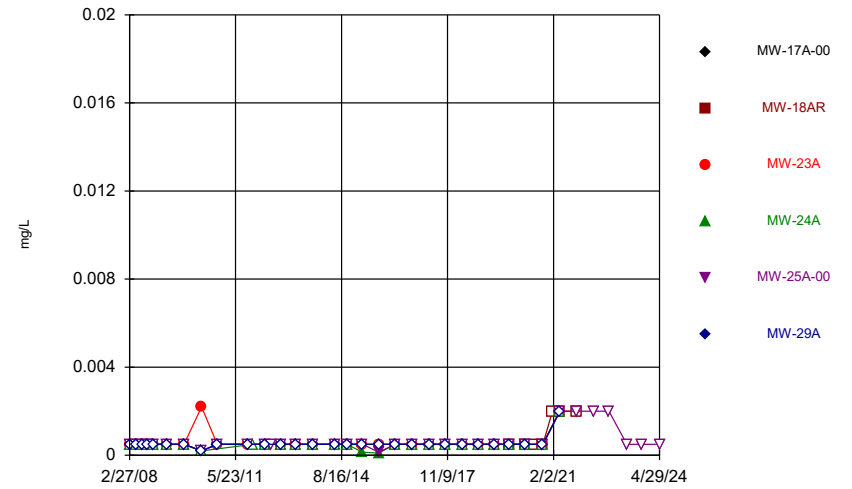
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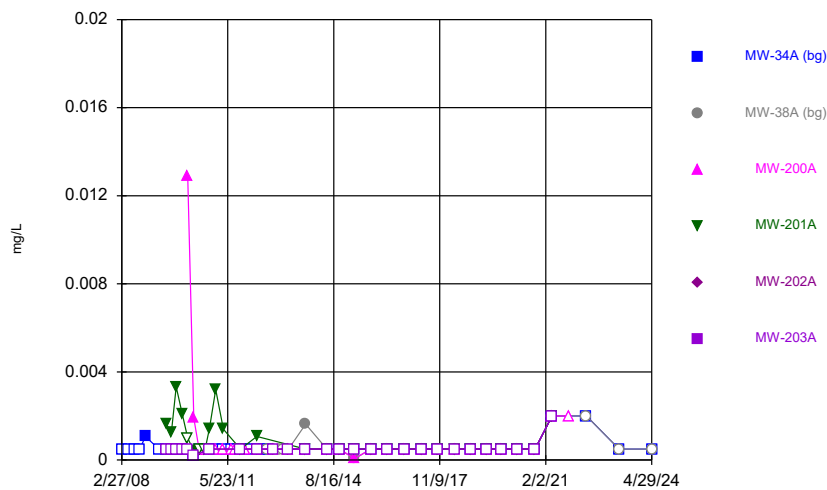
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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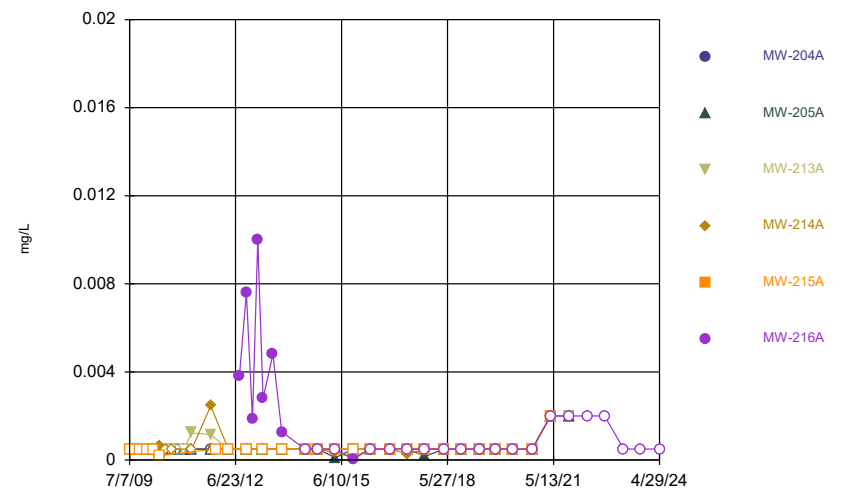
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



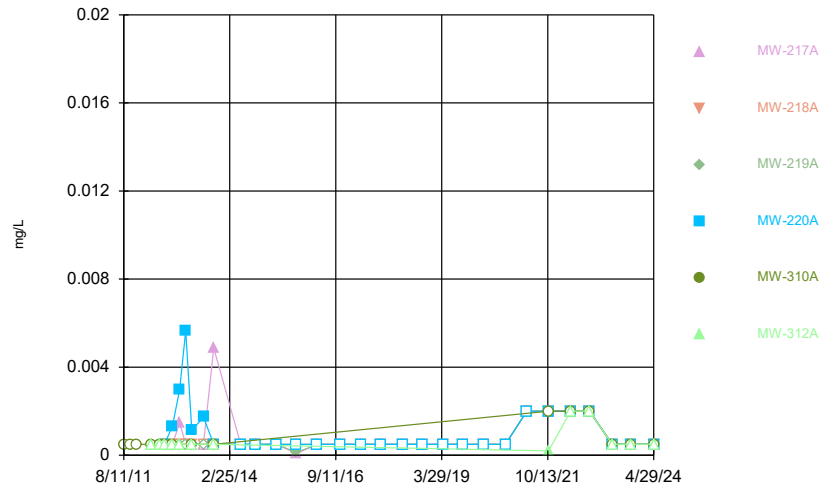
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



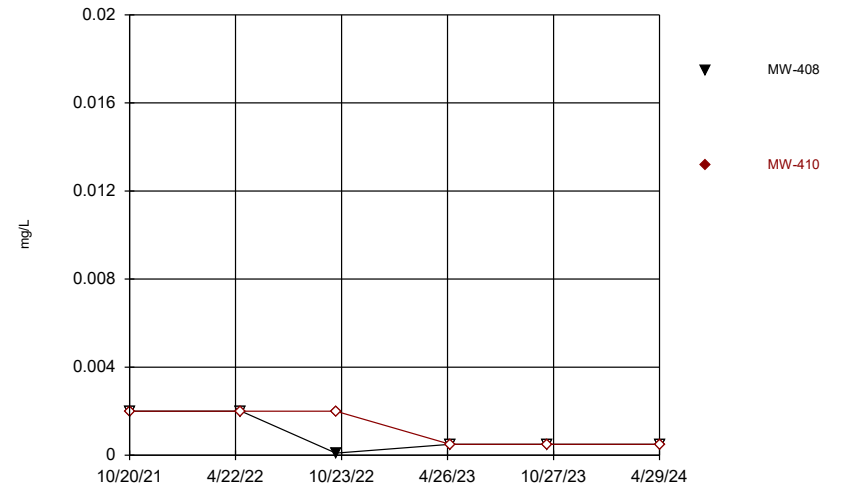
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



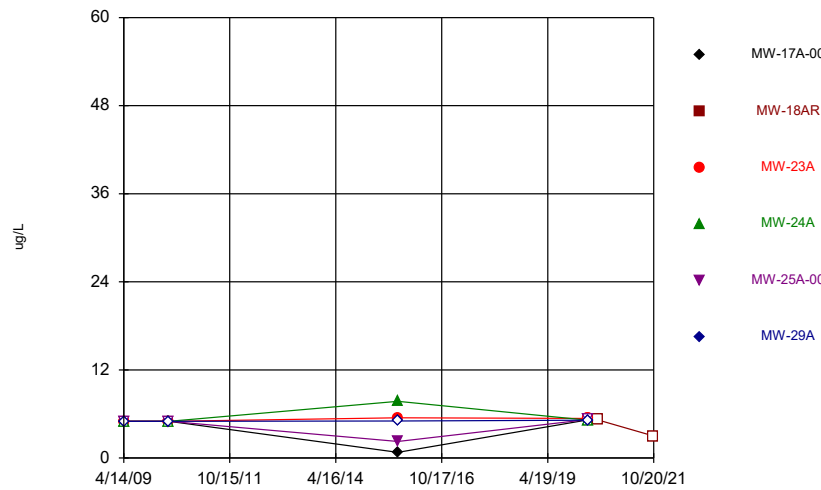
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



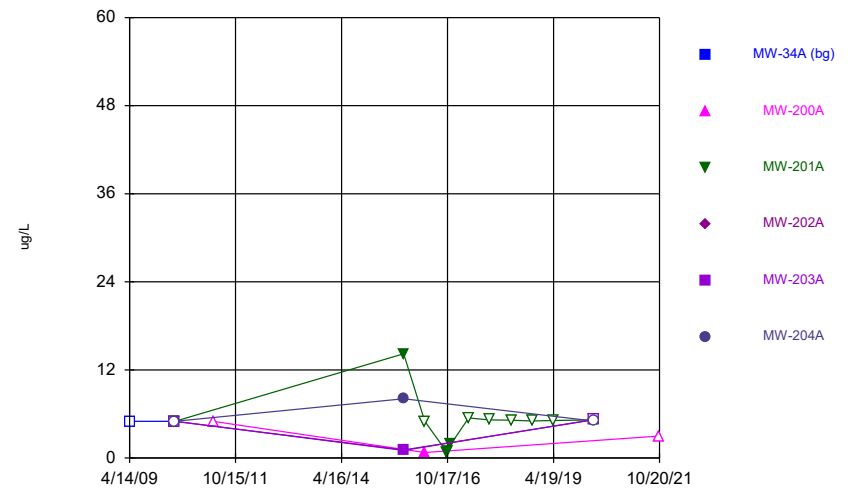
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



Constituent: Bis[2-ethylhexyl]phthalate Analysis Run 5/31/2024 11:13 AM View: 2024SSN Time Series A\_  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

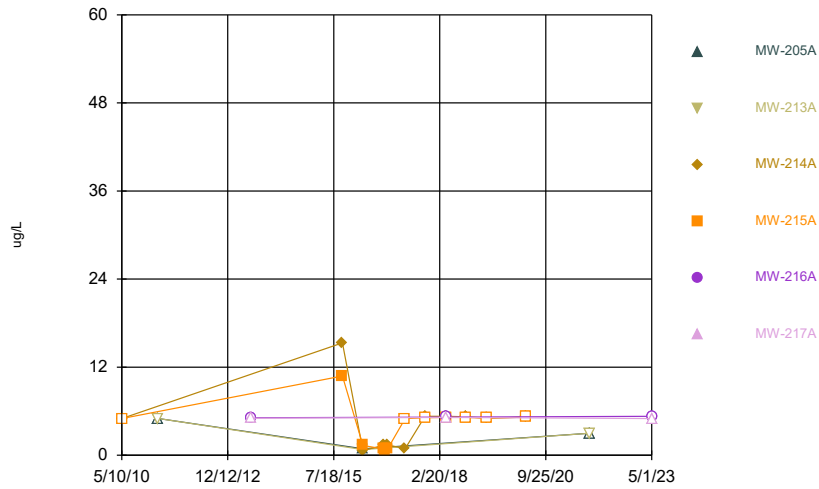
Time Series



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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

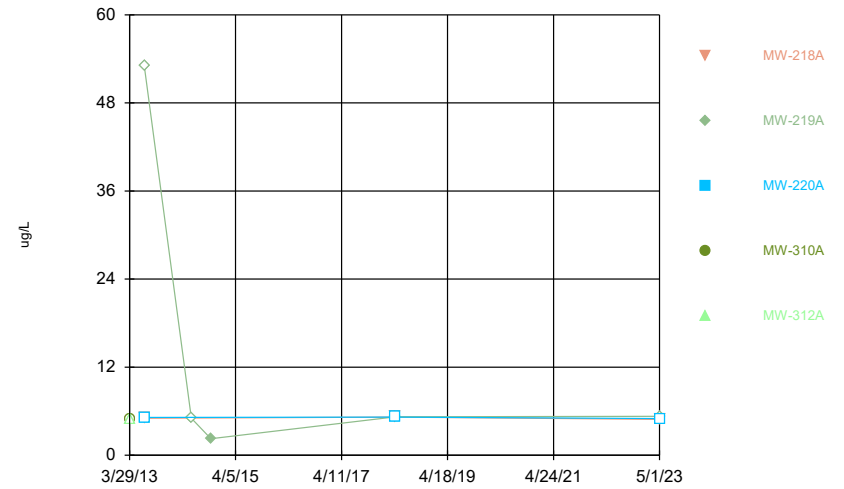


Time Series



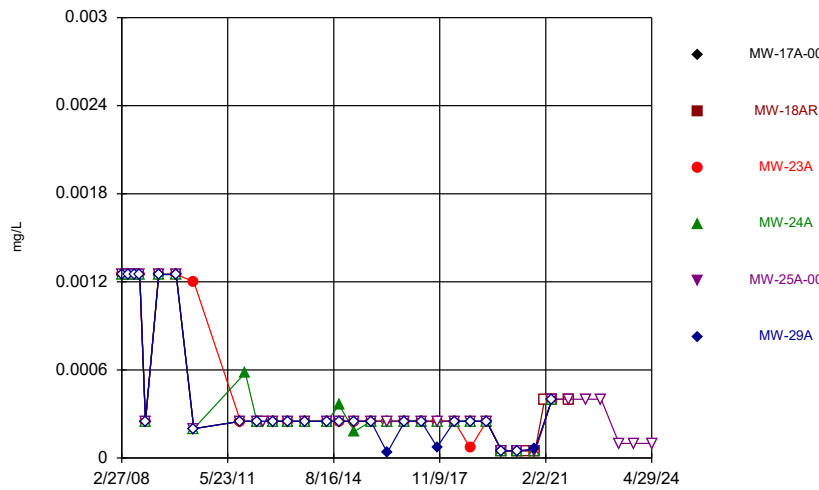
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

Time Series



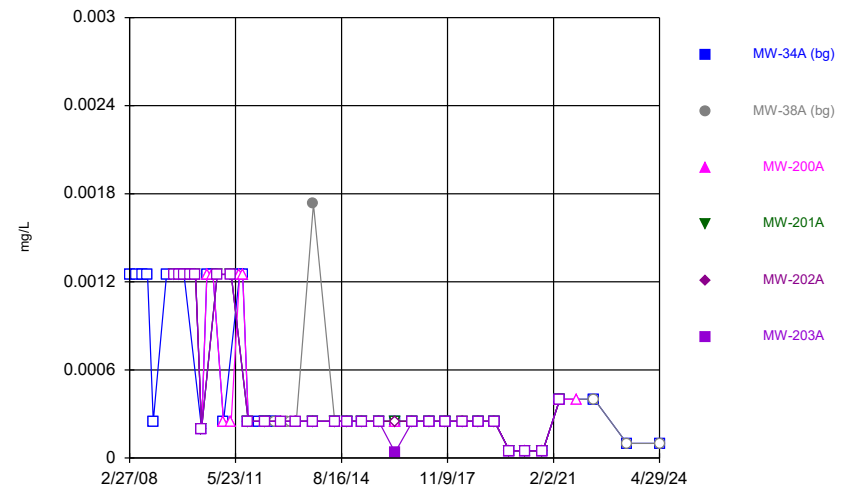
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Time Series



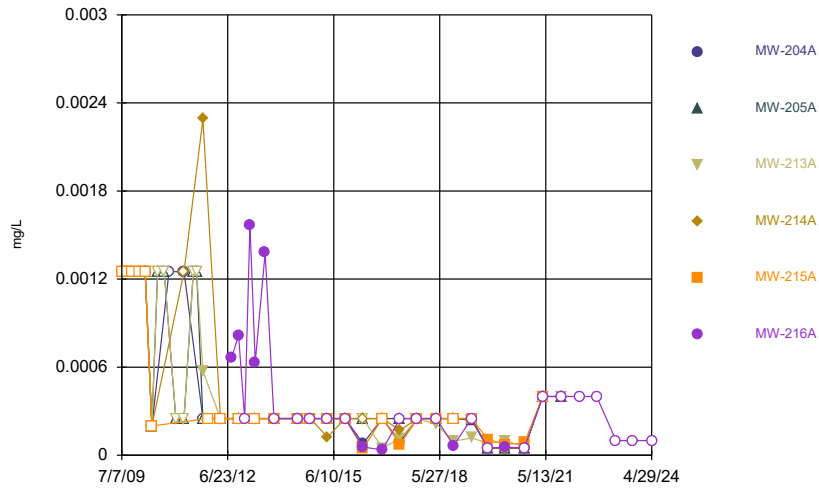
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

Time Series



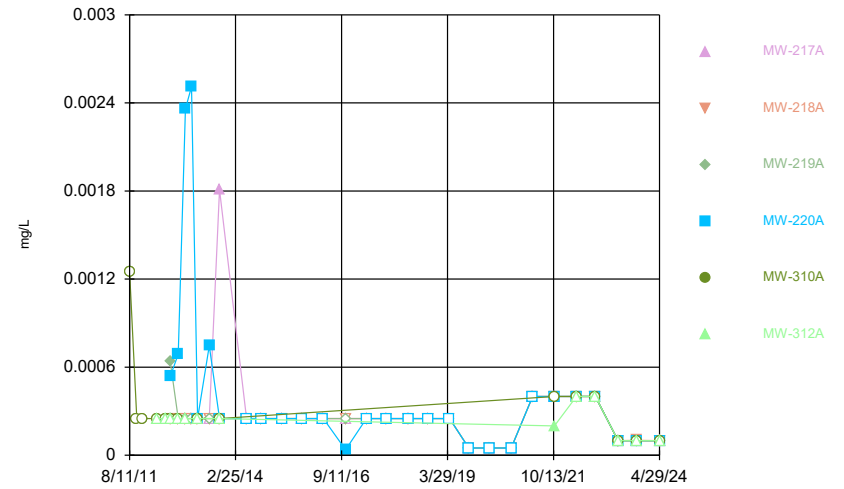
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Time Series



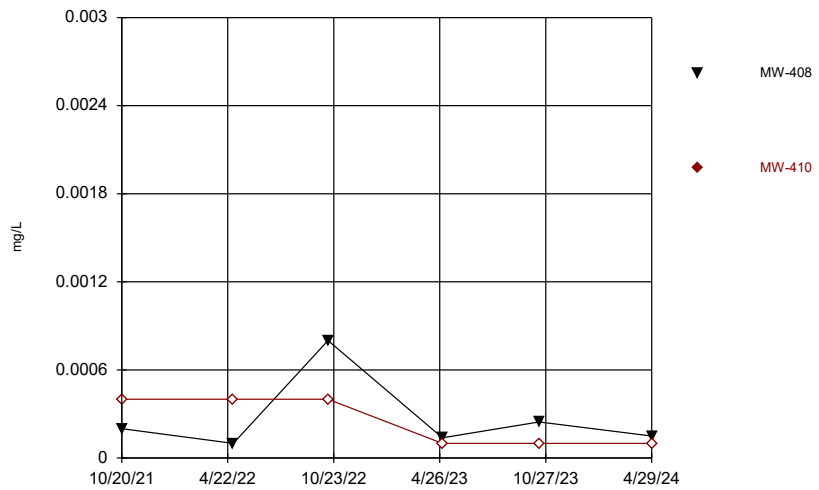
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Time Series



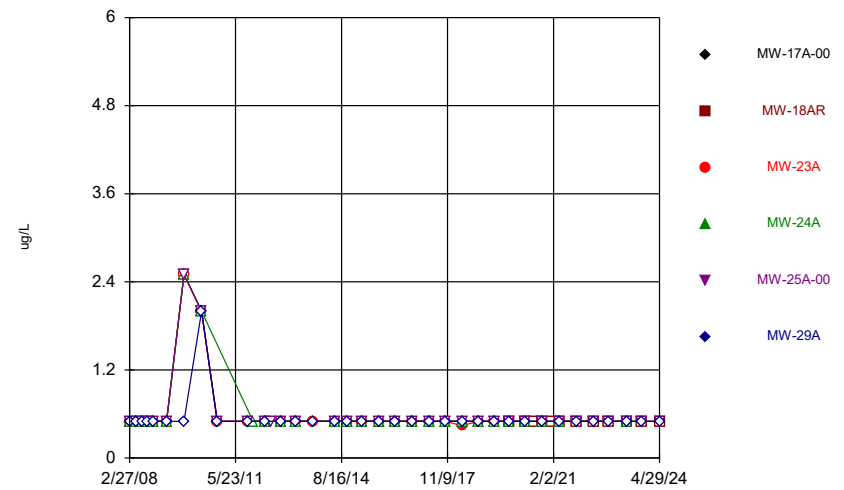
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



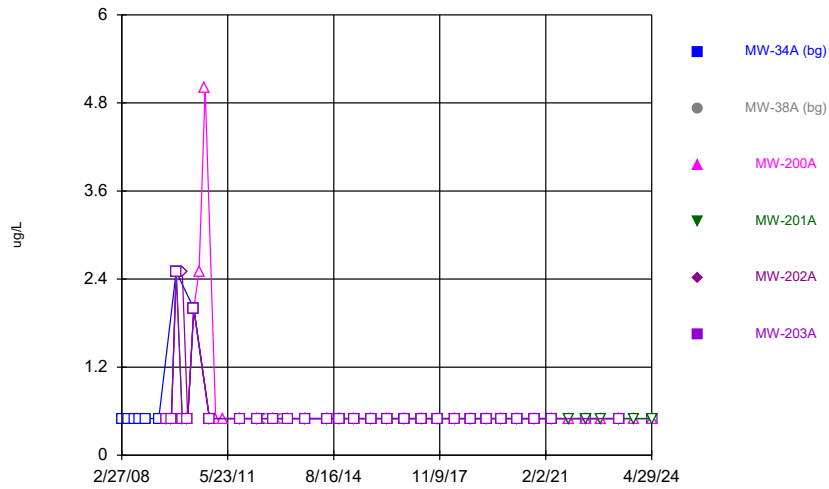
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



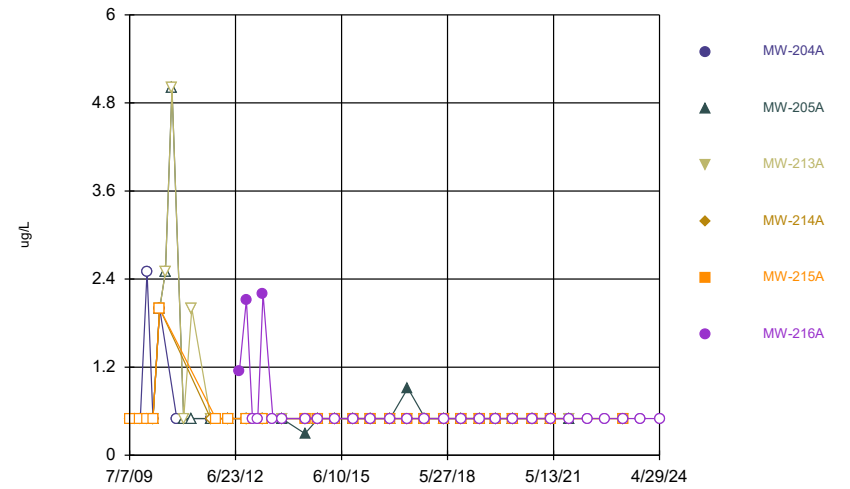
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



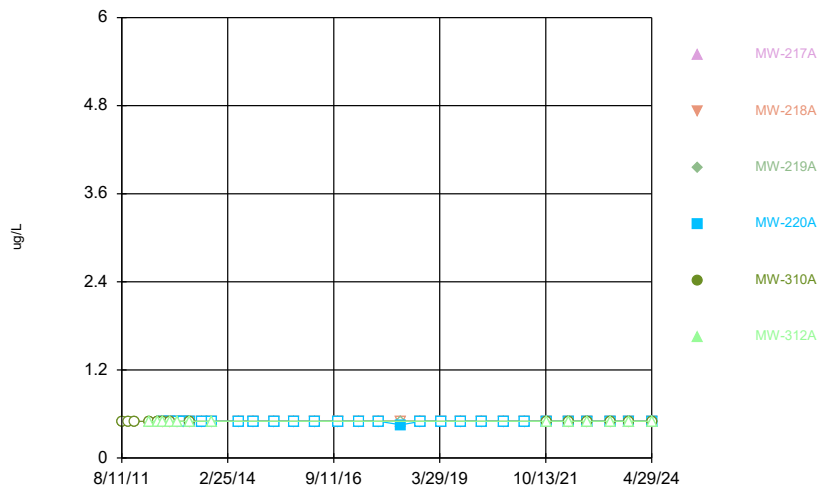
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



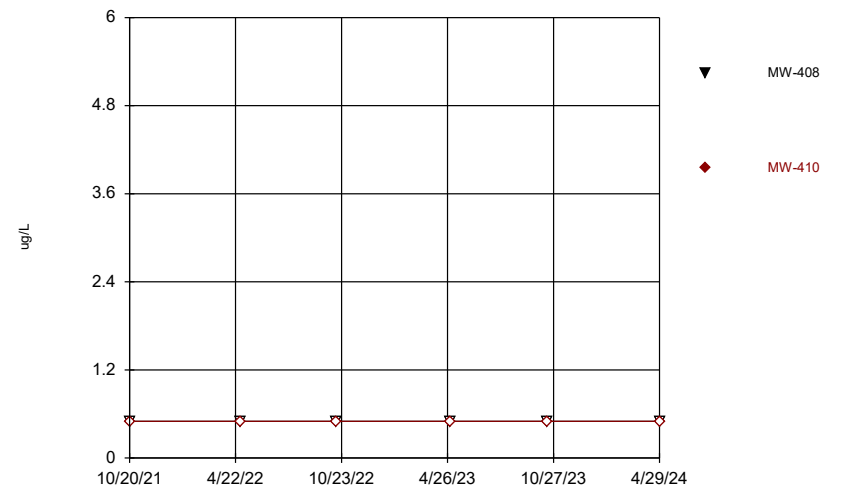
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



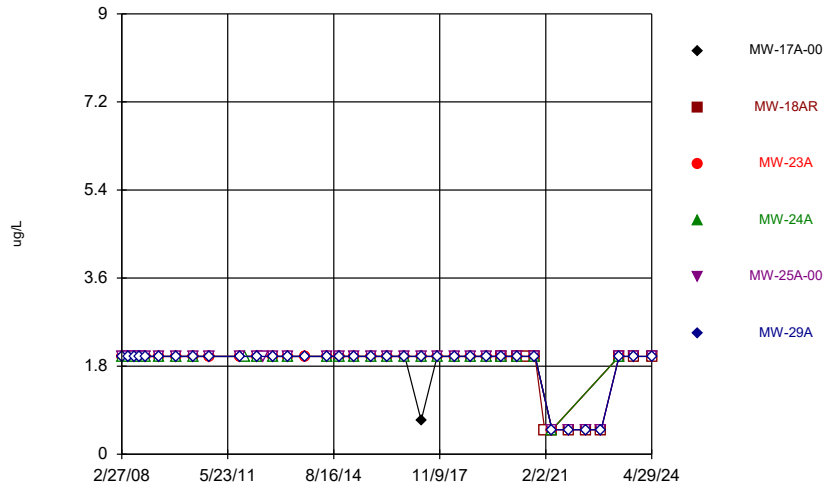
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



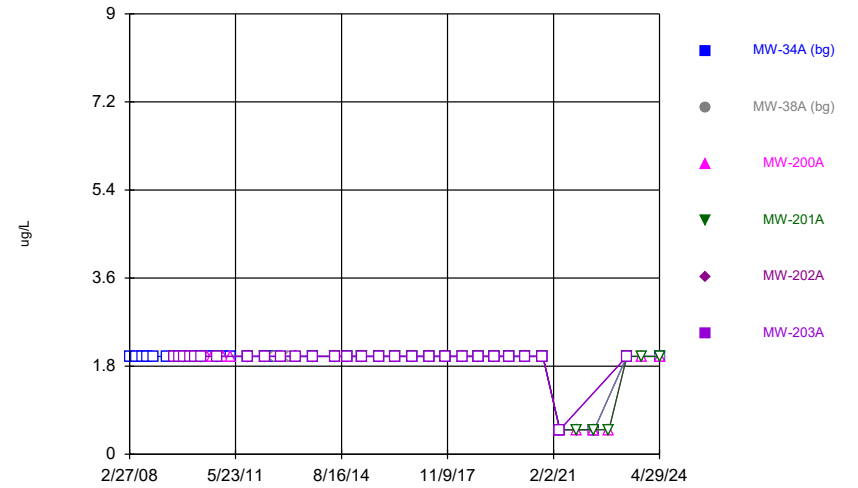
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

Time Series



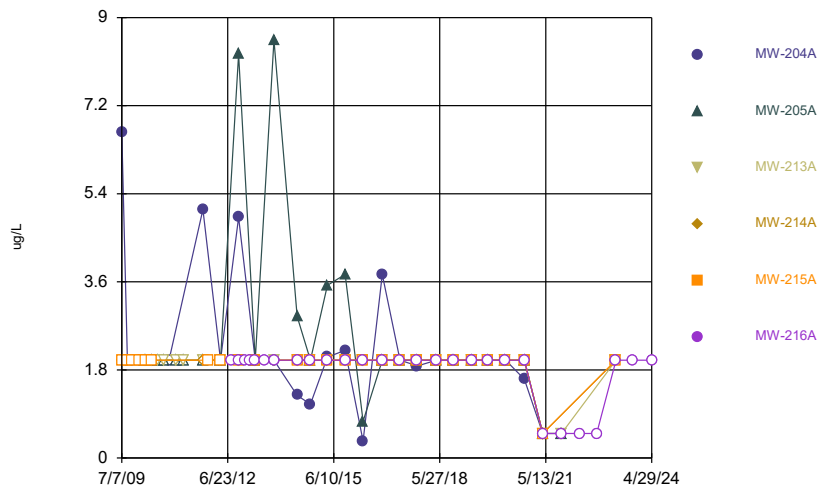
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

Time Series



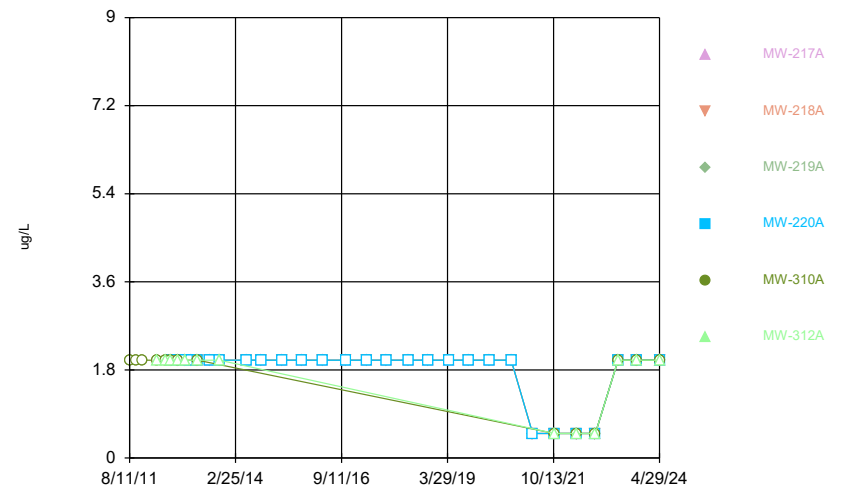
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

Time Series



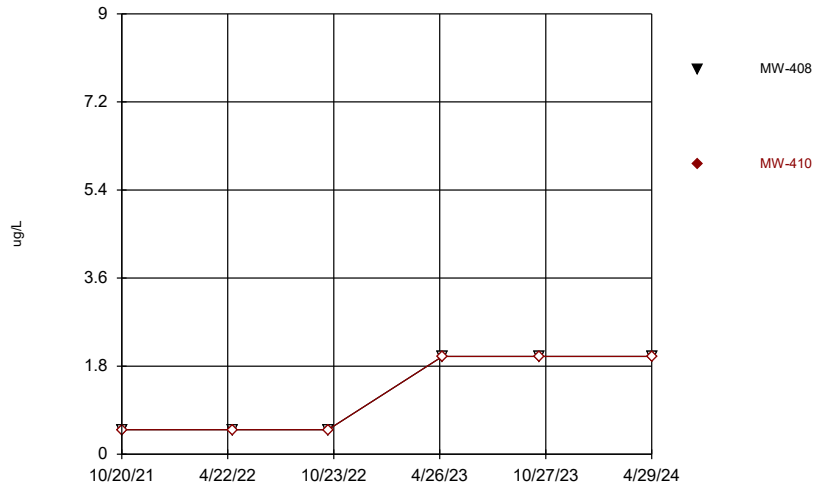
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Time Series



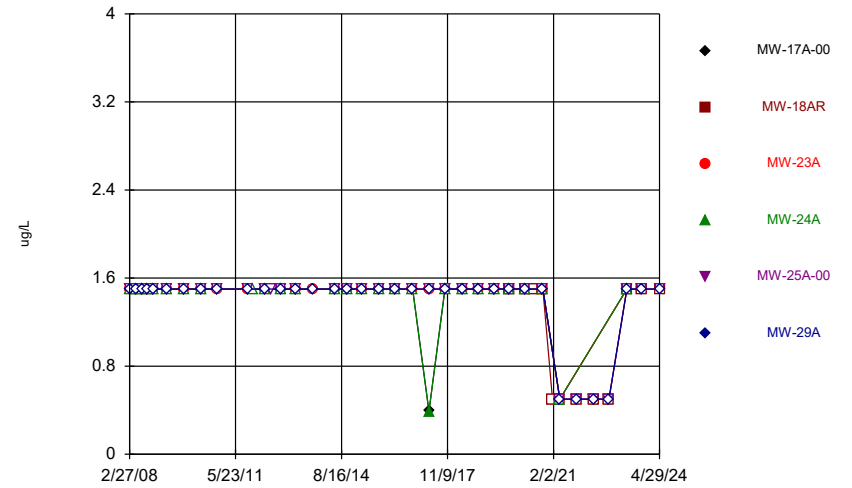
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Time Series



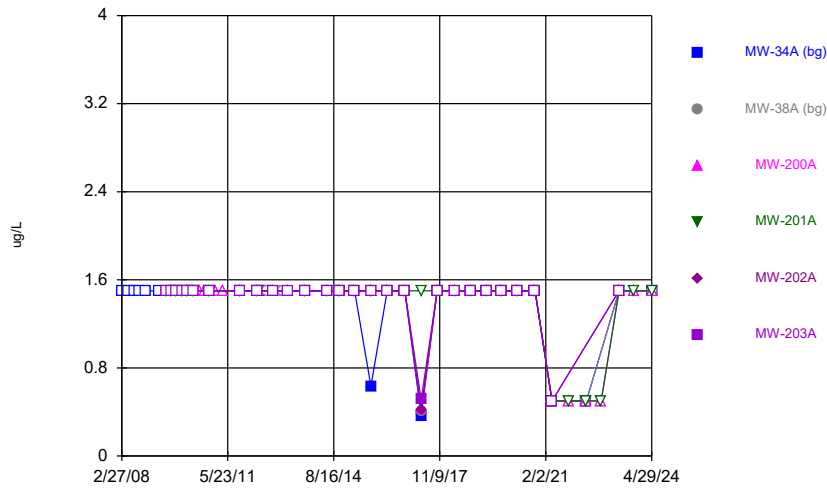
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

Time Series



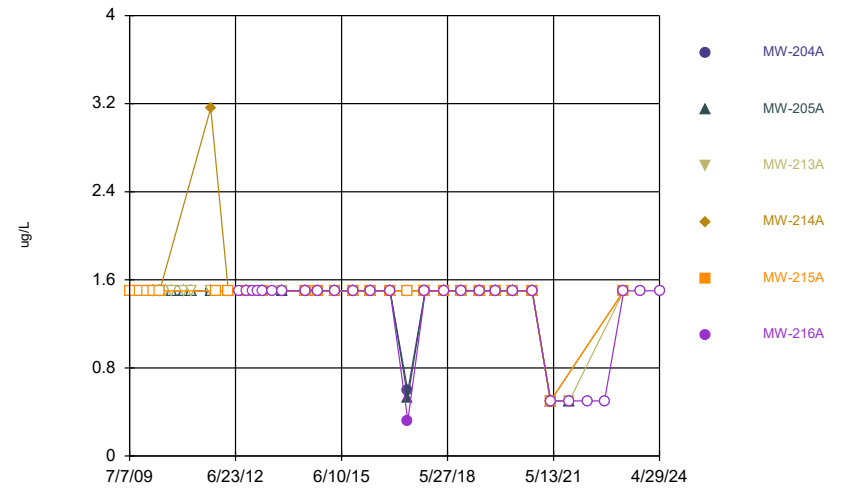
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Time Series



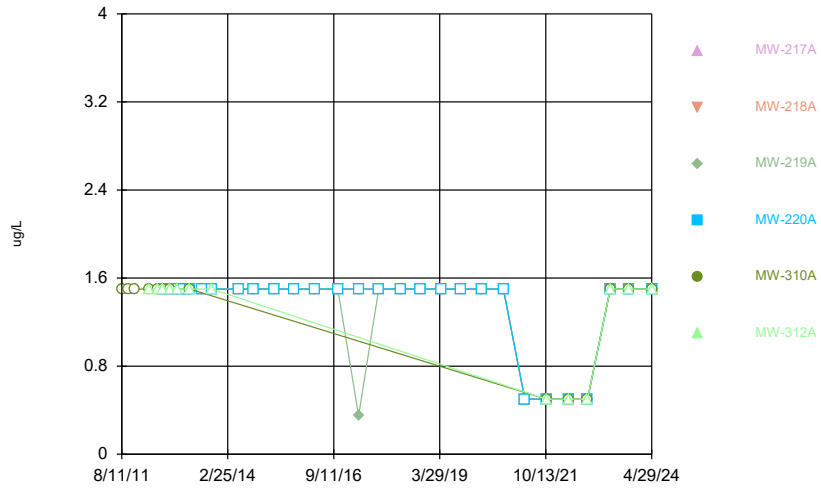
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Time Series



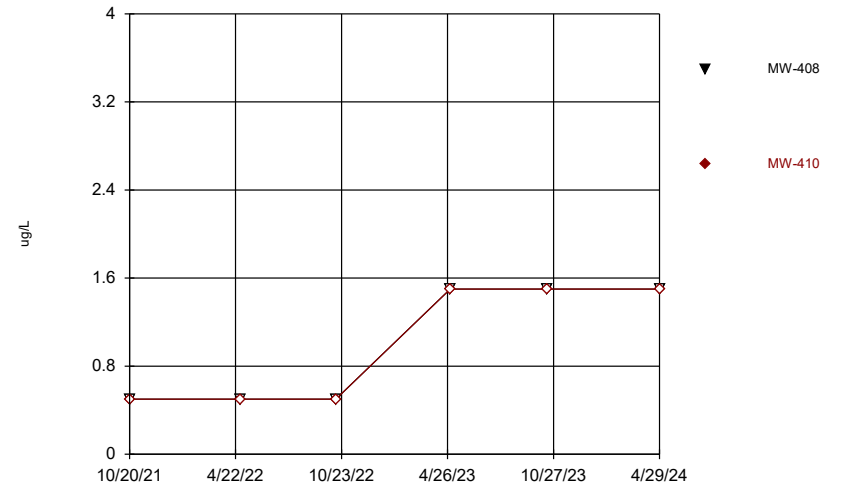
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### Time Series



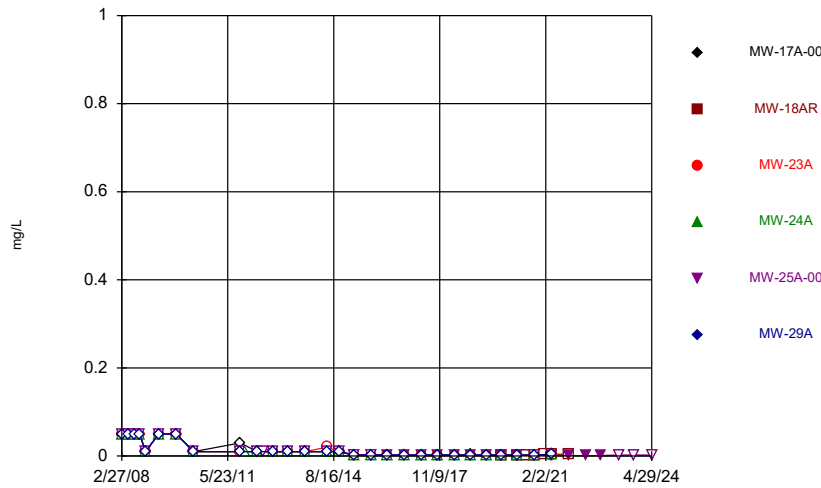
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



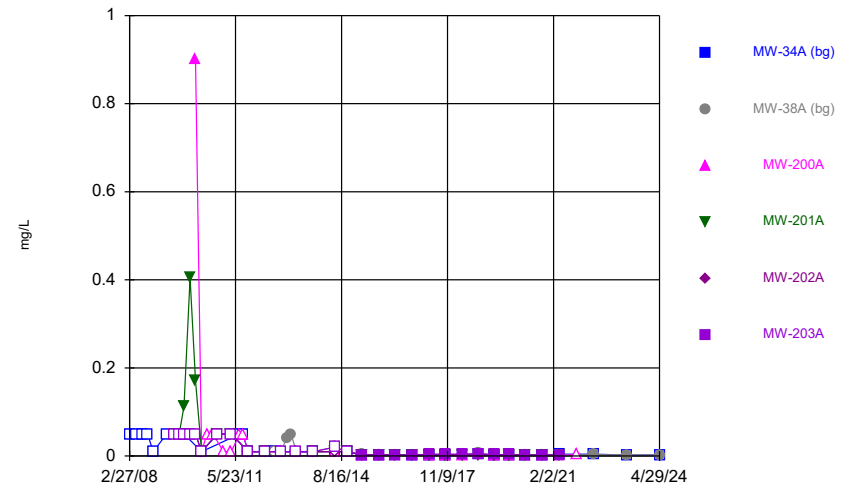
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



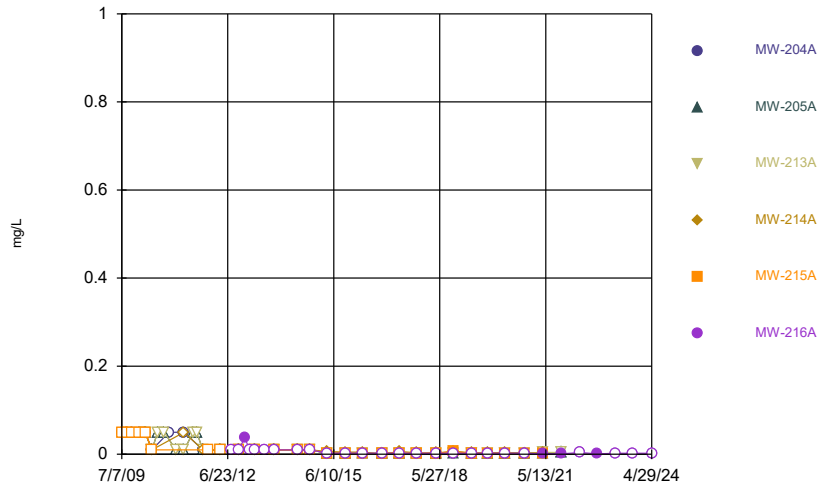
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



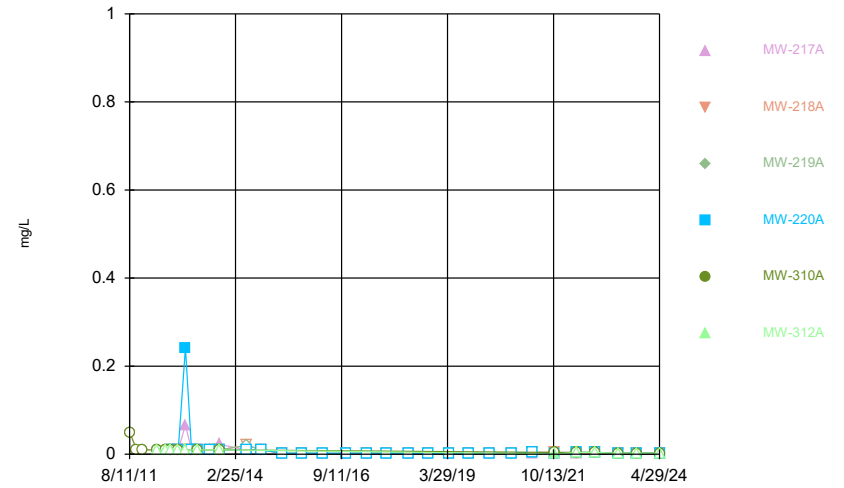
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



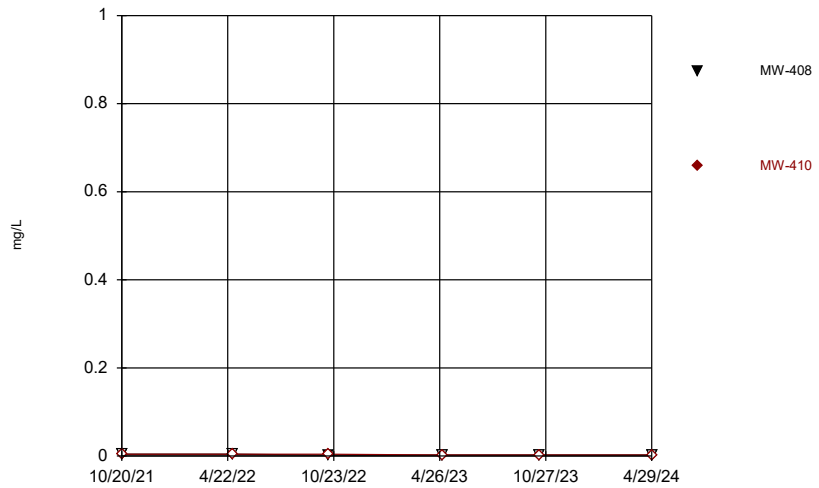
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



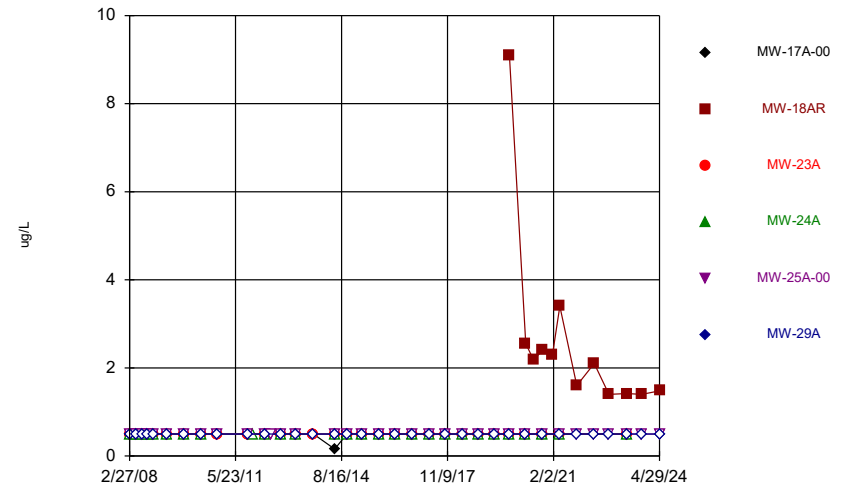
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



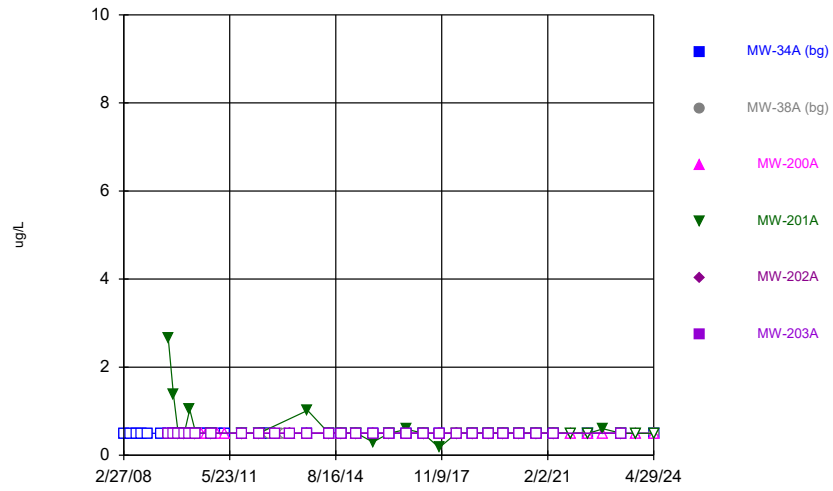
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### Time Series



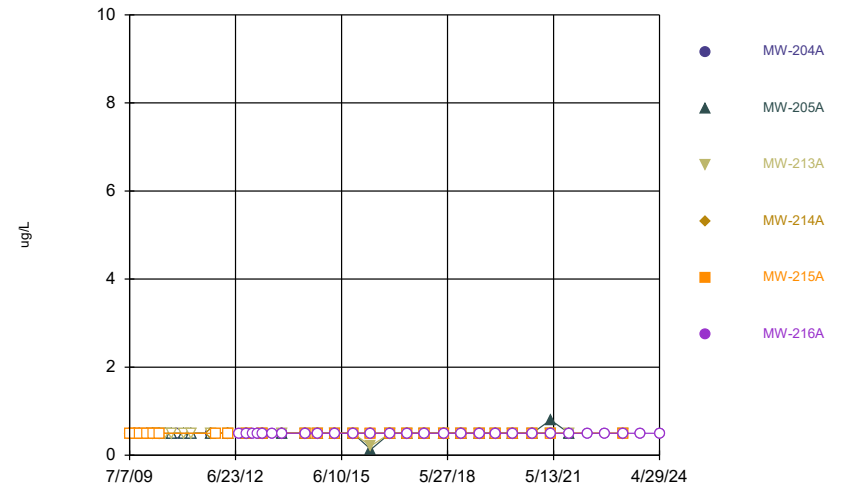
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



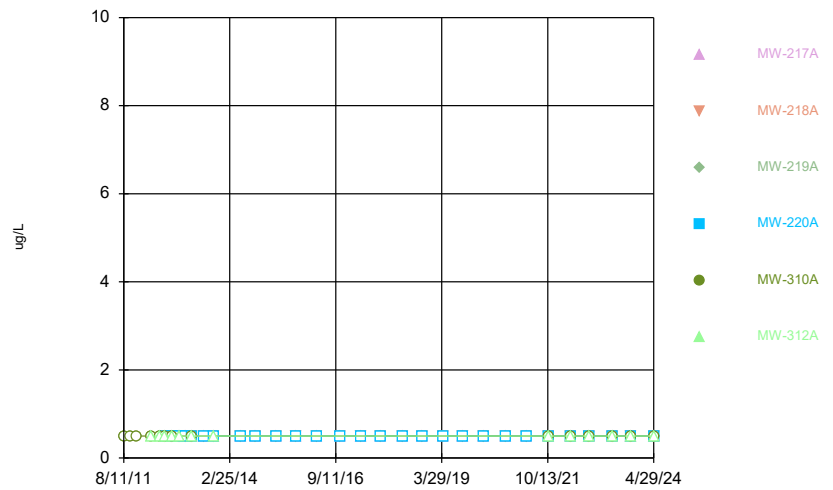
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



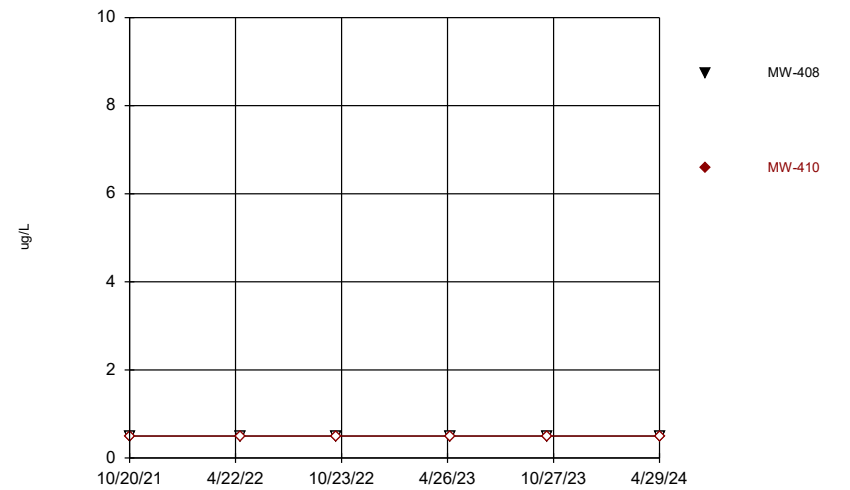
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 5/31/2024 11:13 AM View: 2024SSN Time Series A\_Ser  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

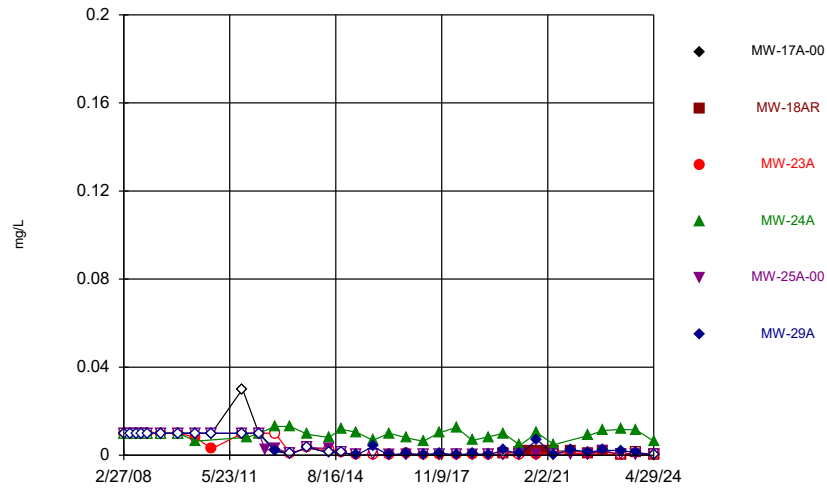
### Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 5/31/2024 11:13 AM View: 2024SSN Time Series A\_Ser  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

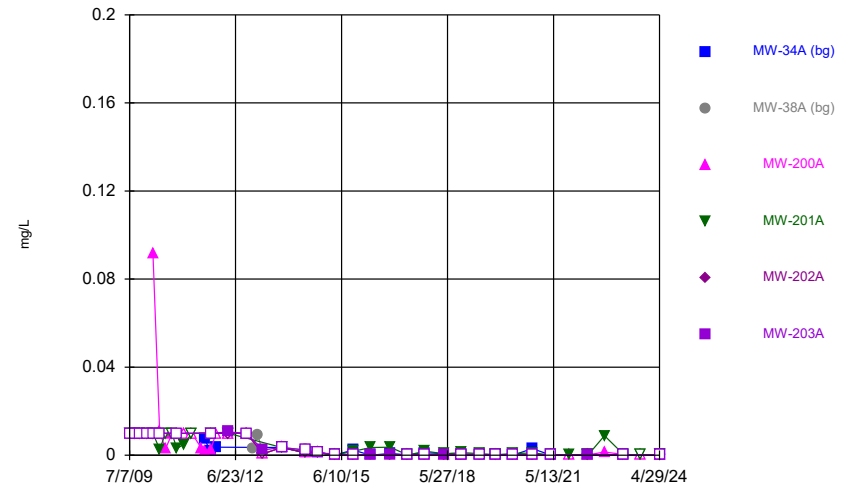


### Time Series



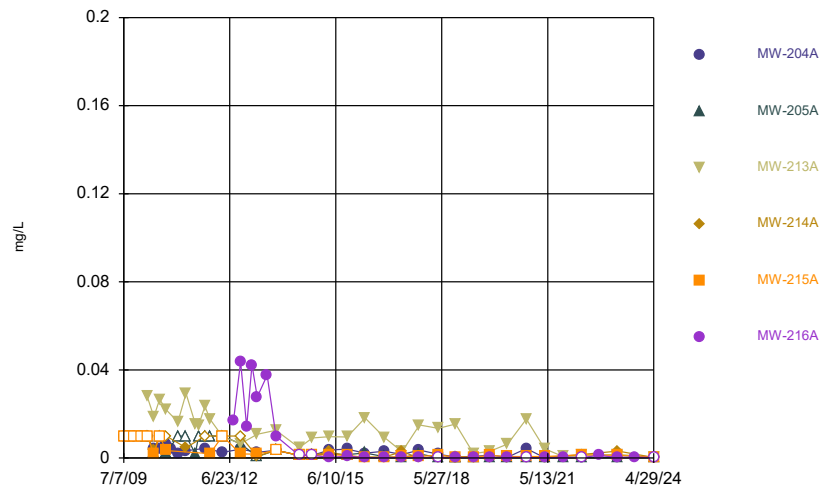
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



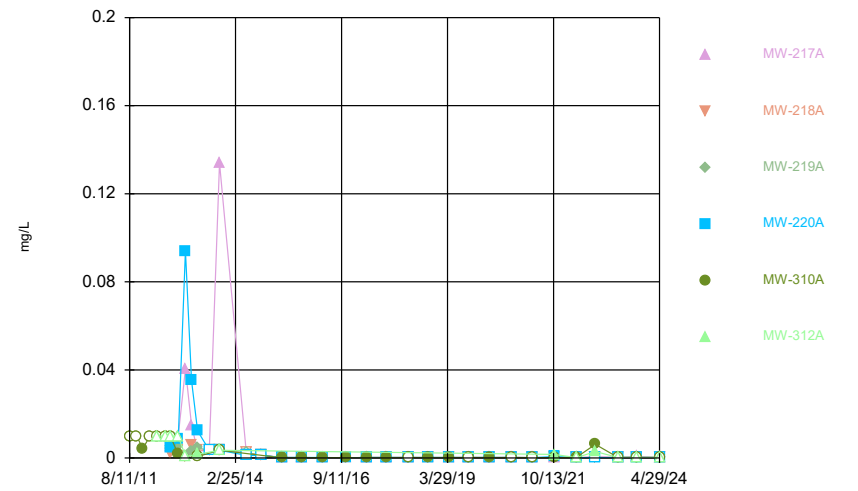
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



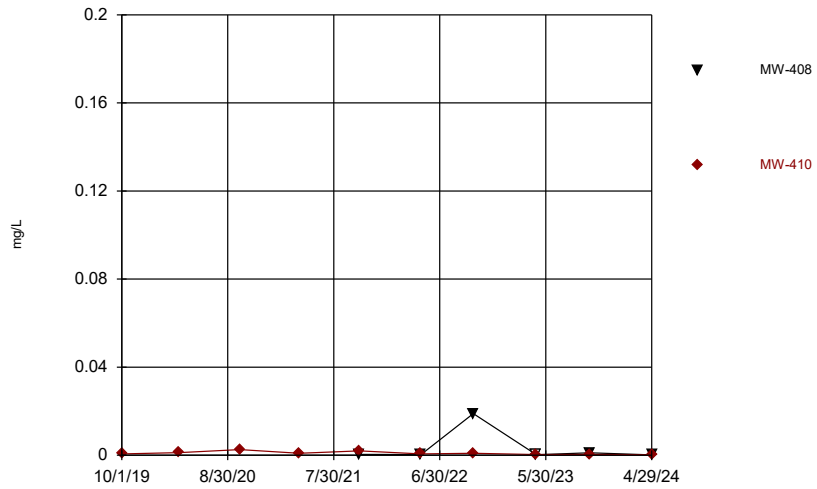
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



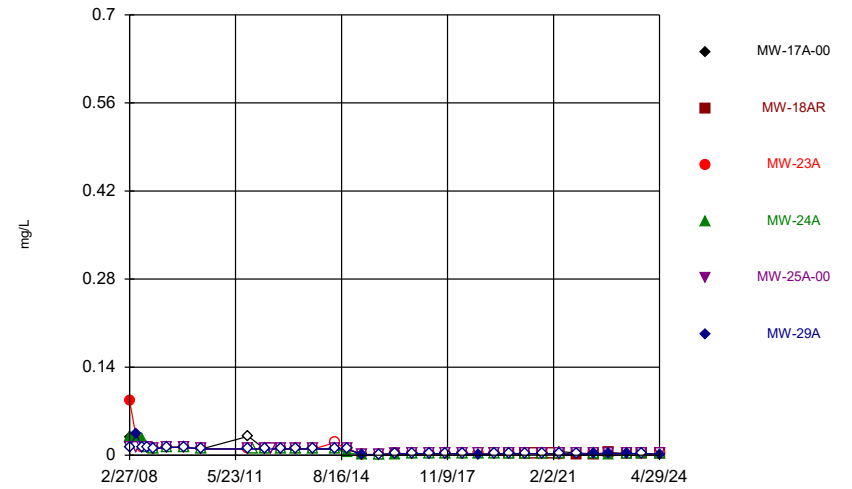
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### Time Series



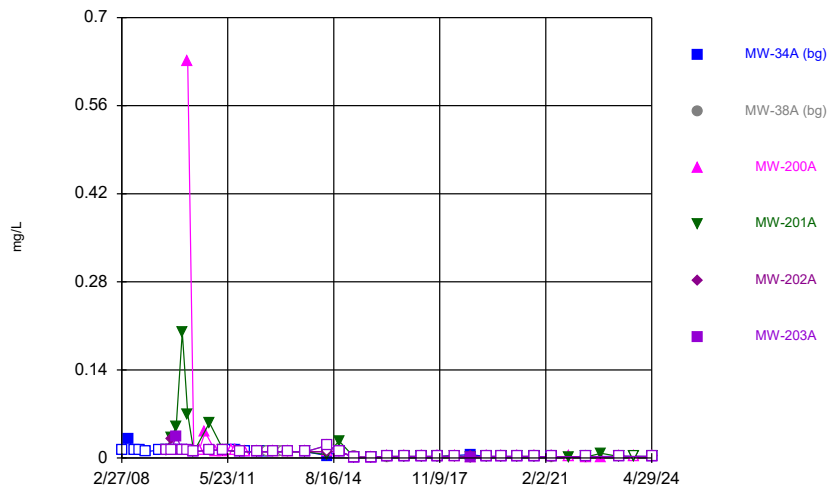
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



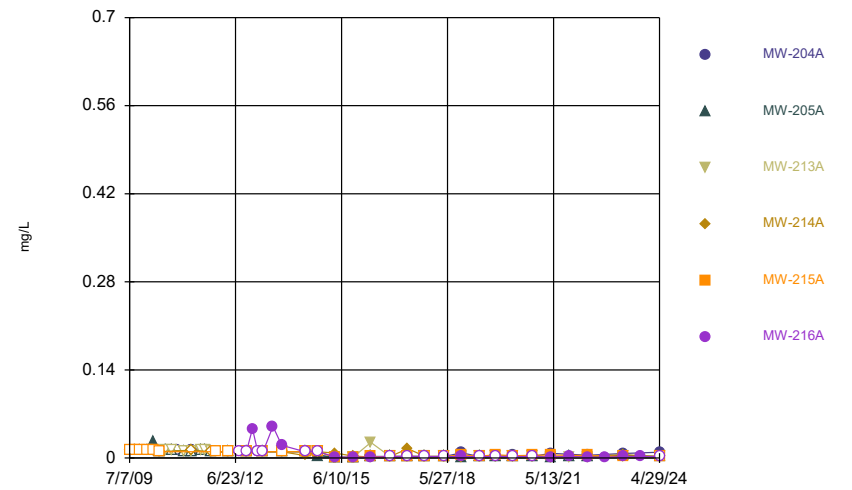
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### Time Series



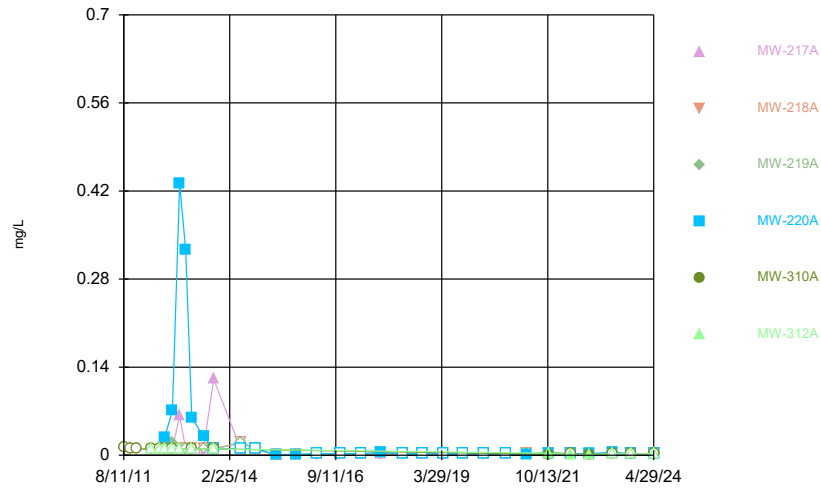
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### Time Series



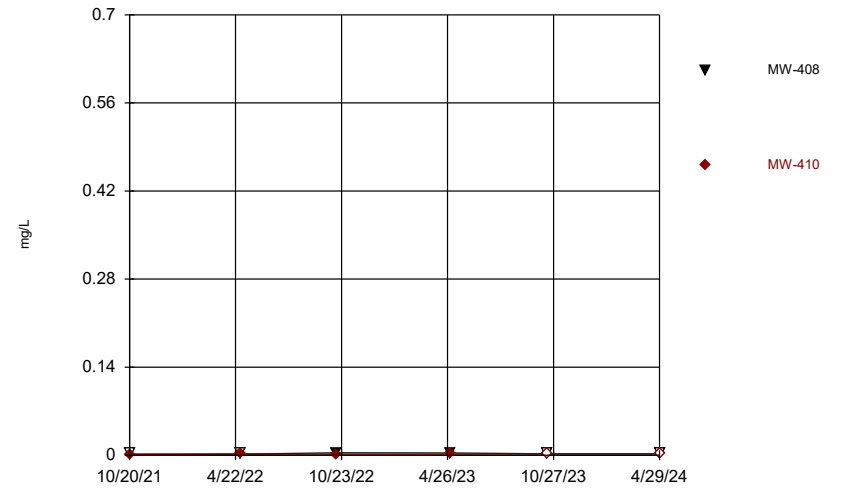
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Time Series



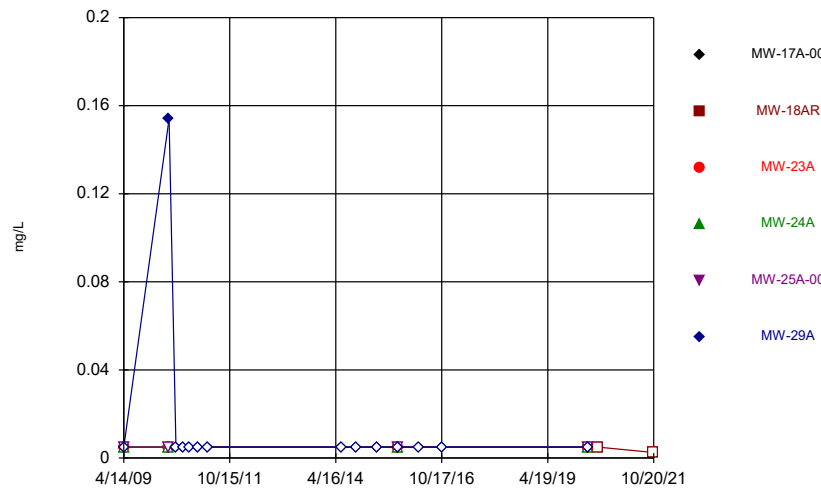
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Time Series



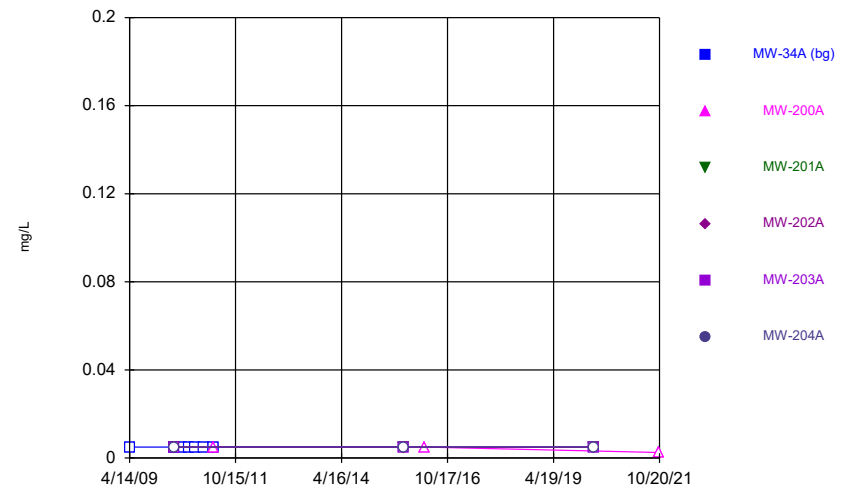
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Time Series



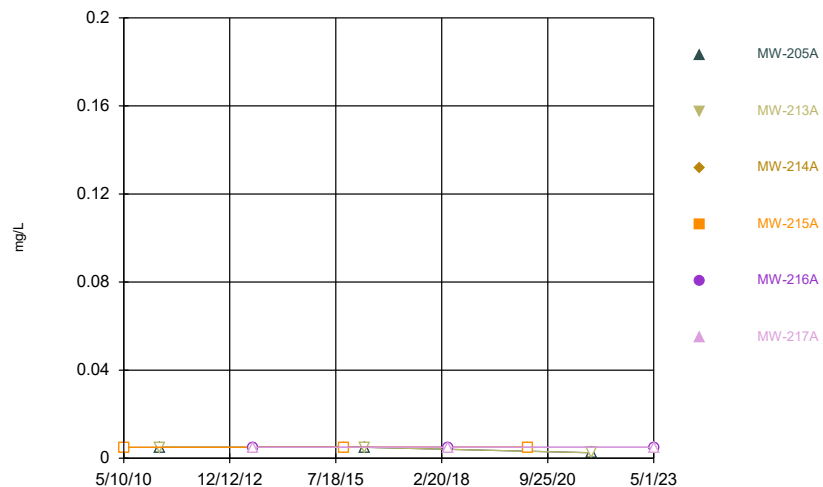
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



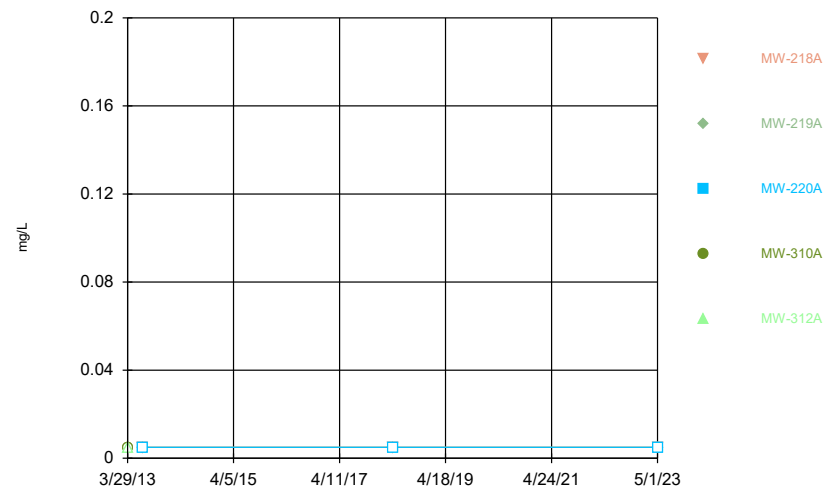
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### Time Series



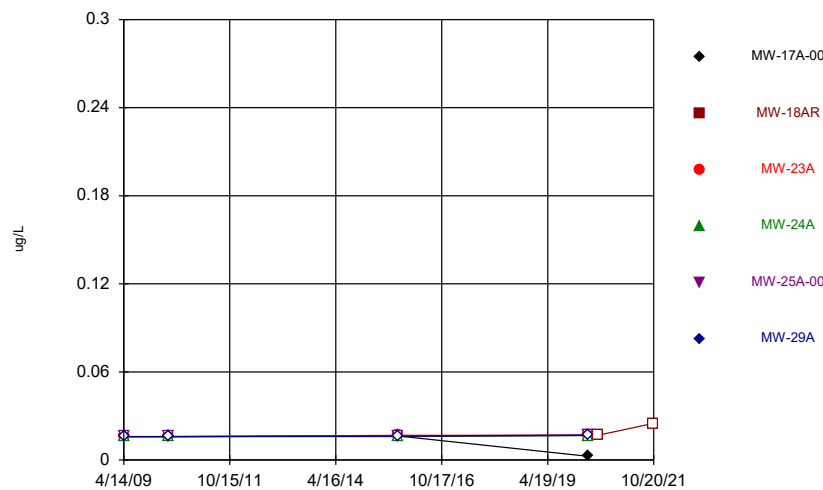
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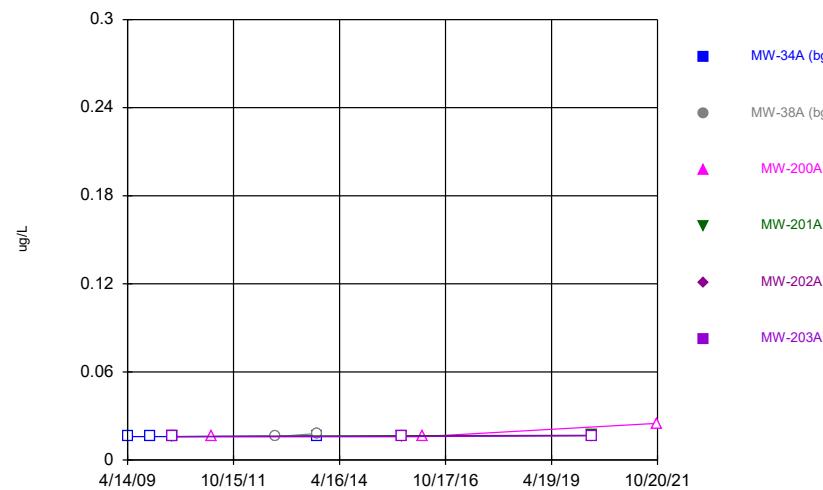
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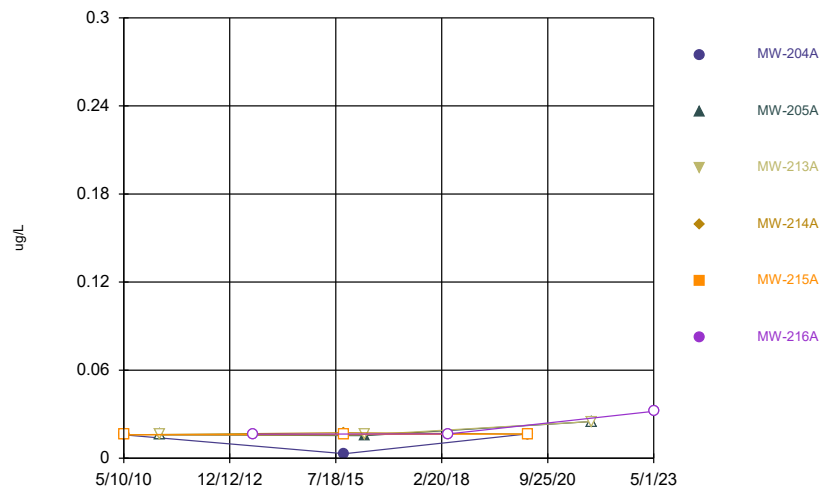
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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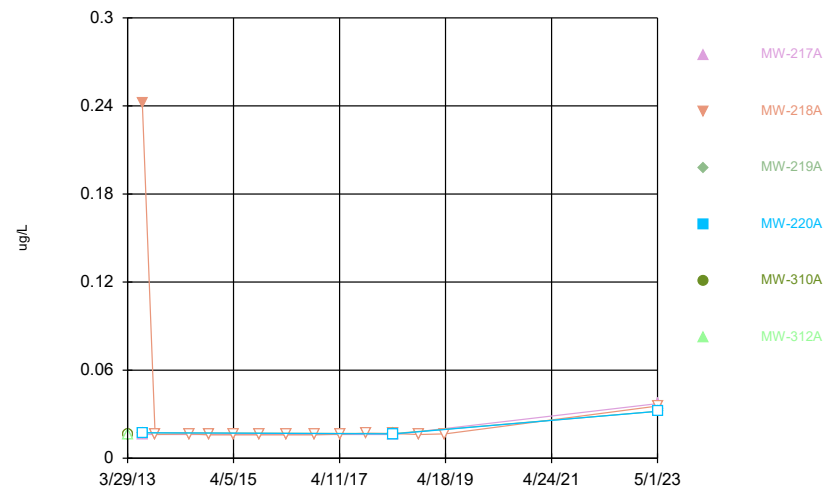
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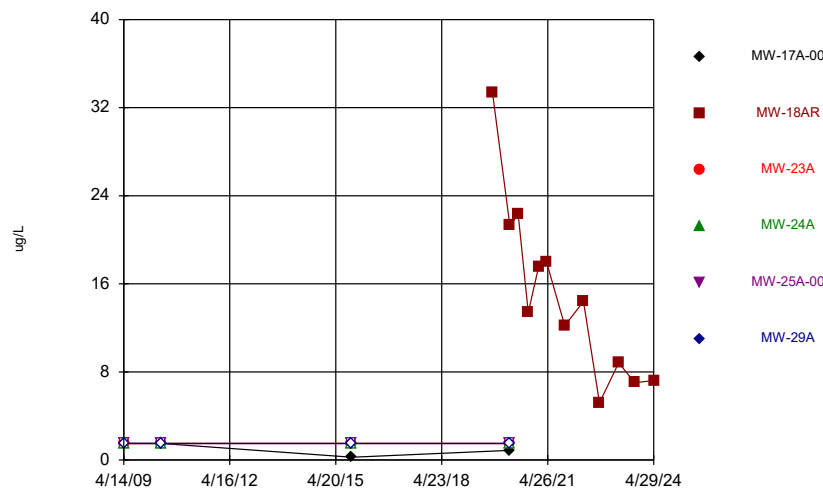
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### Time Series



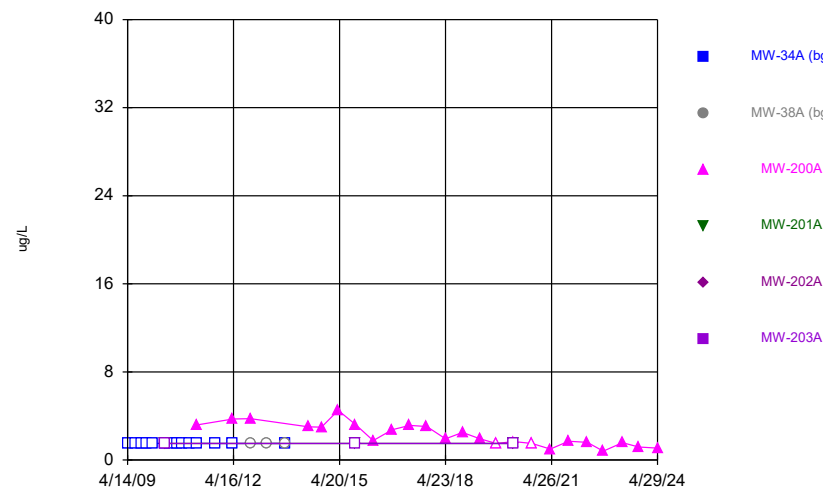
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



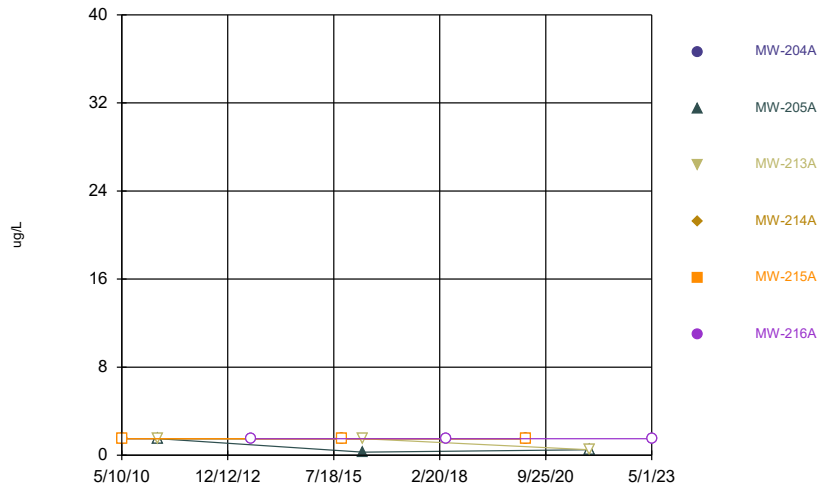
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



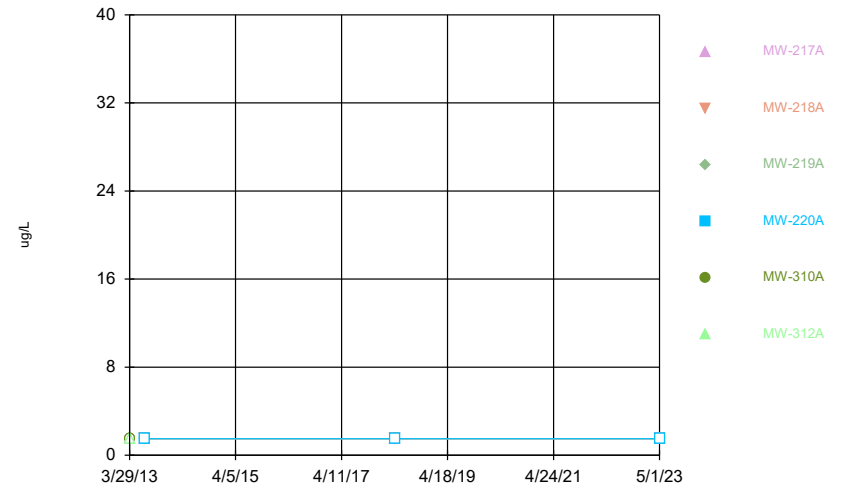
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Time Series



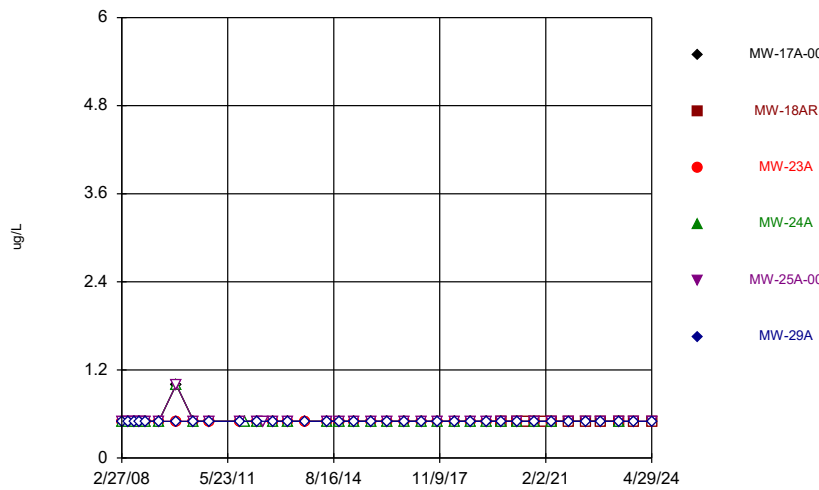
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Time Series



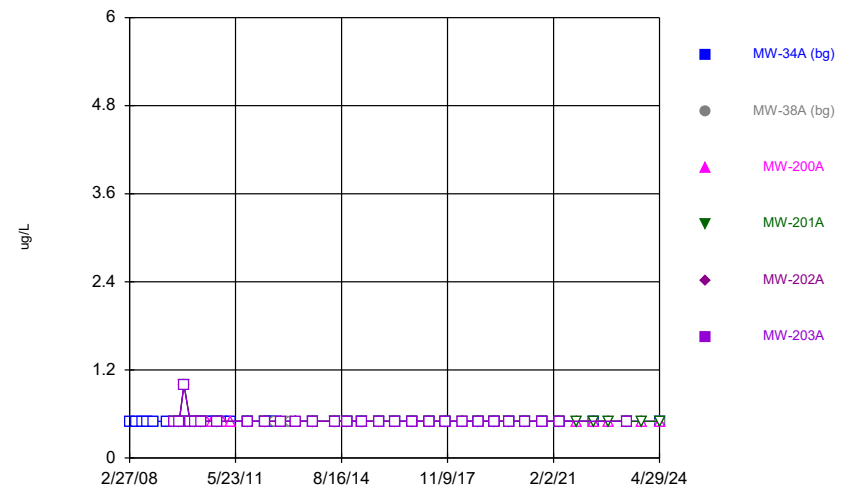
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



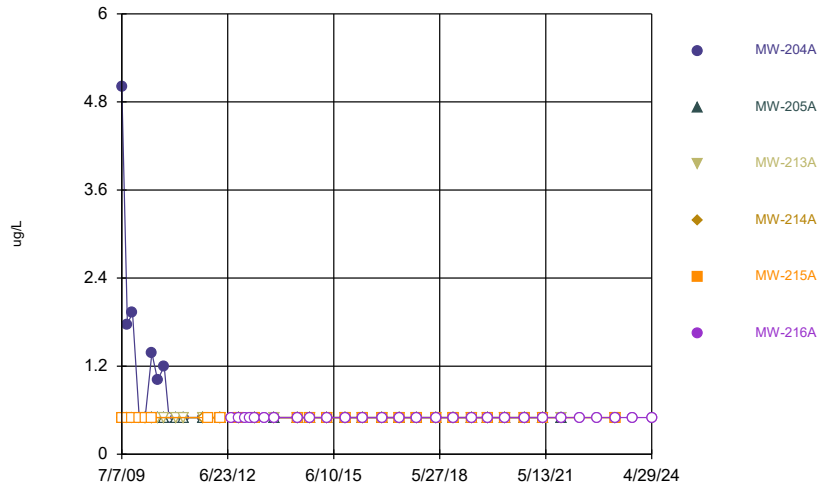
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



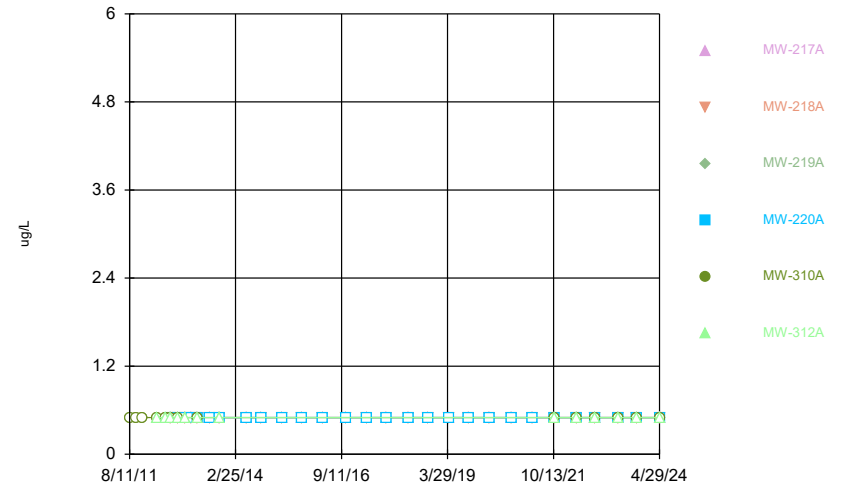
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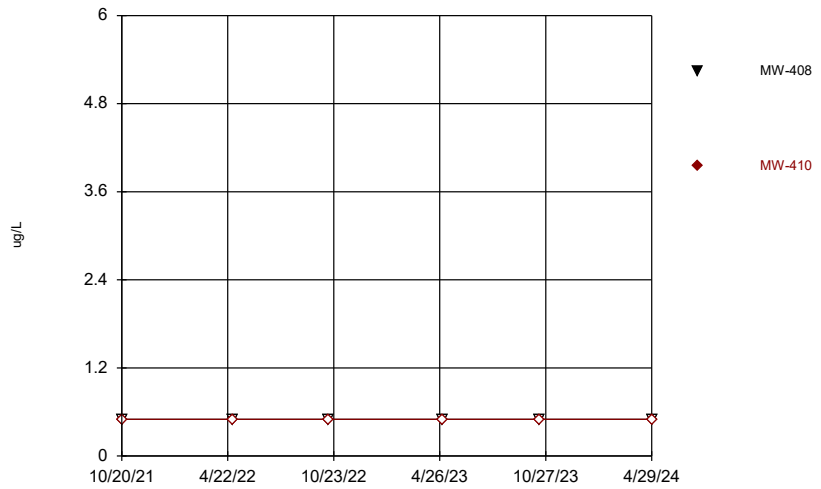
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### Time Series



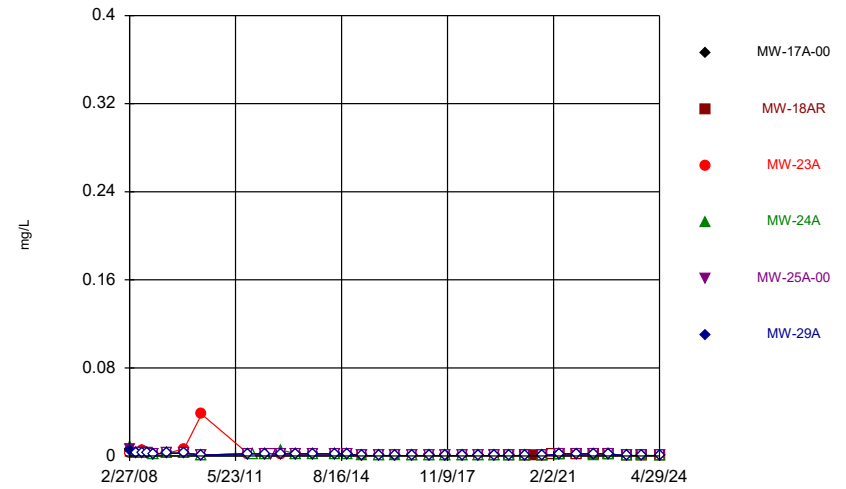
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

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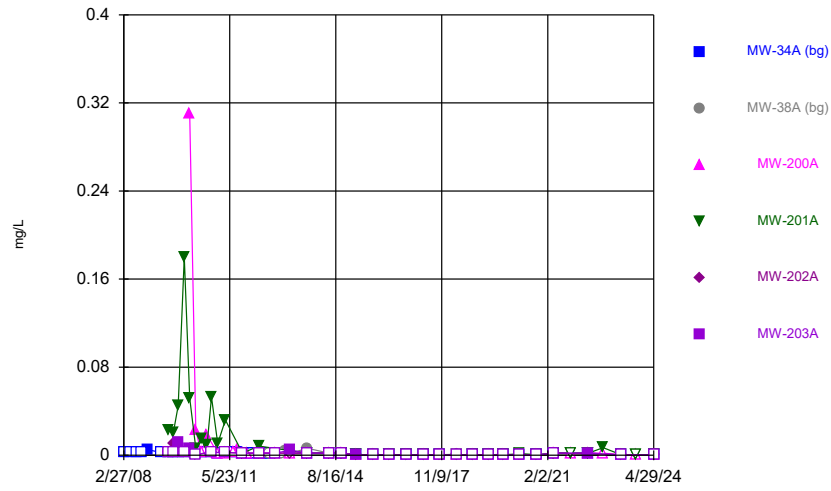
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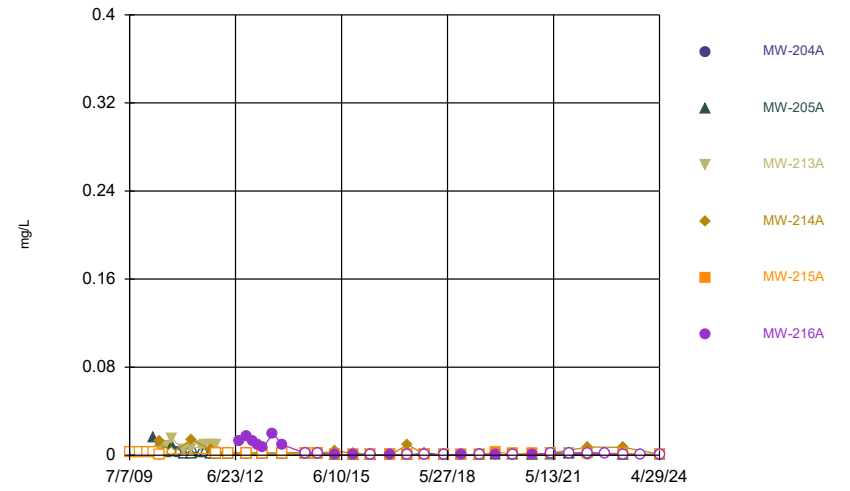
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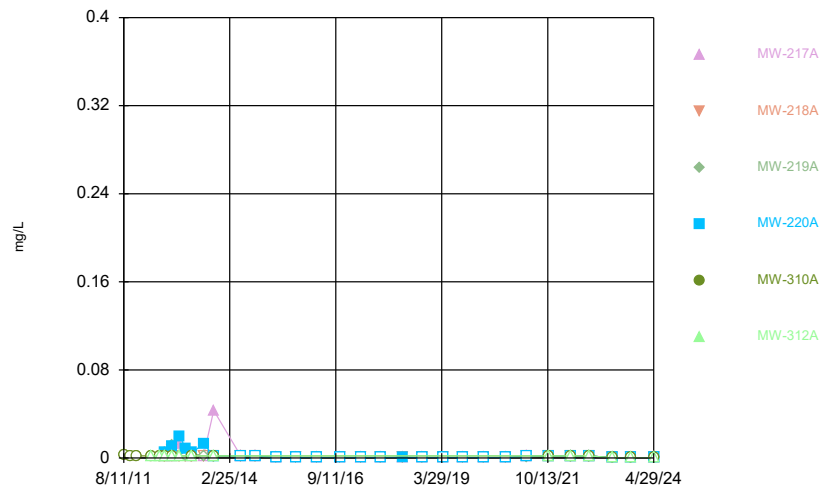
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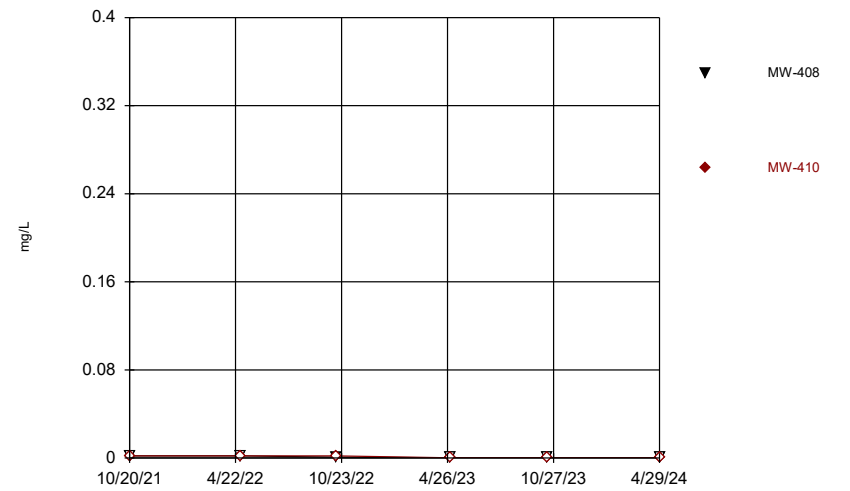
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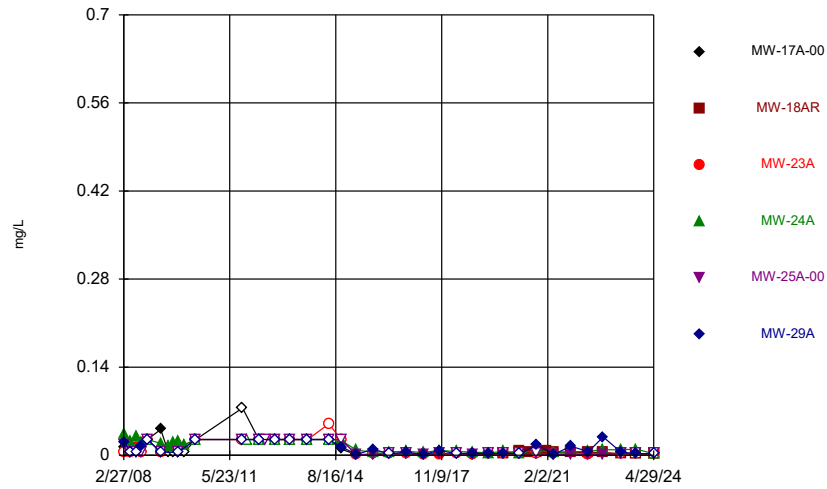
### Time Series



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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

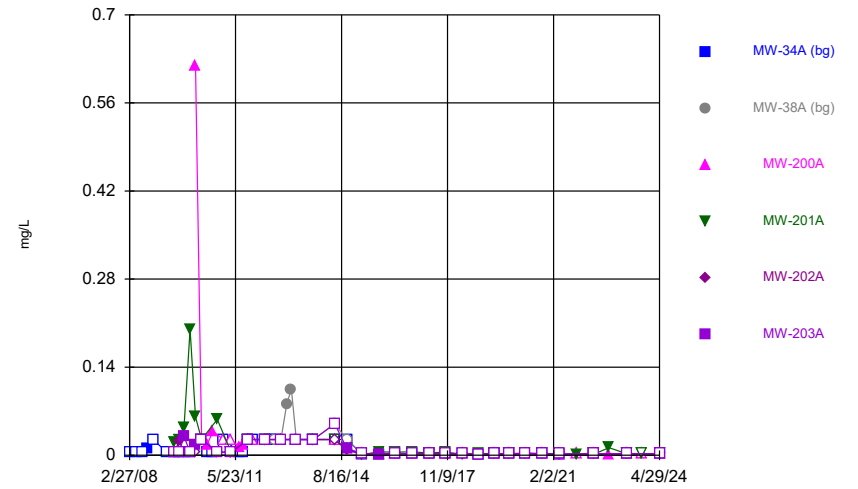


### Time Series



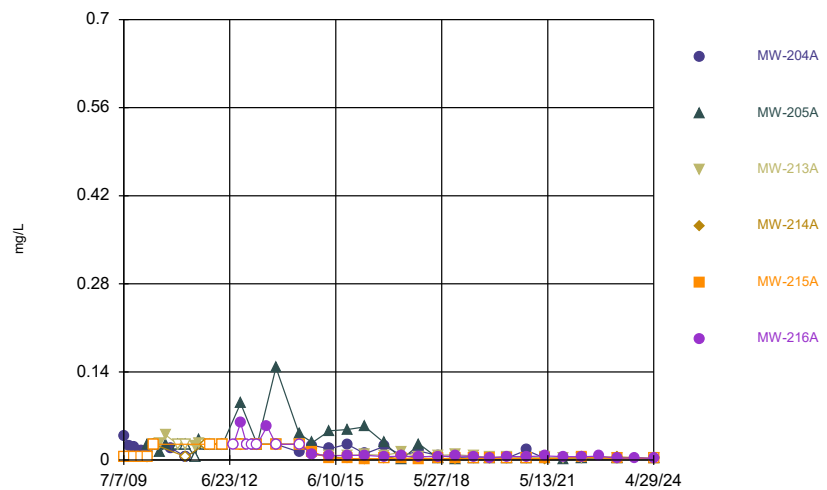
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



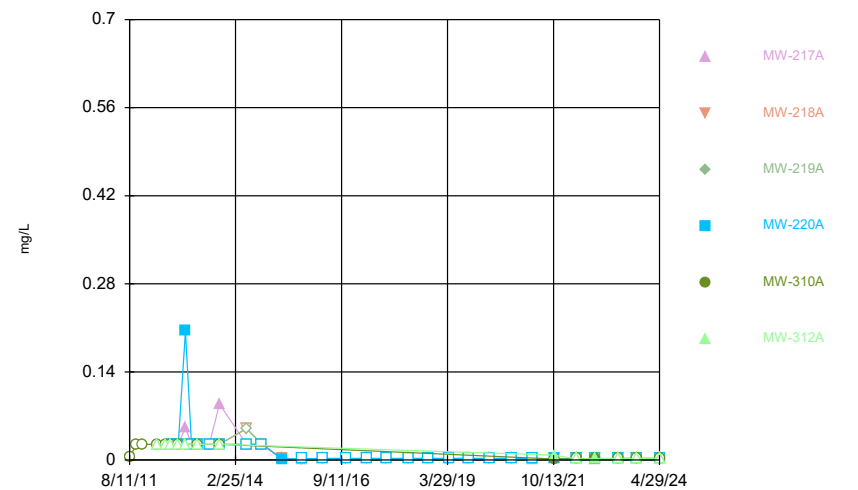
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



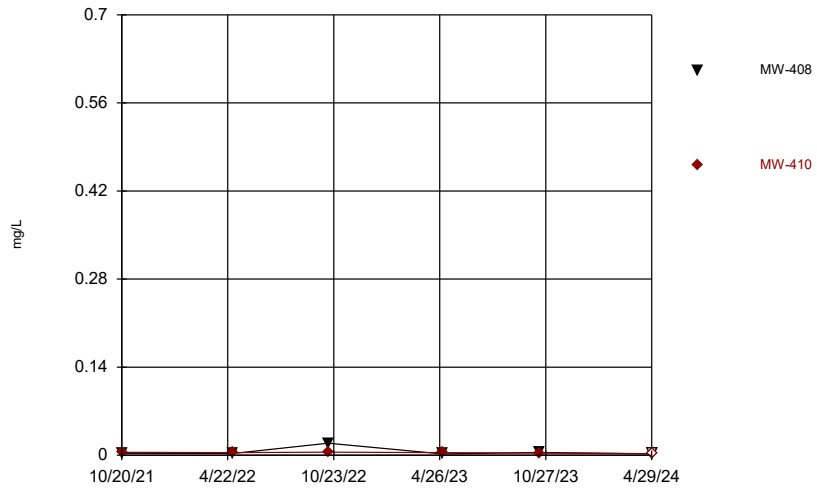
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series

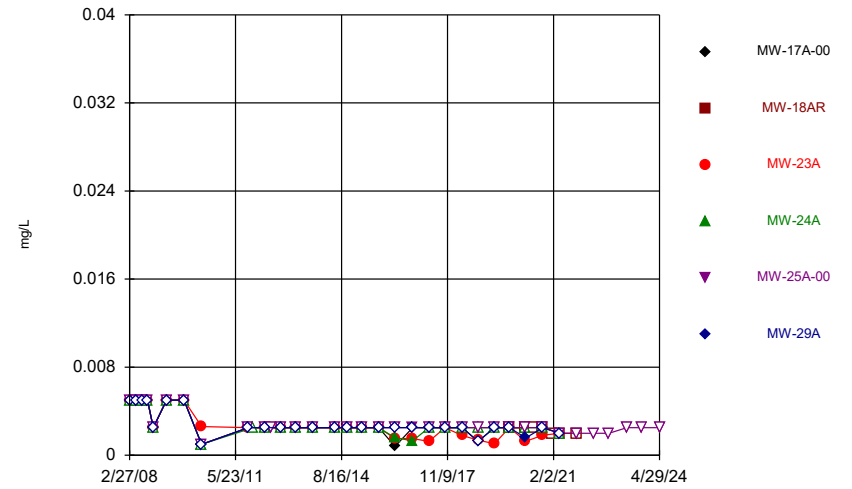


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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

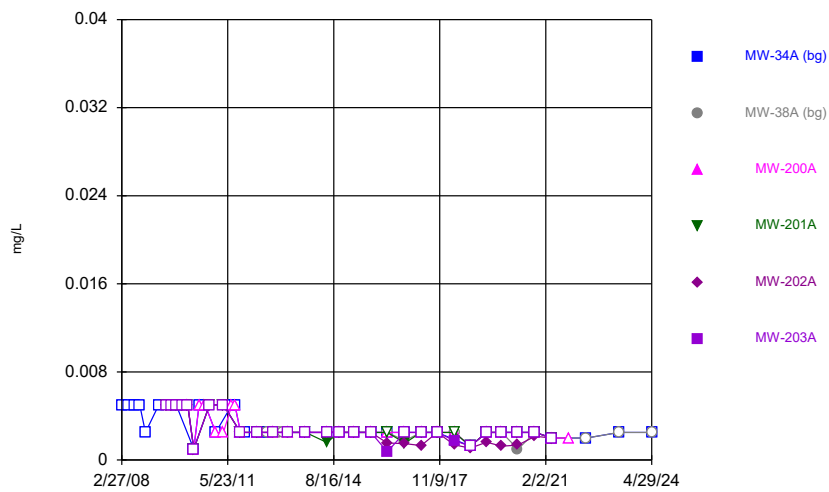
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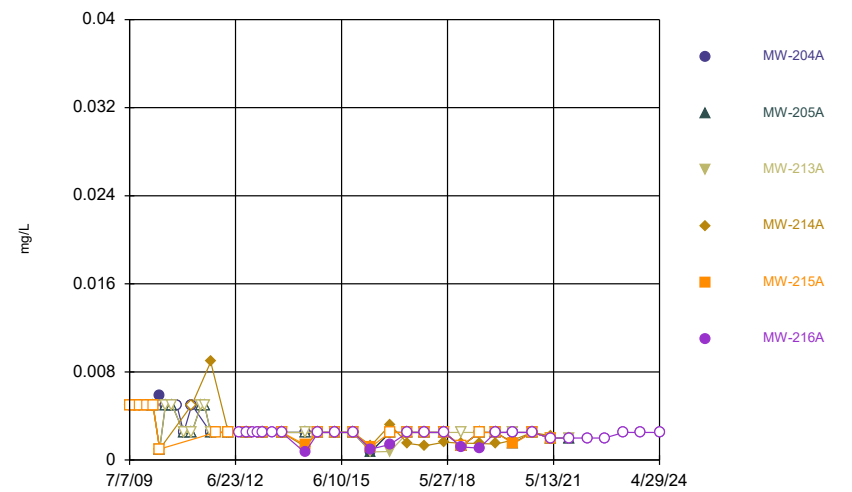
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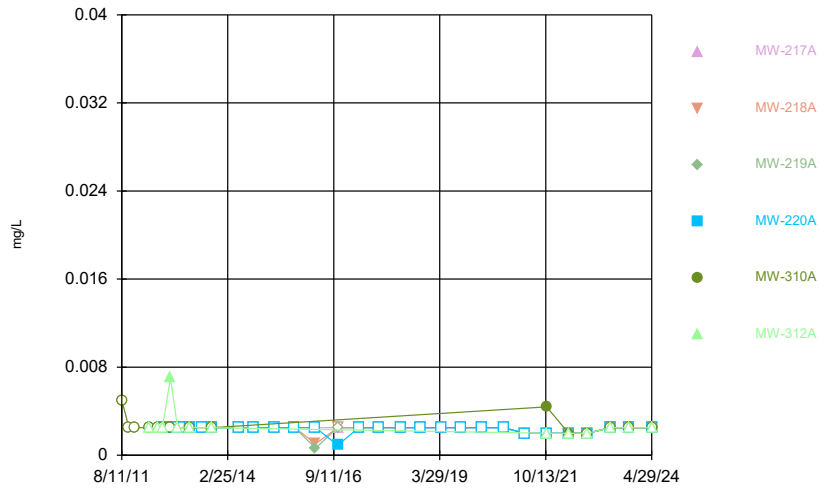
### Time Series



### Time Series

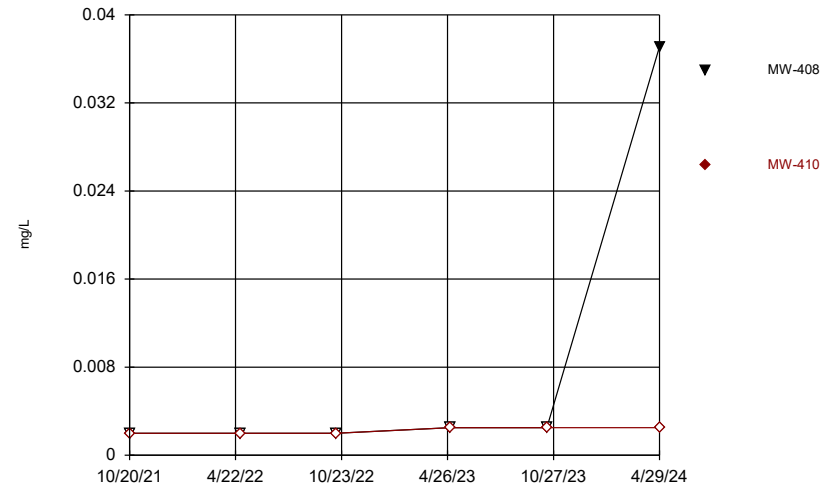


Time Series



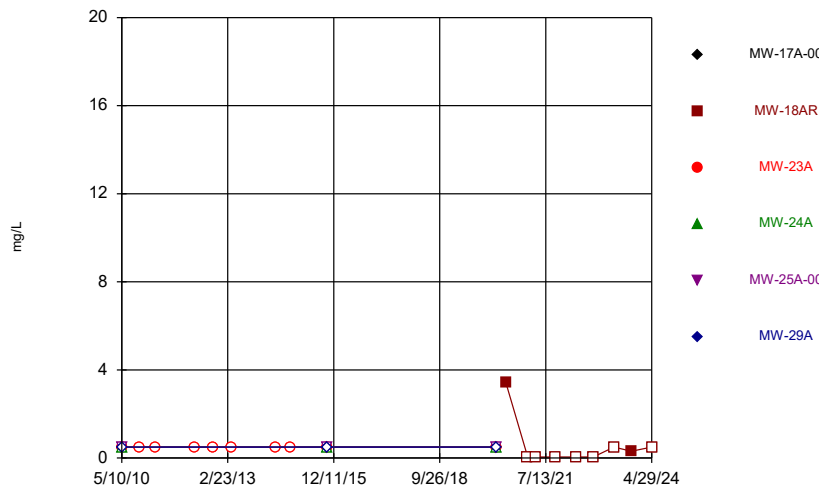
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Time Series



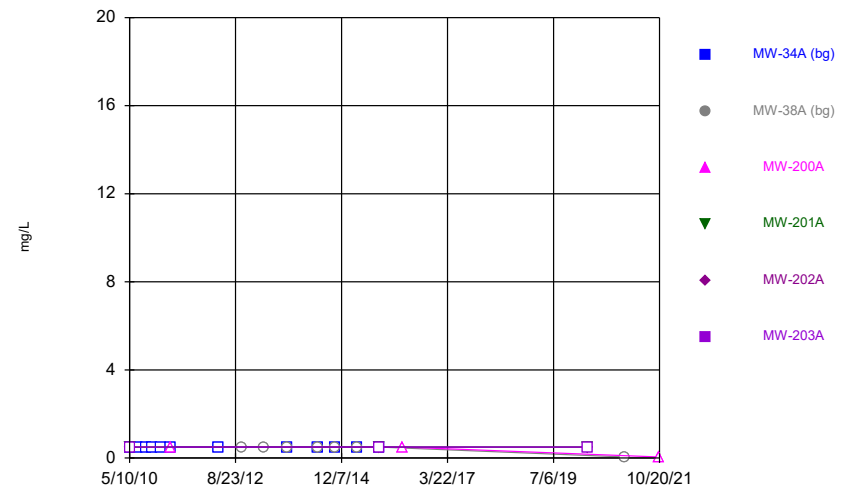
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



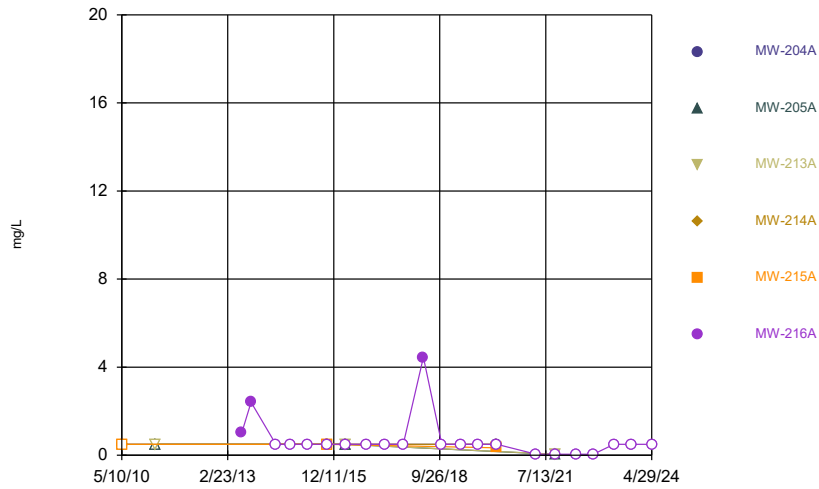
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



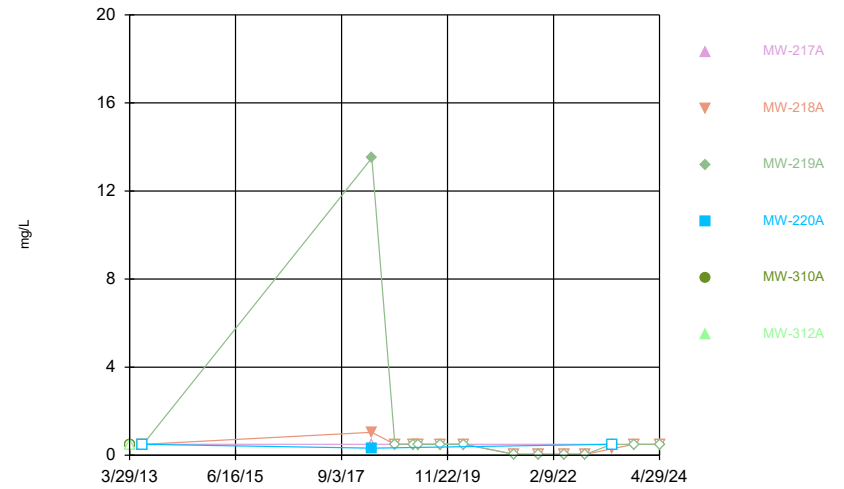
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



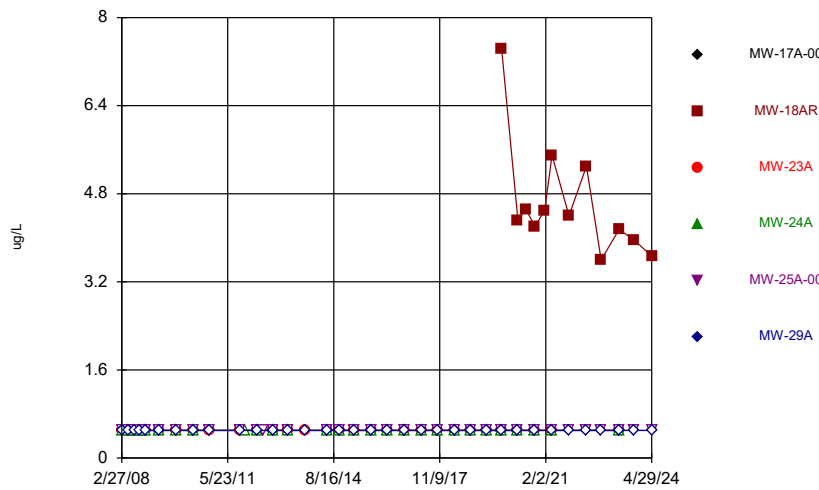
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



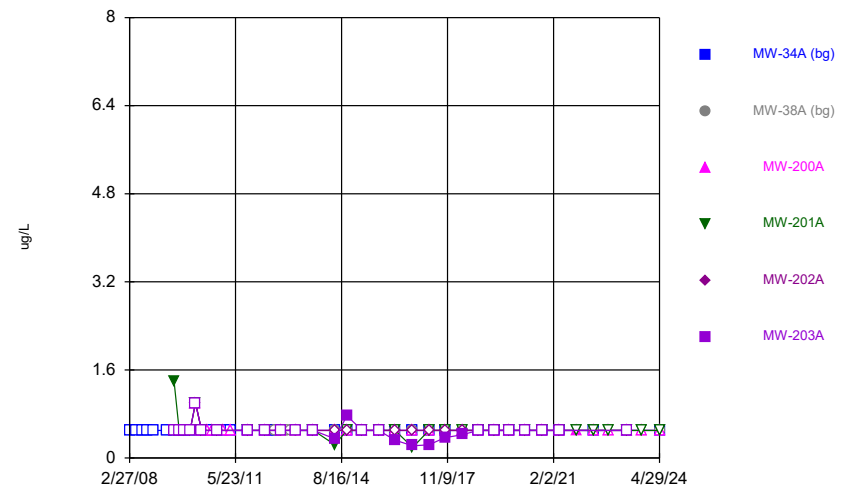
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



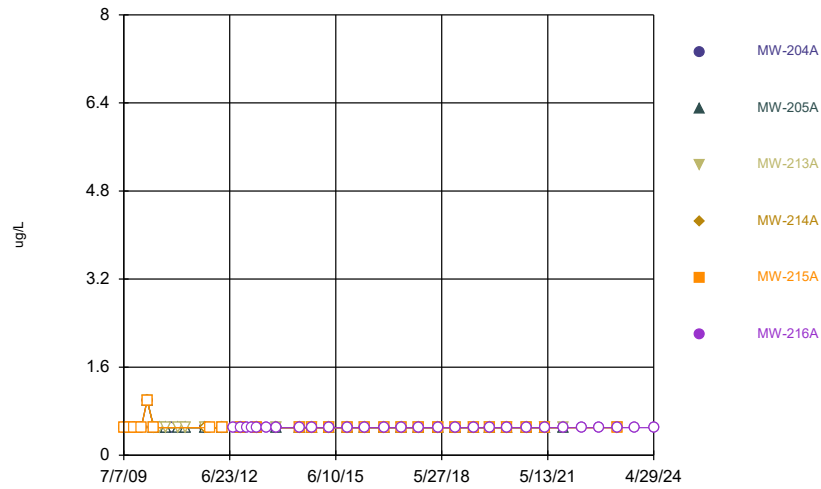
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



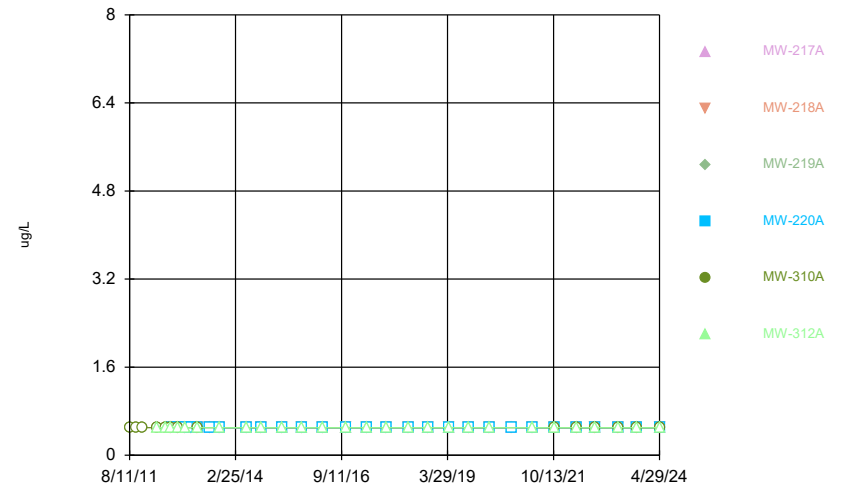
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



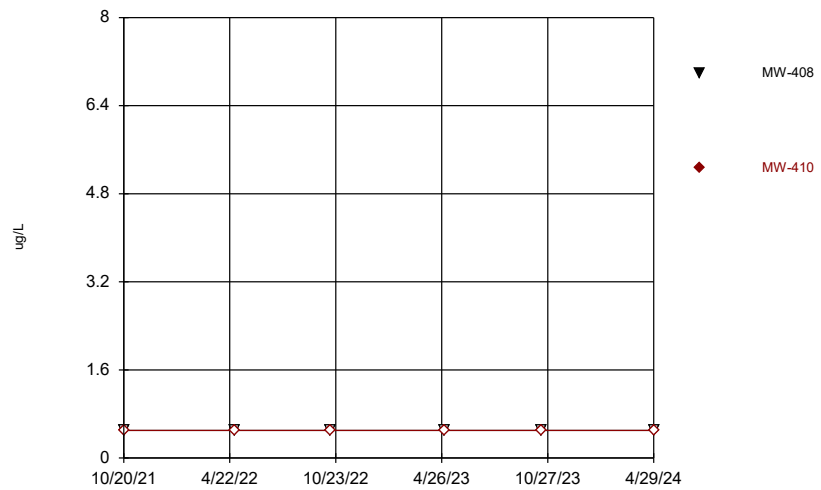
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



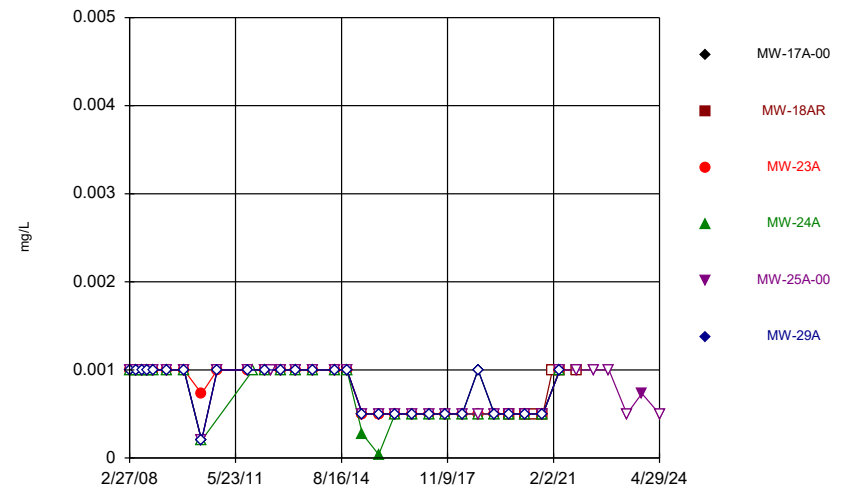
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



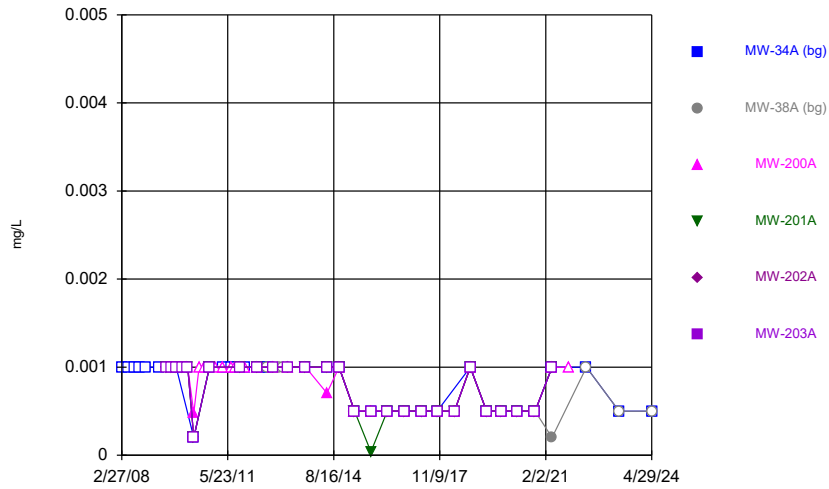
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



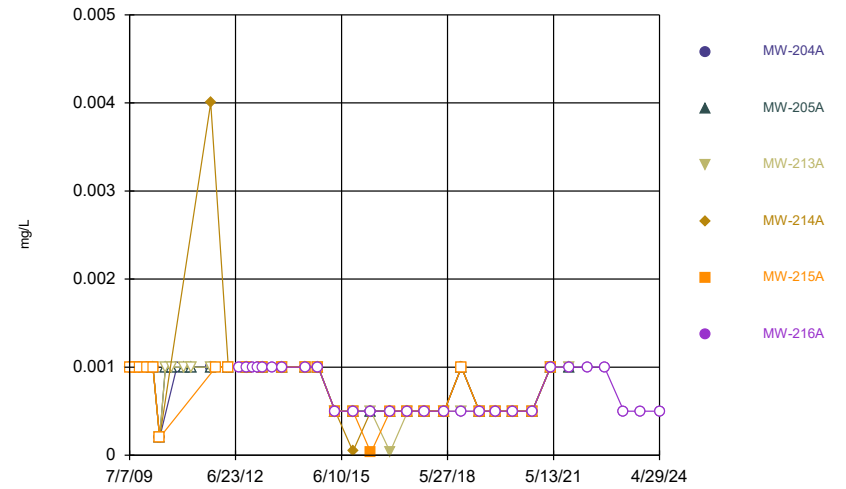
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Time Series



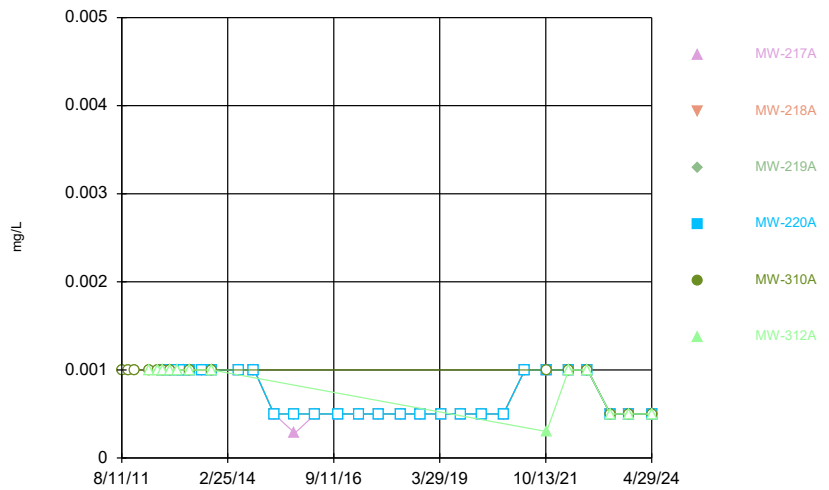
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Time Series



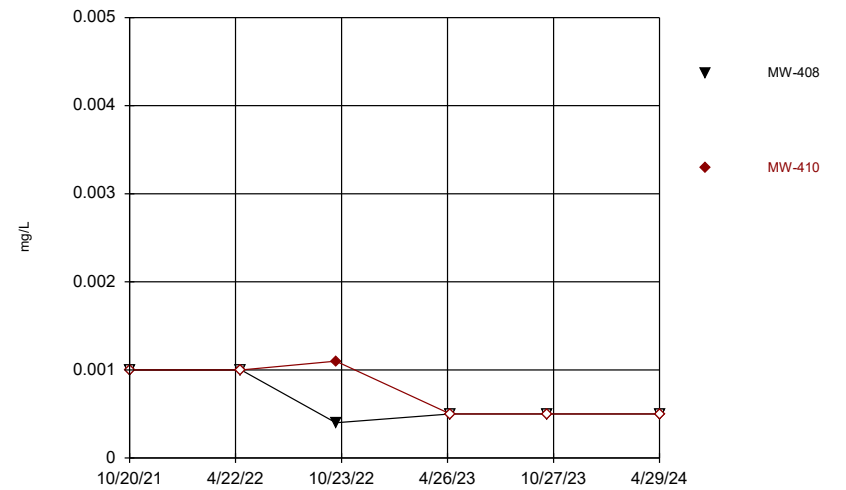
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



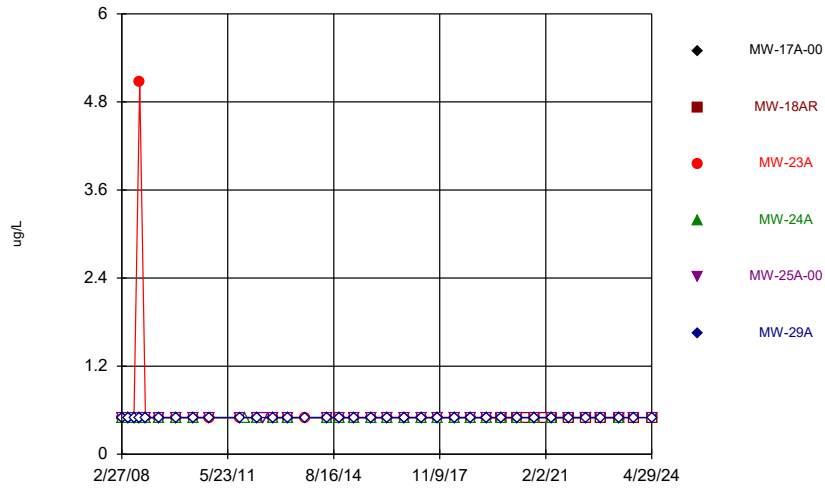
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



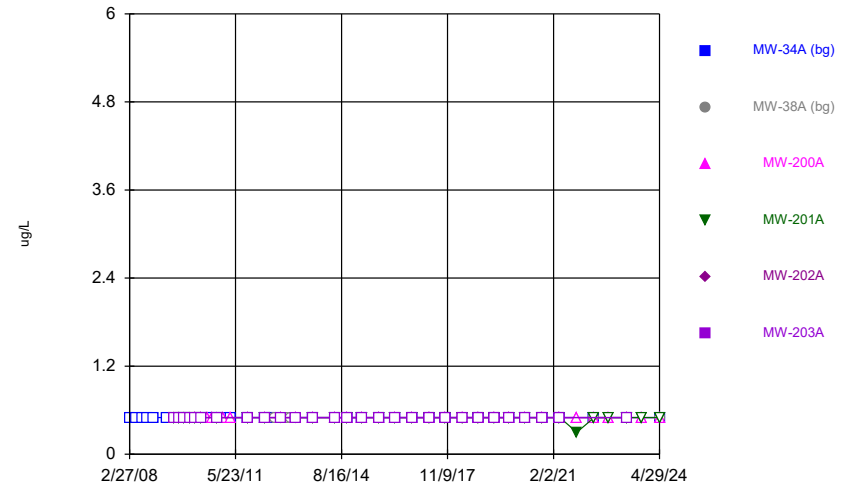
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



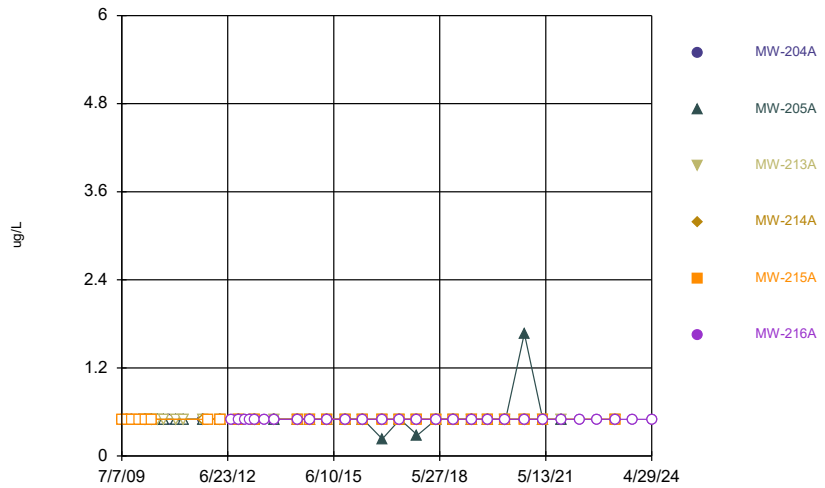
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



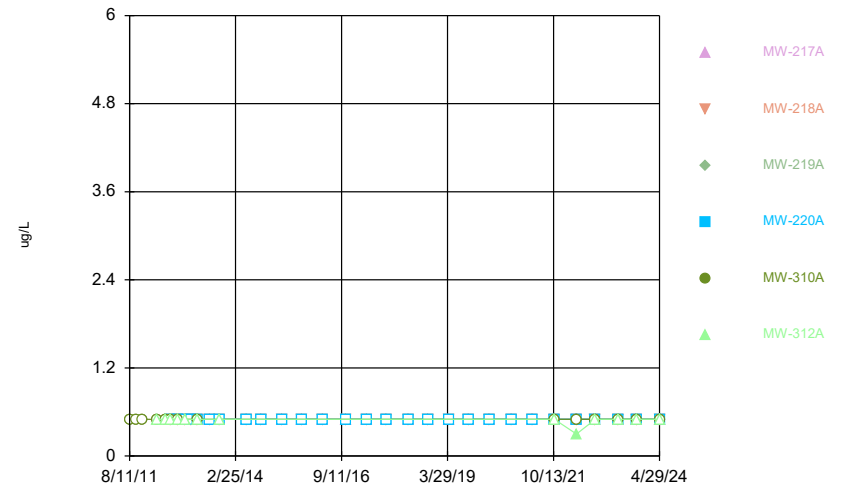
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



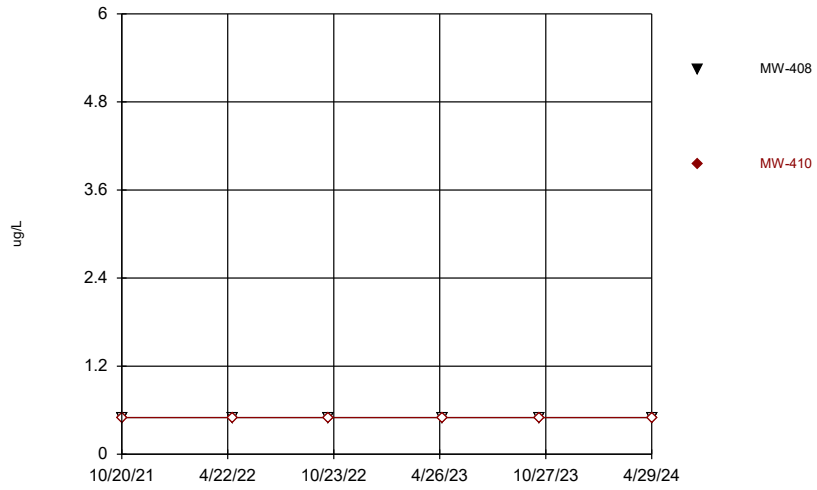
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



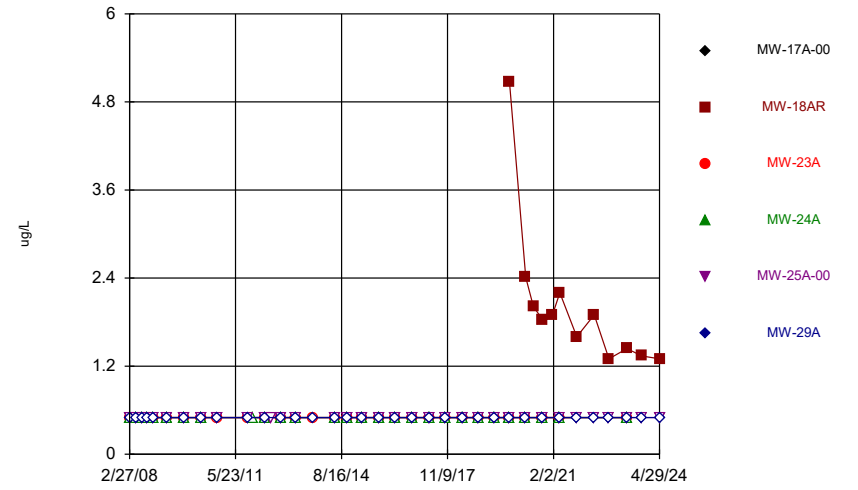
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL A Series Master

### Time Series



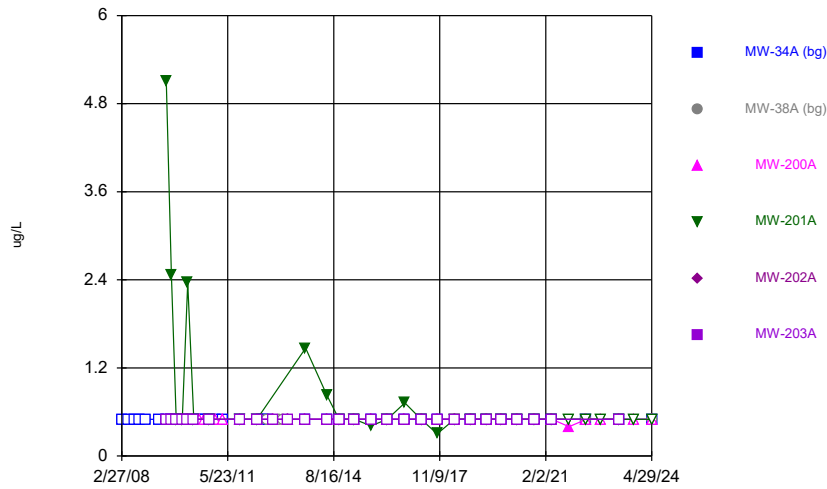
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



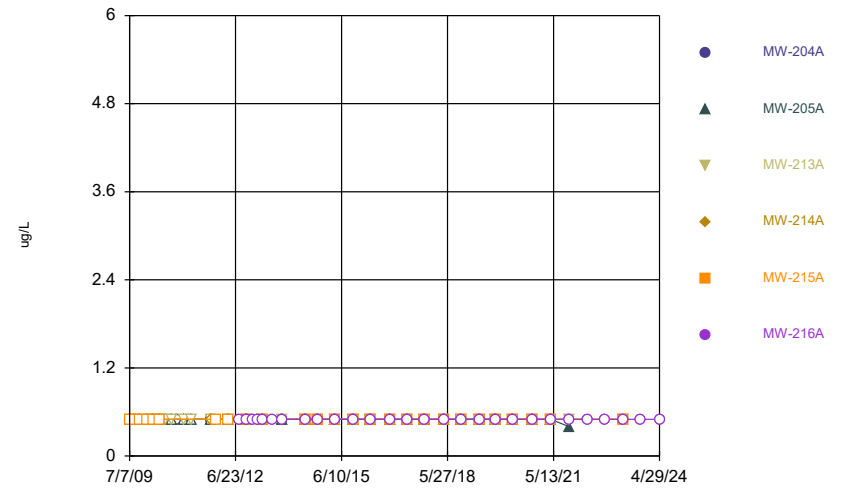
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

### Time Series



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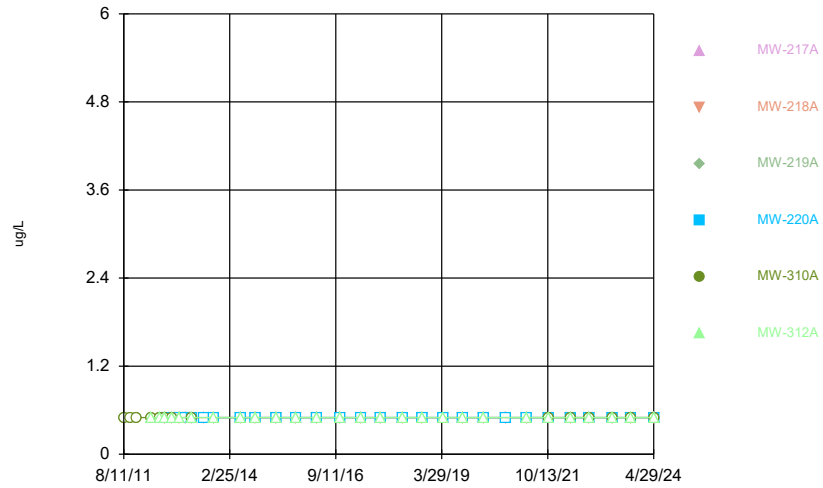
### Time Series



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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F A Series Master

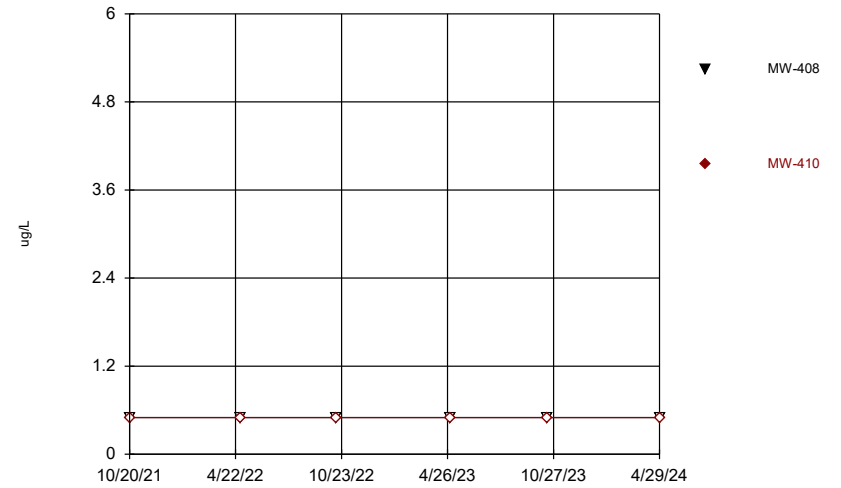


Time Series



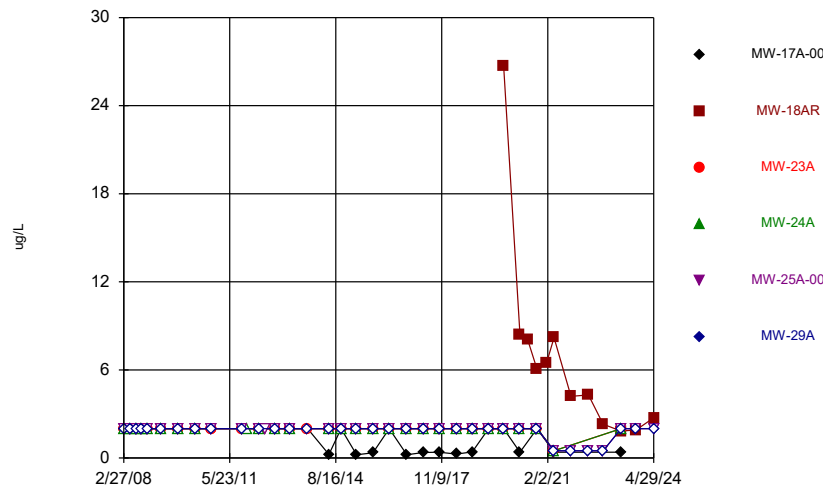
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



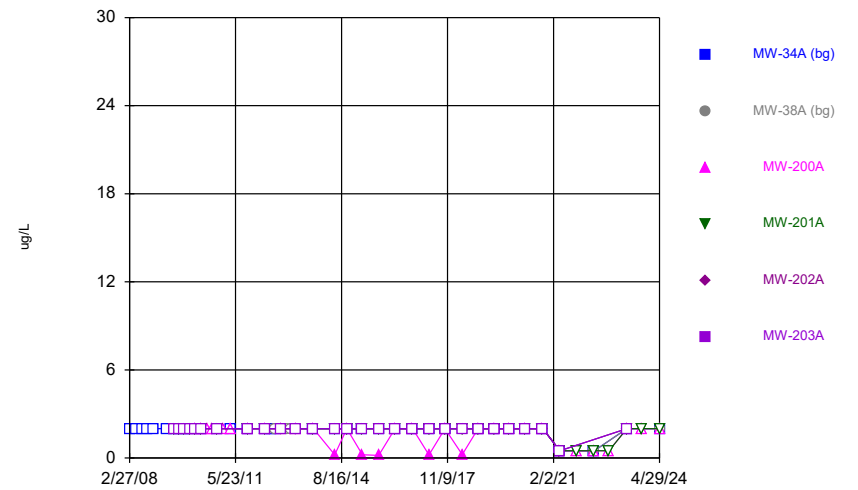
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



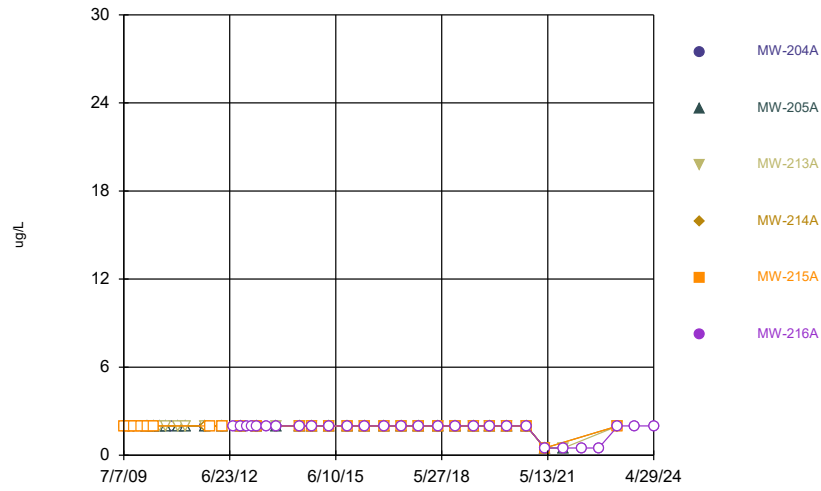
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



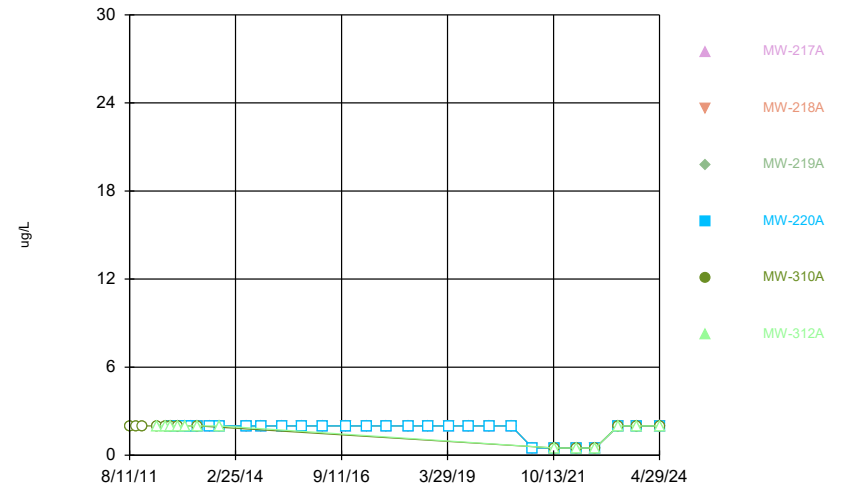
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Time Series



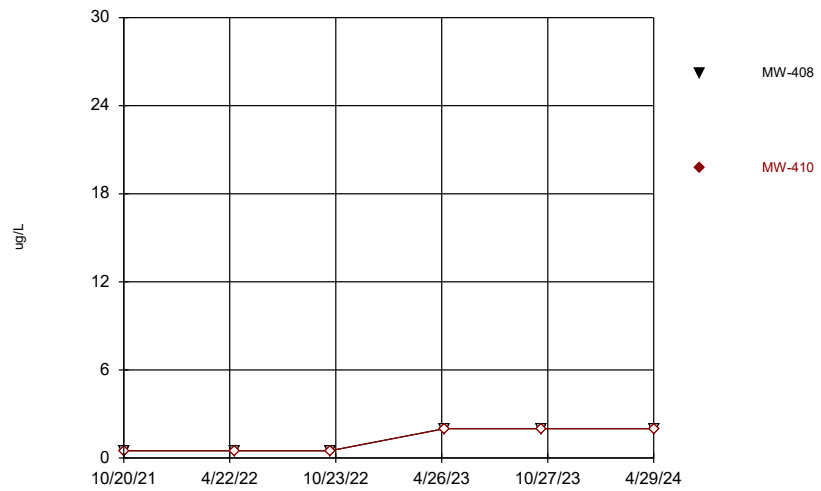
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Time Series



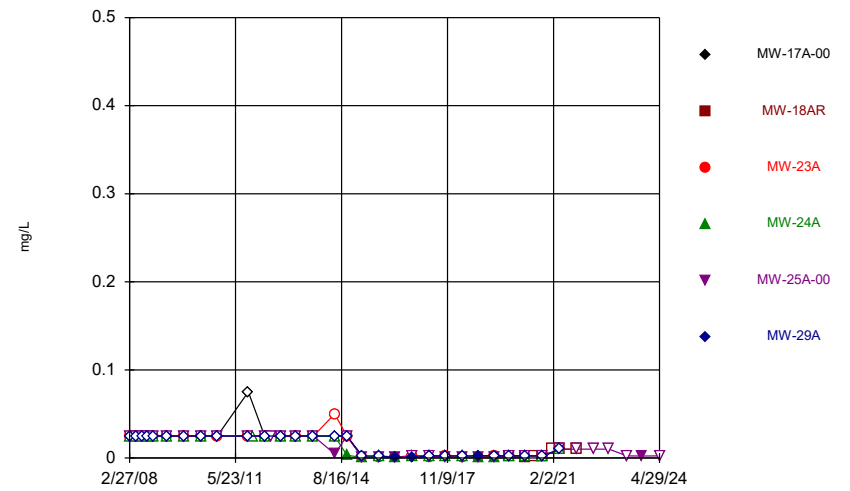
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



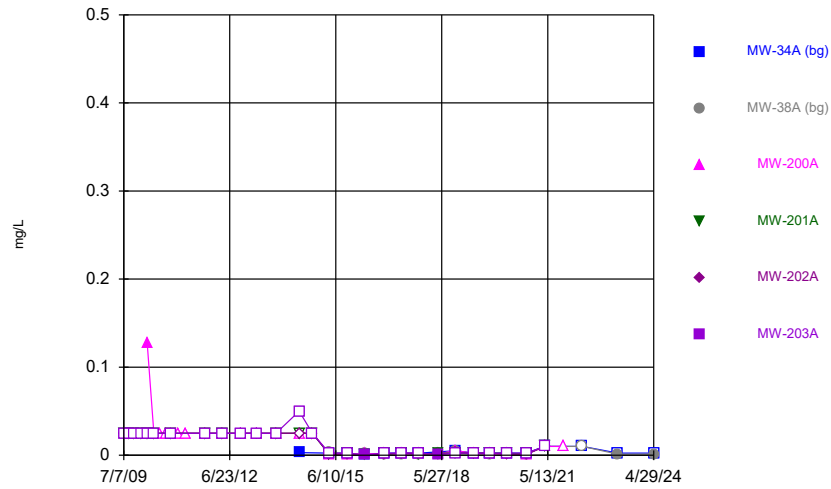
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

Time Series



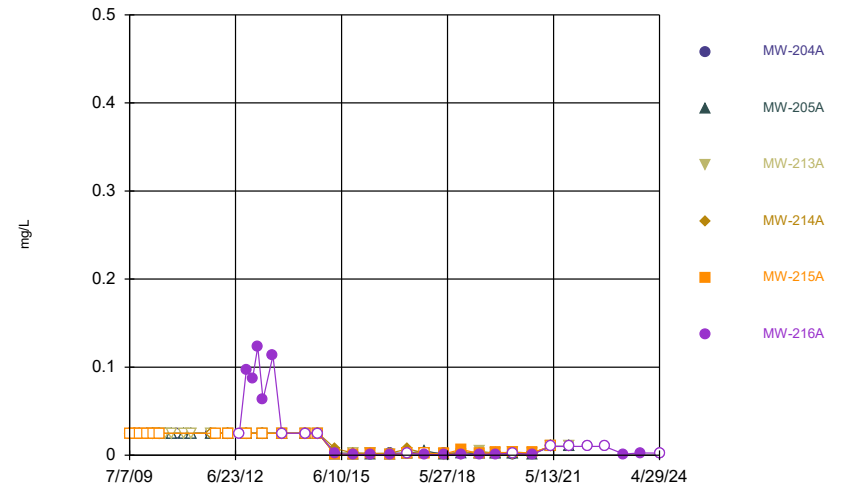
Constituent: Vanadium Analysis Run 5/31/2024 11:14 AM View: 2024SSN Time Series A\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



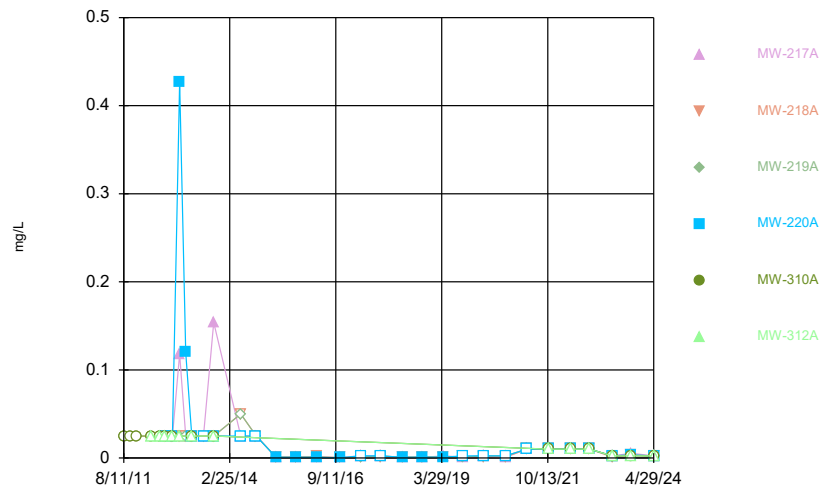
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



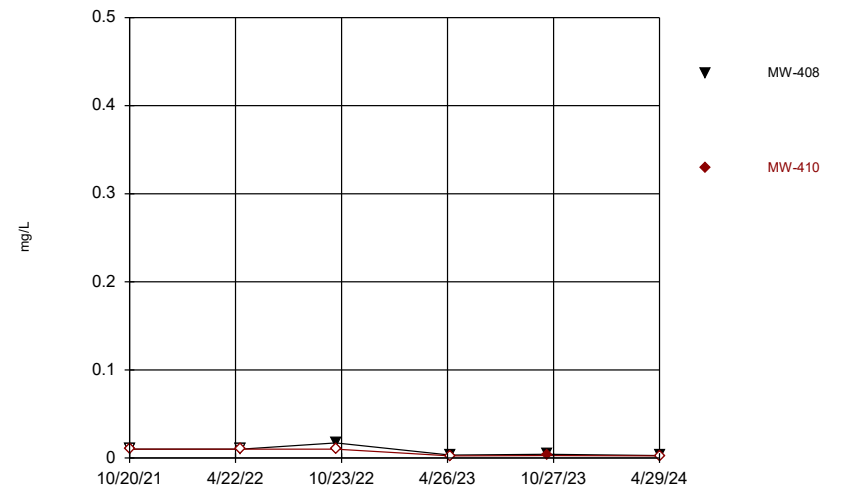
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### Time Series



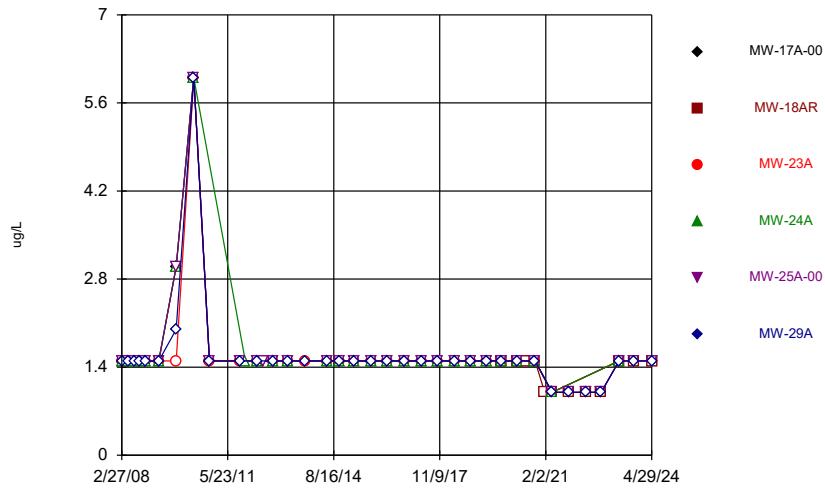
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



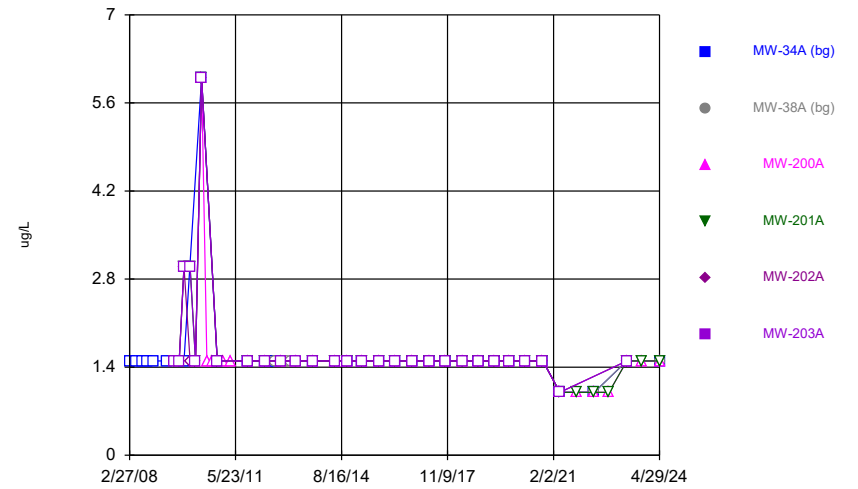
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



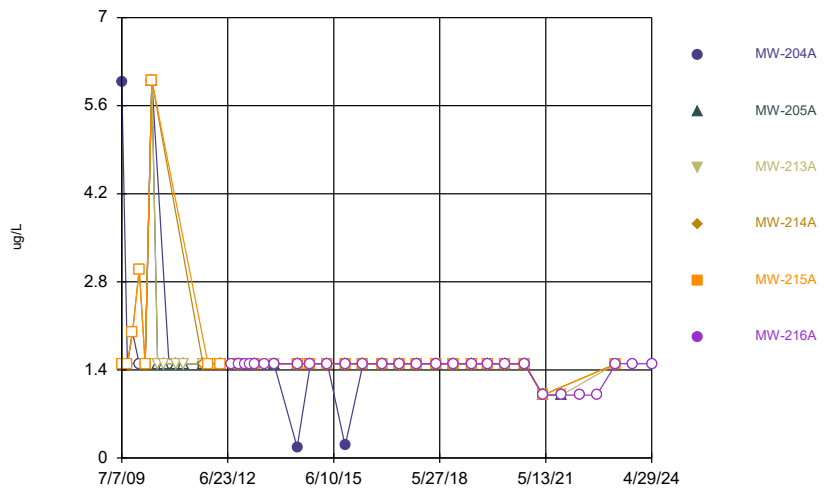
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



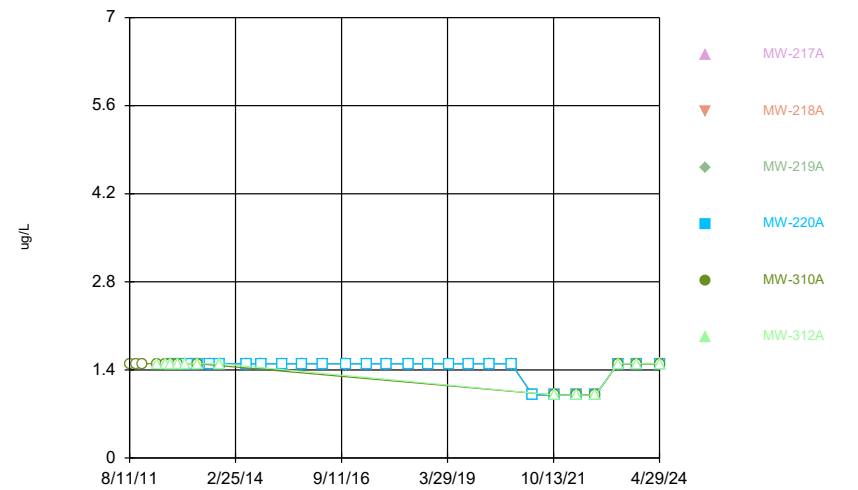
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



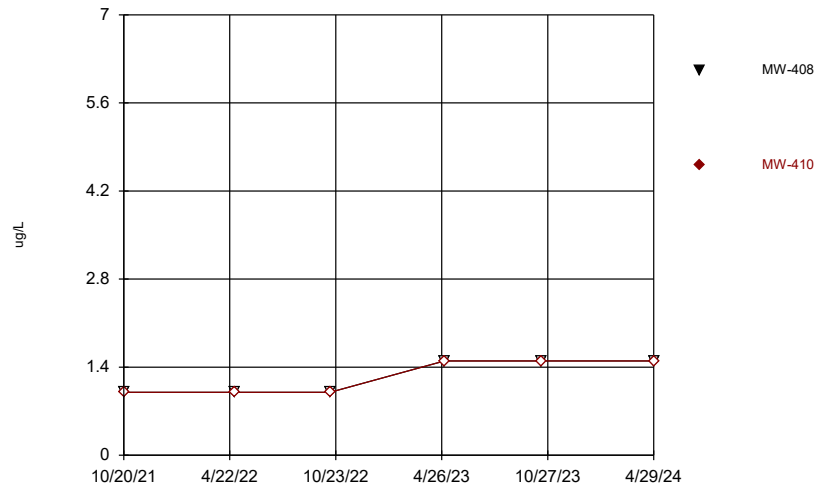
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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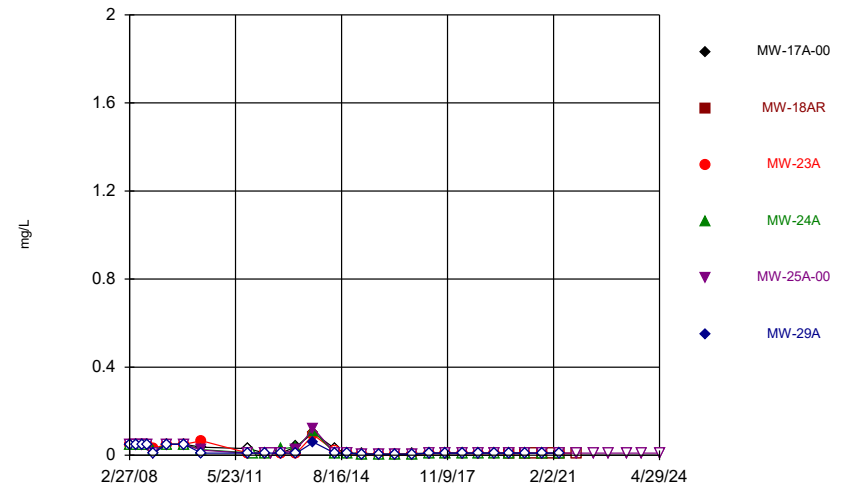
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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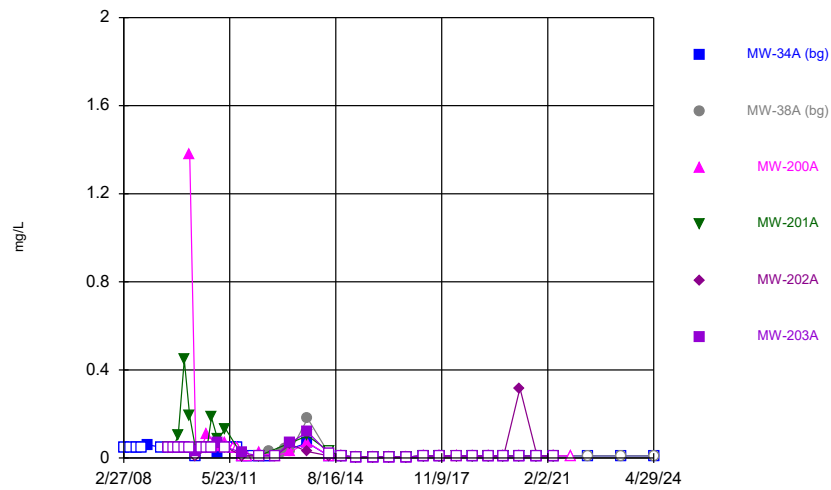
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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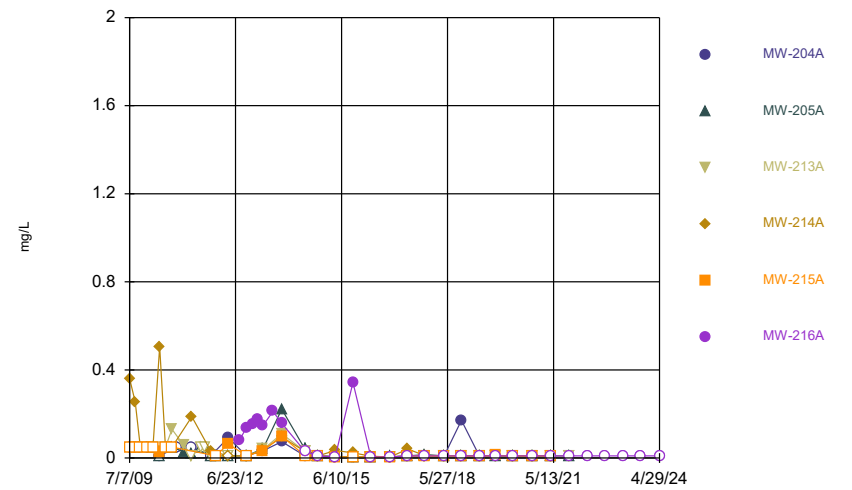
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

### Time Series



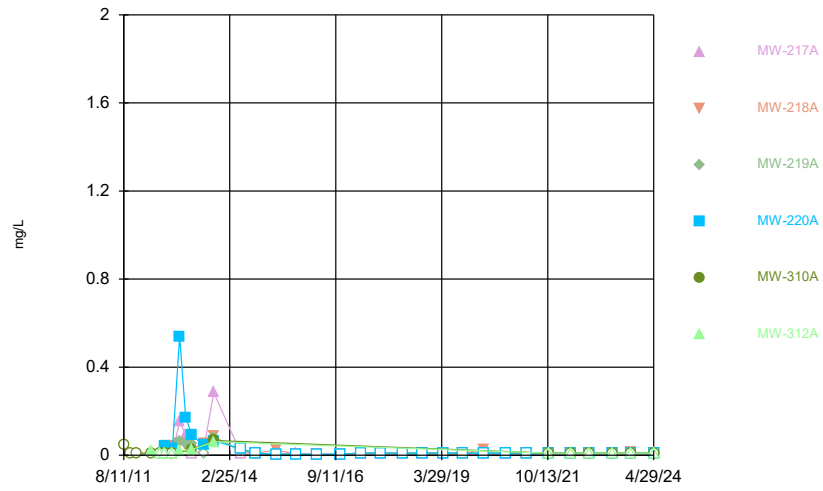
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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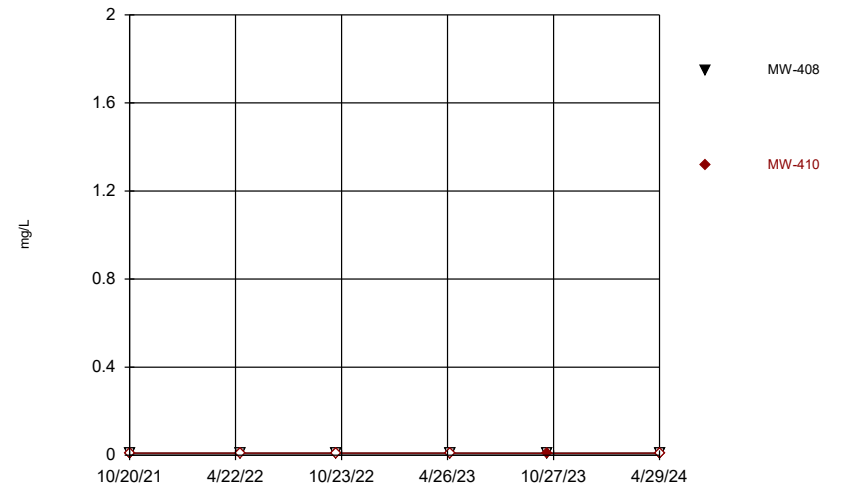
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF A Series Master

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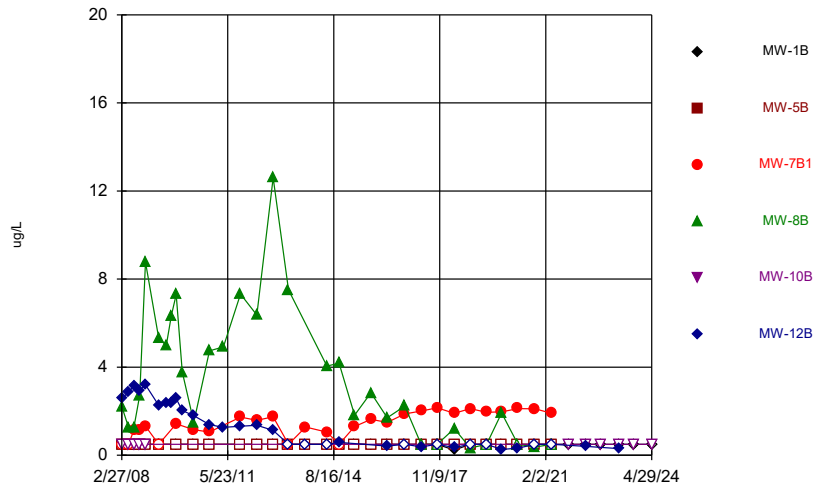
### Time Series



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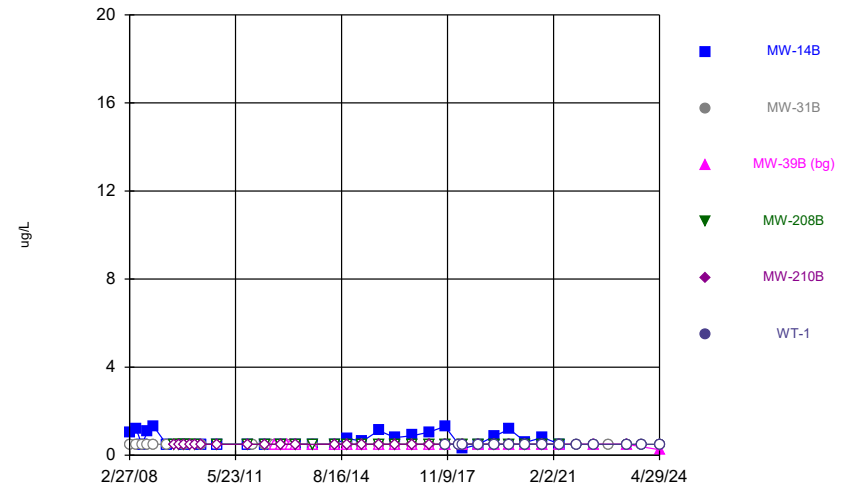
**Time Series Plots**  
**Series B and Groundwater Underdrains**

Time Series



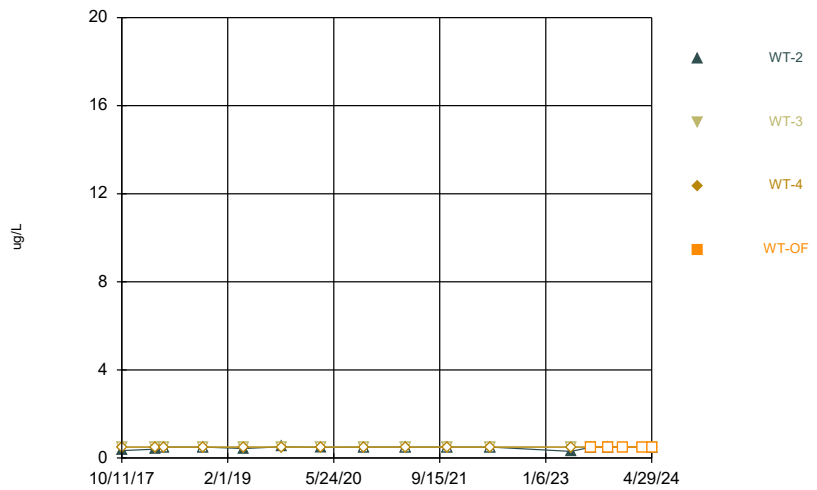
Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



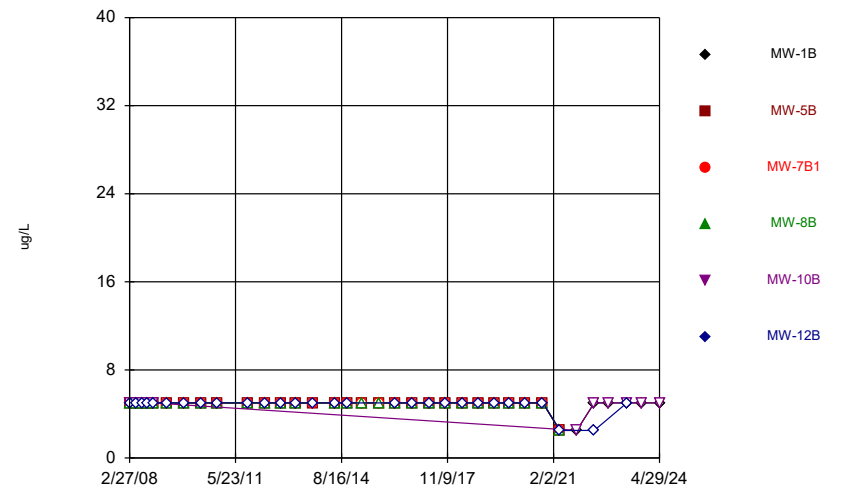
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



Constituent: 1,1-Dichloroethane Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

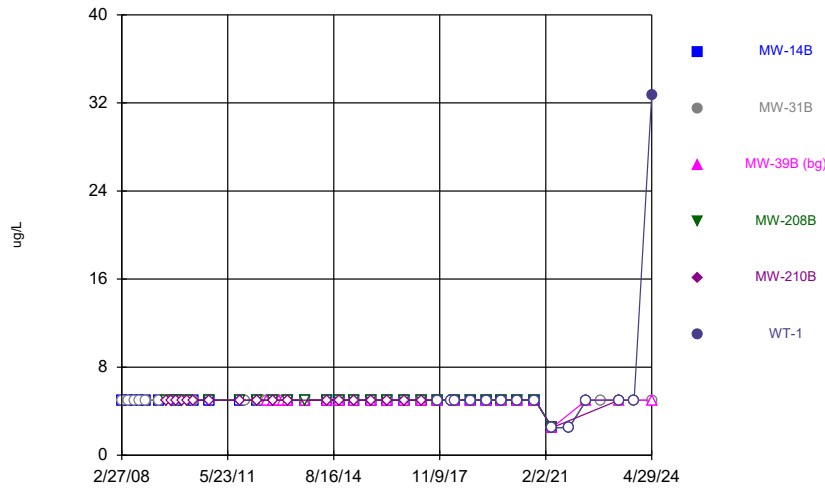
Time Series



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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

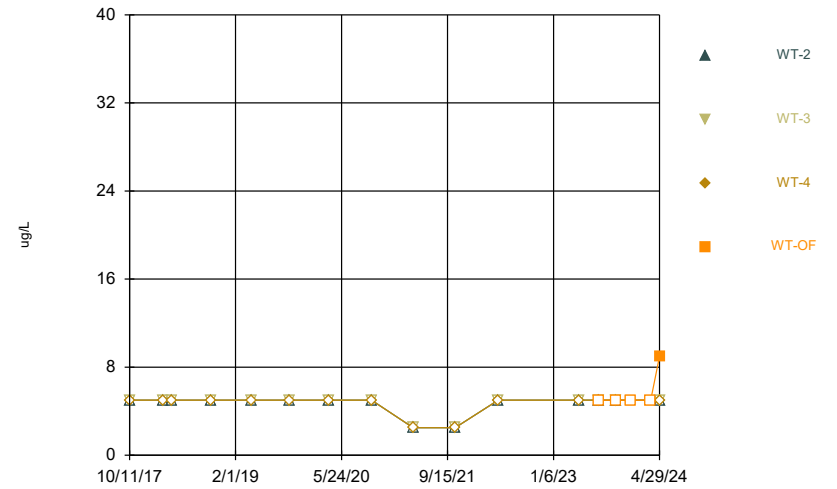


Time Series



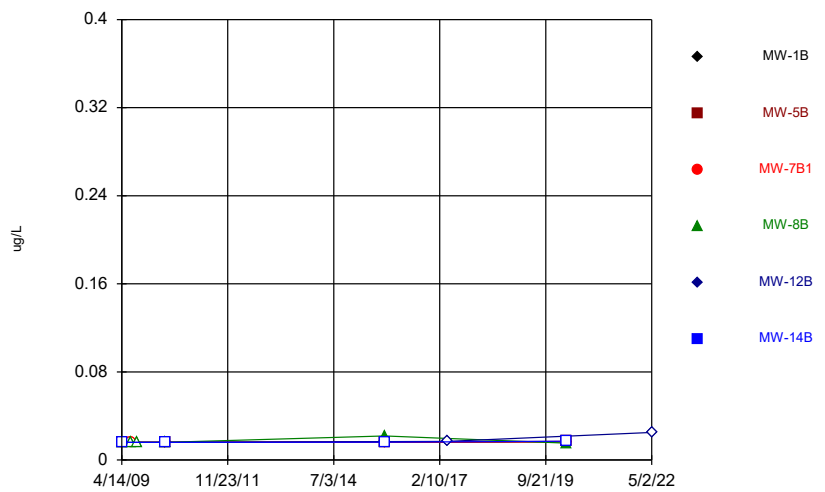
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



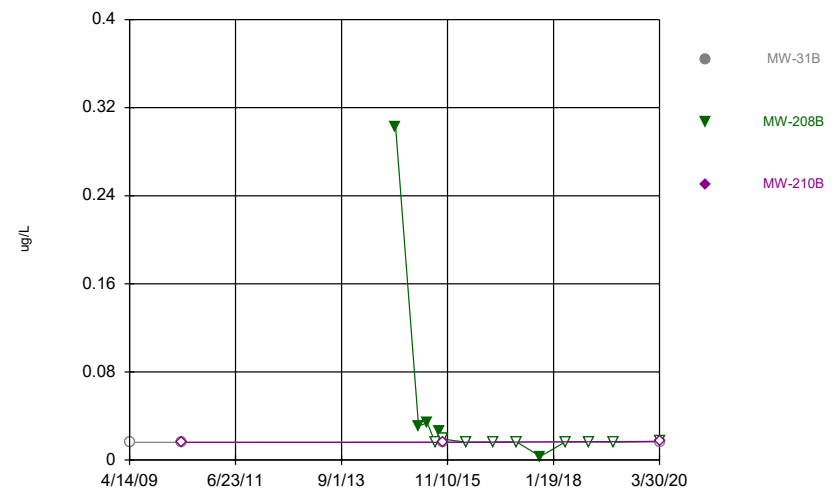
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



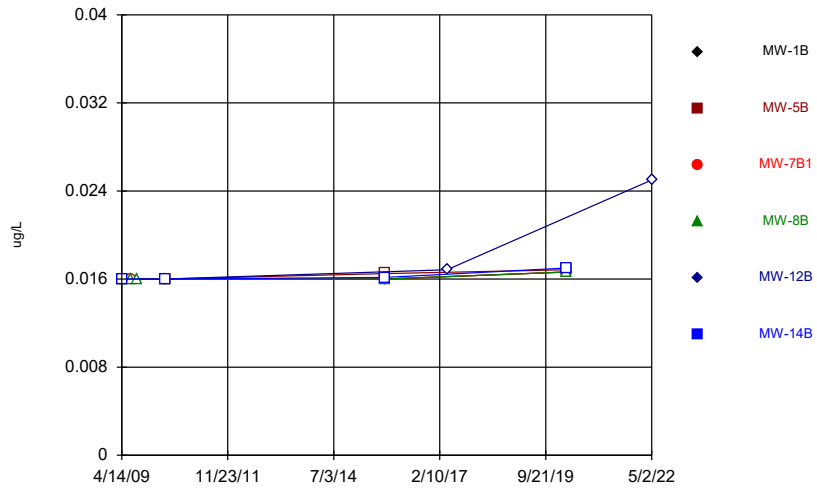
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



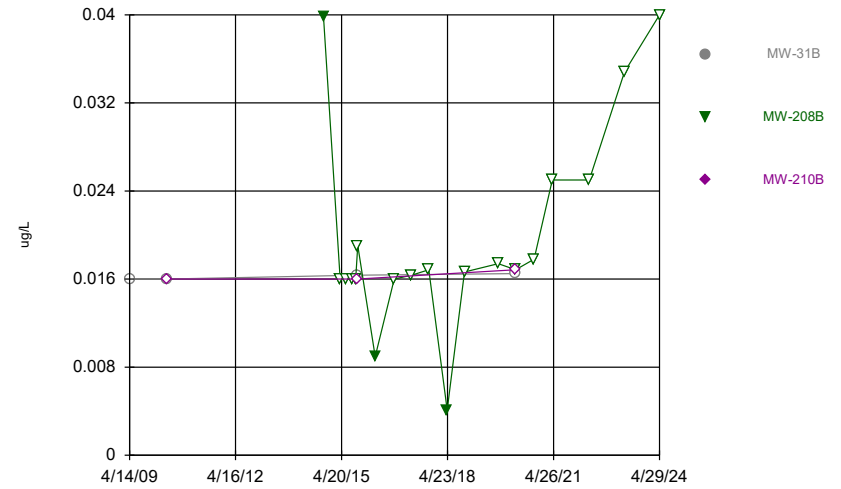
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



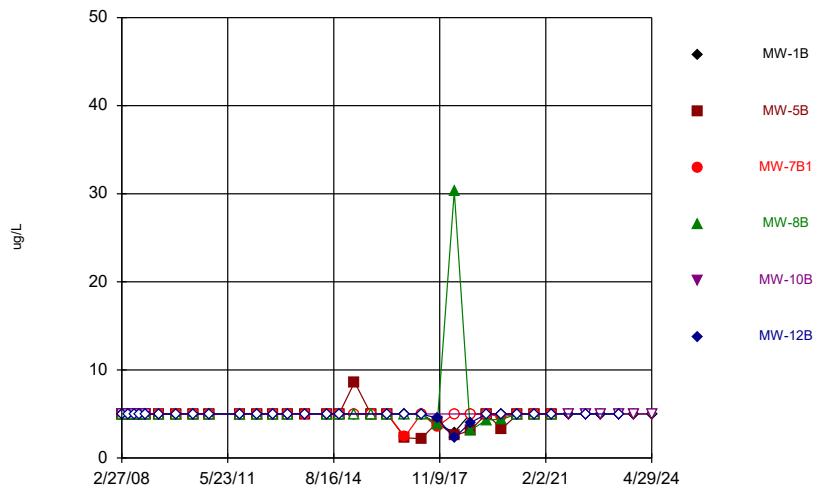
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



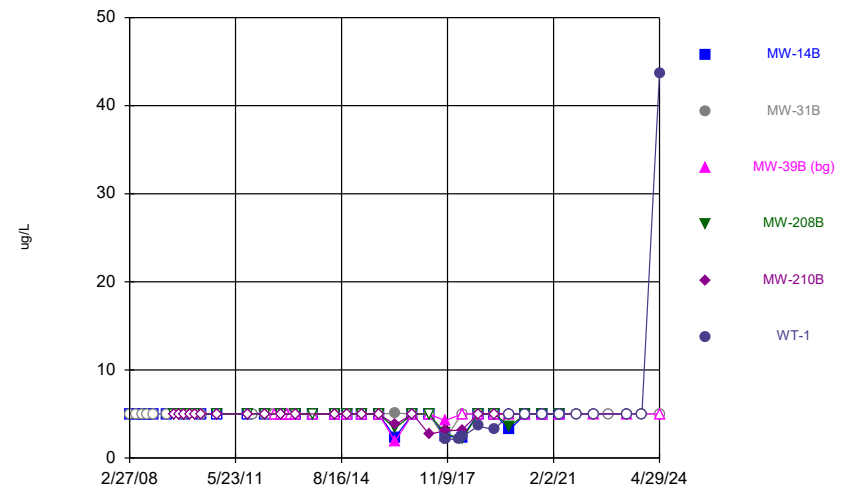
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



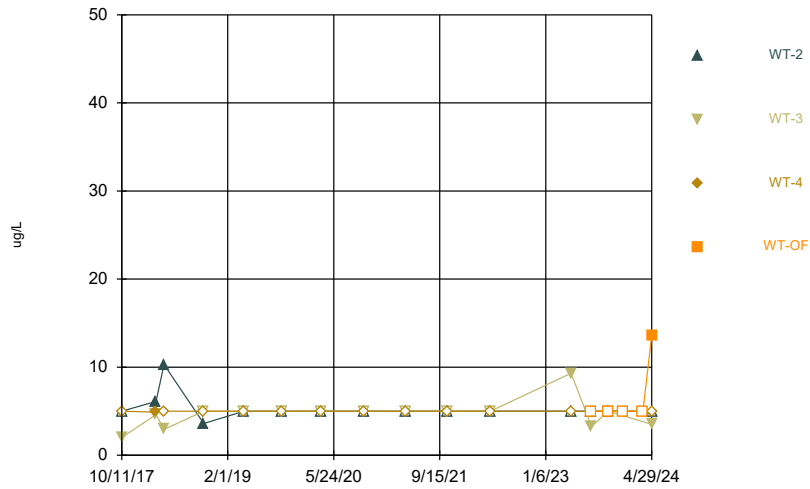
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Time Series



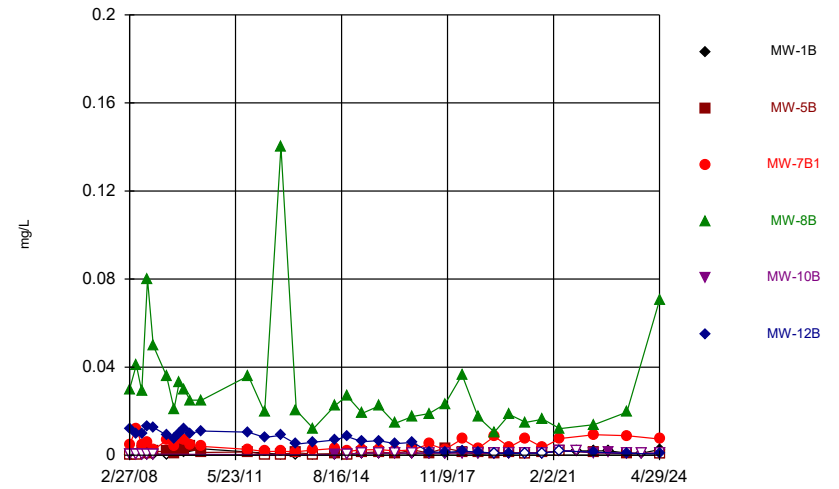
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



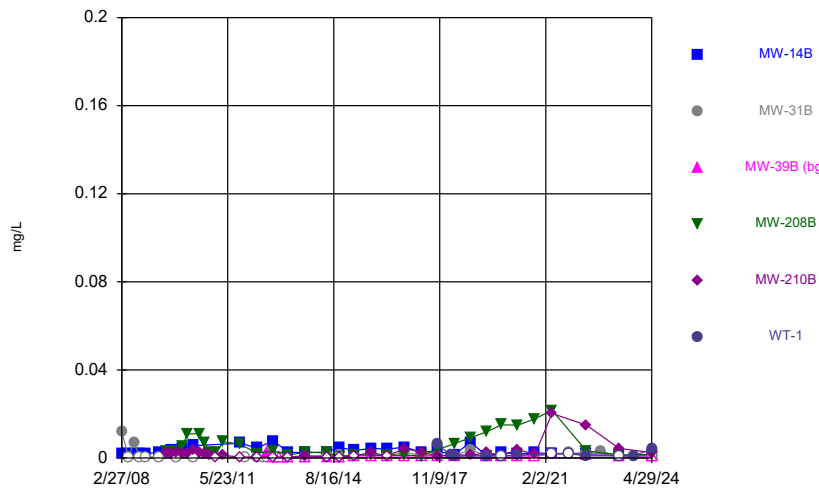
Constituent: Acetone Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



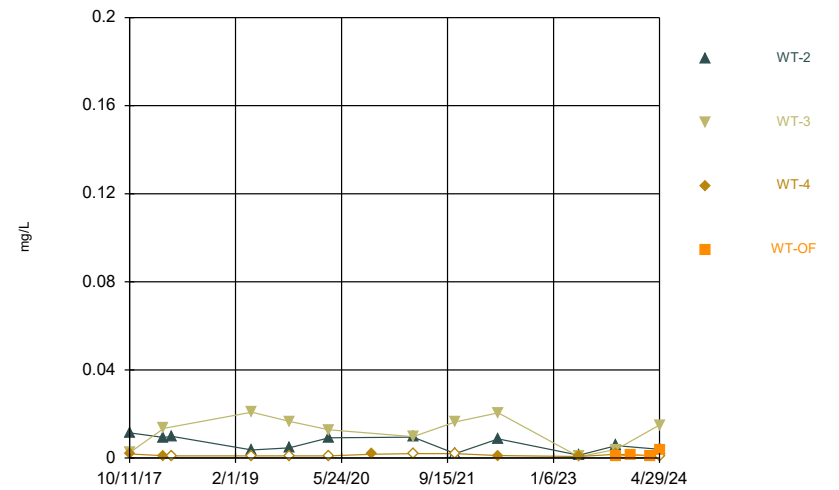
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



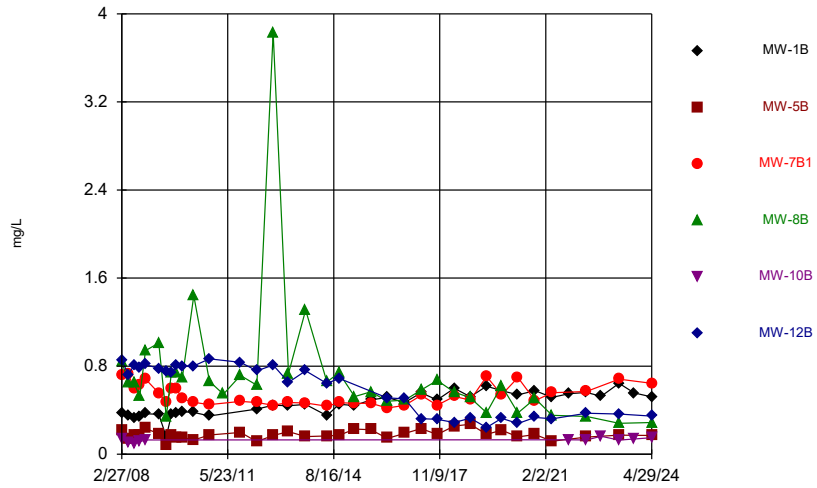
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



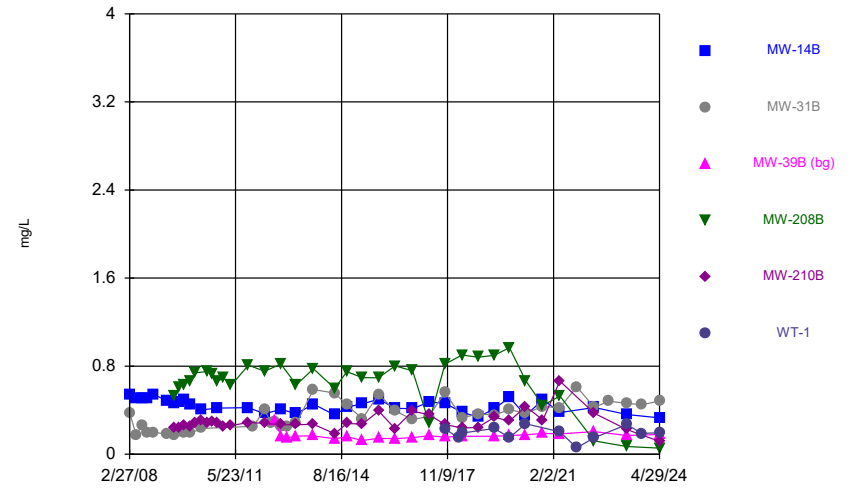
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



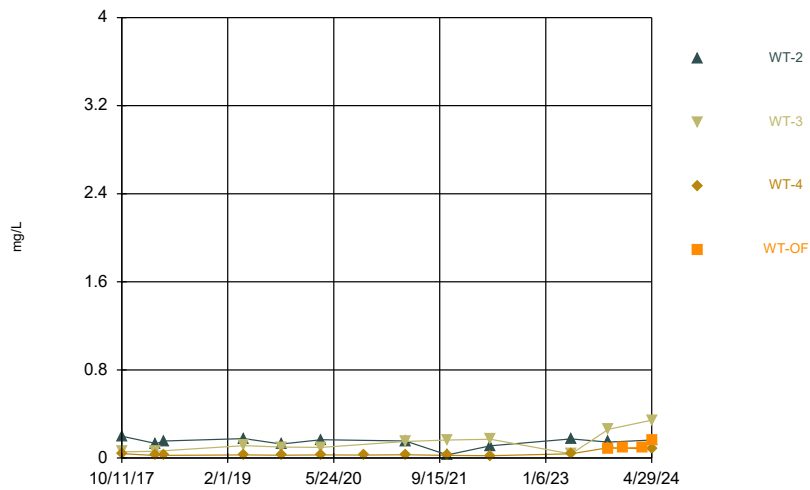
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 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



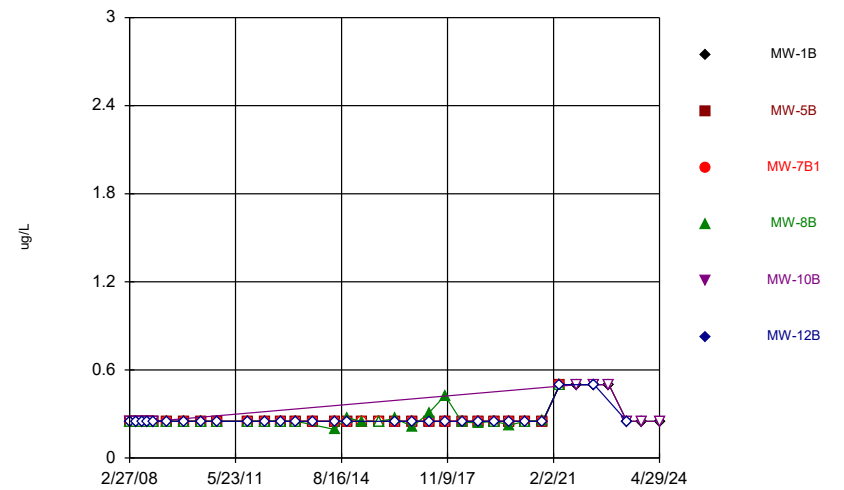
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 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



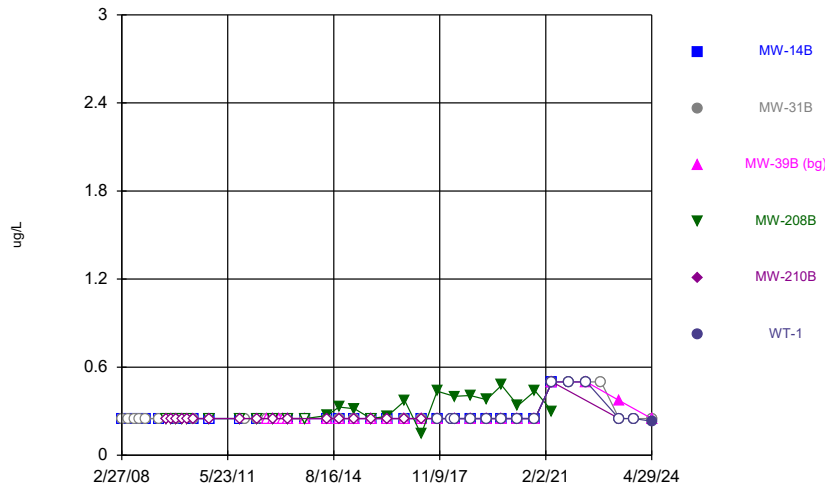
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 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



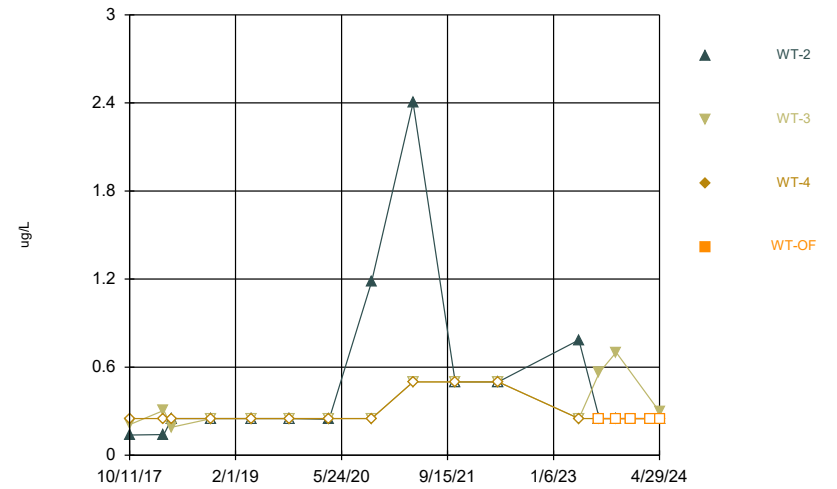
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 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



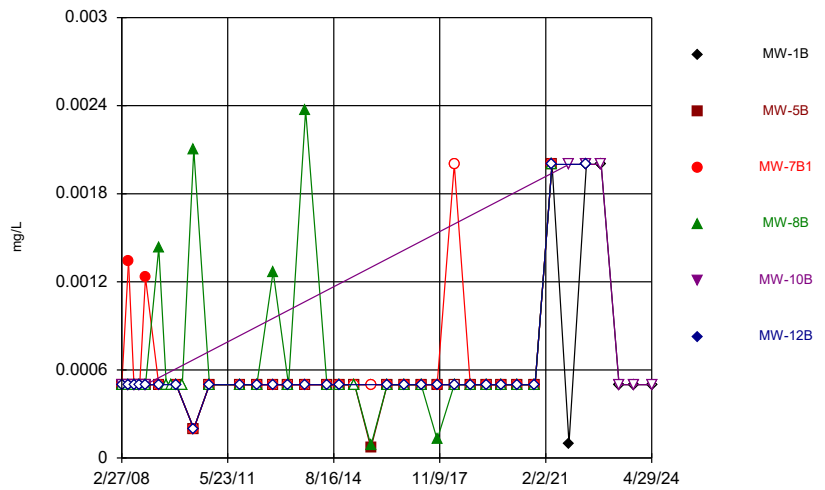
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL B Series and UD Master

Time Series



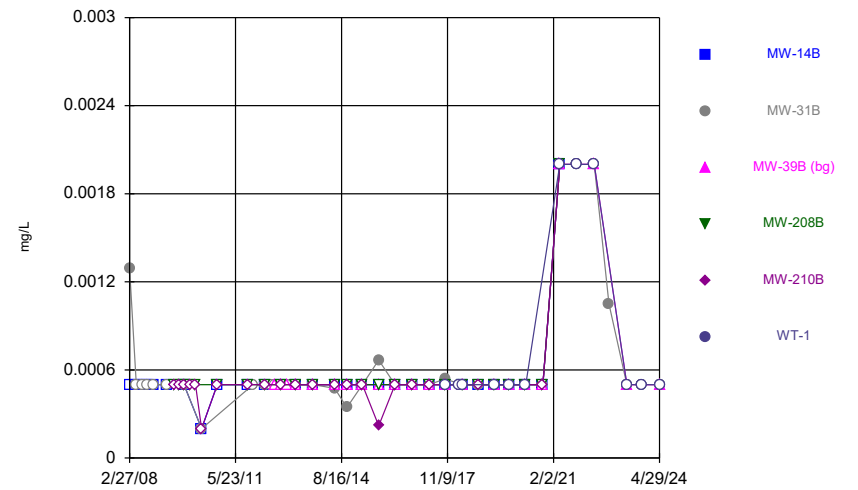
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL B Series and UD Master

Time Series



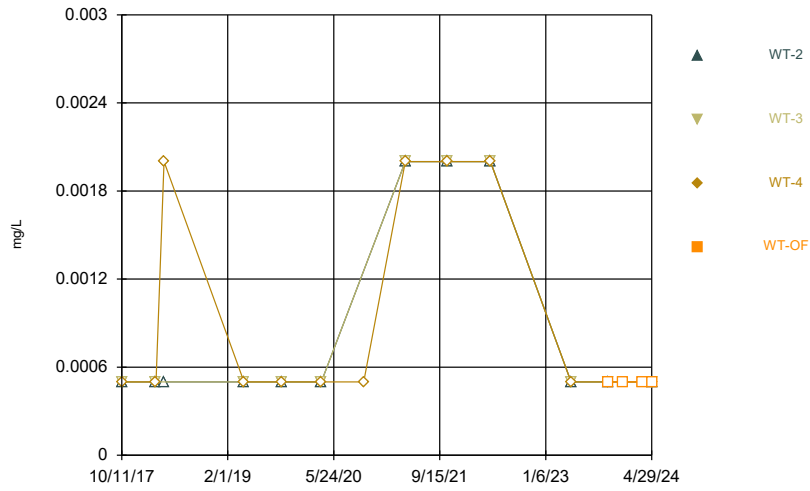
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL B Series and UD Master

Time Series



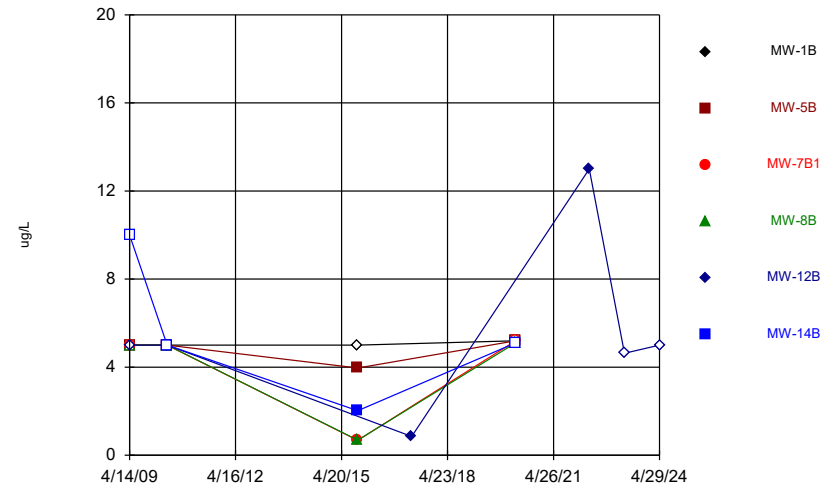
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL B Series and UD Master

Time Series



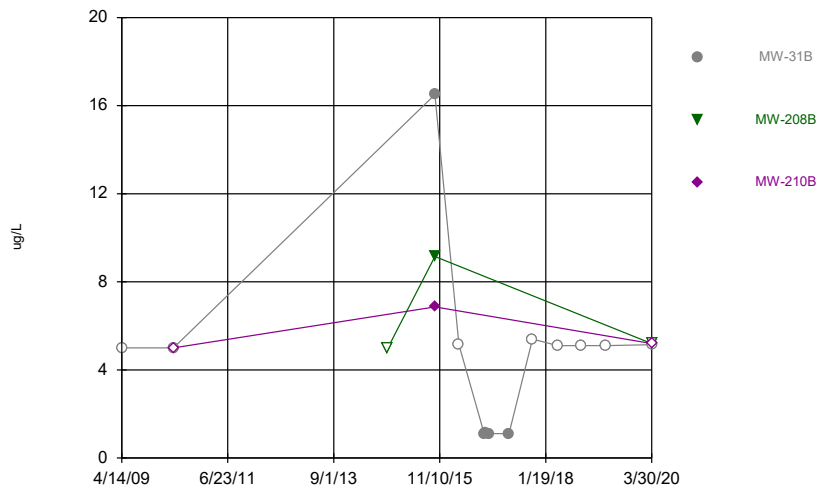
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



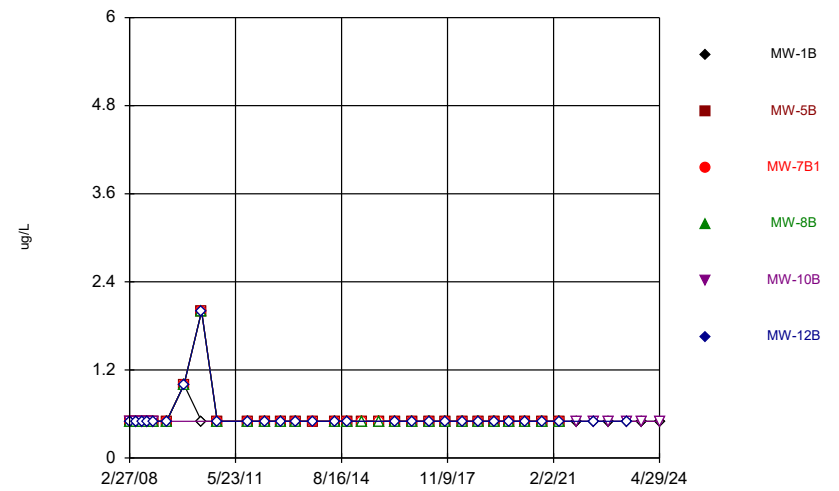
Constituent: Bis[2-ethylhexyl]phthalate Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



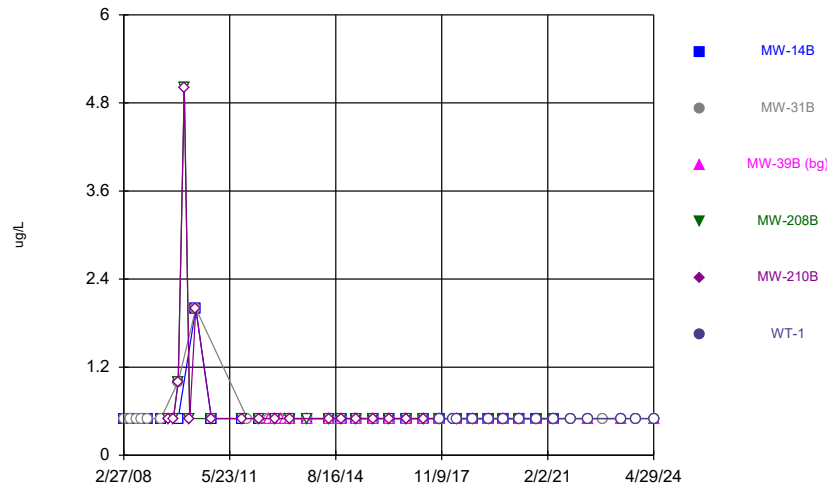
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



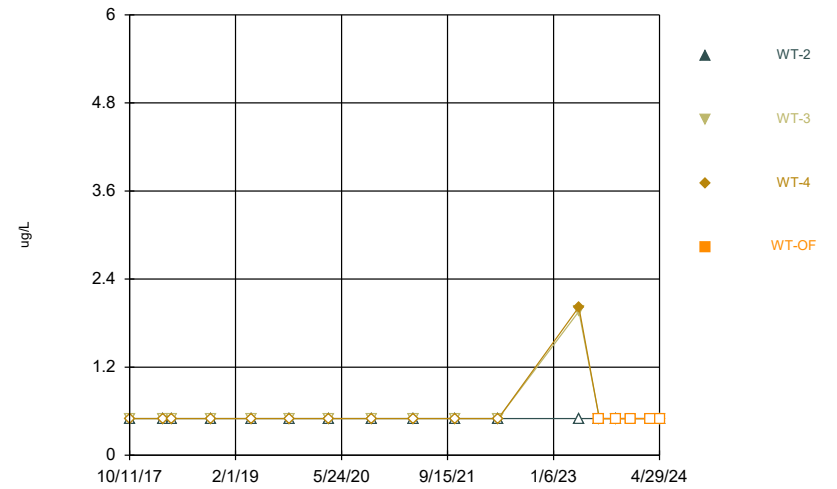
Constituent: Bromodichloromethane Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Se  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



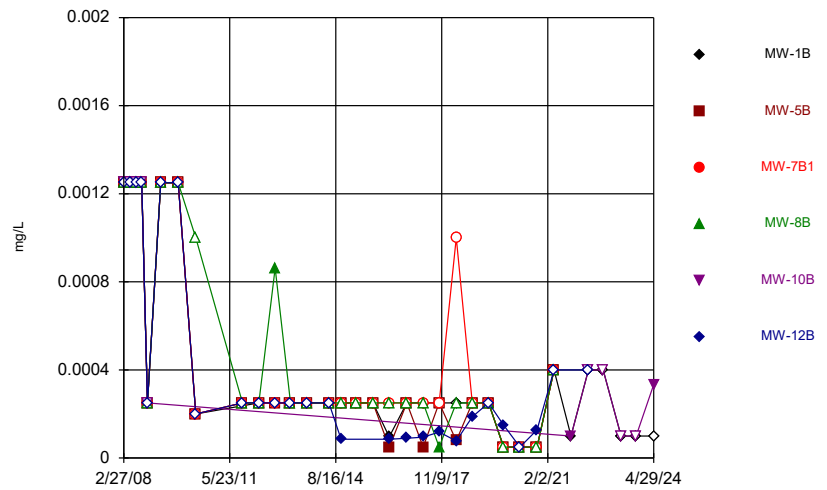
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



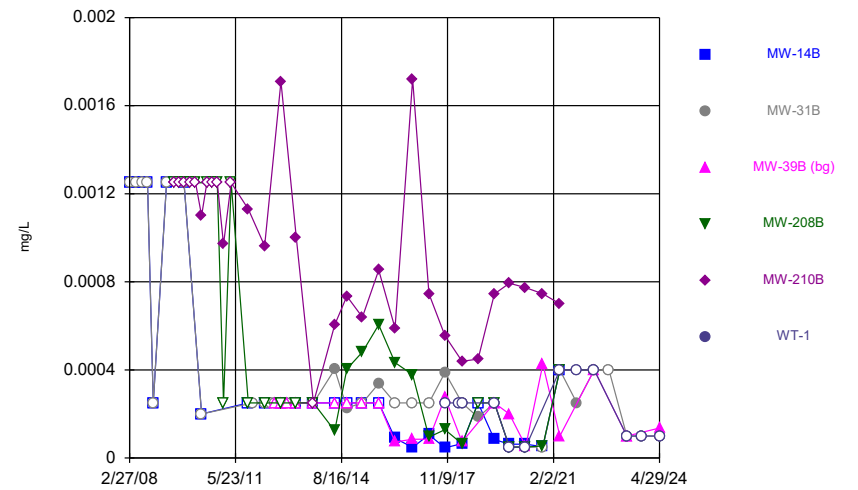
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



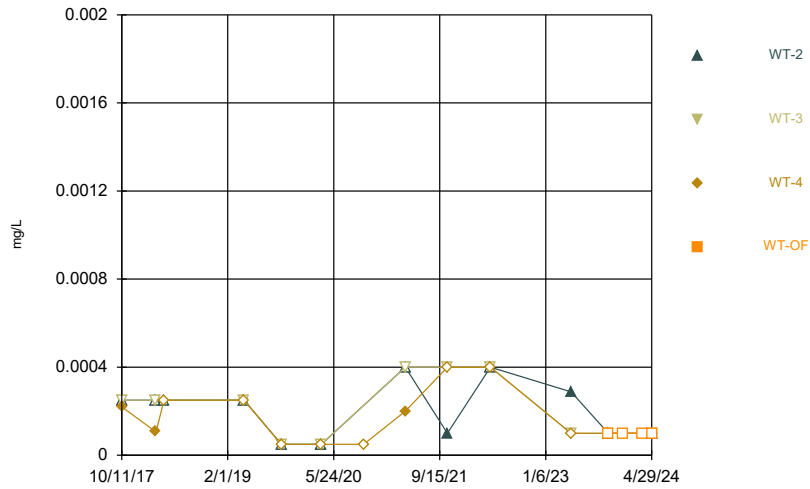
Constituent: Cadmium Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



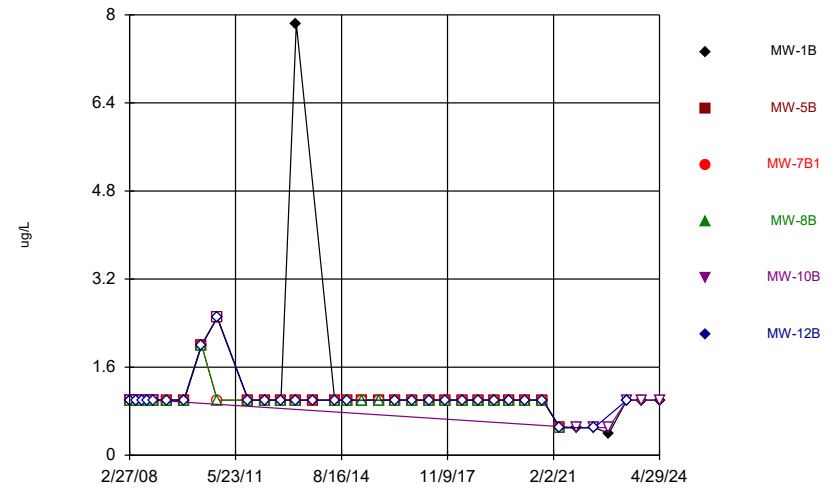
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



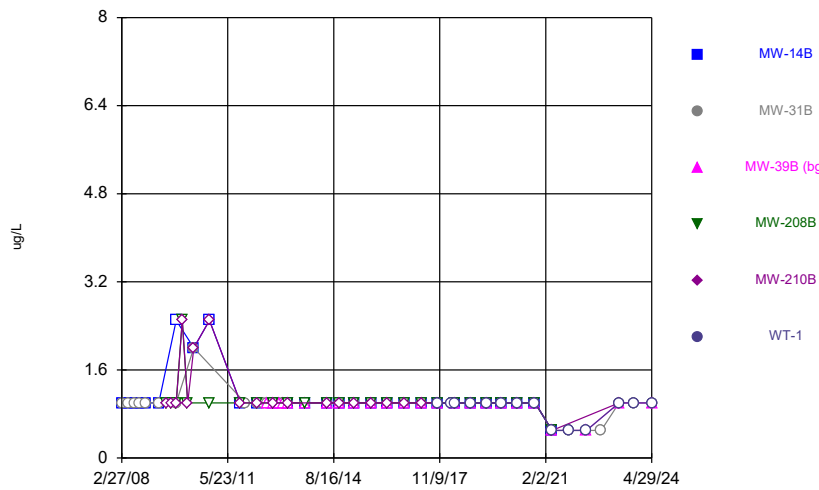
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



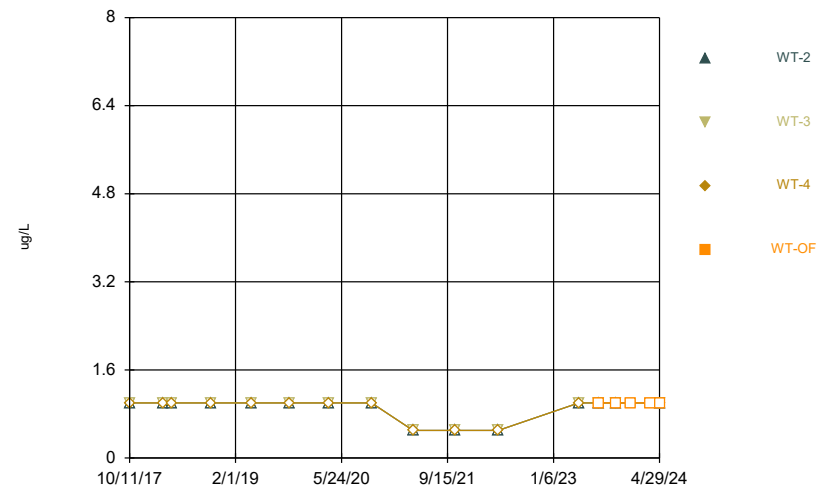
Constituent: Carbon Tetrachloride Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Seri  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

Time Series



Constituent: Carbon Tetrachloride Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Seri  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

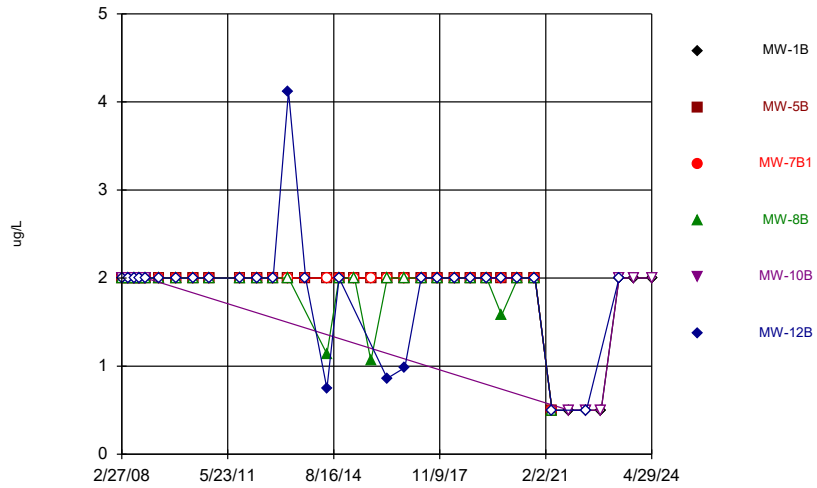
Time Series



Constituent: Carbon Tetrachloride Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Seri  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL F B Series and UD Master

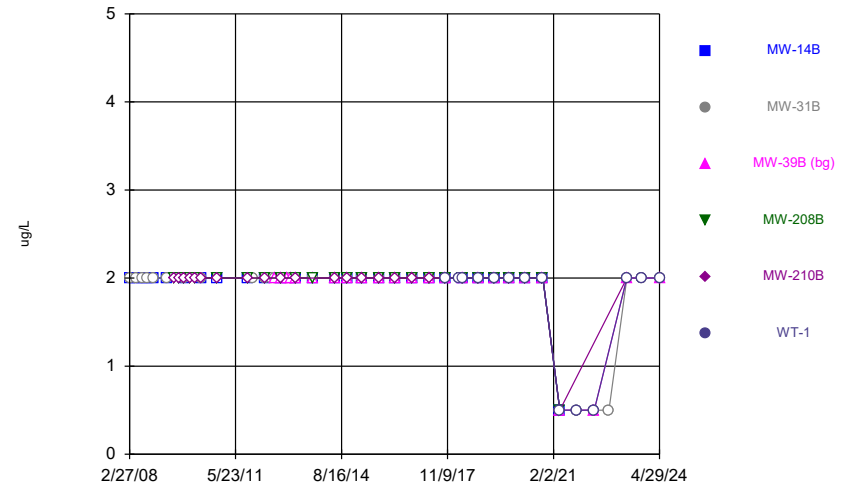


Time Series



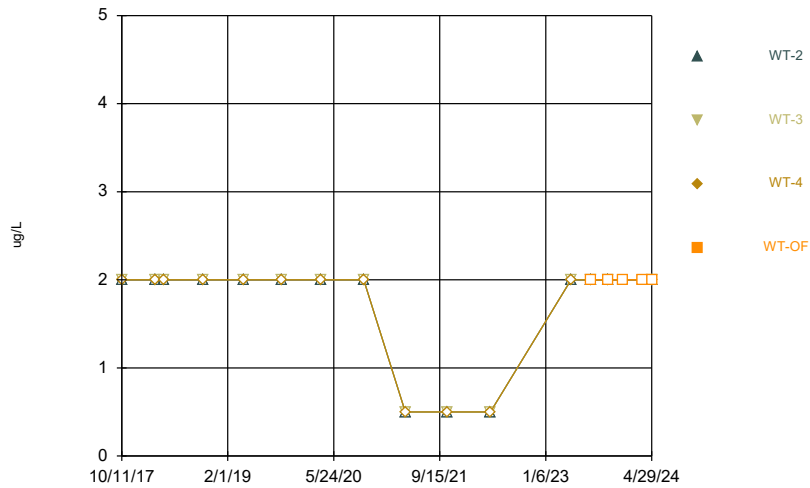
Constituent: Chloroethane Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



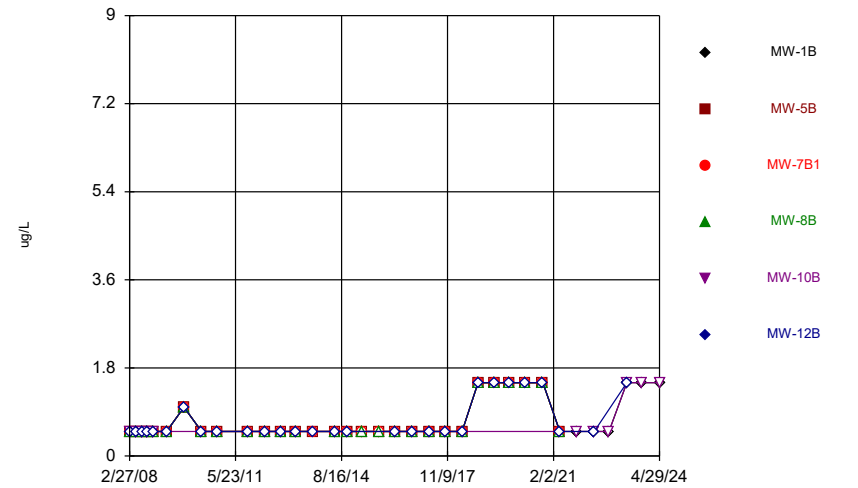
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



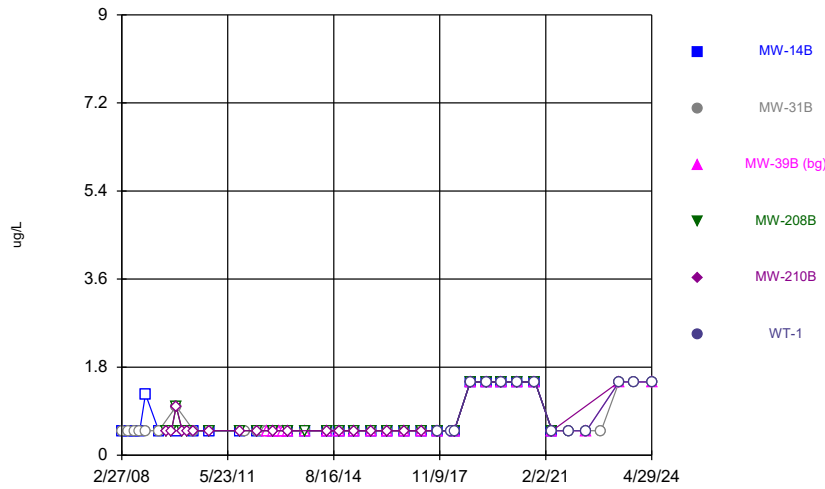
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



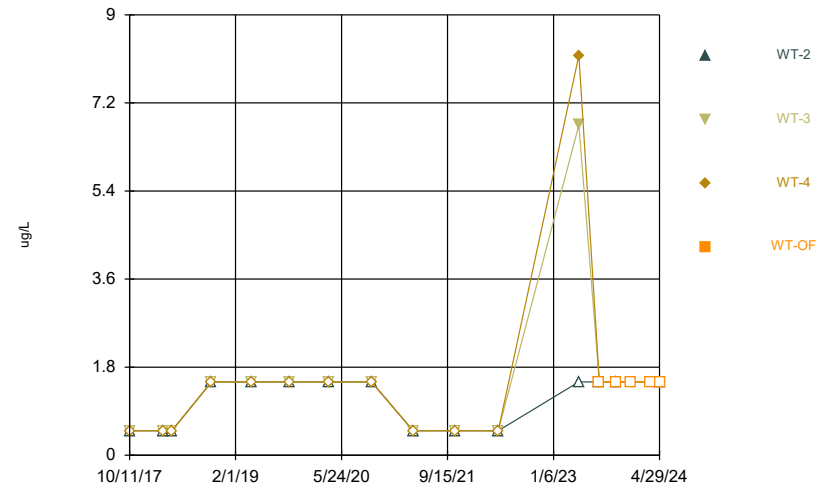
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



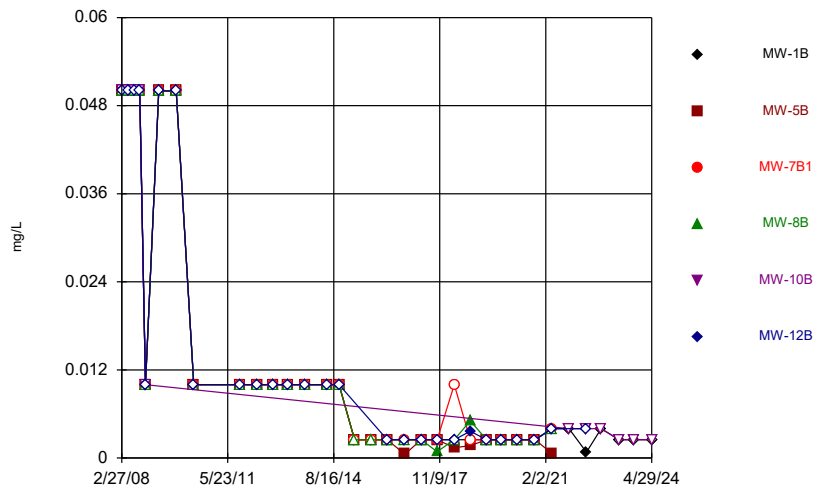
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



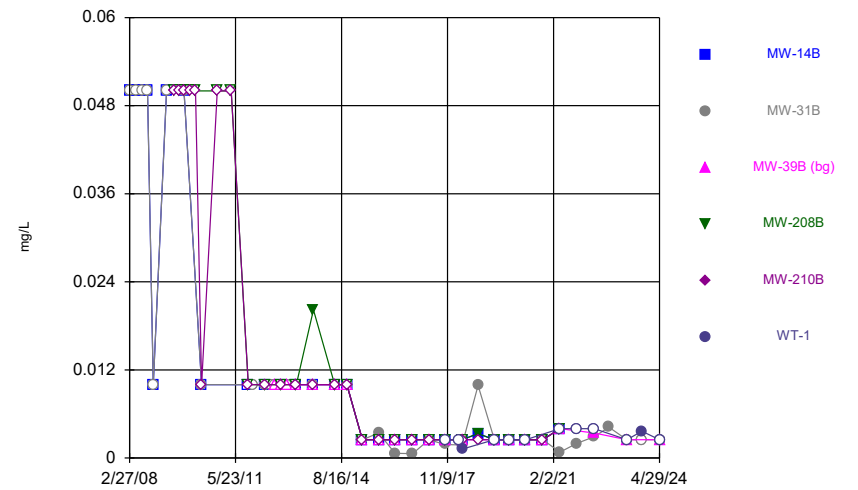
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



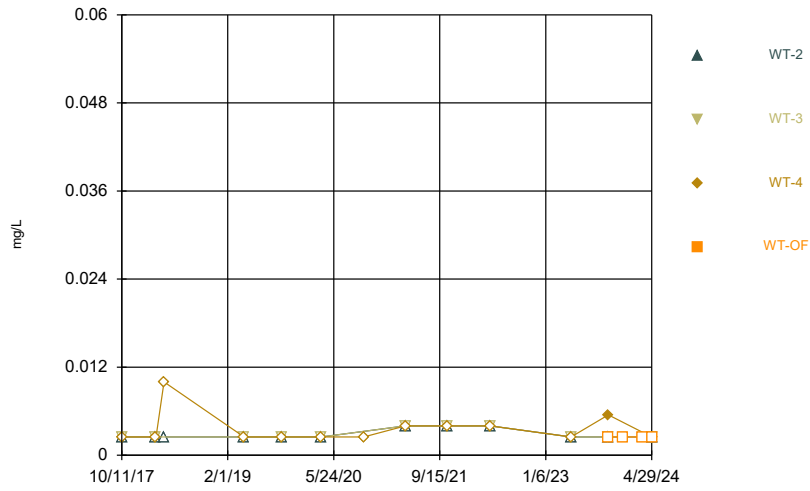
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



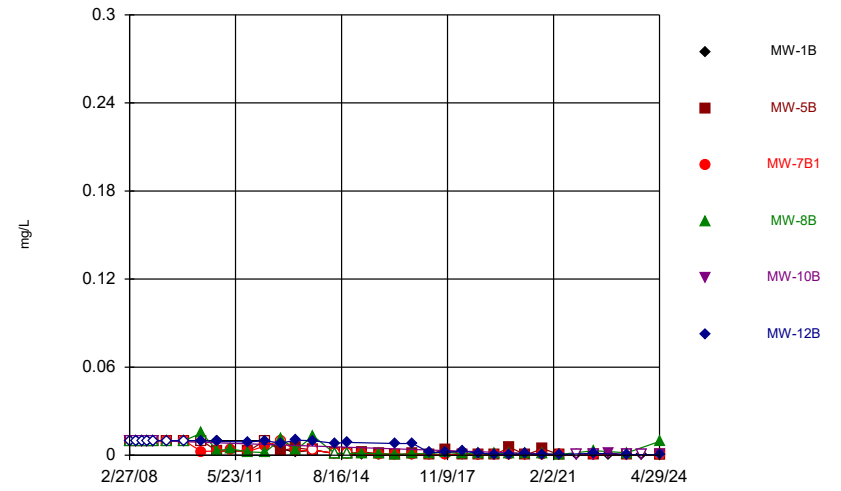
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



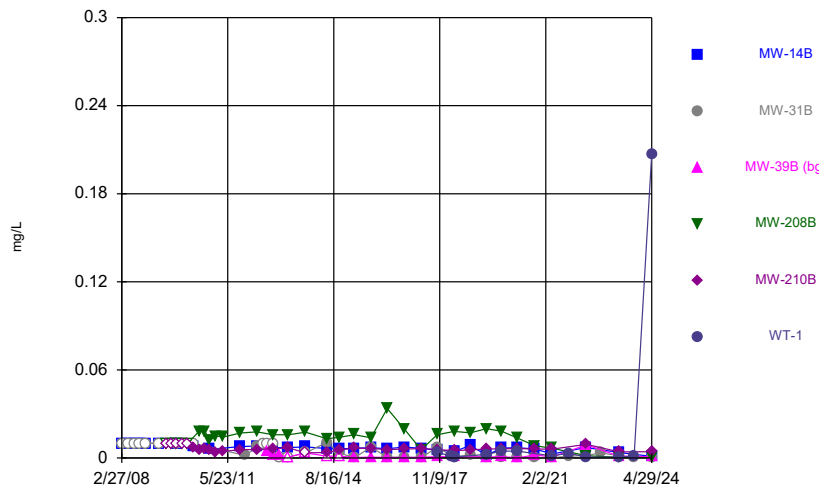
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



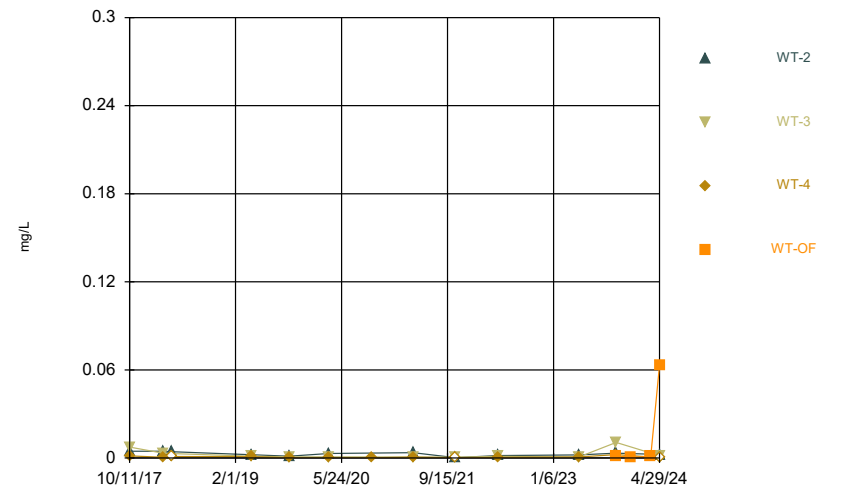
Constituent: Cobalt Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



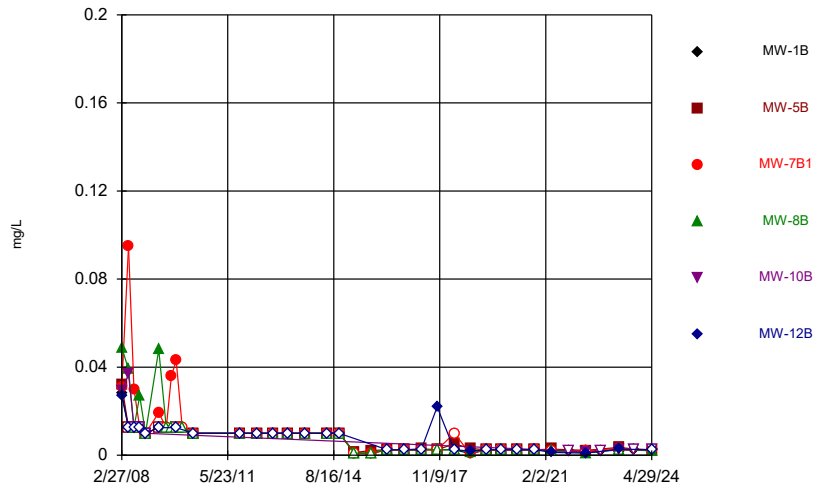
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



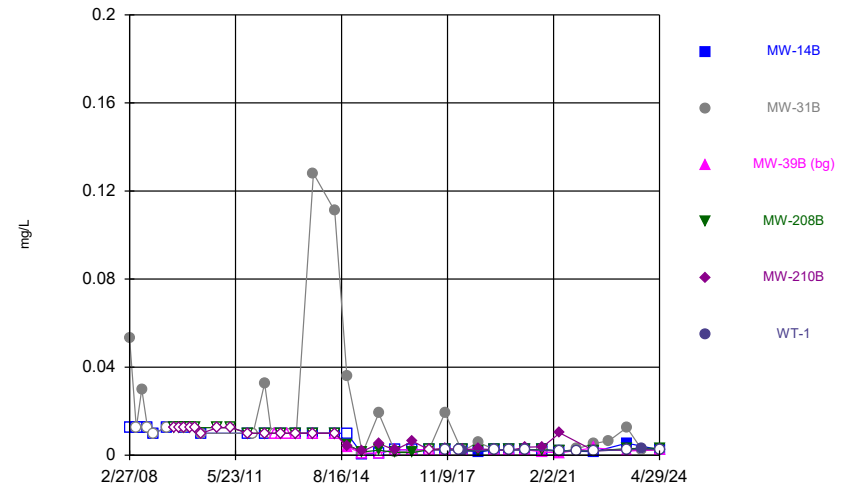
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



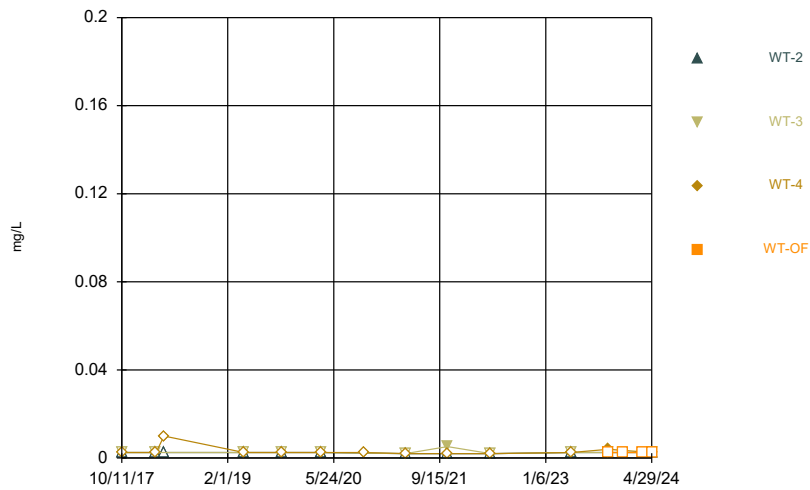
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



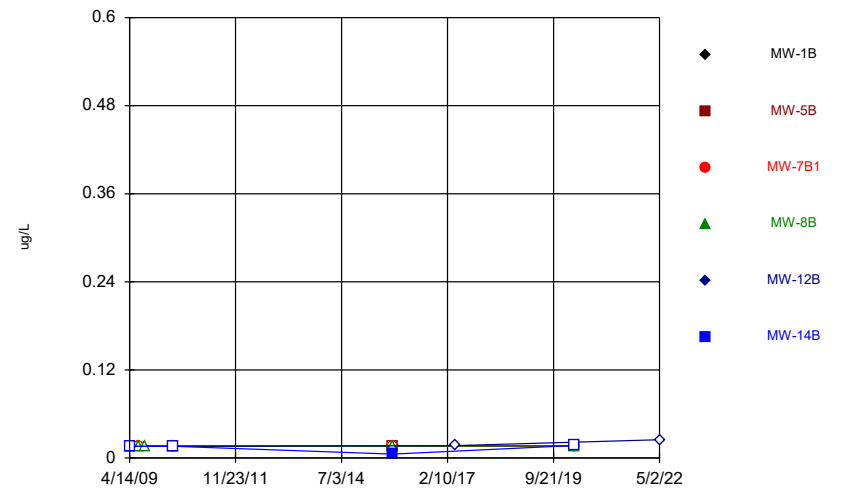
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



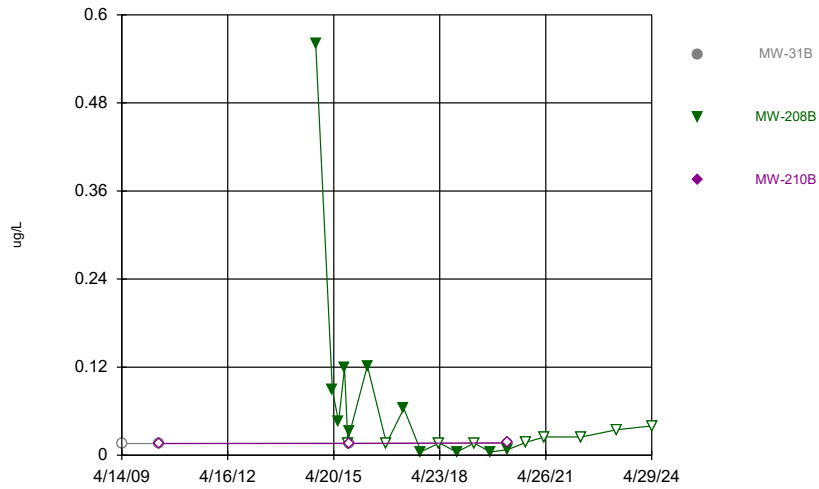
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



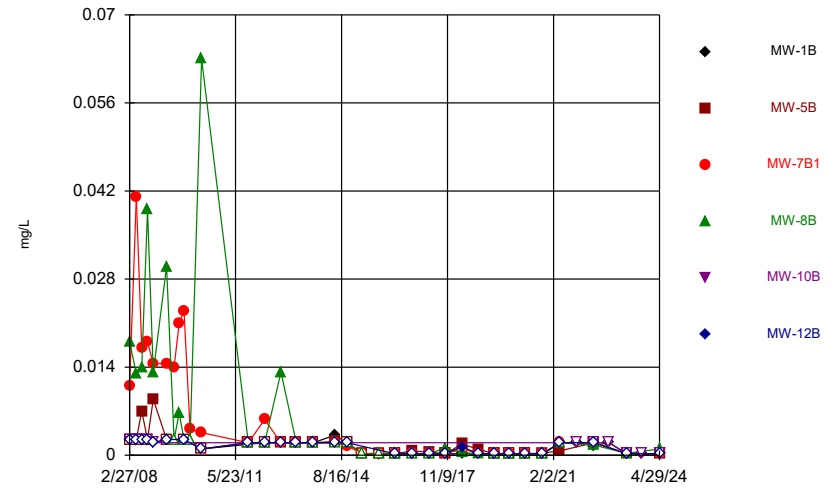
Constituent: Endrin Analysis Run 5/31/2024 11:55 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



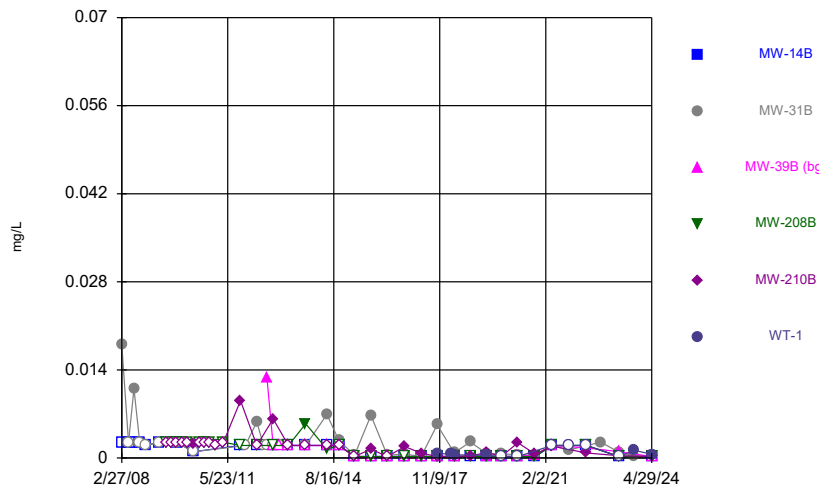
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



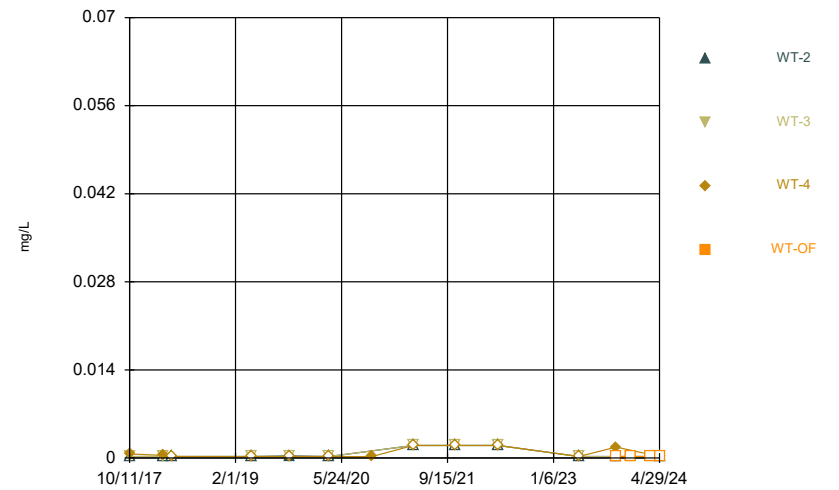
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



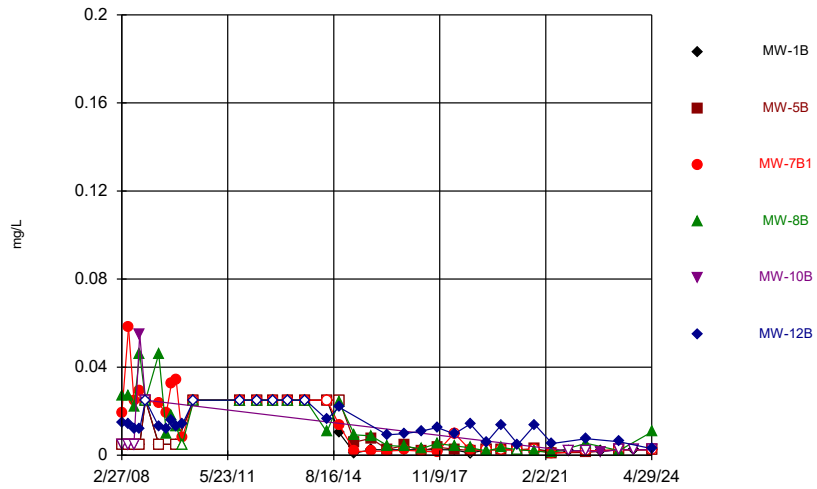
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



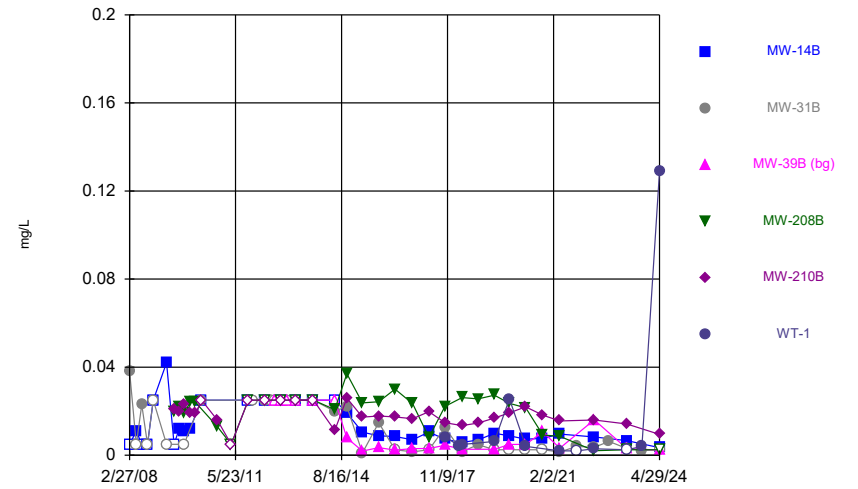
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



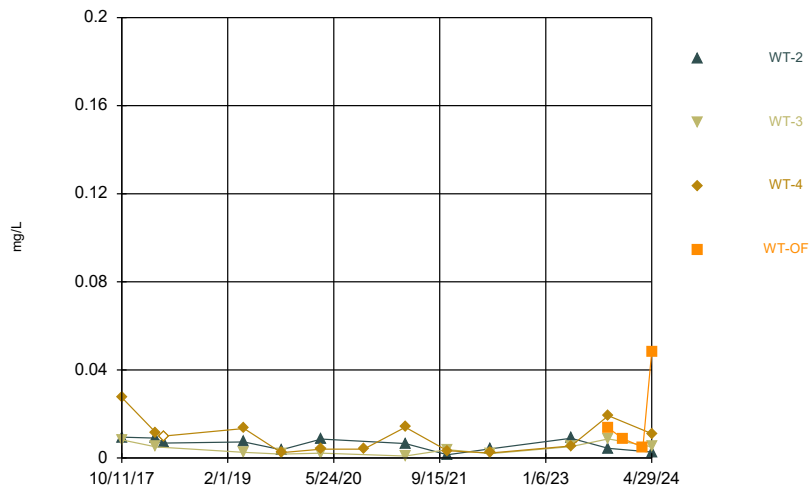
Constituent: Nickel Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



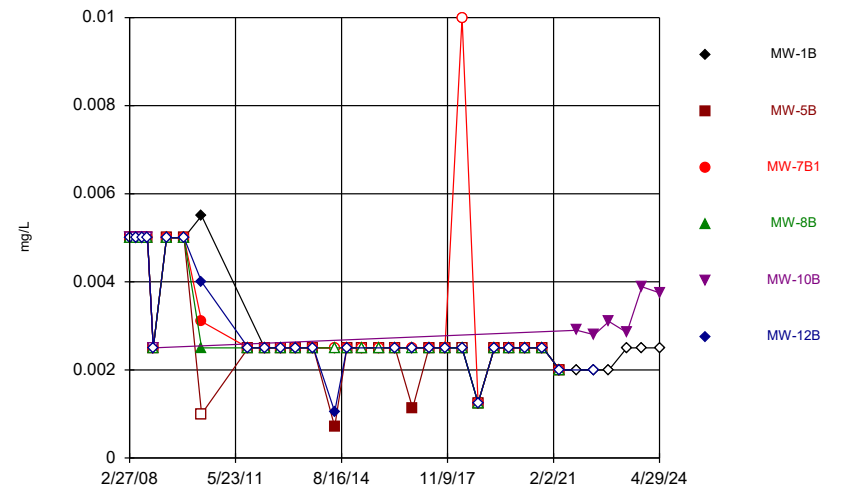
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



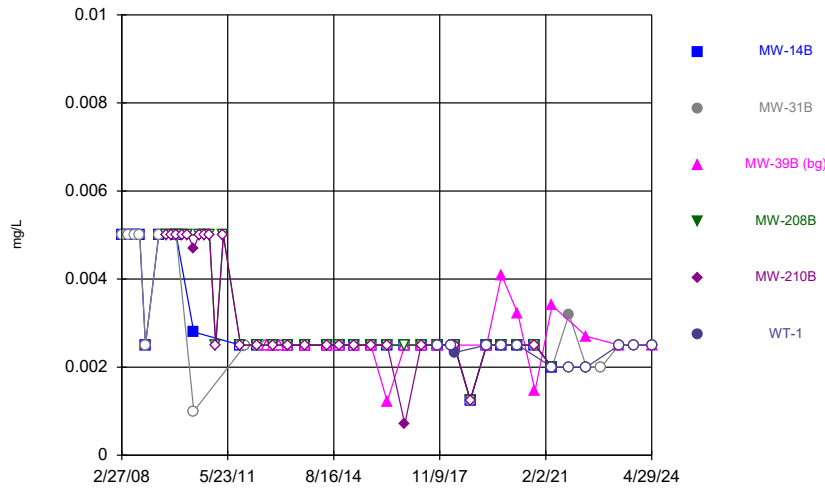
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

### Time Series



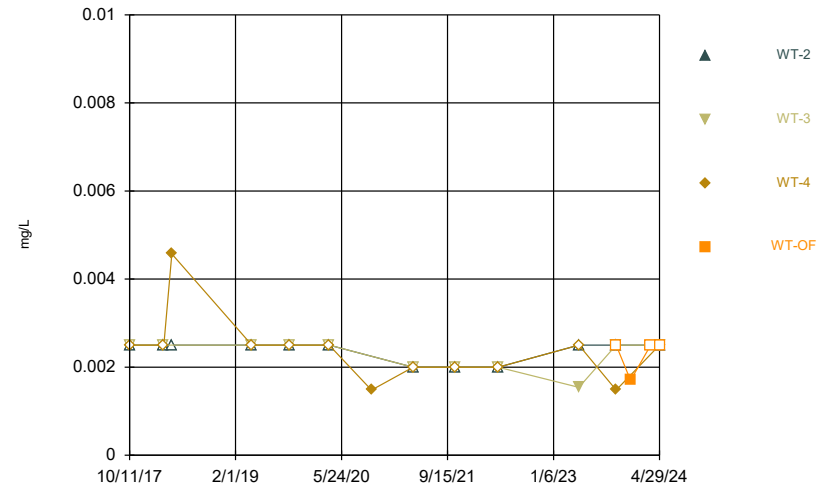
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



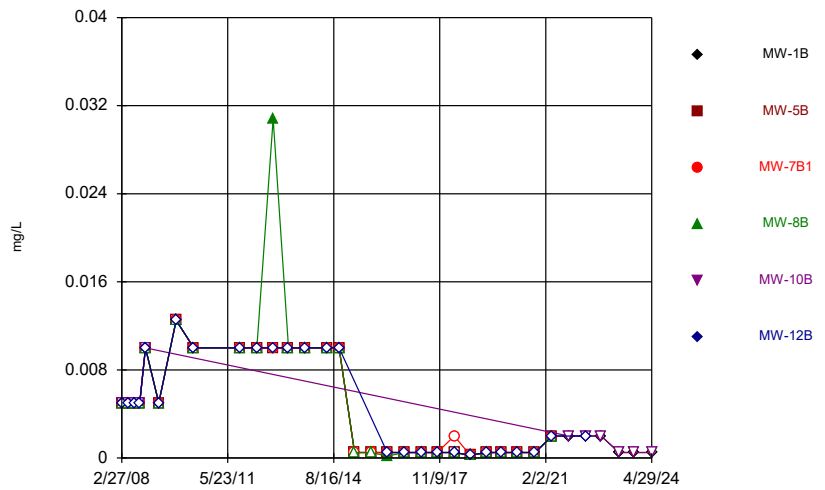
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



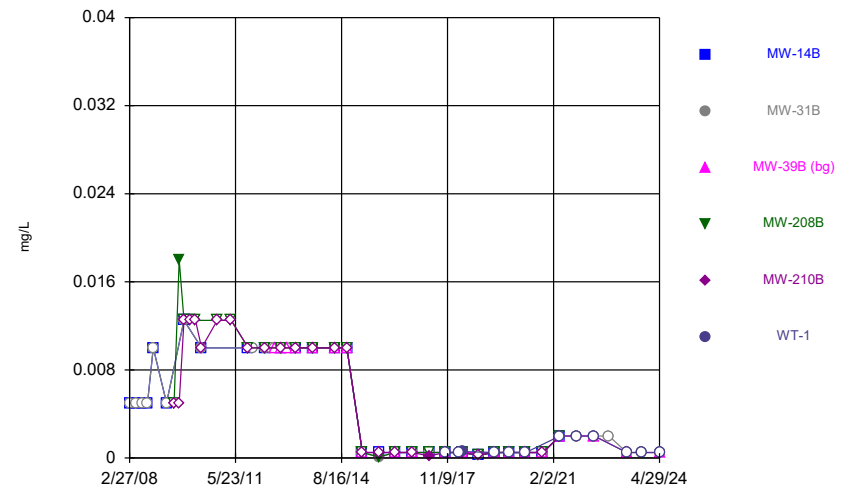
Constituent: Selenium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



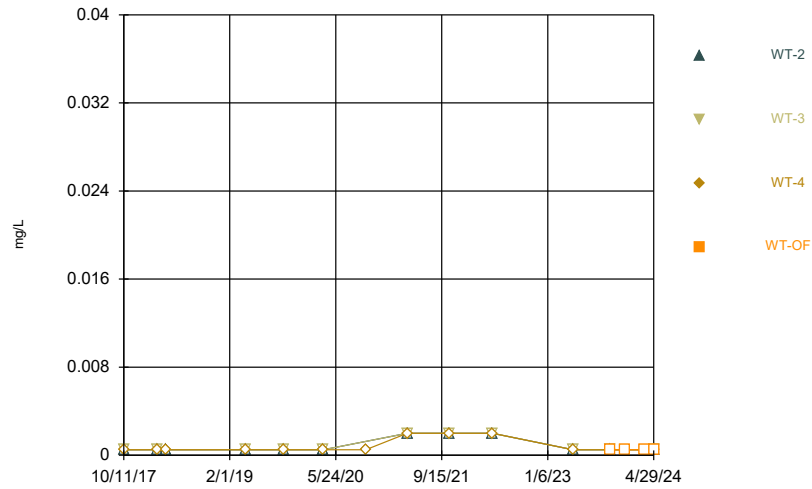
Constituent: Silver Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



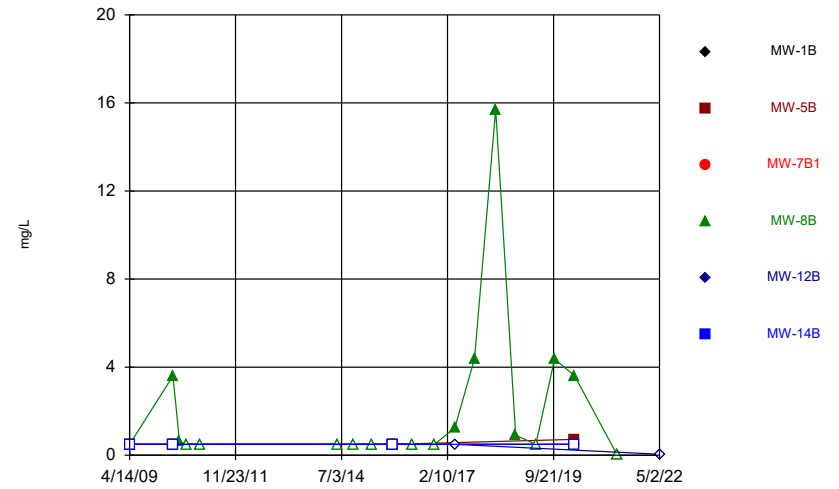
Constituent: Silver Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



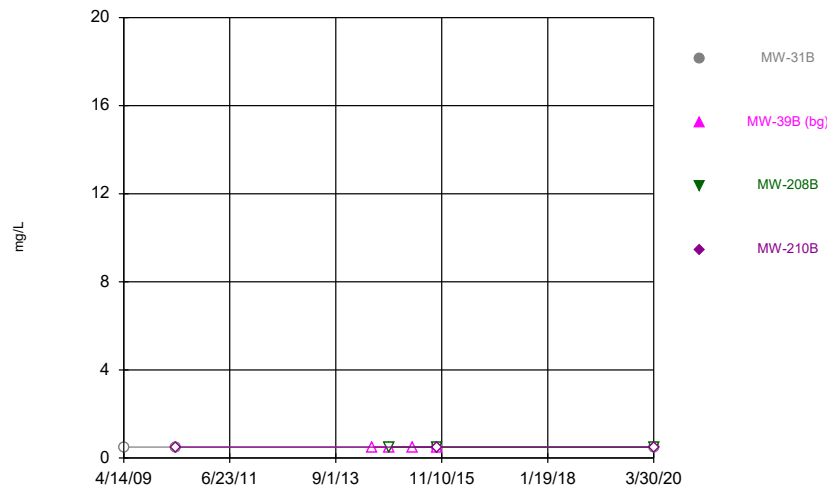
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Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



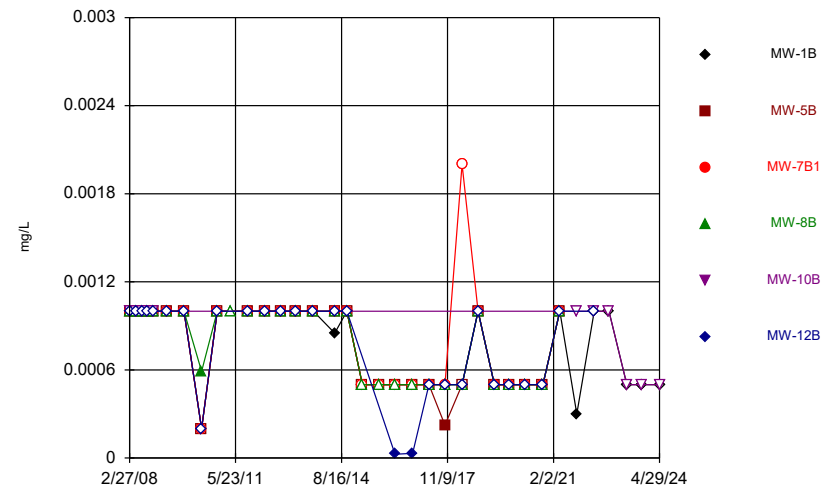
Constituent: Sulfide Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



Constituent: Sulfide Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

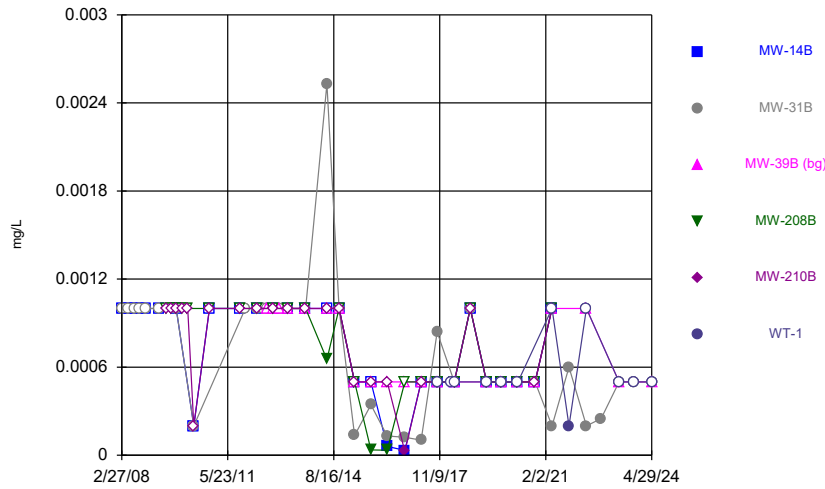
Time Series



Constituent: Thallium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

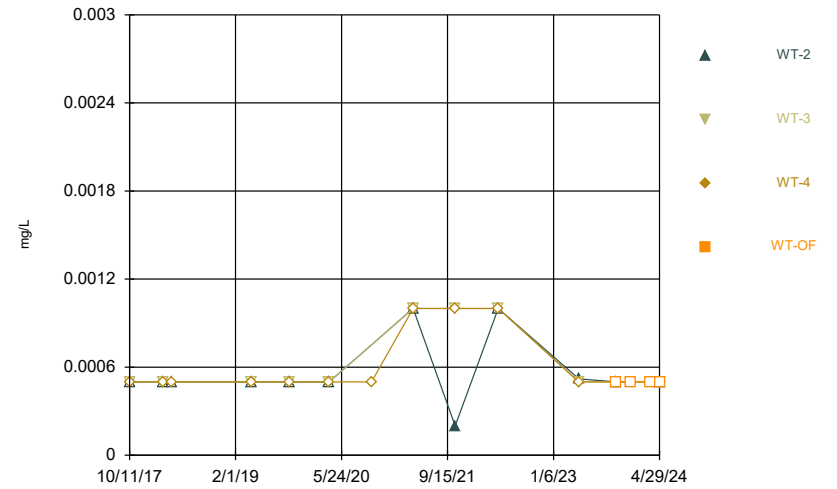


Time Series



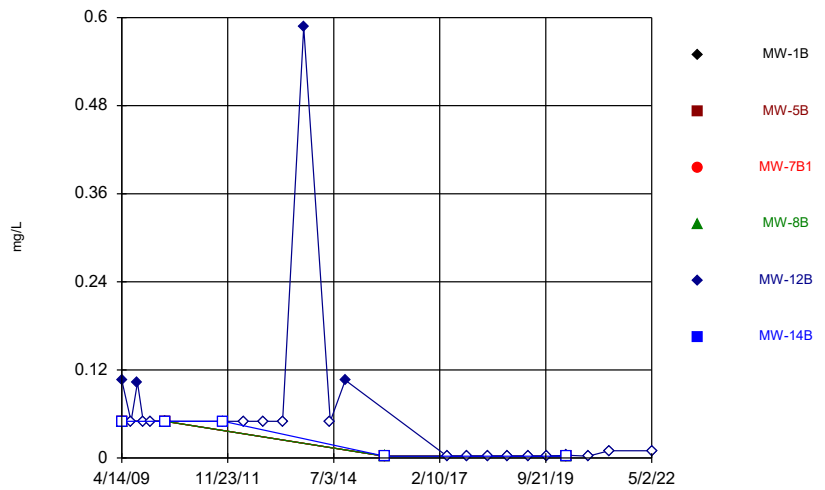
Constituent: Thallium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



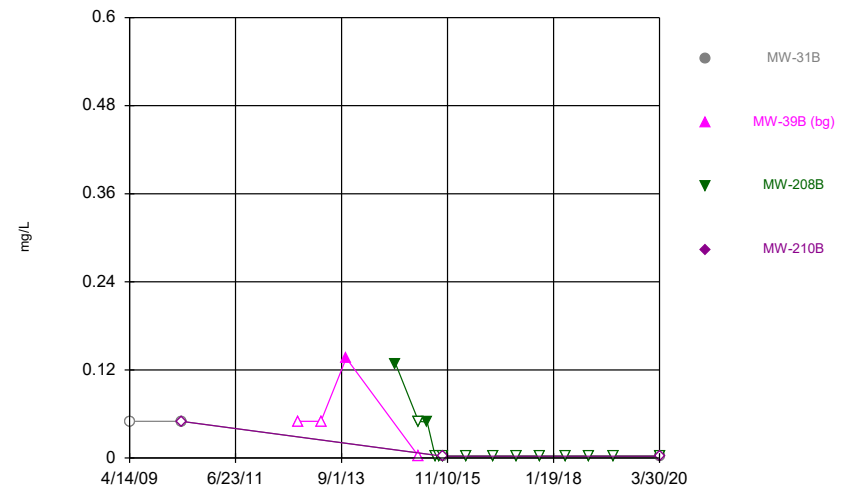
Constituent: Thallium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



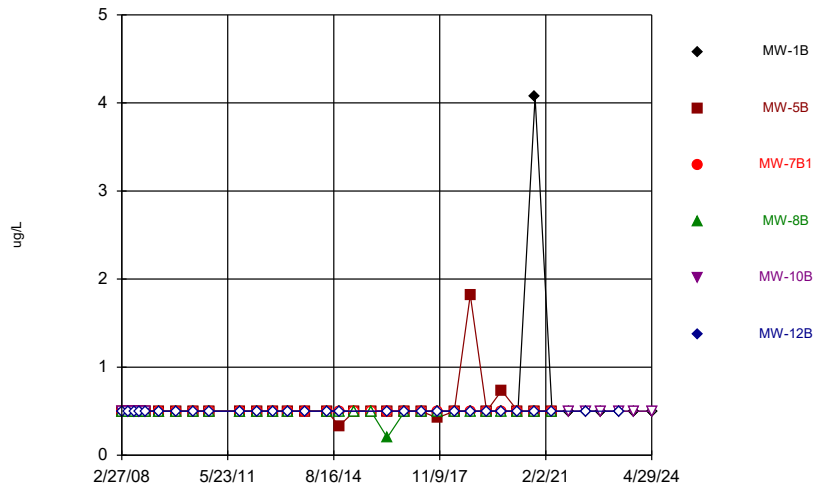
Constituent: Tin Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



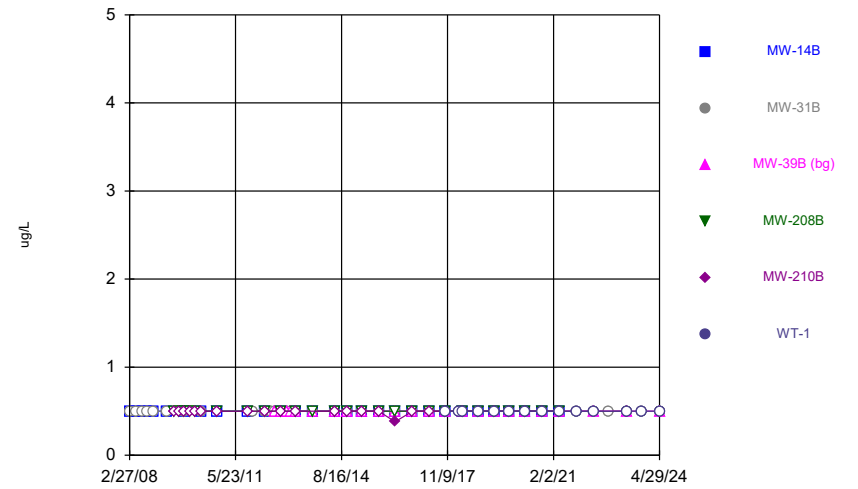
Constituent: Tin Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



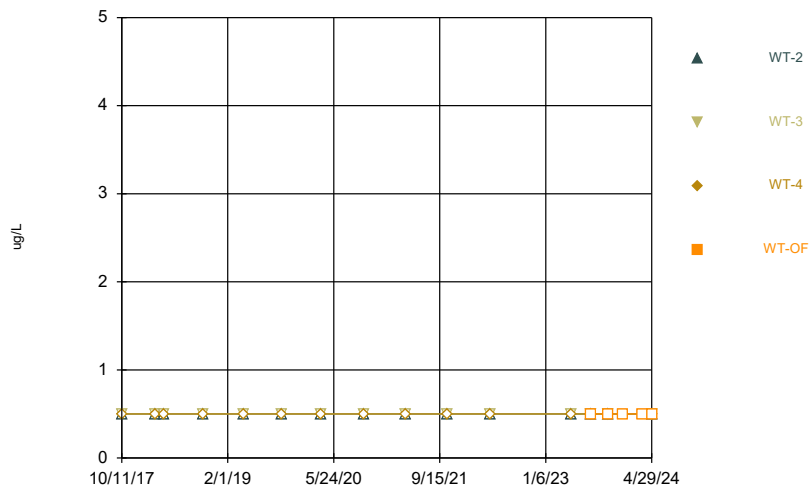
Constituent: Toluene Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



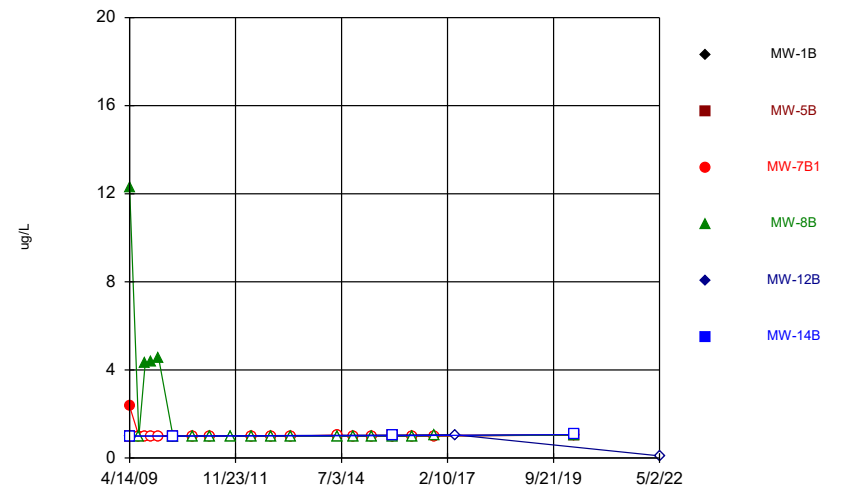
Constituent: Toluene Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



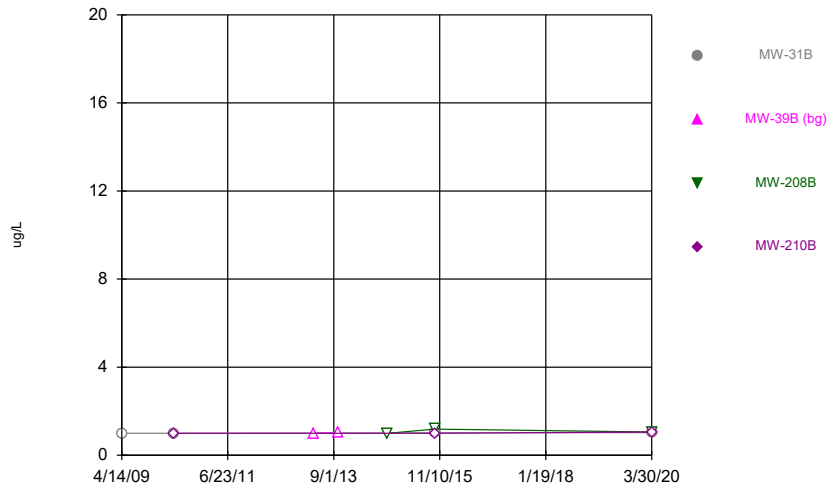
Constituent: Toluene Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



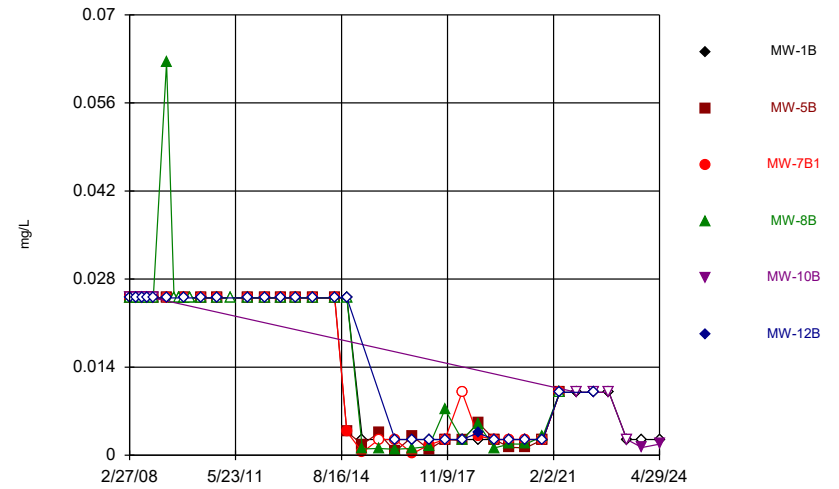
Constituent: Toxaphene Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



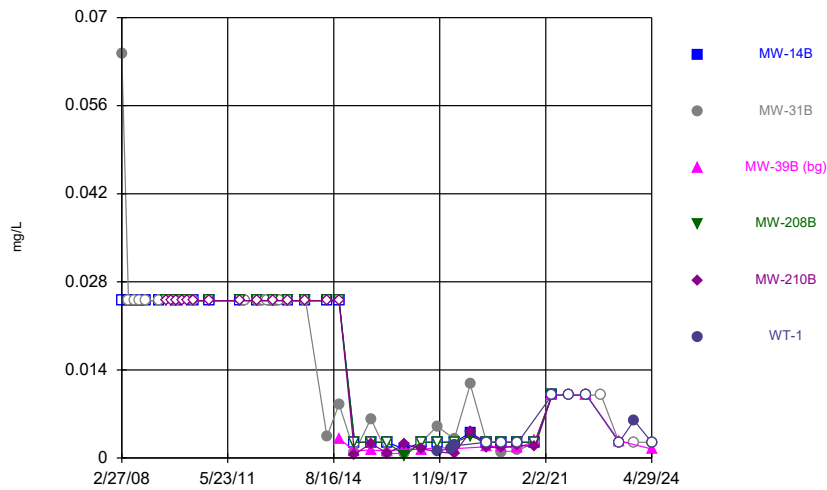
Constituent: Toxaphene Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



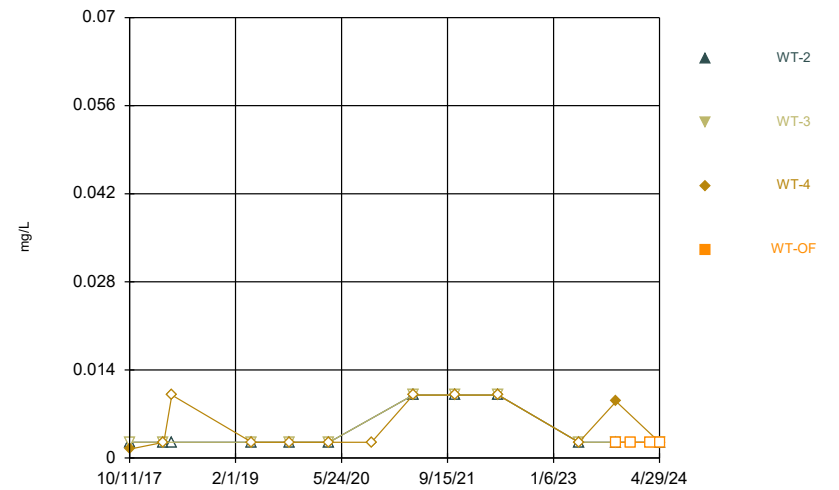
Constituent: Vanadium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



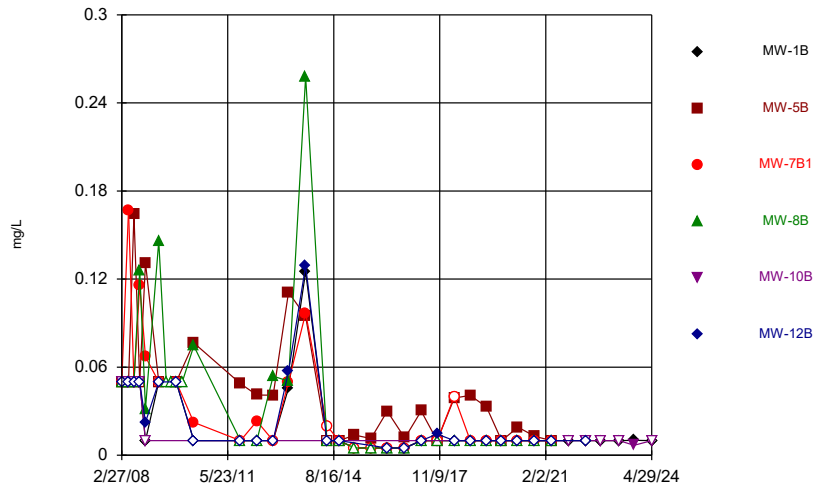
Constituent: Vanadium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



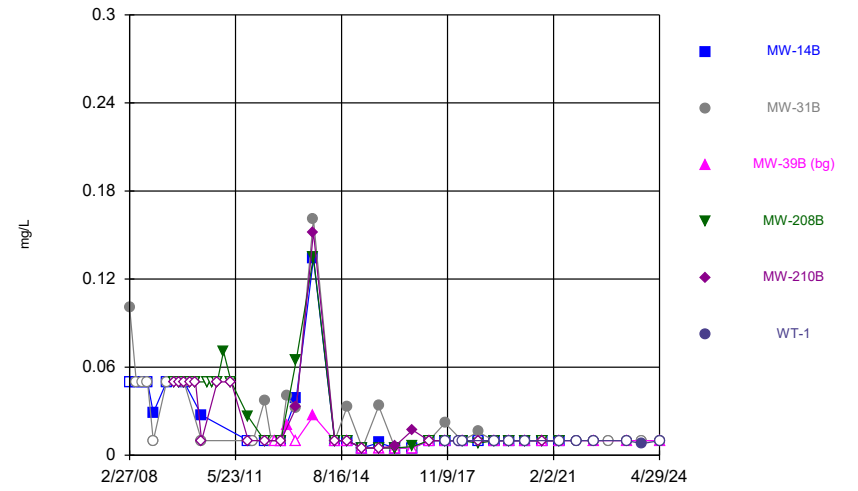
Constituent: Vanadium Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



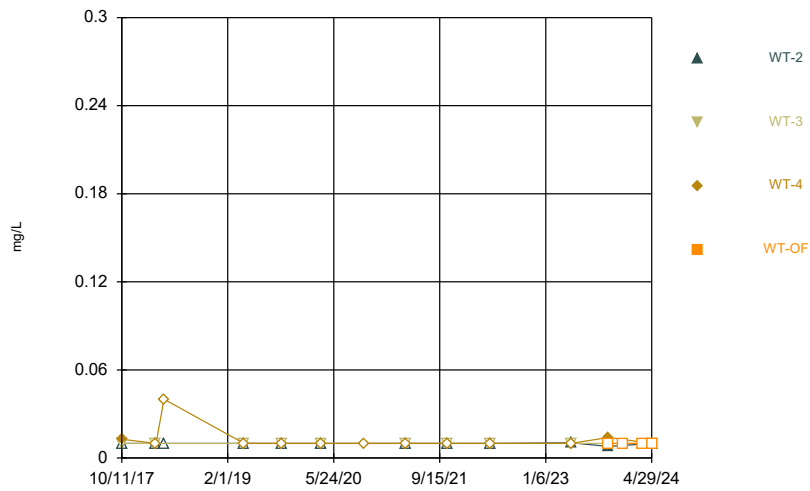
Constituent: Zinc Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



Constituent: Zinc Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Time Series



Constituent: Zinc Analysis Run 5/31/2024 11:56 AM View: 2024SSN Time Series B\_Series  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

**Outlier Tests Summary Table and Graphs**  
**Background Wells**

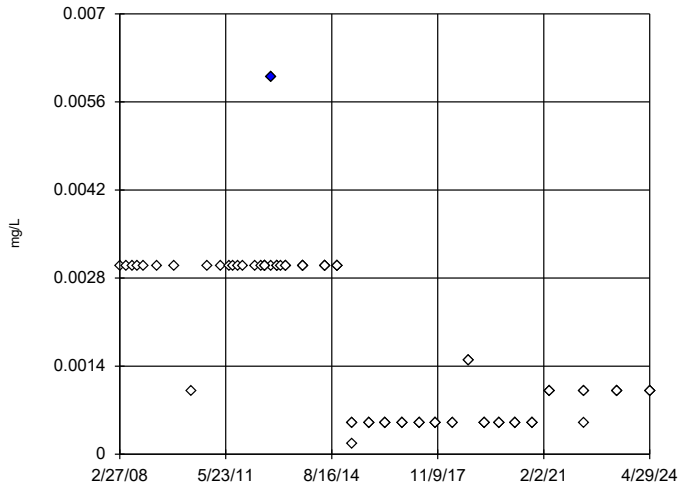
# Outlier Analysis

Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat Printed 5/31/2024, 12:34 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Normality Test
<b>Antimony (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.006</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>81</b>	<b>0.001681</b>	<b>0.001268</b>	<b>n/a</b>
Arsenic (mg/L)	MW-39B,MW-34A,MW-38A	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	86	0.001304	0.002413	ShapiroFrancia
<b>Barium (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.806</b>	<b>n/a w/combined bg</b>	<b>NP (nrm)/OH</b>	<b>NaN</b>	<b>88</b>	<b>0.2216</b>	<b>0.08948</b>	<b>ShapiroFrancia</b>
<b>Beryllium (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.002,0.002</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>88</b>	<b>0.0006132</b>	<b>0.0004048</b>	<b>n/a</b>
<b>Cadmium (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.00173,0.00125,0.00125,0.00125,0.00125,0.00125,0</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>82</b>	<b>0.0003626</b>	<b>0.0003824</b>	<b>n/a</b>
Chromium (mg/L)	MW-39B,MW-34A,MW-38A	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	78	0.01083	0.01516	ShapiroFrancia
Cobalt (mg/L)	MW-34A,MW-38A,MW-39B	No	n/a	n/a w/combined bg	EPA/OH	0.05	65	0.00136	0.001942	ShapiroFrancia
<b>Copper (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.03</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>82</b>	<b>0.006168</b>	<b>0.005246</b>	<b>n/a</b>
<b>Lead (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.0128</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>86</b>	<b>0.001523</b>	<b>0.001717</b>	<b>n/a</b>
Nickel (mg/L)	MW-39B,MW-34A,MW-38A	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	85	0.01176	0.01664	ShapiroFrancia
Selenium (mg/L)	MW-39B,MW-34A,MW-38A	No	n/a	n/a w/combined bg	OH	NaN	82	0.002718	0.0009584	n/a
<b>Silver (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.02,0.0125,0.0125,0.0125,0.0125,0.01,0.01,0.01,0</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>81</b>	<b>0.004516</b>	<b>0.00485</b>	<b>n/a</b>
Thallium (mg/L)	MW-39B,MW-34A,MW-38A	No	n/a	n/a w/combined bg	OH	NaN	81	0.0007457	0.0002632	n/a
<b>Vanadium (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.01,0.01</b>	<b>n/a w/combined bg</b>	<b>NP (nrm)/OH</b>	<b>NaN</b>	<b>48</b>	<b>0.003038</b>	<b>0.002829</b>	<b>ShapiroWilk</b>
<b>Zinc (mg/L)</b>	<b>MW-39B,MW-34A,MW-38A</b>	<b>Yes</b>	<b>0.18,0.0684,0.0599,0.05,0.05,0.05,0.05,0.05,0.05,</b>	<b>n/a w/combined bg</b>	<b>OH</b>	<b>NaN</b>	<b>86</b>	<b>0.02019</b>	<b>0.02417</b>	<b>n/a</b>

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

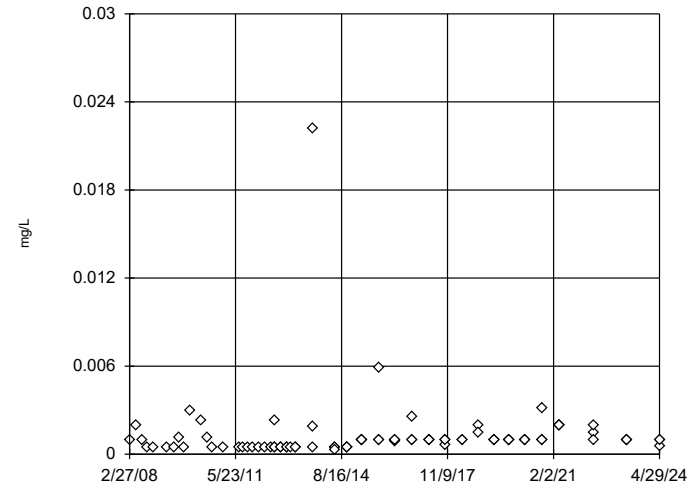


n = 81  
 Statistical outlier is drawn as solid.  
 Outlier per Ohio method.

Constituent: Antimony Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

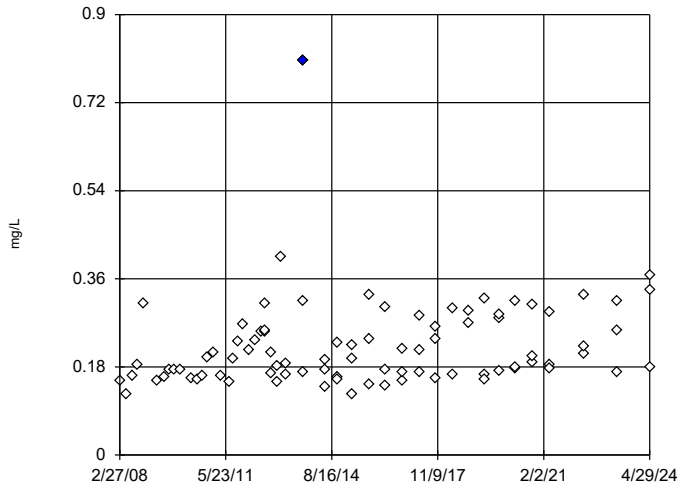


n = 86  
 No outliers found.  
 Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.  
 The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Arsenic Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

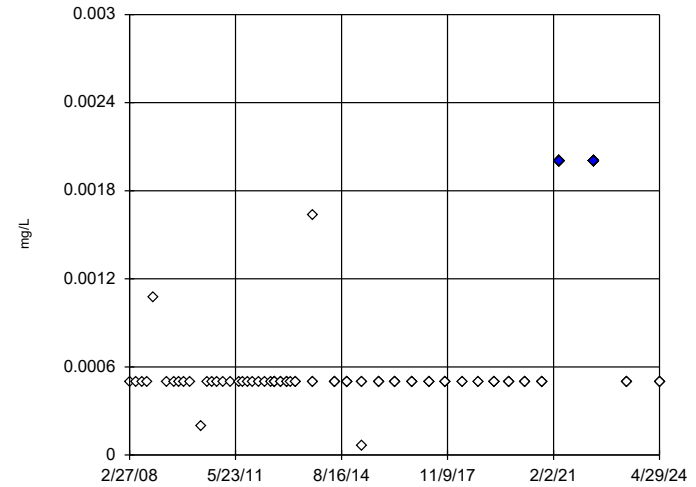


n = 88  
 Outlier is drawn as solid.  
 Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.  
 High cutoff = 0.57, low cutoff = -0.1405, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

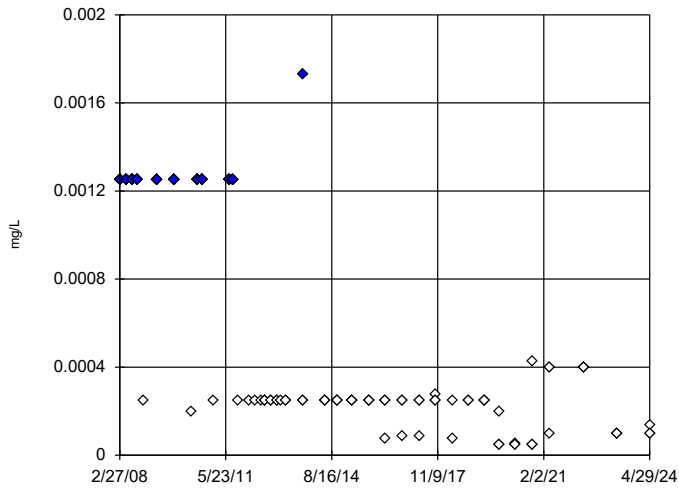


n = 88  
 Statistical outliers are drawn as solid.  
 Outliers per Ohio method.

Constituent: Beryllium Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

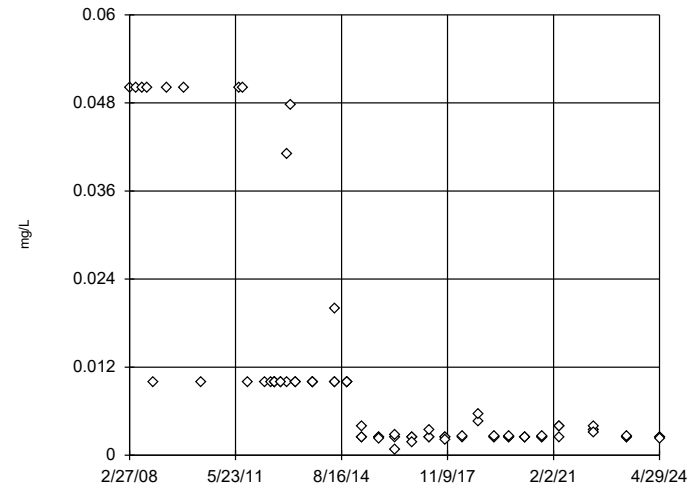


n = 82  
 Statistical outliers are drawn as solid.  
 Outliers per Ohio method.

Constituent: Cadmium Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

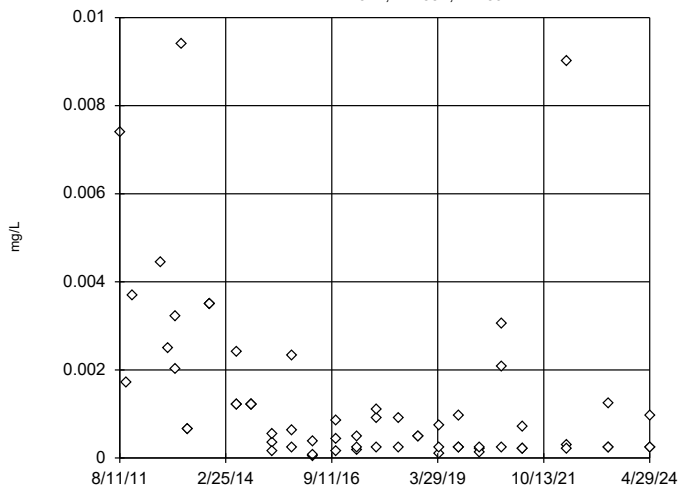


n = 78  
 No outliers found.  
 Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.  
 The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Chromium Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### EPA Screening (suspected outliers for Rosner's Test)

MW-34A,MW-38A,MW-39B

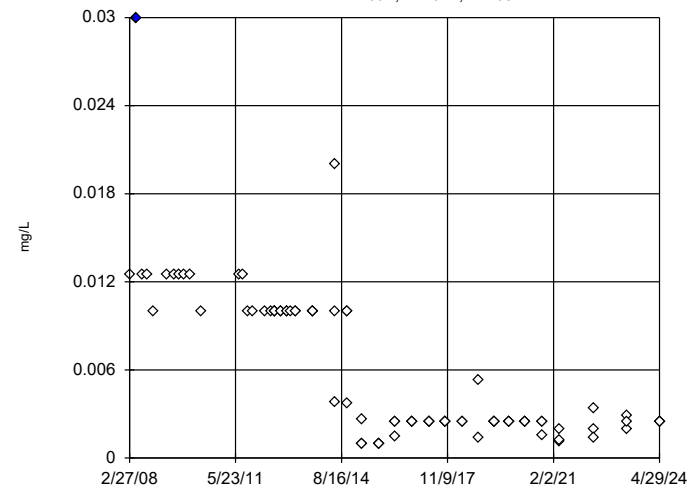


n = 65  
 Rosner's will not be run. No suspect values identified or unable to establish suspect values.  
 Ohio method in use.  
 Mean 0.00136, std. dev. 0.001942, critical Tn 3.055  
 Normality test used: Shapiro Francia@alpha = 0.01  
 Calculated = 0.972  
 Critical = 0.948 (after natural log transformation)  
 The distribution was found to be log-normal.

Constituent: Cobalt Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A



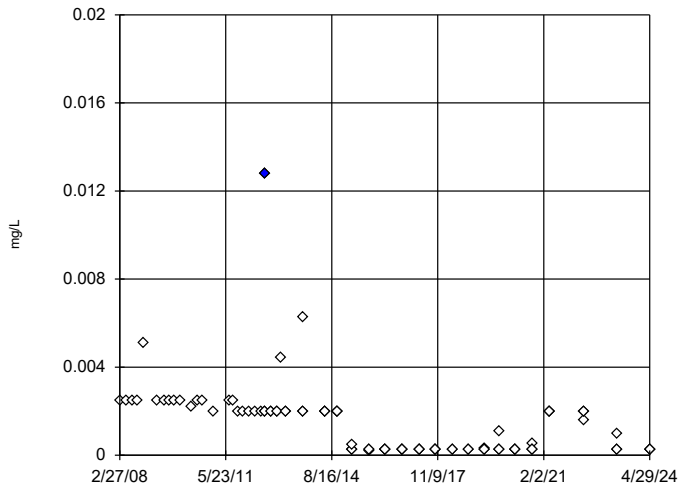
n = 82  
 Statistical outlier is drawn as solid.  
 Outlier per Ohio method.

Constituent: Copper Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat



### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

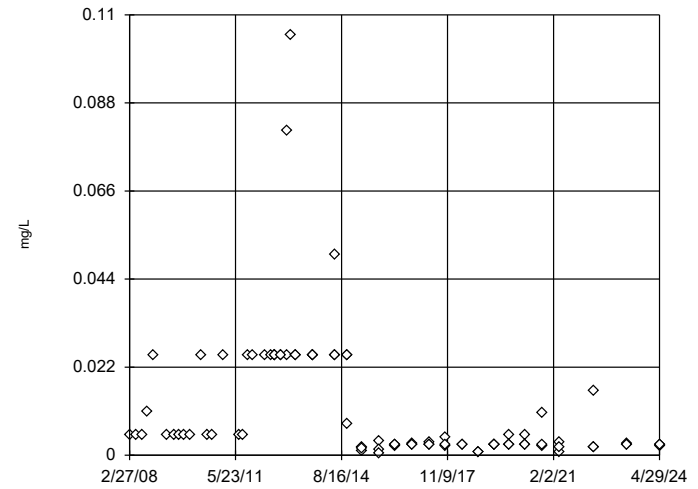


n = 86  
 Statistical outlier is drawn as solid.  
 Outlier per Ohio method.

Constituent: Lead Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

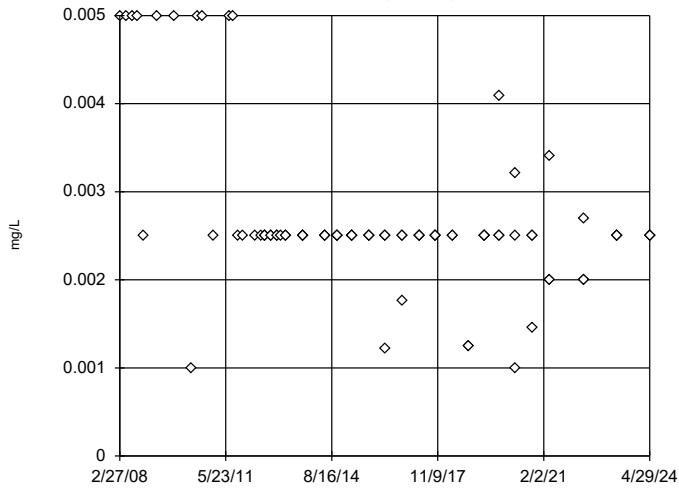


n = 85  
 No outliers found.  
 Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.  
 The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Nickel Analysis Run 5/31/2024 12:23 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

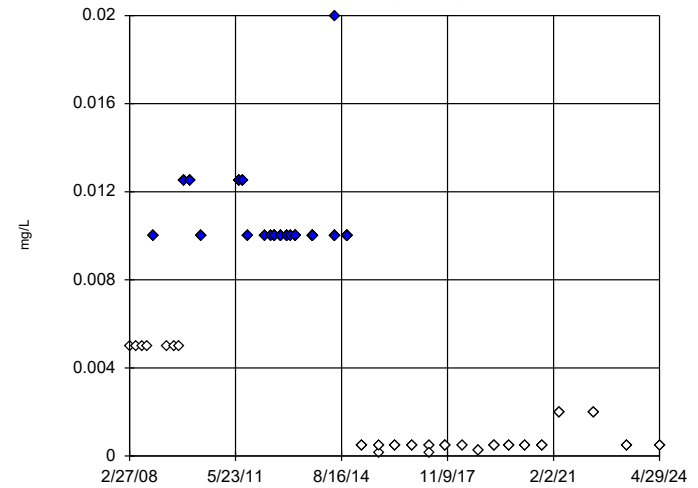


n = 82  
 No statistical outliers.

Constituent: Selenium Analysis Run 5/31/2024 12:24 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

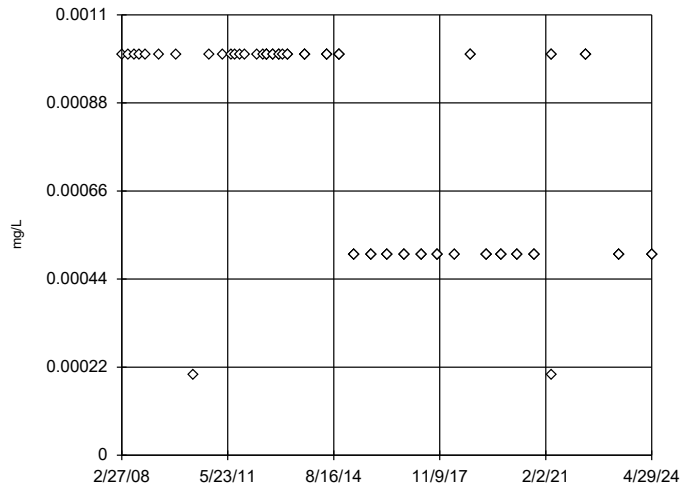


n = 81  
 Statistical outliers are drawn as solid.  
 Outliers per Ohio method.

Constituent: Silver Analysis Run 5/31/2024 12:24 PM View: 2024SSN BG Outliers  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

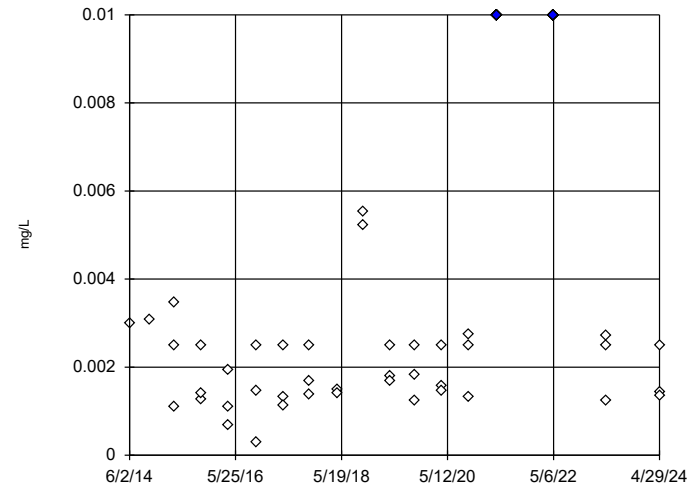


n = 81  
No statistical outliers.

Constituent: Thallium Analysis Run 5/31/2024 12:24 PM View: 2024SSN BG Outliers  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A

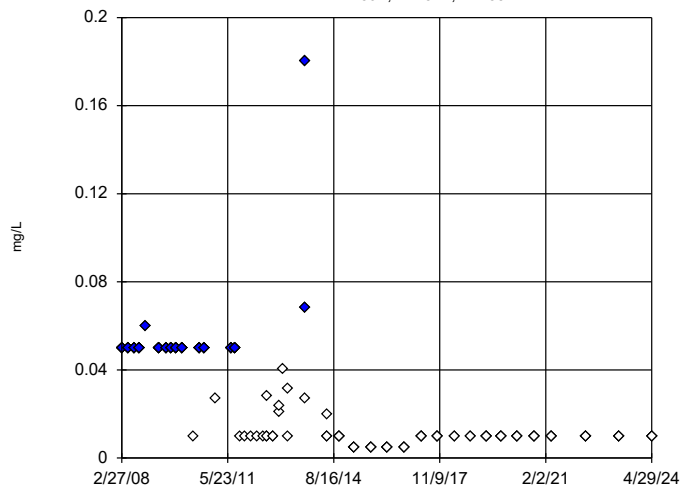


n = 48  
Outliers are drawn as solid.  
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.  
High cutoff = 0.006765, low cutoff = -0.00265, based on IQR multiplier of 3.

Constituent: Vanadium Analysis Run 5/31/2024 12:24 PM View: 2024SSN BG Outliers  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

### Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-39B,MW-34A,MW-38A



n = 86  
Statistical outliers are drawn as solid.  
Outliers per Ohio method.

Constituent: Zinc Analysis Run 5/31/2024 12:24 PM View: 2024SSN BG Outliers  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF BG Master flat

**Intrawell Prediction Limits Summary Table and Graphs**  
**Groundwater Underdrains**

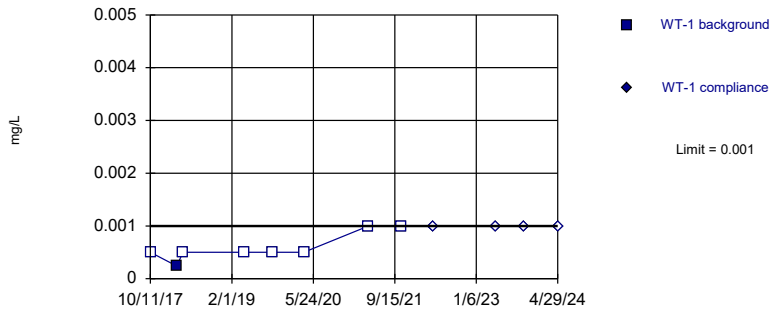
# Prediction Limit

Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master Printed 6/4/2024, 2:49 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>
Antimony (mg/L)	WT-1	0.001	n/a	4/29/2024	0.001ND	No	8	n/a	n/a	n/a	87.5
Arsenic (mg/L)	WT-1	0.009764	n/a	4/29/2024	0.00404	No	8	n/a	0.1144	0.02686	37.5
Barium (mg/L)	WT-1	0.4362	n/a	4/29/2024	0.195	No	8	n/a	0.1868	0.06744	0
Chromium (mg/L)	WT-1	0.004	n/a	4/29/2024	0.0025ND	No	8	n/a	n/a	n/a	87.5
<b>Cobalt (mg/L)</b>	<b>WT-1</b>	<b>0.008476</b>	<b>n/a</b>	<b>4/29/2024</b>	<b>0.207</b>	<b>Yes</b>	<b>8</b>	<b>n/a</b>	<b>0.002811</b>	<b>0.001531</b>	<b>0</b>
Copper (mg/L)	WT-1	0.0025	n/a	4/29/2024	0.0025ND	No	8	n/a	n/a	n/a	87.5
Lead (mg/L)	WT-1	0.001012	n/a	4/29/2024	0.000584	No	8	n/a	0.02274	0.00245	50
<b>Nickel (mg/L)</b>	<b>WT-1</b>	<b>0.04577</b>	<b>n/a</b>	<b>4/29/2024</b>	<b>0.129</b>	<b>Yes</b>	<b>8</b>	<b>n/a</b>	<b>0.07742</b>	<b>0.0369</b>	<b>12.5</b>
Selenium (mg/L)	WT-1	0.0025	n/a	4/29/2024	0.0025ND	No	8	n/a	n/a	n/a	87.5
Silver (mg/L)	WT-1	0.002	n/a	4/29/2024	0.0005ND	No	8	n/a	n/a	n/a	87.5
Thallium (mg/L)	WT-1	0.001	n/a	4/29/2024	0.0005ND	No	8	n/a	n/a	n/a	87.5
Vanadium (mg/L)	WT-1	0.01	n/a	4/29/2024	0.0025ND	No	8	n/a	n/a	n/a	62.5

Within Limit

Prediction Limit  
Intrawell Non-parametric

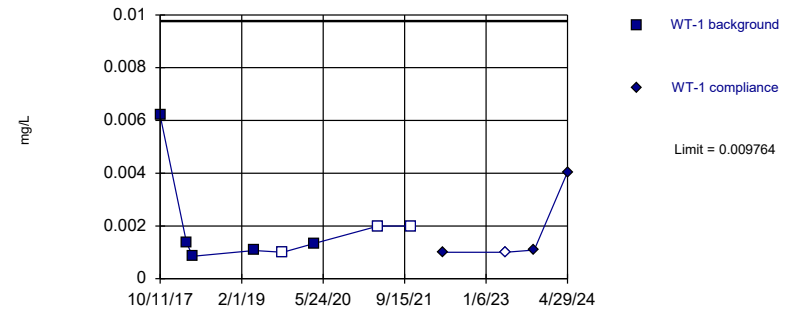


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Antimony Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

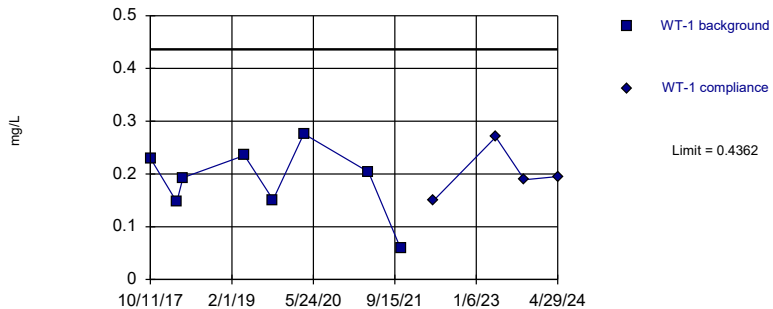


Background Data Summary (based on cube root transformation) (after Kaplan-Meier Adjustment): Mean=0.1144, Std. Dev.=0.02686, n=8, 37.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7746, critical = 0.749. Kappa = 3.699 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Arsenic Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

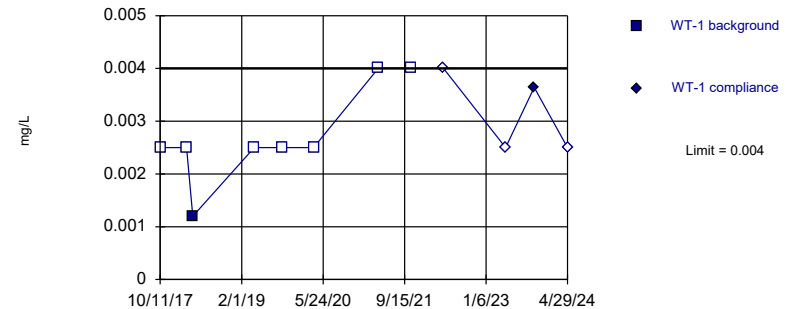


Background Data Summary: Mean=0.1868, Std. Dev.=0.06744, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.749. Kappa = 3.699 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Barium Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

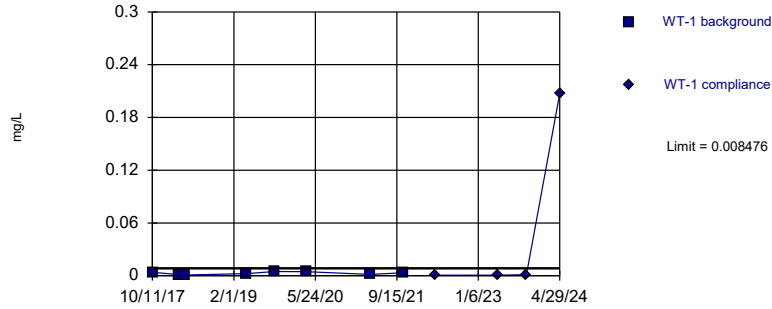


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Chromium Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Exceeds Limit

Prediction Limit  
Intrawell Parametric



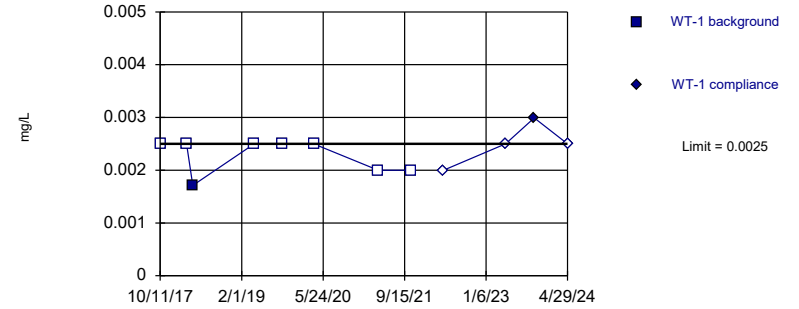
Background Data Summary: Mean=0.002811, Std. Dev.=0.001531, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9152, critical = 0.749. Kappa = 3.699 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Cobalt Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Hollow symbols indicate censored values.

Within Limit

Prediction Limit  
Intrawell Non-parametric



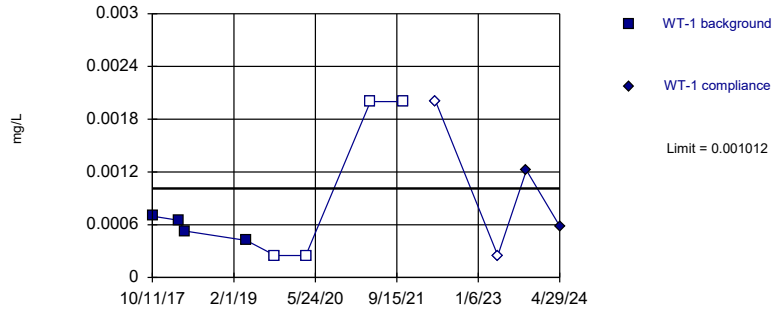
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Copper Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Hollow symbols indicate censored values.

Within Limit

Prediction Limit  
Intrawell Parametric



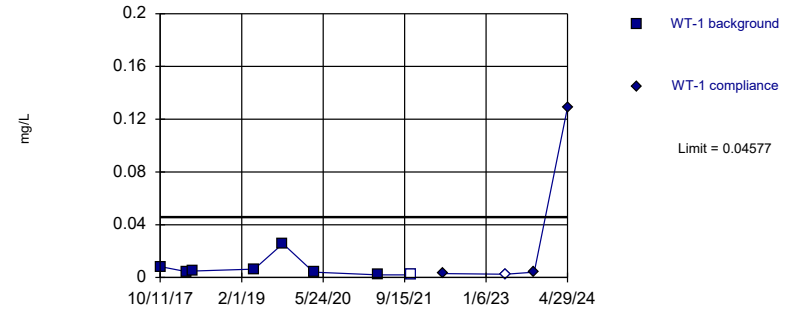
Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.02274, Std. Dev.=0.00245, n=8, 50% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8237, critical = 0.749. Kappa = 3.699 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Lead Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit  
Intrawell Parametric

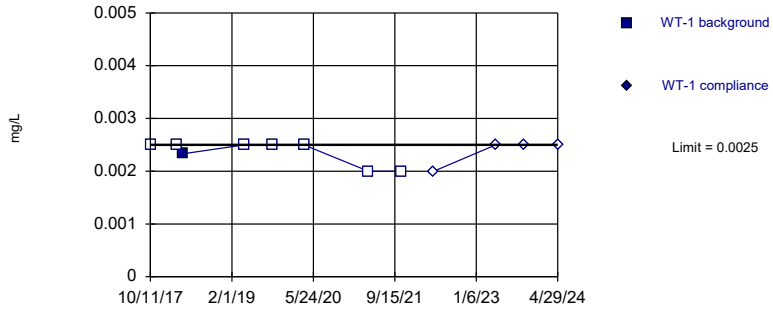


Background Data Summary (based on square root transformation): Mean=0.07742, Std. Dev.=0.0369, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8026, critical = 0.749. Kappa = 3.699 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Nickel Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

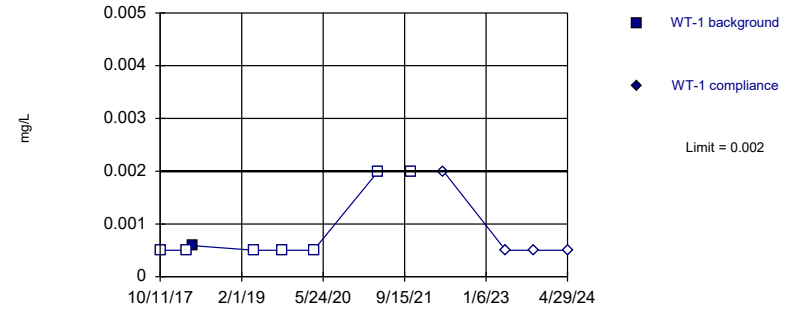


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Selenium Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

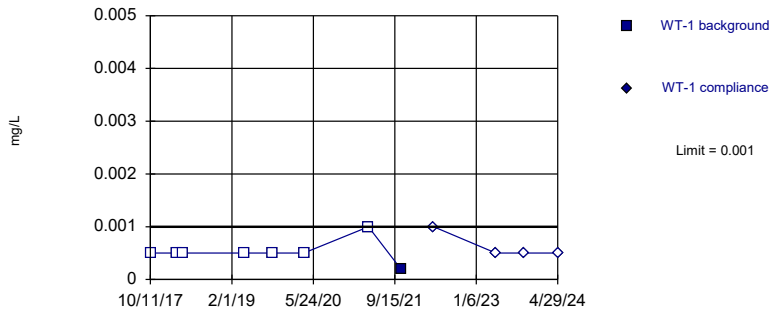


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Silver Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

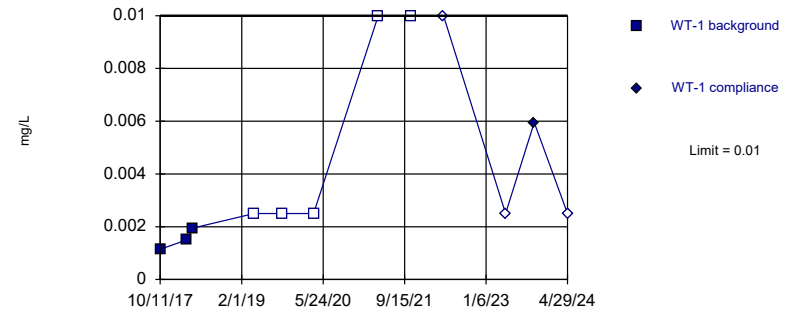


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Thallium Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Vanadium Analysis Run 6/4/2024 2:46 PM View: 2024SSN - WT-1 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

# Prediction Limit

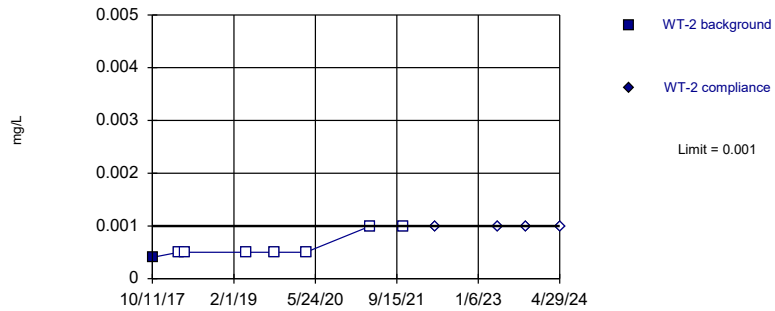
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master Printed 6/4/2024, 3:01 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>
Antimony (mg/L)	WT-2	0.001	n/a	4/29/2024	0.001ND	No	8	n/a	n/a	n/a	87.5
Arsenic (mg/L)	WT-2	0.01935	n/a	4/29/2024	0.00396	No	8	n/a	0.007438	0.003471	12.5
Barium (mg/L)	WT-2	0.3182	n/a	4/29/2024	0.163	No	8	n/a	0.1421	0.05135	0
Cadmium (mg/L)	WT-2	0.0004	n/a	4/29/2024	0.0001ND	No	8	n/a	n/a	n/a	87.5
Cobalt (mg/L)	WT-2	0.008551	n/a	4/29/2024	0.00239	No	8	n/a	0.002984	0.001623	0
Lead (mg/L)	WT-2	0.002	n/a	4/29/2024	0.00025ND	No	8	n/a	n/a	n/a	87.5
Nickel (mg/L)	WT-2	0.01607	n/a	4/29/2024	0.00269J	No	8	n/a	0.006624	0.002752	0
Thallium (mg/L)	WT-2	0.001	n/a	4/29/2024	0.0005ND	No	8	n/a	n/a	n/a	87.5



Within Limit

Prediction Limit  
Intrawell Non-parametric

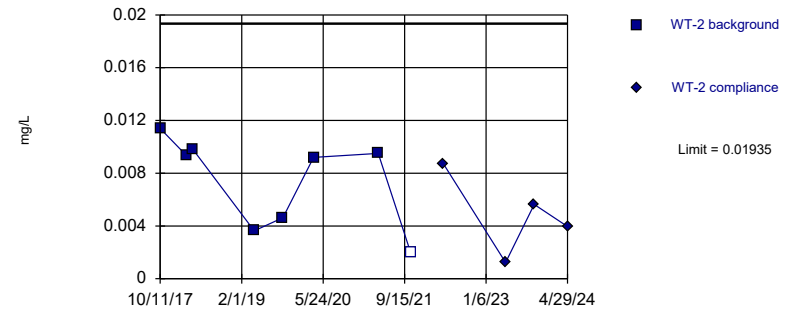


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Antimony Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

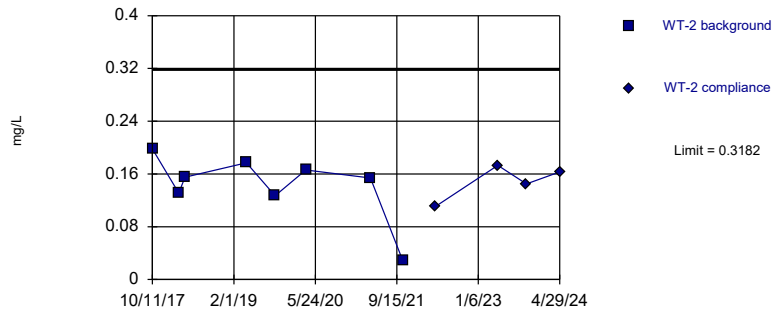


Background Data Summary: Mean=0.007438, Std. Dev.=0.003471, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8579, critical = 0.749. Kappa = 3.431 (c=8, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004702.

Constituent: Arsenic Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

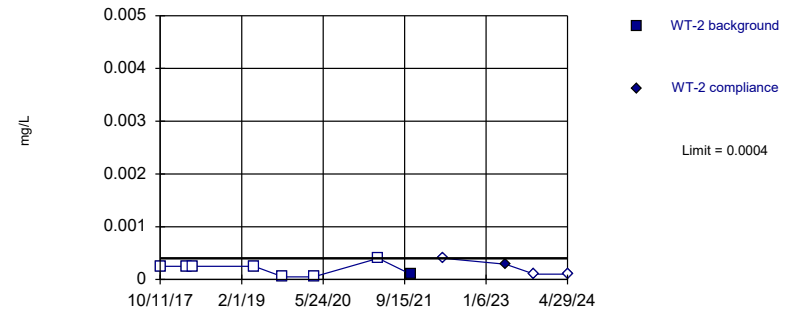


Background Data Summary: Mean=0.1421, Std. Dev.=0.05135, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8398, critical = 0.749. Kappa = 3.431 (c=8, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004702.

Constituent: Barium Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

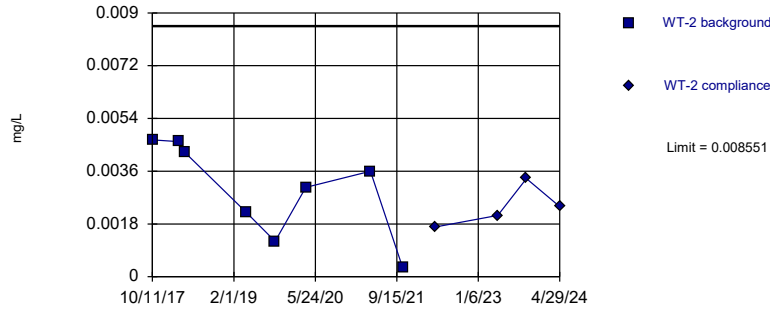


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Cadmium Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

### Prediction Limit Intrawell Parametric

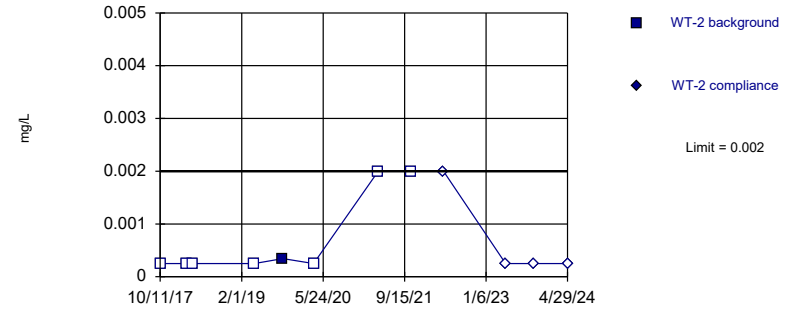


Background Data Summary: Mean=0.002984, Std. Dev.=0.001623, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.749. Kappa = 3.431 (c=8, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004702.

Constituent: Cobalt Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

### Prediction Limit Intrawell Non-parametric

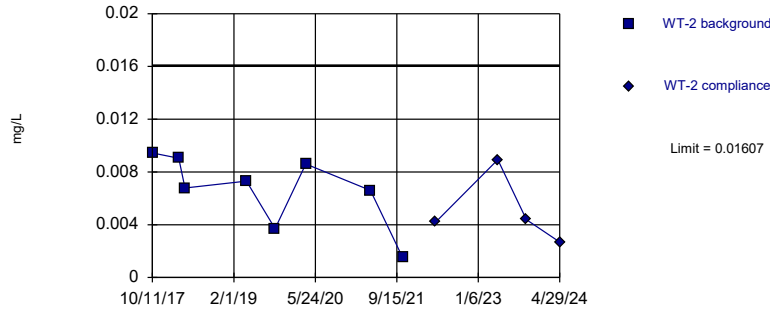


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Lead Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

### Prediction Limit Intrawell Parametric

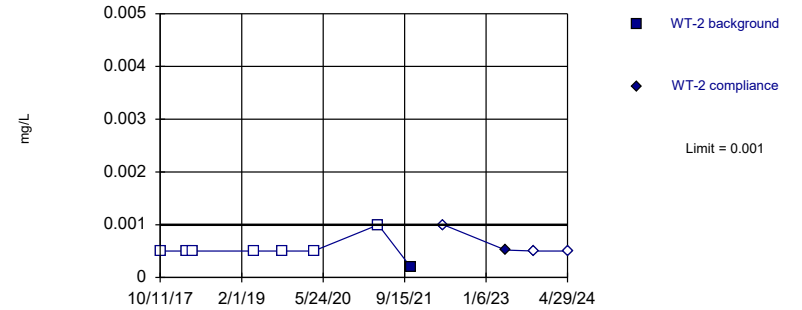


Background Data Summary: Mean=0.006624, Std. Dev.=0.002752, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8914, critical = 0.749. Kappa = 3.431 (c=8, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004702.

Constituent: Nickel Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

### Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Thallium Analysis Run 6/4/2024 3:00 PM View: 2024SSN - WT-2 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

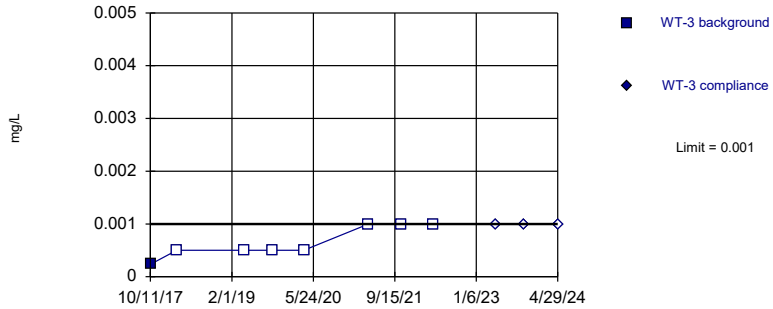
# Prediction Limit

Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master Printed 6/4/2024, 3:07 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>
Antimony (mg/L)	WT-3	0.001	n/a	4/29/2024	0.001ND	No	8	n/a	n/a	n/a	87.5
Arsenic (mg/L)	WT-3	0.0338	n/a	4/29/2024	0.015	No	8	n/a	0.0141	0.006047	0
<b>Barium (mg/L)</b>	<b>WT-3</b>	<b>0.2566</b>	<b>n/a</b>	<b>4/29/2024</b>	<b>0.344</b>	<b>Yes</b>	<b>8</b>	<b>n/a</b>	<b>0.1137</b>	<b>0.04389</b>	<b>0</b>
Cobalt (mg/L)	WT-3	0.01353	n/a	4/29/2024	0.00152	No	8	n/a	0.1142	0.03812	0
Copper (mg/L)	WT-3	0.0052	n/a	4/29/2024	0.0025ND	No	8	n/a	n/a	n/a	87.5
Nickel (mg/L)	WT-3	0.01105	n/a	4/29/2024	0.00511	No	8	n/a	0.003315	0.002374	0

Within Limit

Prediction Limit  
Intrawell Non-parametric

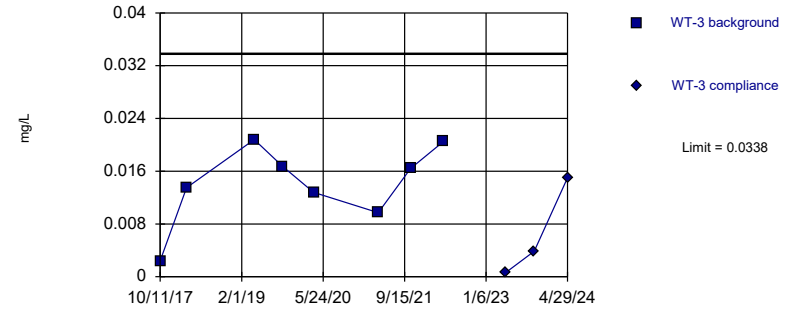


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Antimony Analysis Run 6/4/2024 3:06 PM View: 2024SSN - WT-3 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

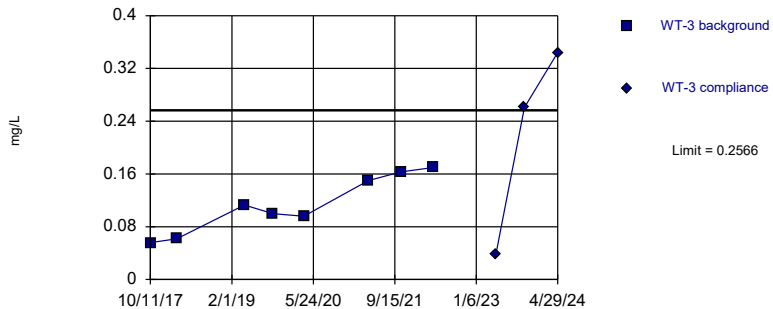


Background Data Summary: Mean=0.0141, Std. Dev.=0.006047, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9252, critical = 0.749. Kappa = 3.257 (c=6, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Arsenic Analysis Run 6/4/2024 3:06 PM View: 2024SSN - WT-3 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Exceeds Limit

Prediction Limit  
Intrawell Parametric

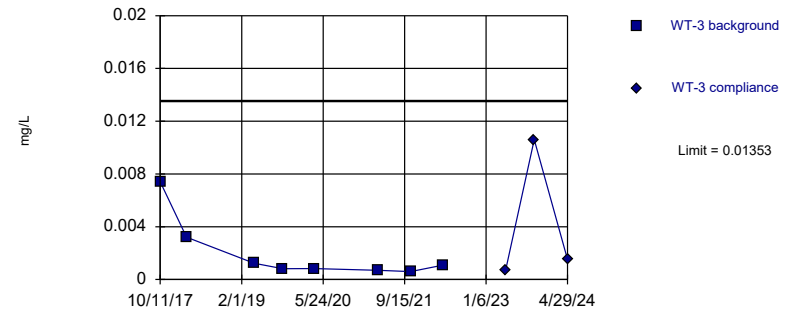


Background Data Summary: Mean=0.1137, Std. Dev.=0.04389, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9193, critical = 0.749. Kappa = 3.257 (c=6, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Barium Analysis Run 6/4/2024 3:06 PM View: 2024SSN - WT-3 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

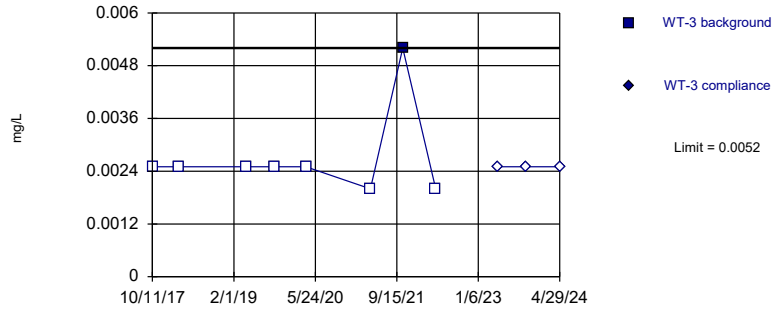


Background Data Summary (based on cube root transformation): Mean=0.1142, Std. Dev.=0.03812, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7681, critical = 0.749. Kappa = 3.257 (c=6, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Cobalt Analysis Run 6/4/2024 3:06 PM View: 2024SSN - WT-3 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
 Intrawell Non-parametric

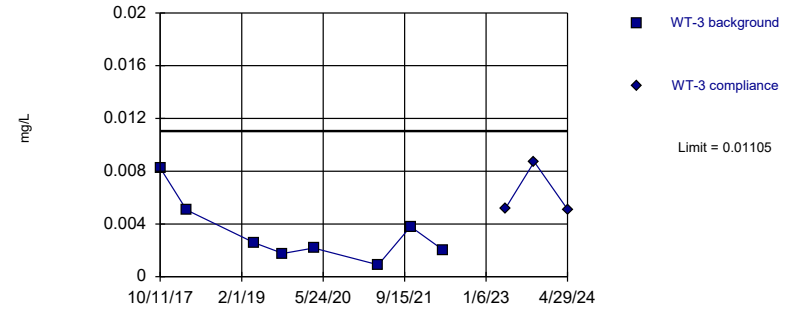


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Copper Analysis Run 6/4/2024 3:06 PM View: 2024SSN - WT-3 IntraPL  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
 Intrawell Parametric



Background Data Summary: Mean=0.003315, Std. Dev.=0.002374, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8608, critical = 0.749. Kappa = 3.257 (c=6, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Nickel Analysis Run 6/4/2024 3:06 PM View: 2024SSN - WT-3 IntraPL  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

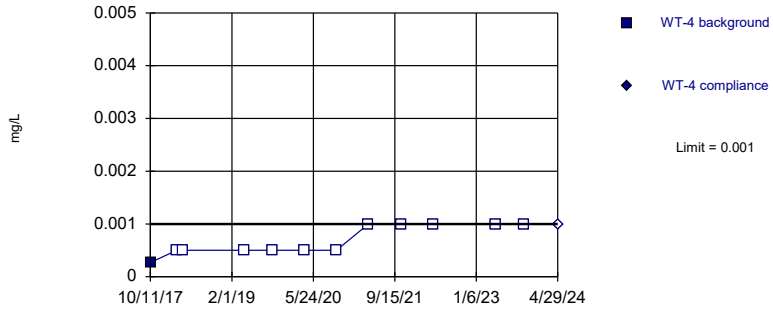
# Prediction Limit

Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master Printed 6/4/2024, 3:12 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>
Antimony (mg/L)	WT-4	0.001	n/a	4/29/2024	0.001ND	No	12	n/a	n/a	n/a	91.67
Arsenic (mg/L)	WT-4	0.002471	n/a	4/29/2024	0.001ND	No	12	n/a	0.001215	0.0004215	50
Barium (mg/L)	WT-4	0.0942	n/a	4/29/2024	0.0821	No	12	n/a	n/a	n/a	0
Cadmium (mg/L)	WT-4	0.0004	n/a	4/29/2024	0.0001ND	No	12	n/a	n/a	n/a	75
Chromium (mg/L)	WT-4	0.01	n/a	4/29/2024	0.0025ND	No	12	n/a	n/a	n/a	91.67
Cobalt (mg/L)	WT-4	0.002607	n/a	4/29/2024	0.00025ND	No	12	n/a	0.0006634	0.0006526	16.67
Copper (mg/L)	WT-4	0.01	n/a	4/29/2024	0.0025ND	No	12	n/a	n/a	n/a	91.67
Lead (mg/L)	WT-4	0.002	n/a	4/29/2024	0.00025ND	No	12	n/a	n/a	n/a	66.67
Nickel (mg/L)	WT-4	0.03306	n/a	4/29/2024	0.0111	No	12	n/a	0.009752	0.007824	8.333
Selenium (mg/L)	WT-4	0.00457	n/a	4/29/2024	0.0025ND	No	12	n/a	n/a	n/a	75
Vanadium (mg/L)	WT-4	0.01	n/a	4/29/2024	0.0025ND	No	12	n/a	n/a	n/a	83.33
Zinc (mg/L)	WT-4	0.04	n/a	4/29/2024	0.01ND	No	12	n/a	n/a	n/a	83.33

Within Limit

Prediction Limit  
Intrawell Non-parametric

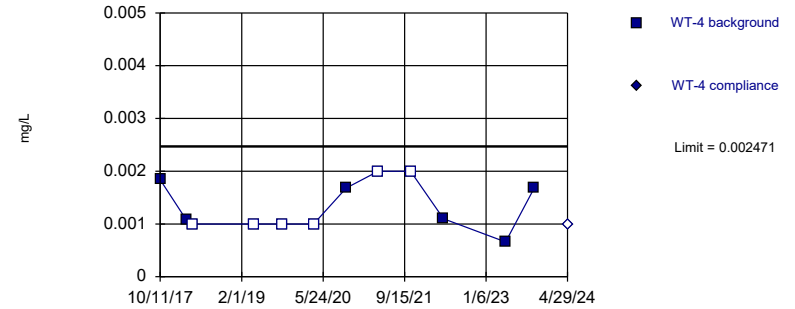


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Antimony Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

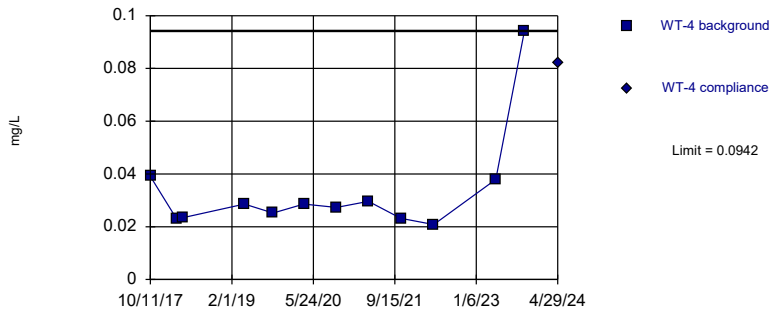


Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.001215, Std. Dev.=0.0004215, n=12, 50% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8554, critical = 0.805. Kappa = 2.979 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Arsenic Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

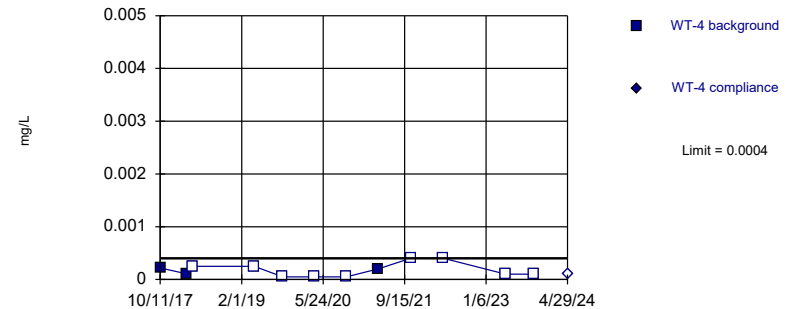


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Barium Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

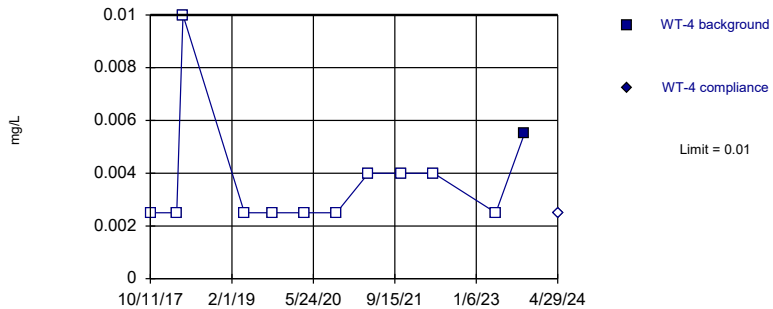


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Cadmium Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

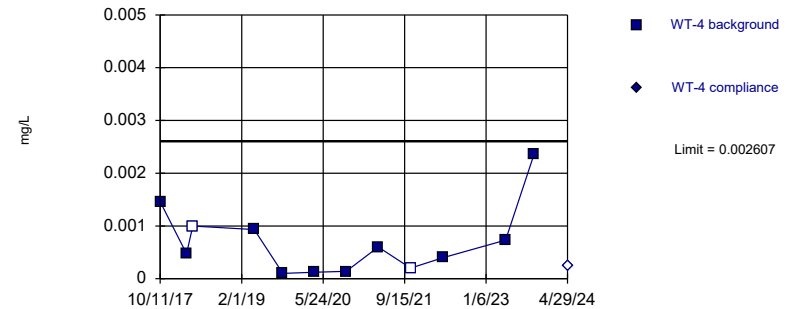


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Chromium Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Parametric

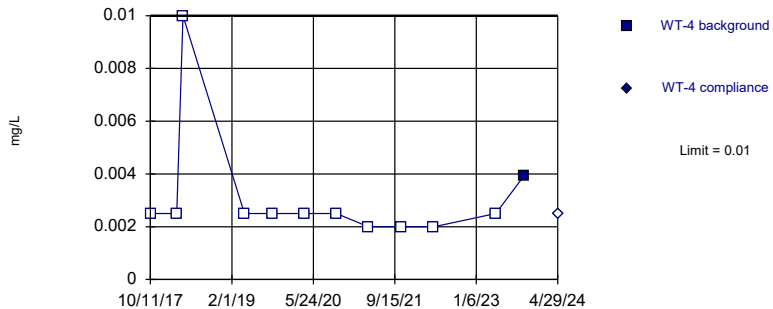


Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0006634, Std. Dev.=0.0006526, n=12, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8458, critical = 0.805. Kappa = 2.979 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Cobalt Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

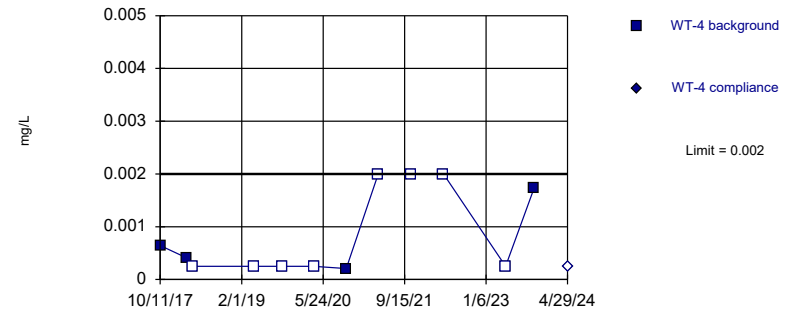


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Copper Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric



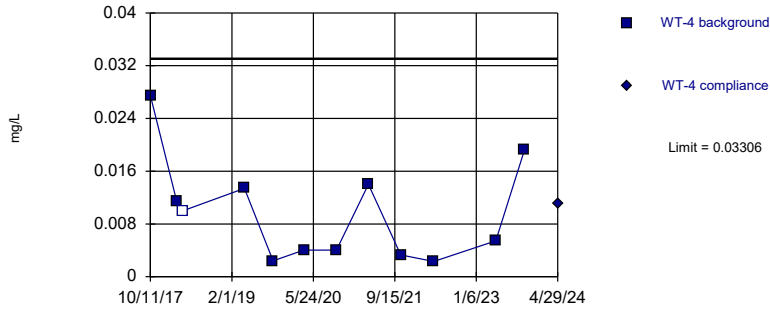
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Lead Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master



Within Limit

Prediction Limit  
Intrawell Parametric

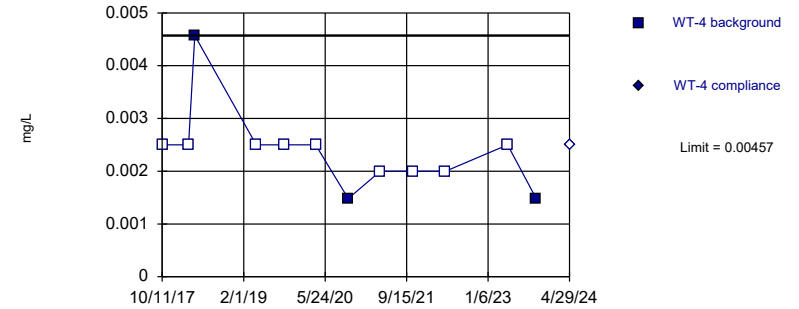


Background Data Summary: Mean=0.009752, Std. Dev.=0.007824, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8693, critical = 0.805. Kappa = 2.979 (c=12, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003135.

Constituent: Nickel Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

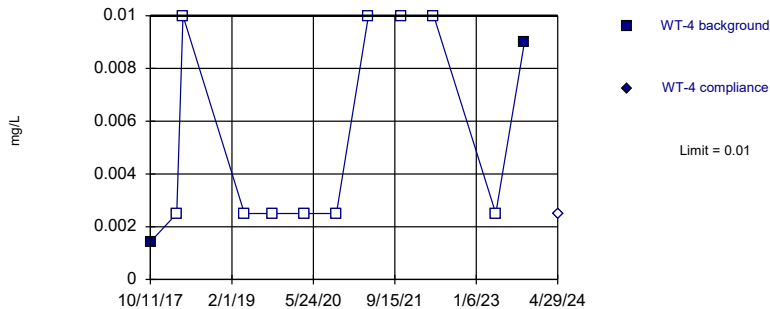


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Selenium Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric

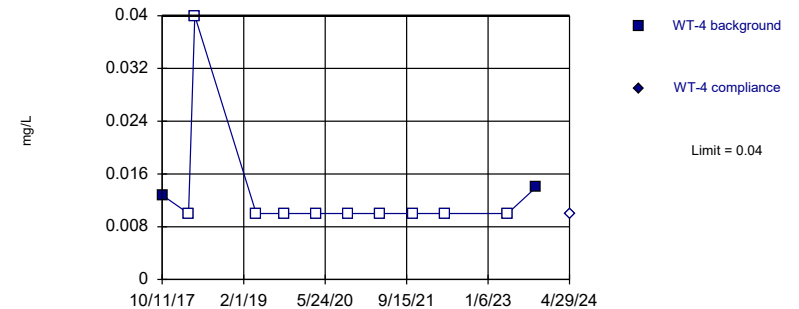


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Vanadium Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

Within Limit

Prediction Limit  
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Zinc Analysis Run 6/4/2024 3:11 PM View: 2024SSN - WT-4 IntraPL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF B Series and UD Master

**Prediction Limit Summary Table and Graphs**  
**Assessment Monitoring and AZPOC Monitoring Wells**

# Prediction Limit

Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME Printed 6/3/2024, 11:55 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs
Arsenic (mg/L)	MW-24A	0.0222	n/a	4/29/2024	0.00519	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-204A	0.0222	n/a	4/29/2024	0.00251	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-205A	0.0222	n/a	4/29/2024	0.00574	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-213A	0.0222	n/a	4/29/2024	0.000768J	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-215A	0.0222	n/a	4/29/2024	0.000593J	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-1B	0.0222	n/a	4/29/2024	0.00255	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-7B1	0.0222	n/a	4/29/2024	0.00737	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
<b>Arsenic (mg/L)</b>	<b>MW-8B</b>	<b>0.0222</b>	<b>n/a</b>	<b>4/29/2024</b>	<b>0.0704</b>	<b>Yes</b>	<b>86</b>	<b>MW-38A,MW-39B,MW-34A</b>	<b>n/a</b>	<b>n/a</b>	<b>70.93</b>
Arsenic (mg/L)	MW-14B	0.0222	n/a	4/29/2024	0.00109J	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-208B	0.0222	n/a	4/29/2024	0.00165J	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-210B	0.0222	n/a	4/29/2024	0.002475	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Arsenic (mg/L)	MW-12B	0.0222	n/a	4/29/2024	0.000594J	No	86	MW-38A,MW-39B,MW-34A	n/a	n/a	70.93
Barium (mg/L)	MW-17A-00	0.806	n/a	4/29/2024	0.487	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-23A	0.806	n/a	4/29/2024	0.322	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-24A	0.806	n/a	4/29/2024	0.279	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-25A-00	0.806	n/a	4/29/2024	0.199	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-29A	0.806	n/a	4/29/2024	0.151	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
<b>Barium (mg/L)</b>	<b>MW-200A</b>	<b>0.806</b>	<b>n/a</b>	<b>4/29/2024</b>	<b>0.934</b>	<b>Yes</b>	<b>88</b>	<b>MW-34A,MW-39B,MW-38A</b>	<b>n/a</b>	<b>n/a</b>	<b>0</b>
Barium (mg/L)	MW-201A	0.806	n/a	4/29/2024	0.154	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-202A	0.806	n/a	4/29/2024	0.232	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-203A	0.806	n/a	4/29/2024	0.311	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-204A	0.806	n/a	4/29/2024	0.0996	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-205A	0.806	n/a	4/29/2024	0.18	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-213A	0.806	n/a	4/29/2024	0.0384	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-214A	0.806	n/a	4/29/2024	0.255	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-215A	0.806	n/a	4/29/2024	0.139	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-216A	0.806	n/a	4/29/2024	0.0539	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-217A	0.806	n/a	4/29/2024	0.0962	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-218A	0.806	n/a	4/29/2024	0.269	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-219A	0.806	n/a	4/29/2024	0.708	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-220A	0.806	n/a	4/29/2024	0.3125	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-1B	0.806	n/a	4/29/2024	0.521	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-5B	0.806	n/a	4/29/2024	0.17	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-7B1	0.806	n/a	4/29/2024	0.645	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-8B	0.806	n/a	4/29/2024	0.289	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-14B	0.806	n/a	4/29/2024	0.33	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-31B	0.806	n/a	4/29/2024	0.483	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-208B	0.806	n/a	4/29/2024	0.0557	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-210B	0.806	n/a	4/29/2024	0.1165	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-310A	0.806	n/a	4/29/2024	0.0891	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-312A	0.806	n/a	4/29/2024	0.164	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-10B	0.806	n/a	4/29/2024	0.15	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-12B	0.806	n/a	4/29/2024	0.346	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-408	0.806	n/a	4/29/2024	0.157	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-410	0.806	n/a	4/29/2024	0.0923	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Barium (mg/L)	MW-18AR	0.806	n/a	4/29/2024	0.791	No	88	MW-34A,MW-39B,MW-38A	n/a	n/a	0
Cadmium (mg/L)	MW-10B	0.00173	n/a	4/29/2024	0.000334	No	82	MW-34A,MW-38A,MW-39B	n/a	n/a	85.37
Cadmium (mg/L)	MW-408	0.00173	n/a	4/29/2024	0.00015J	No	82	MW-34A,MW-38A,MW-39B	n/a	n/a	85.37
Cobalt (mg/L)	MW-24A	0.01156	n/a	4/29/2024	0.00645	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-205A	0.01156	n/a	4/29/2024	0.000319J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08

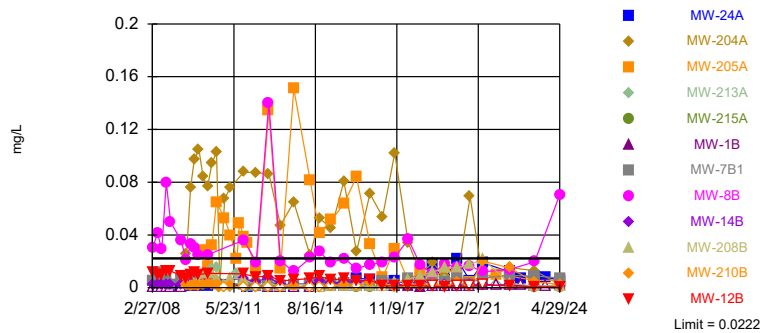
## Prediction Limit

Iowa City Landfill &amp; Recycling Client: SCS Engineers Data: IACLF PRIME Printed 6/3/2024, 11:55 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs
Cobalt (mg/L)	MW-213A	0.01156	n/a	4/29/2024	0.000426J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-214A	0.01156	n/a	4/29/2024	0.000263J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-215A	0.01156	n/a	4/29/2024	0.000539	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-1B	0.01156	n/a	4/29/2024	0.000348J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-8B	0.01156	n/a	4/29/2024	0.00941	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-14B	0.01156	n/a	4/29/2024	0.00118	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-31B	0.01156	n/a	4/29/2024	0.000195J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-208B	0.01156	n/a	4/29/2024	0.000297J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-210B	0.01156	n/a	4/29/2024	0.004295	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-10B	0.01156	n/a	4/29/2024	0.000299J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-12B	0.01156	n/a	4/29/2024	0.000328J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-408	0.01156	n/a	4/29/2024	0.000179J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Cobalt (mg/L)	MW-410	0.01156	n/a	4/29/2024	0.000273J	No	65	MW-34A,MW-38A,MW-39B	-7.702	1.316	43.08
Copper (mg/L)	MW-29A	0.03	n/a	4/29/2024	0.00189J	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Copper (mg/L)	MW-204A	0.03	n/a	4/29/2024	0.00924	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Copper (mg/L)	MW-205A	0.03	n/a	4/29/2024	0.0024J	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Copper (mg/L)	MW-219A	0.03	n/a	4/29/2024	0.00195J	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Copper (mg/L)	MW-5B	0.03	n/a	4/29/2024	0.00188J	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Copper (mg/L)	MW-8B	0.03	n/a	4/29/2024	0.00206J	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Copper (mg/L)	MW-208B	0.03	n/a	4/29/2024	0.00324J	No	82	MW-38A,MW-39B,MW-34A	n/a	n/a	81.71
Lead (mg/L)	MW-204A	0.0128	n/a	4/29/2024	0.000489J	No	86	MW-34A,MW-38A,MW-39B	n/a	n/a	84.88
Lead (mg/L)	MW-205A	0.0128	n/a	4/29/2024	0.000461J	No	86	MW-34A,MW-38A,MW-39B	n/a	n/a	84.88
Lead (mg/L)	MW-214A	0.0128	n/a	4/29/2024	0.000957	No	86	MW-34A,MW-38A,MW-39B	n/a	n/a	84.88
Lead (mg/L)	MW-215A	0.0128	n/a	4/29/2024	0.00089	No	86	MW-34A,MW-38A,MW-39B	n/a	n/a	84.88
Lead (mg/L)	MW-8B	0.0128	n/a	4/29/2024	0.00101	No	86	MW-34A,MW-38A,MW-39B	n/a	n/a	84.88
Lead (mg/L)	MW-31B	0.0128	n/a	4/29/2024	0.000441J	No	86	MW-34A,MW-38A,MW-39B	n/a	n/a	84.88
Nickel (mg/L)	MW-216A	0.105	n/a	4/29/2024	0.00236J	No	85	MW-38A,MW-34A,MW-39B	n/a	n/a	67.06
Nickel (mg/L)	MW-8B	0.105	n/a	4/29/2024	0.0106	No	85	MW-38A,MW-34A,MW-39B	n/a	n/a	67.06
Nickel (mg/L)	MW-14B	0.105	n/a	4/29/2024	0.00346J	No	85	MW-38A,MW-34A,MW-39B	n/a	n/a	67.06
Nickel (mg/L)	MW-210B	0.105	n/a	4/29/2024	0.00951	No	85	MW-38A,MW-34A,MW-39B	n/a	n/a	67.06
Nickel (mg/L)	MW-12B	0.105	n/a	4/29/2024	0.00299J	No	85	MW-38A,MW-34A,MW-39B	n/a	n/a	67.06
Selenium (mg/L)	MW-10B	0.005	n/a	4/29/2024	0.00375J	No	82	MW-38A,MW-34A,MW-39B	n/a	n/a	90.24
<b>Selenium (mg/L)</b>	<b>MW-408</b>	<b>0.005</b>	<b>n/a</b>	<b>4/29/2024</b>	<b>0.0371</b>	<b>Yes</b>	<b>82</b>	<b>MW-38A,MW-34A,MW-39B</b>	<b>n/a</b>	<b>n/a</b>	<b>90.24</b>
Vanadium (mg/L)	MW-10B	0.01	n/a	4/29/2024	0.00176J	No	48	MW-38A,MW-34A,MW-39B	n/a	n/a	35.42
Vanadium (mg/L)	MW-408	0.01	n/a	4/29/2024	0.00279J	No	48	MW-38A,MW-34A,MW-39B	n/a	n/a	35.42

Exceeds Limit: MW-8B

Prediction Limit  
Interwell Non-parametric

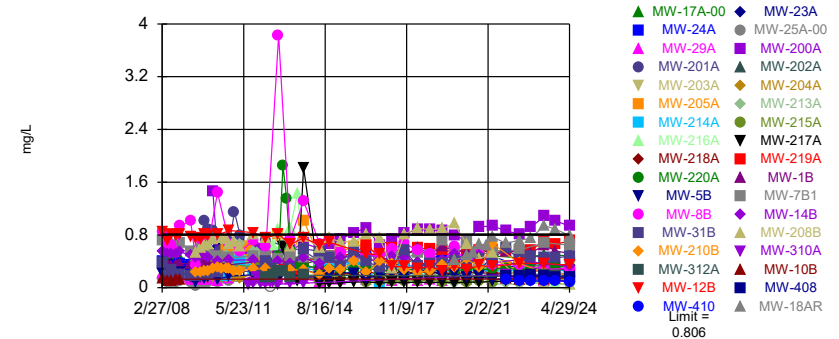


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 86 background values. 70.93% NDs. Annual per-constituent alpha = 0.01708. Individual comparison alpha = 0.0002533 (1 of 2). Comparing 12 points to limit. Assumes 22 future values.

Constituent: Arsenic Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Exceeds Limit: MW-200A

Prediction Limit  
Interwell Non-parametric

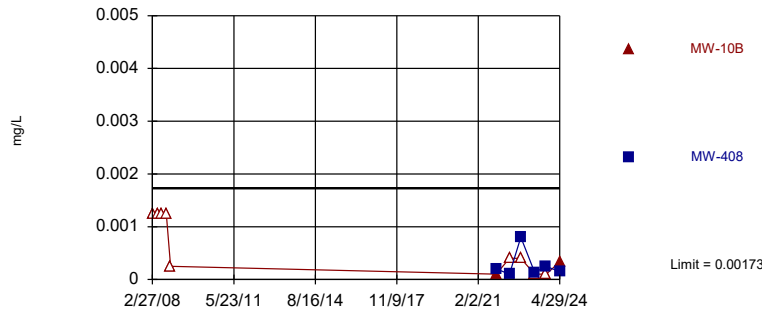


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 88 background values. Annual per-constituent alpha = 0.01631. Individual comparison alpha = 0.0002418 (1 of 2). Comparing 34 points to limit.

Constituent: Barium Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Within Limit

Prediction Limit  
Interwell Non-parametric

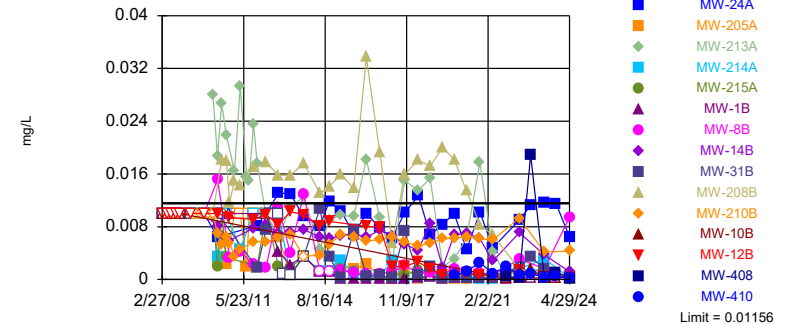


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 82 background values. 85.37% NDs. Annual per-constituent alpha = 0.01862. Individual comparison alpha = 0.0002763 (1 of 2). Comparing 2 points to limit. Assumes 32 future values.

Constituent: Cadmium Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Within Limit

Prediction Limit  
Interwell Parametric

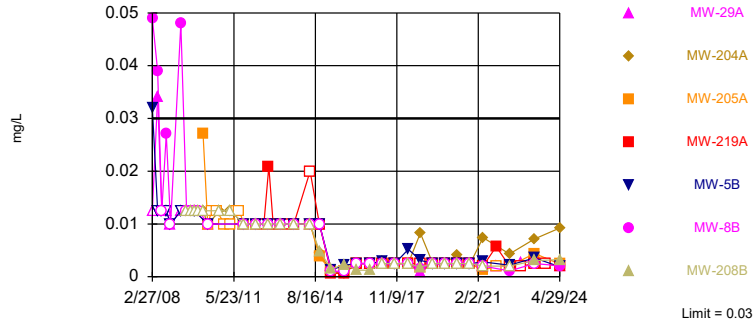


Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-7.702, Std. Dev.=1.316, n=65, 43.08% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.972, critical = 0.948. Kappa = 2.463 (c=15, w=34, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0001033. Comparing 15 points to limit. Assumes 19 future values.

Constituent: Cobalt Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Within Limit

Prediction Limit  
Interwell Non-parametric

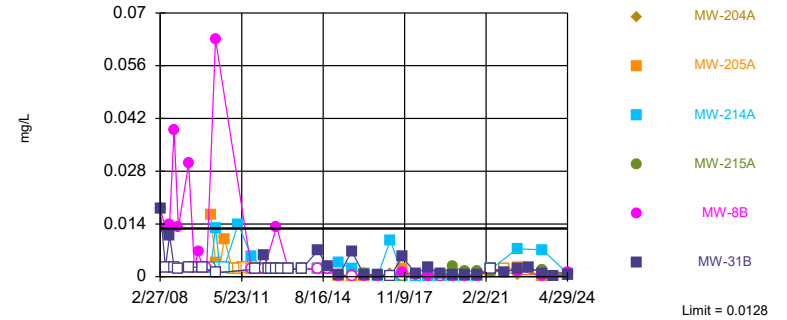


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 82 background values. 81.71% NDs. Annual per-constituent alpha = 0.01862. Individual comparison alpha = 0.0002763 (1 of 2). Comparing 7 points to limit. Assumes 27 future values.

Constituent: Copper Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Within Limit

Prediction Limit  
Interwell Non-parametric

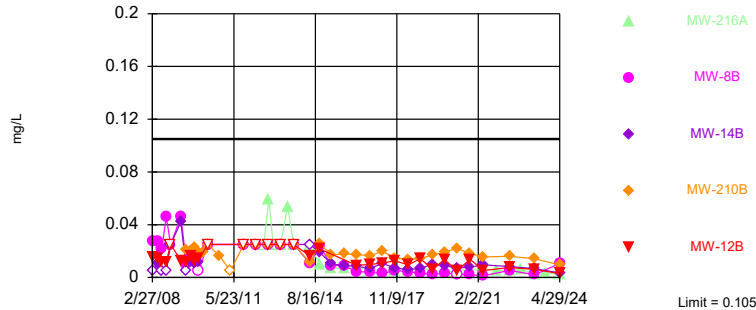


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 86 background values. 84.88% NDs. Annual per-constituent alpha = 0.01708. Individual comparison alpha = 0.0002533 (1 of 2). Comparing 6 points to limit. Assumes 28 future values.

Constituent: Lead Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Within Limit

Prediction Limit  
Interwell Non-parametric

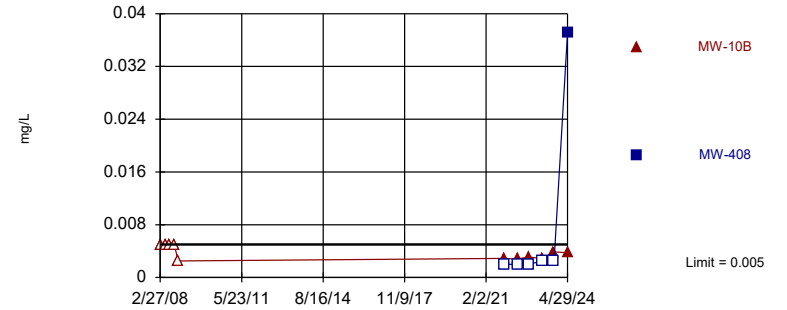


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 85 background values. 67.06% NDs. Annual per-constituent alpha = 0.01747. Individual comparison alpha = 0.0002591 (1 of 2). Comparing 5 points to limit. Assumes 29 future values.

Constituent: Nickel Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Exceeds Limit: MW-408

Prediction Limit  
Interwell Non-parametric

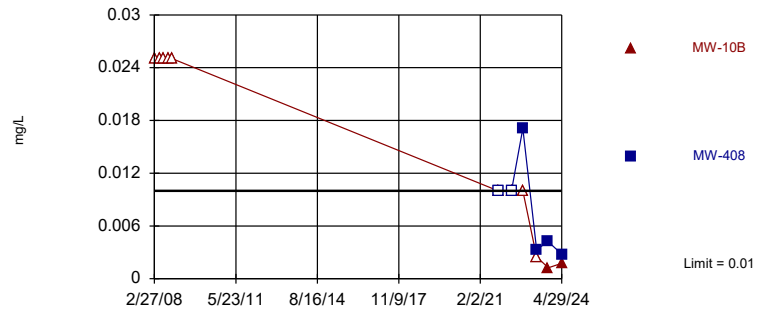


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 82 background values. 90.24% NDs. Annual per-constituent alpha = 0.01862. Individual comparison alpha = 0.0002763 (1 of 2). Comparing 2 points to limit. Assumes 32 future values.

Constituent: Selenium Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

Within Limit

### Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 48 background values. 35.42% NDs. Annual per-constituent alpha = 0.04944. Individual comparison alpha = 0.0007453 (1 of 2). Comparing 2 points to limit. Assumes 32 future values.

Constituent: Vanadium Analysis Run 6/3/2024 11:49 AM View: 2024SSN - AM PL  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF PRIME

**Mann-Kendall Trend Test Summary Table and Graphs**  
**Series A**



# Trend Test

Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF Series A-AM 2024SSN    Printed 6/3/2024, 5:55 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-18AR	-0.0139	-3	-21	No	8	12.5	0.01	NP
2-Butanone (ug/L)	MW-216A	0	3	21	No	8	87.5	0.01	NP
Antimony (mg/L)	MW-18AR	0	3	18	No	7	85.71	0.01	NP
Antimony (mg/L)	MW-215A	0	0	21	No	8	75	0.01	NP
Arsenic (mg/L)	MW-201A	0	-5	-21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-204A	-0.001439	-8	-21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-205A	-0.001301	-12	-21	No	8	0	0.01	NP
<b>Arsenic (mg/L)</b>	<b>MW-213A</b>	<b>-0.0007405</b>	<b>-27</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>12.5</b>	<b>0.01</b>	<b>NP</b>
Arsenic (mg/L)	MW-24A	-0.003607	-12	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-17A-00	0.0005689	0	21	No	8	0	0.01	NP
Barium (mg/L)	MW-18AR	0.06217	16	21	No	8	0	0.01	NP
Barium (mg/L)	MW-200A	0.02873	6	21	No	8	0	0.01	NP
Barium (mg/L)	MW-201A	-0.01701	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-202A	-0.004851	-2	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-203A	0.003424	3	21	No	8	0	0.01	NP
Barium (mg/L)	MW-204A	-0.01175	-12	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-205A	-0.008168	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-213A	-0.006365	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-214A	-0.002986	-4	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-215A	0.009936	15	21	No	8	0	0.01	NP
<b>Barium (mg/L)</b>	<b>MW-216A</b>	<b>-0.07331</b>	<b>-24</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>0.01</b>	<b>NP</b>
Barium (mg/L)	MW-217A	0.005169	16	21	No	8	0	0.01	NP
Barium (mg/L)	MW-218A	0.01552	15	21	No	8	0	0.01	NP
Barium (mg/L)	MW-219A	0.03857	18	21	No	8	0	0.01	NP
Barium (mg/L)	MW-220A	0.01323	16	21	No	8	0	0.01	NP
Barium (mg/L)	MW-23A	0.00145	8	21	No	8	0	0.01	NP
Barium (mg/L)	MW-24A	-0.05085	-9	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-25A-00	0.008641	14	21	No	8	0	0.01	NP
Barium (mg/L)	MW-29A	0.001782	2	21	No	8	0	0.01	NP
Benzene (ug/L)	MW-204A	0	-1	-21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-215A	-0.00001177	-6	-21	No	8	62.5	0.01	NP
Chromium (mg/L)	MW-214A	-0.00008008	-6	-21	No	8	0	0.01	NP
Chromium (mg/L)	MW-215A	-0.0003558	-17	-21	No	8	37.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-18AR	-0.2808	-15	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-18AR	-0.0004653	-18	-21	No	8	37.5	0.01	NP
Cobalt (mg/L)	MW-201A	0.000006351	6	21	No	8	37.5	0.01	NP
Cobalt (mg/L)	MW-204A	-0.0001089	-10	-21	No	8	25	0.01	NP
Cobalt (mg/L)	MW-205A	0.00002962	17	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-213A	-0.001218	-14	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-214A	0.00000301	7	21	No	8	37.5	0.01	NP
Cobalt (mg/L)	MW-215A	0.00002417	4	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-216A	0.00004535	7	21	No	8	37.5	0.01	NP
Cobalt (mg/L)	MW-217A	0.0000181	10	21	No	8	75	0.01	NP
Cobalt (mg/L)	MW-220A	0	3	21	No	8	87.5	0.01	NP
Cobalt (mg/L)	MW-23A	0	0	21	No	8	50	0.01	NP
Cobalt (mg/L)	MW-24A	0.0005633	12	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-25A-00	0.00002477	12	21	No	8	50	0.01	NP
Cobalt (mg/L)	MW-29A	-0.0008372	-14	-21	No	8	12.5	0.01	NP
Copper (mg/L)	MW-17A-00	0	-1	-21	No	8	87.5	0.01	NP
Copper (mg/L)	MW-18AR	0.0001911	10	21	No	8	62.5	0.01	NP

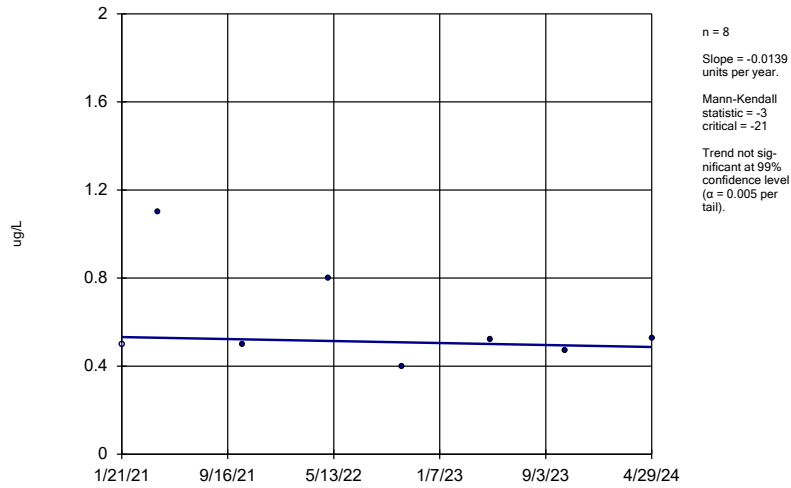
# Trend Test

Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF Series A-AM 2024SSN    Printed 6/3/2024, 5:55 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-201A	0.0008206	7	21	No	8	75	0.01	NP
Copper (mg/L)	MW-204A	0.001271	19	21	No	8	37.5	0.01	NP
Copper (mg/L)	MW-214A	0	6	21	No	8	62.5	0.01	NP
Copper (mg/L)	MW-215A	-0.0003221	-8	-21	No	8	12.5	0.01	NP
Copper (mg/L)	MW-219A	-0.00008206	-6	-21	No	8	75	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-18AR	-3.573	-16	-21	No	8	0	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-200A	-0.1119	-6	-21	No	8	12.5	0.01	NP
Lead (mg/L)	MW-201A	-0.0001323	-8	-21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-202A	0	4	21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-205A	0.00002962	1	21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-214A	0.0005448	11	21	No	8	50	0.01	NP
Lead (mg/L)	MW-215A	-0.00003481	0	21	No	8	0	0.01	NP
Lead (mg/L)	MW-24A	0	-1	-21	No	8	75	0.01	NP
Nickel (mg/L)	MW-18AR	-0.001076	-20	-21	No	8	25	0.01	NP
Nickel (mg/L)	MW-201A	0.0002969	6	21	No	8	50	0.01	NP
Nickel (mg/L)	MW-204A	-0.00042	-16	-21	No	8	12.5	0.01	NP
Nickel (mg/L)	MW-213A	-0.0006204	-12	-21	No	8	12.5	0.01	NP
Nickel (mg/L)	MW-214A	0	6	21	No	8	62.5	0.01	NP
Nickel (mg/L)	MW-215A	0	-4	-21	No	8	50	0.01	NP
Nickel (mg/L)	MW-216A	-0.001074	-16	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-24A	0.0009291	8	21	No	8	12.5	0.01	NP
Nickel (mg/L)	MW-29A	-0.002263	-10	-21	No	8	12.5	0.01	NP
Tetrachloroethene (ug/L)	MW-18AR	-0.3509	-16	-21	No	8	0	0.01	NP
Toluene (ug/L)	MW-205A	0	3	21	No	8	87.5	0.01	NP
Trichloroethene (ug/L)	MW-18AR	-0.211	-18	-21	No	8	0	0.01	NP
Trichlorofluoromethane (ug/L)	MW-18AR	-1.659	-16	-21	No	8	0	0.01	NP
Vanadium (mg/L)	MW-200A	0.0003143	3	21	No	8	25	0.01	NP
Vanadium (mg/L)	MW-213A	0.00214	19	21	No	8	25	0.01	NP
Vanadium (mg/L)	MW-215A	0.0006736	11	21	No	8	25	0.01	NP
Vanadium (mg/L)	MW-217A	0	-5	-21	No	8	75	0.01	NP
Zinc (mg/L)	MW-202A	0	3	21	No	8	87.5	0.01	NP
Zinc (mg/L)	MW-204A	0	-3	-21	No	8	87.5	0.01	NP

### Sen's Slope Estimator

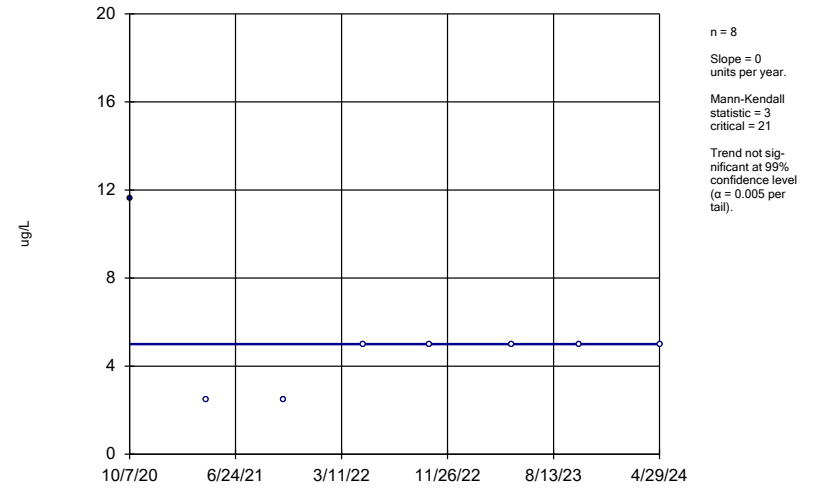
MW-18AR



Constituent: 1,1-Dichloroethane Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

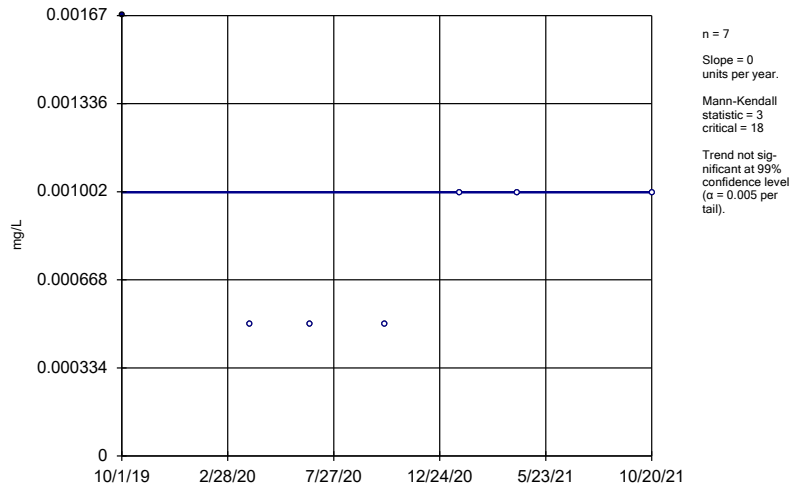
MW-216A



Constituent: 2-Butanone Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

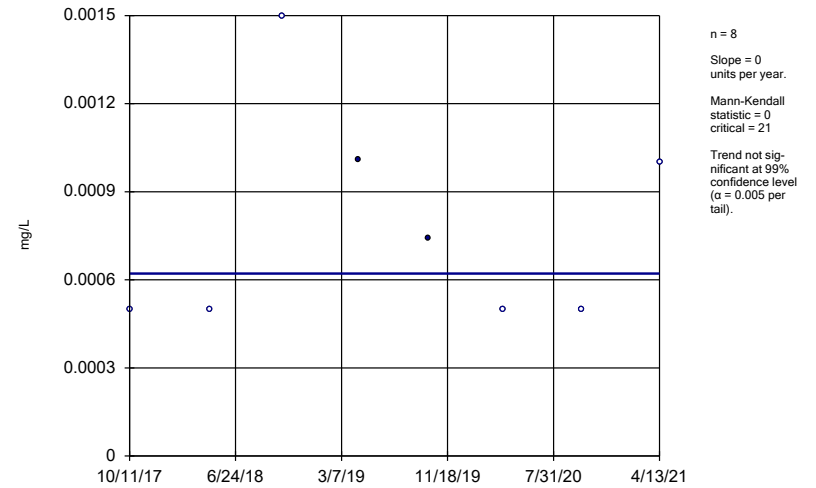
MW-18AR



Constituent: Antimony Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

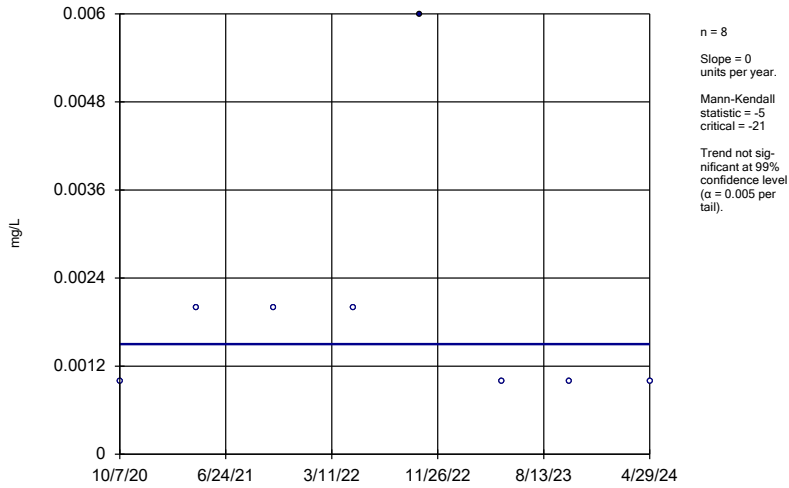
MW-215A



Constituent: Antimony Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

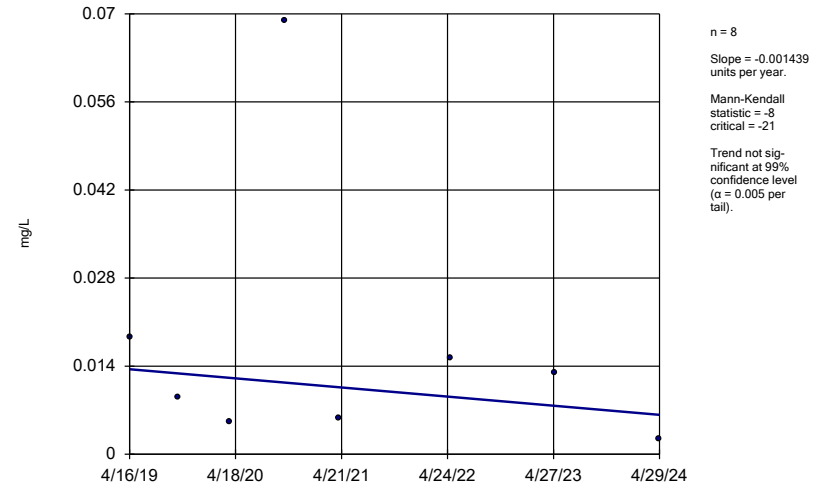
MW-201A



Constituent: Arsenic Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

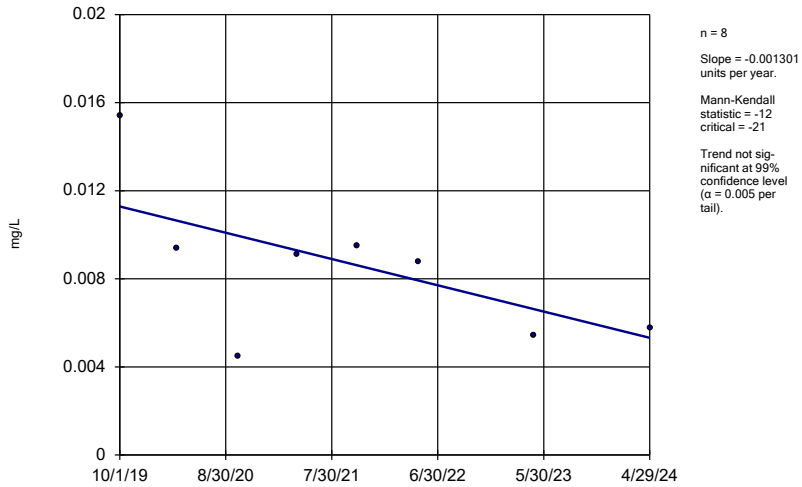
MW-204A



Constituent: Arsenic Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

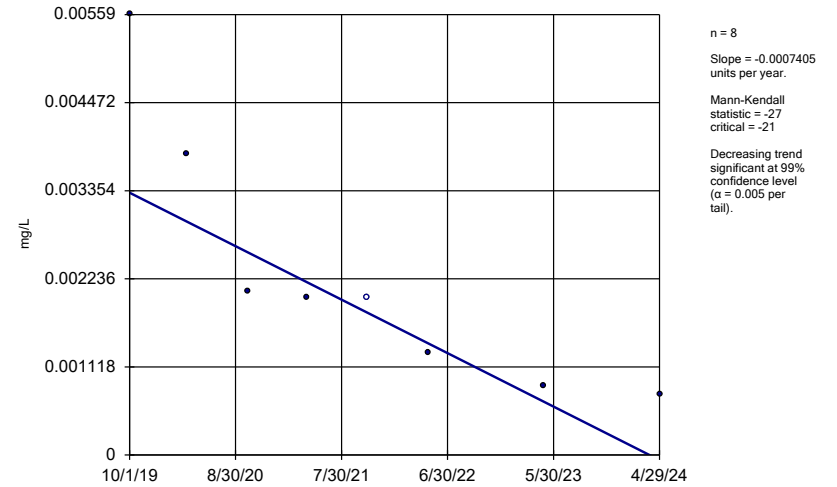
MW-205A



Constituent: Arsenic Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

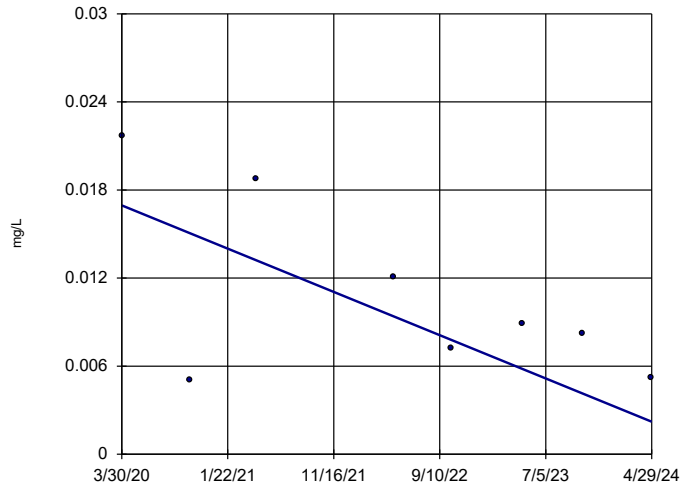
MW-213A



Constituent: Arsenic Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-24A

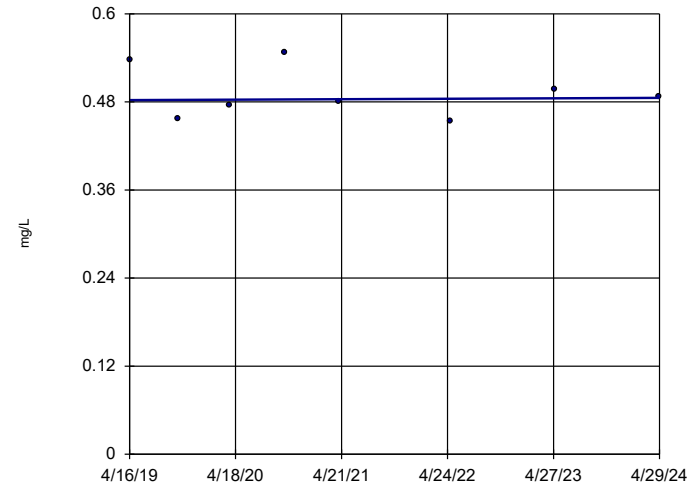


n = 8  
 Slope = -0.003607 units per year.  
 Mann-Kendall statistic = -12  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-17A-00

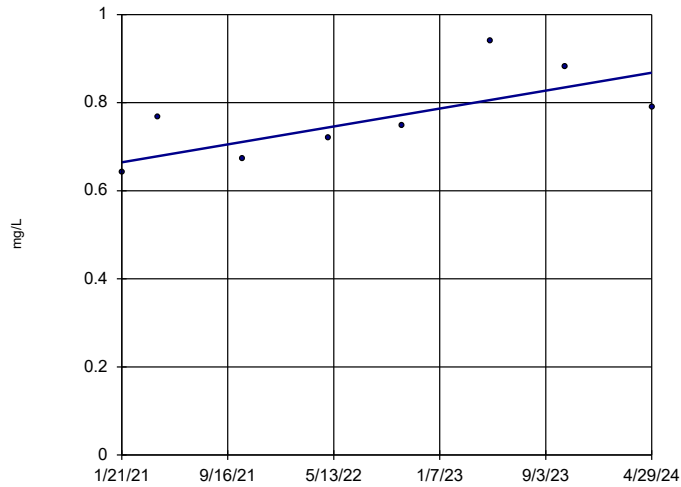


n = 8  
 Slope = 0.0005689 units per year.  
 Mann-Kendall statistic = 0  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-18AR

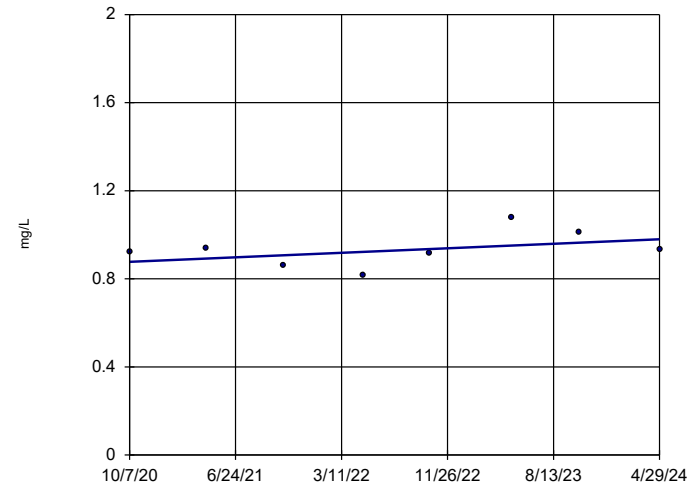


n = 8  
 Slope = 0.06217 units per year.  
 Mann-Kendall statistic = 16  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-200A

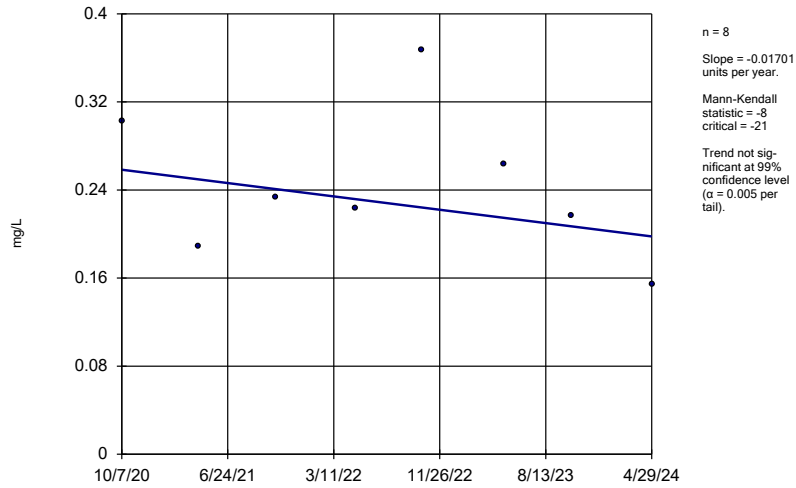


n = 8  
 Slope = 0.02873 units per year.  
 Mann-Kendall statistic = 6  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

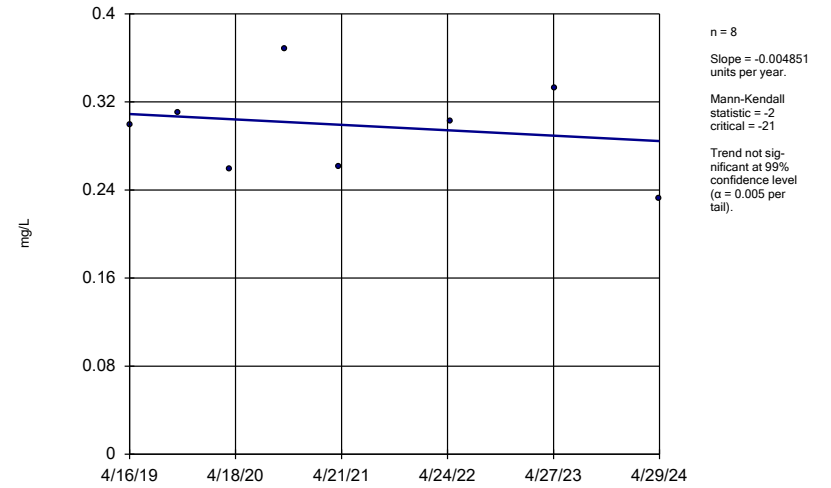
MW-201A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

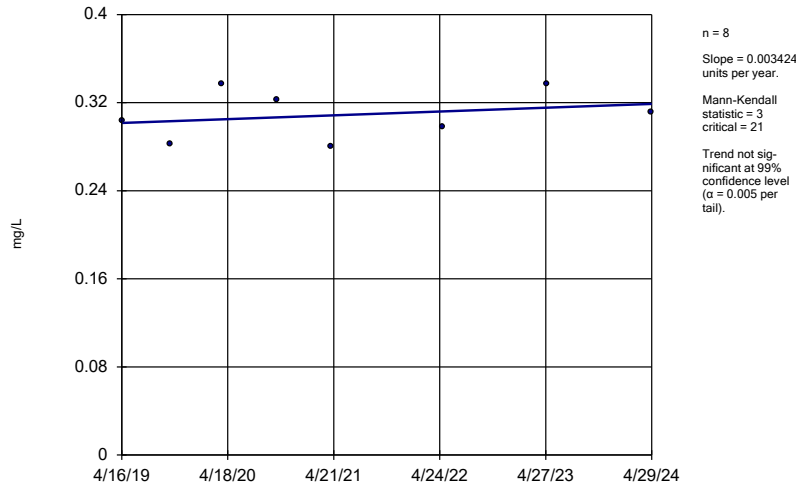
MW-202A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

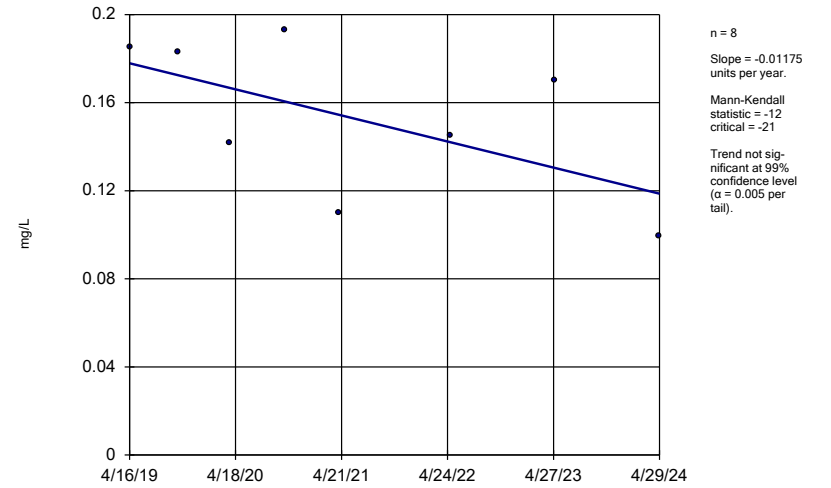
MW-203A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

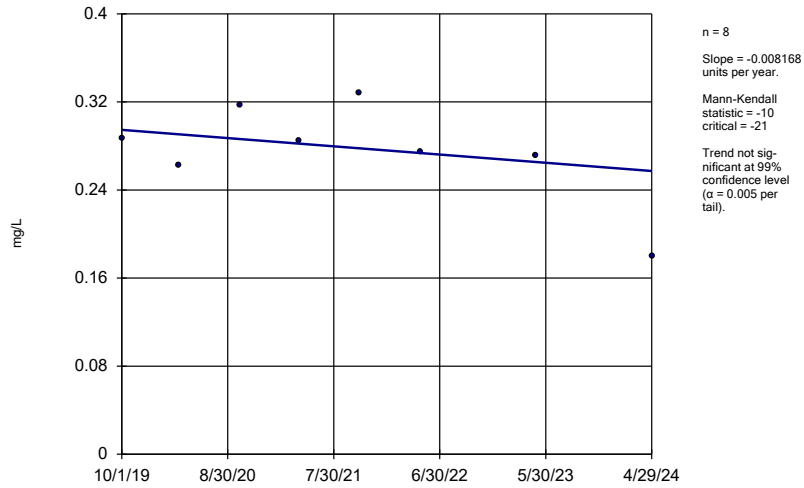
MW-204A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

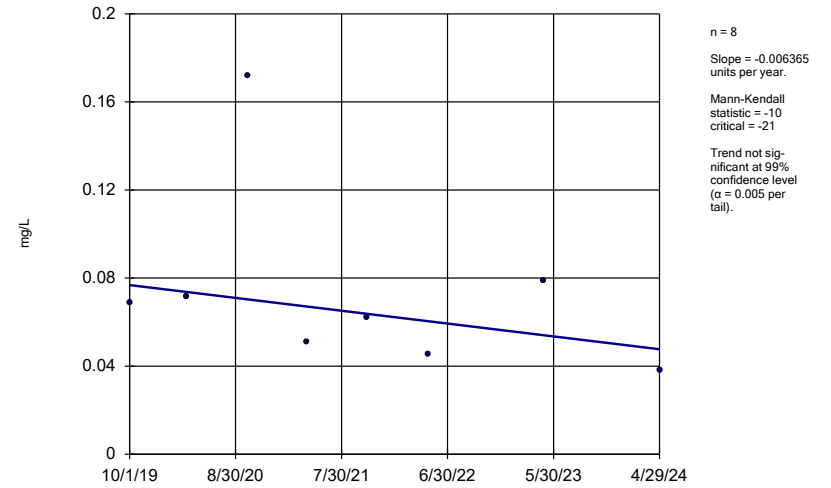
MW-205A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

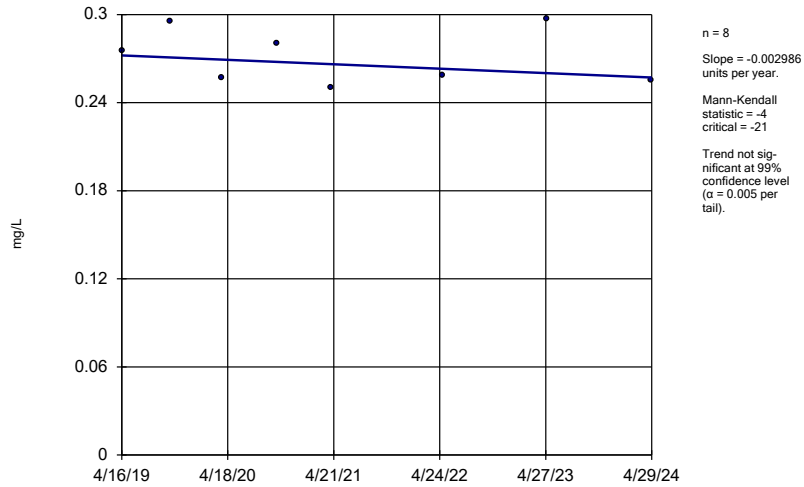
MW-213A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

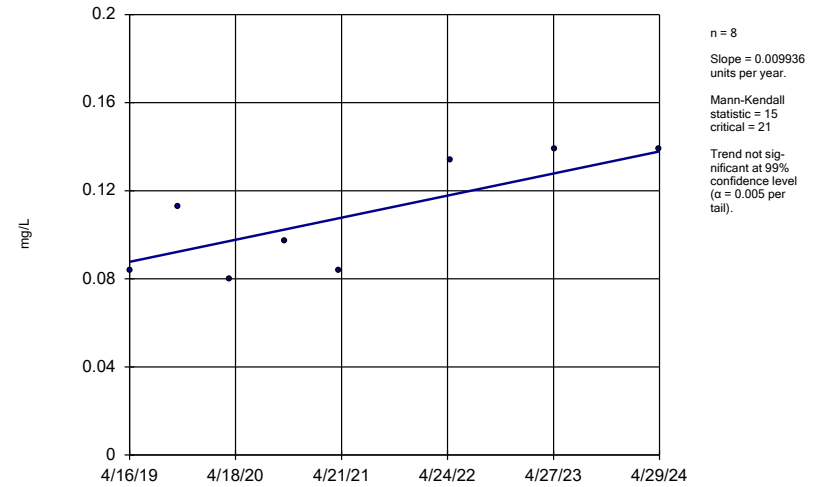
MW-214A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

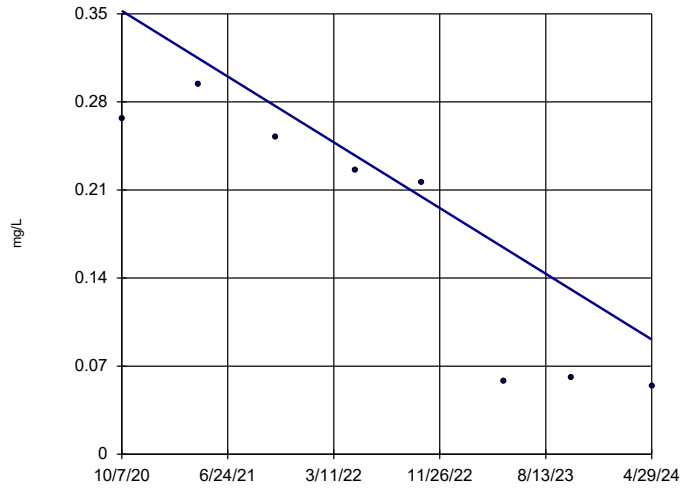
MW-215A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-216A

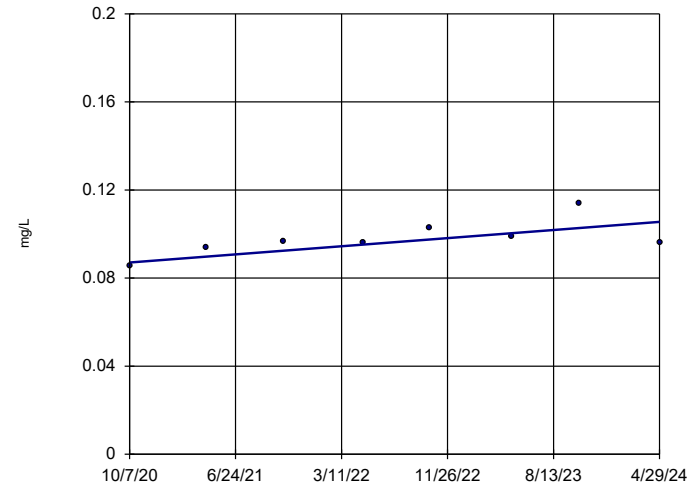


n = 8  
 Slope = -0.07331  
 units per year.  
 Mann-Kendall  
 statistic = -24  
 critical = -21  
 Decreasing trend  
 significant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-217A

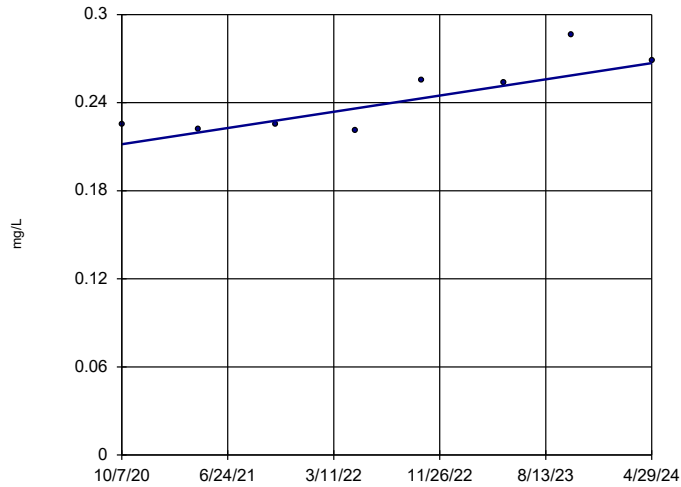


n = 8  
 Slope = 0.005169  
 units per year.  
 Mann-Kendall  
 statistic = 16  
 critical = 21  
 Trend not sig-  
 nificant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-218A

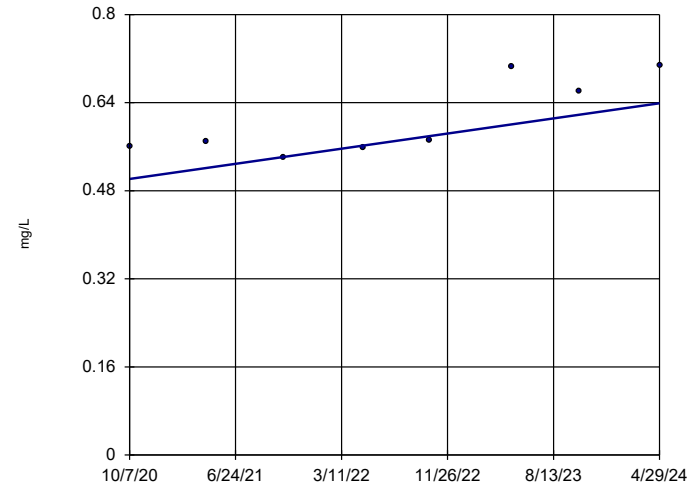


n = 8  
 Slope = 0.01552  
 units per year.  
 Mann-Kendall  
 statistic = 15  
 critical = 21  
 Trend not sig-  
 nificant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-219A



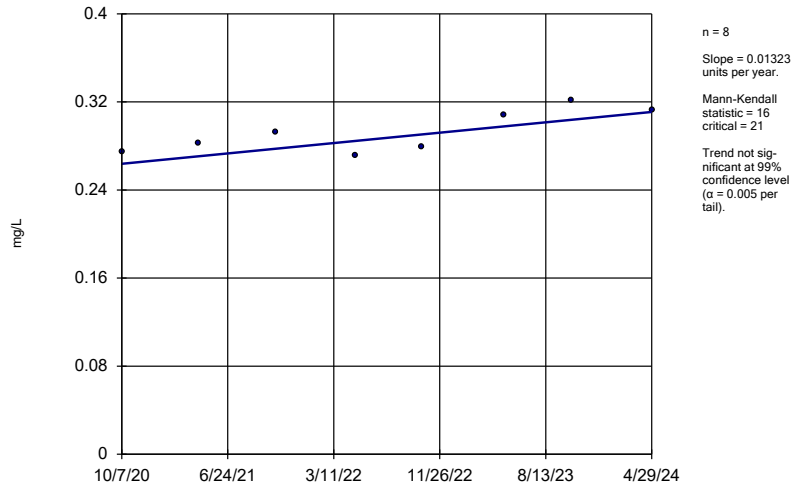
n = 8  
 Slope = 0.03857  
 units per year.  
 Mann-Kendall  
 statistic = 18  
 critical = 21  
 Trend not sig-  
 nificant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN



### Sen's Slope Estimator

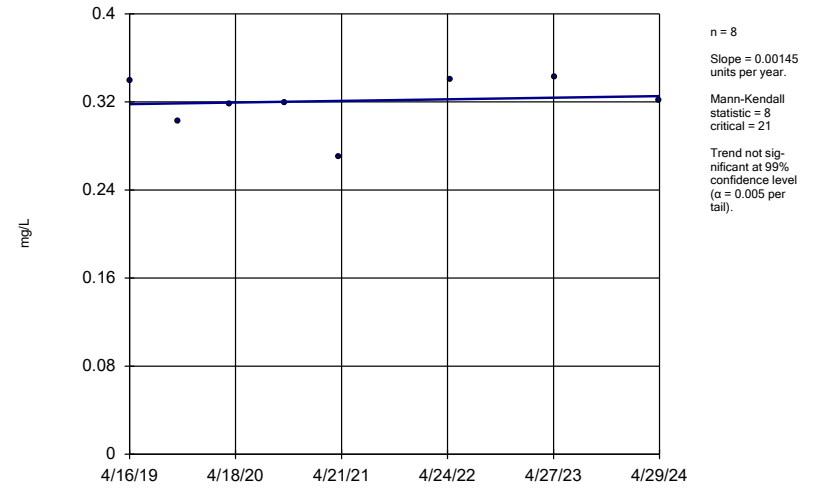
MW-220A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

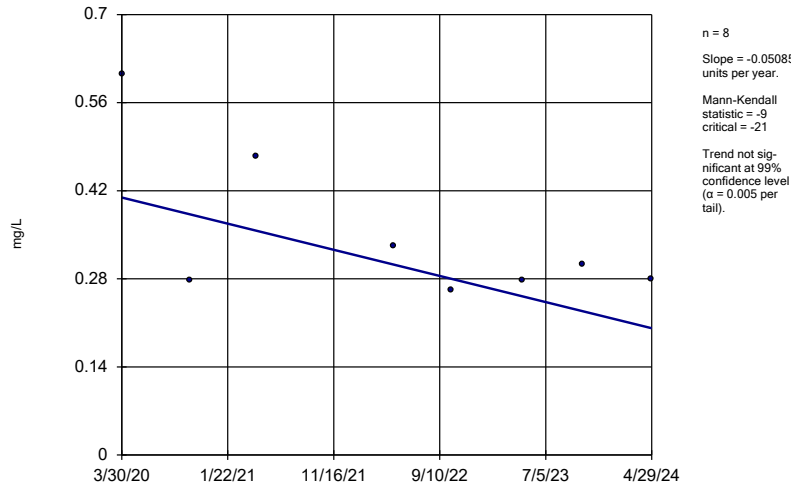
MW-23A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

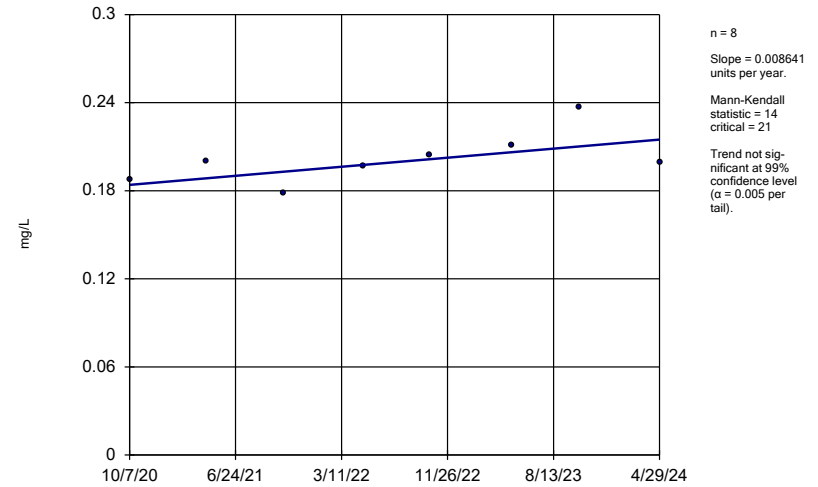
MW-24A



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

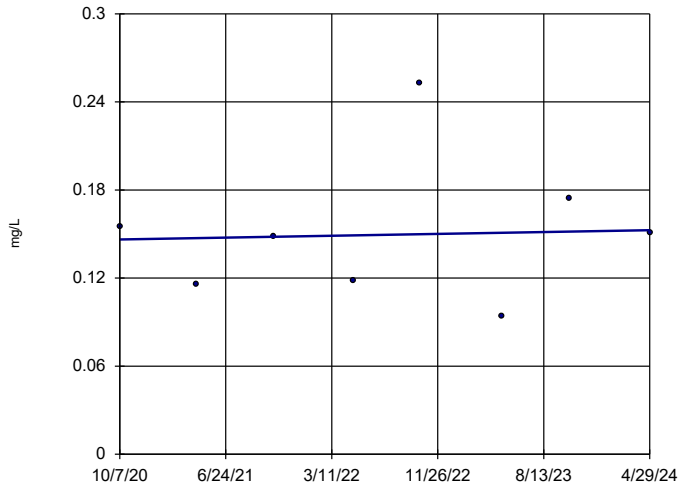
MW-25A-00



Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-29A

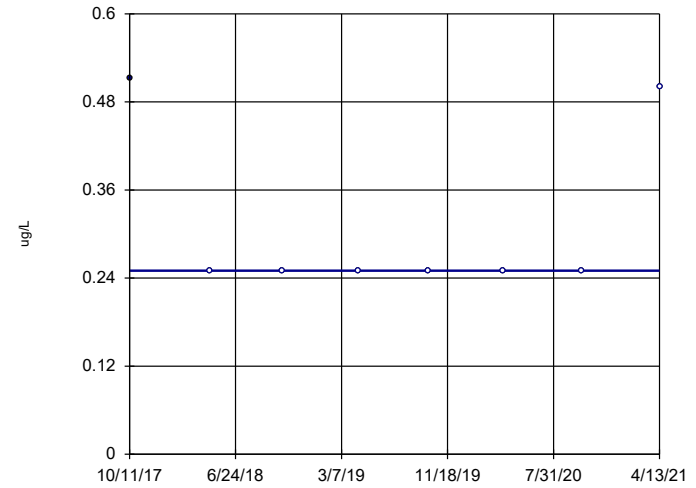


n = 8  
 Slope = 0.001782 units per year.  
 Mann-Kendall statistic = 2  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-204A

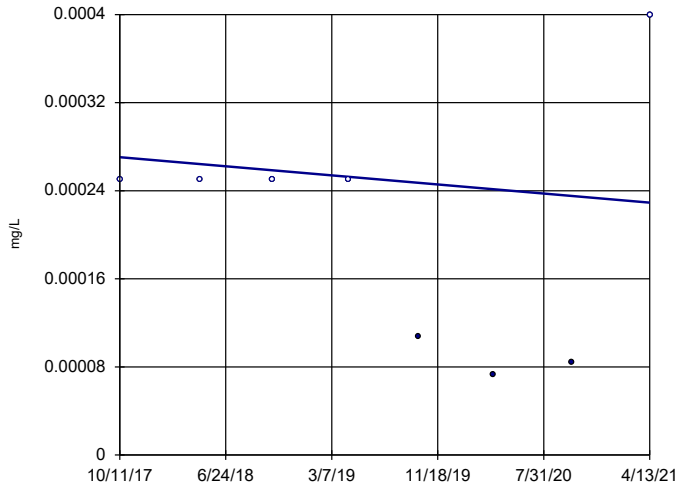


n = 8  
 Slope = 0 units per year.  
 Mann-Kendall statistic = -1  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-215A

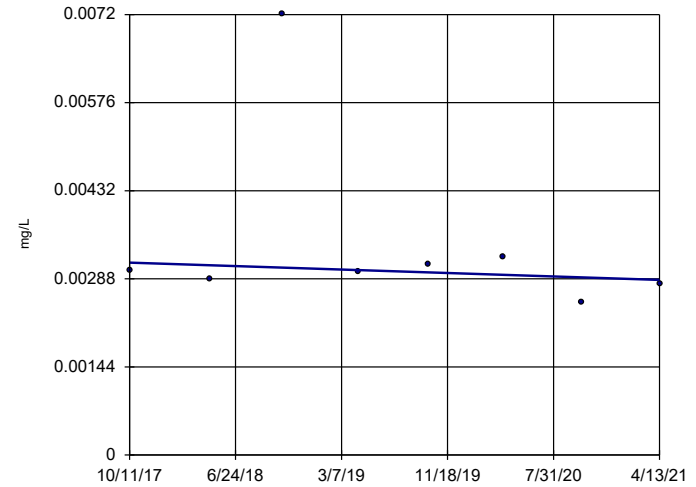


n = 8  
 Slope = -0.00001177 units per year.  
 Mann-Kendall statistic = -6  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cadmium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-214A

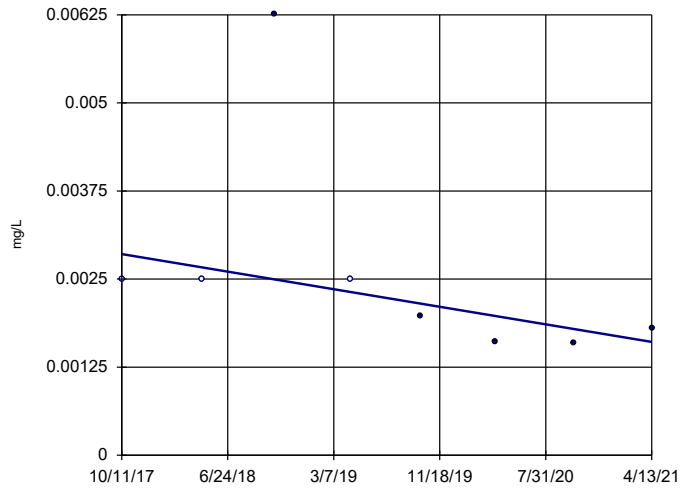


n = 8  
 Slope = -0.00008008 units per year.  
 Mann-Kendall statistic = -6  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chromium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-215A

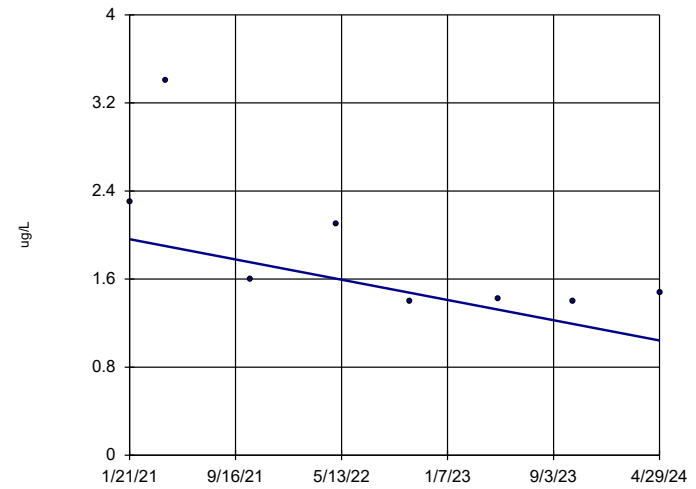


n = 8  
Slope = -0.0003558  
units per year.  
Mann-Kendall  
statistic = -17  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Chromium Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-18AR

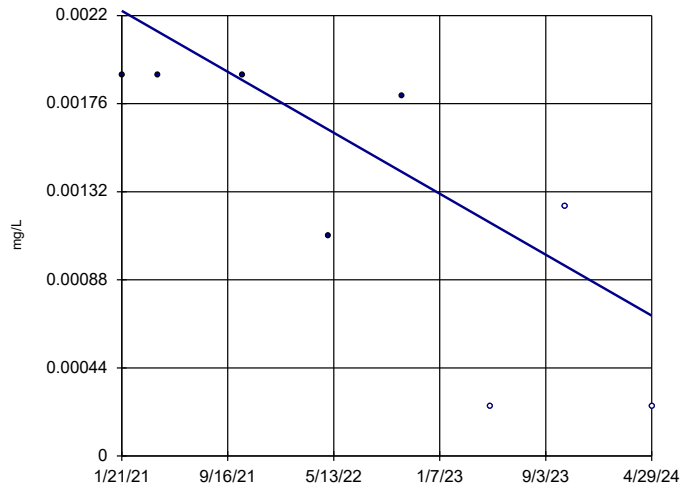


n = 8  
Slope = -0.2808  
units per year.  
Mann-Kendall  
statistic = -15  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: cis-1,2-Dichloroethene Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-18AR

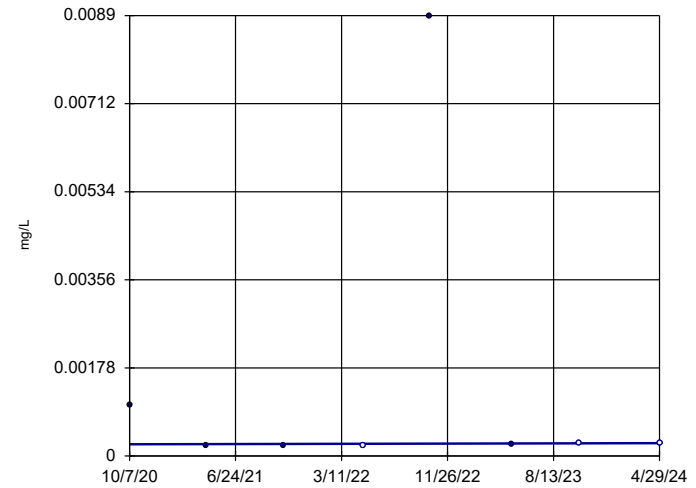


n = 8  
Slope = -0.0004653  
units per year.  
Mann-Kendall  
statistic = -18  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-201A

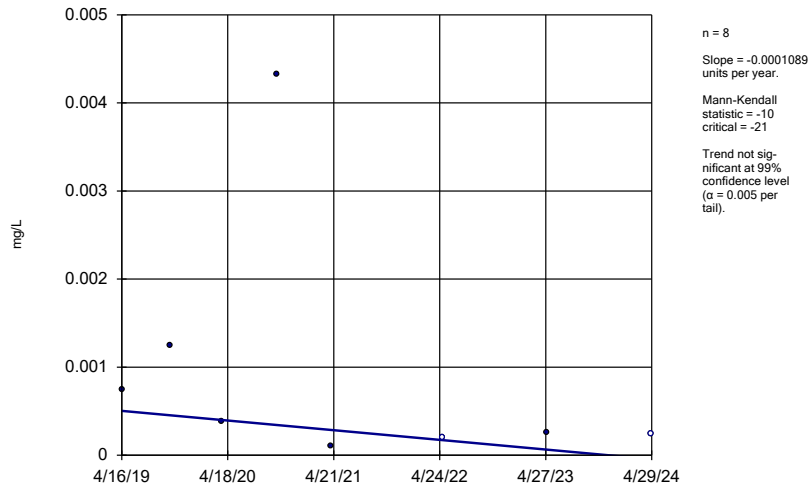


n = 8  
Slope = 0.00006351  
units per year.  
Mann-Kendall  
statistic = 6  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

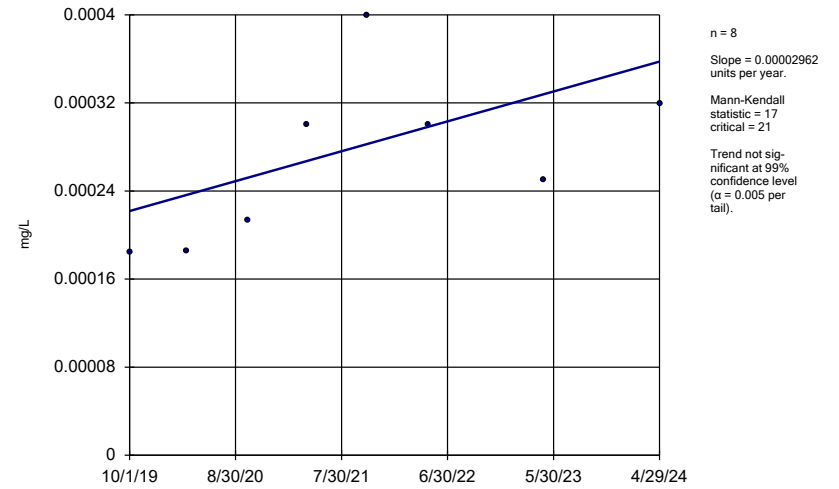
MW-204A



Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

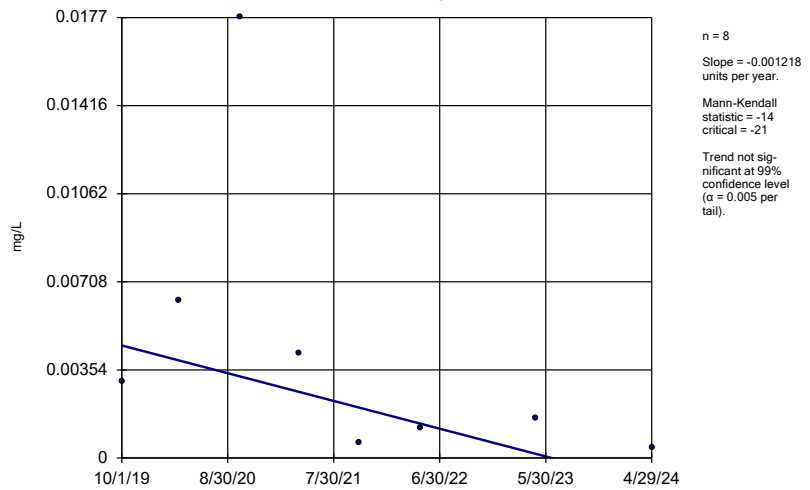
MW-205A



Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

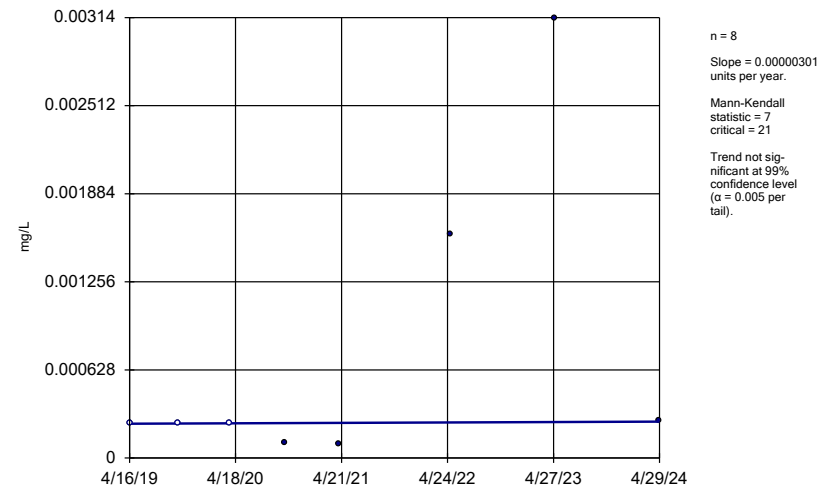
MW-213A



Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

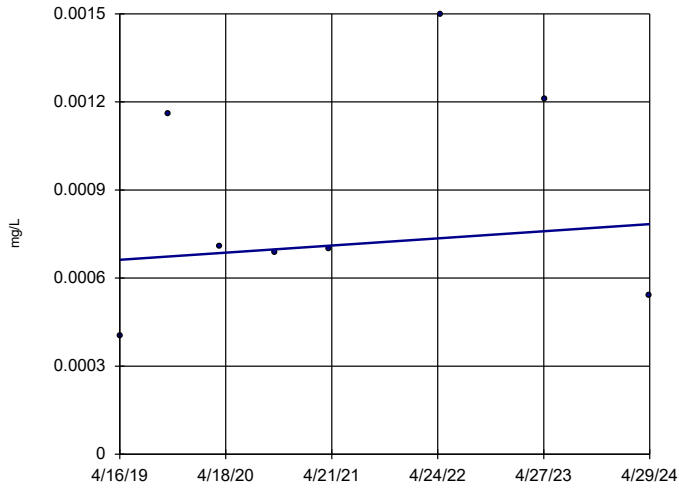
MW-214A



Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-215A



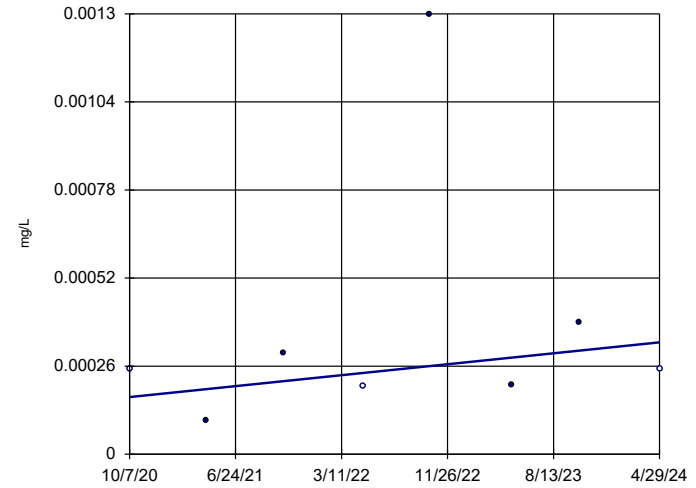
n = 8  
 Slope = 0.00002417 units per year.  
 Mann-Kendall statistic = 4  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

Hollow symbols indicate censored values.

### Sen's Slope Estimator

MW-216A

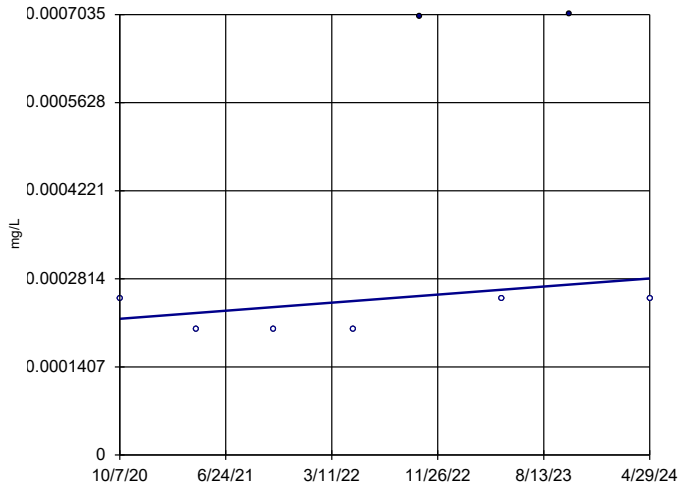


n = 8  
 Slope = 0.00004535 units per year.  
 Mann-Kendall statistic = 7  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-217A

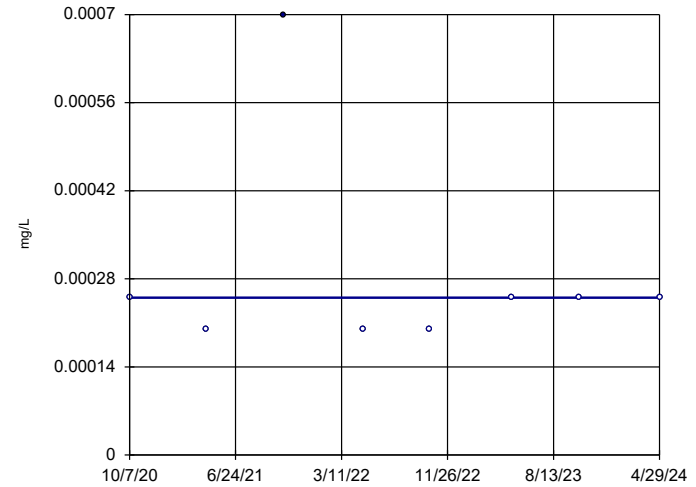


n = 8  
 Slope = 0.0000181 units per year.  
 Mann-Kendall statistic = 10  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-220A

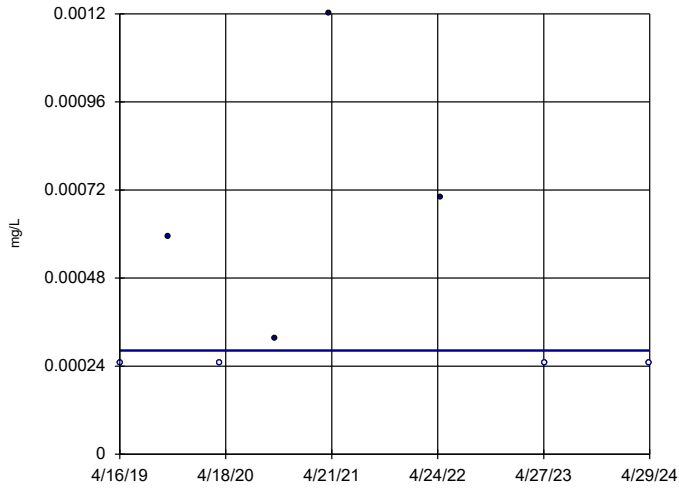


n = 8  
 Slope = 0 units per year.  
 Mann-Kendall statistic = 3  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:49 PM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-23A

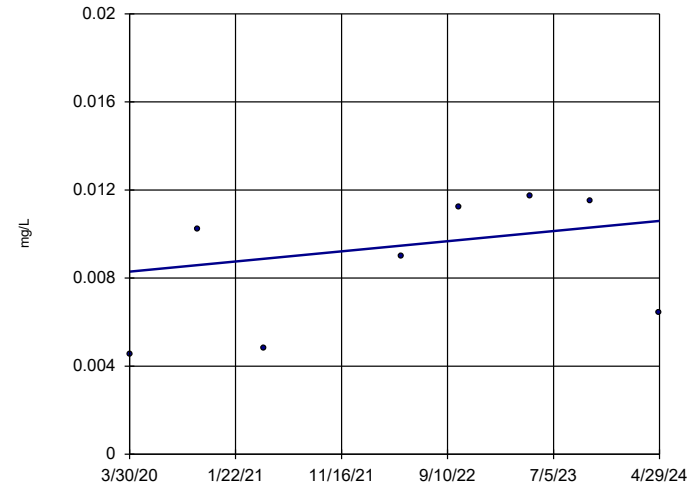


n = 8  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-24A

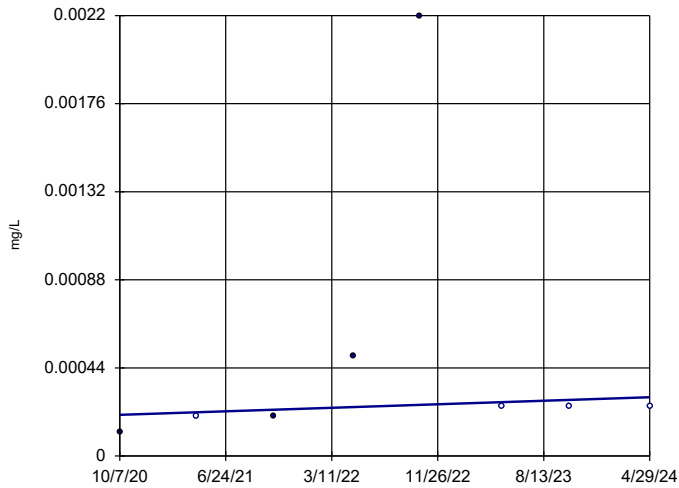


n = 8  
Slope = 0.0005633  
units per year.  
Mann-Kendall  
statistic = 12  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-25A-00

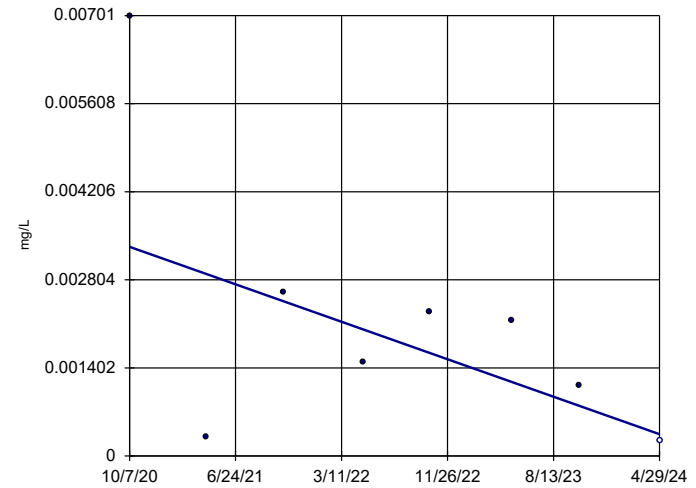


n = 8  
Slope = 0.00002477  
units per year.  
Mann-Kendall  
statistic = 12  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-29A

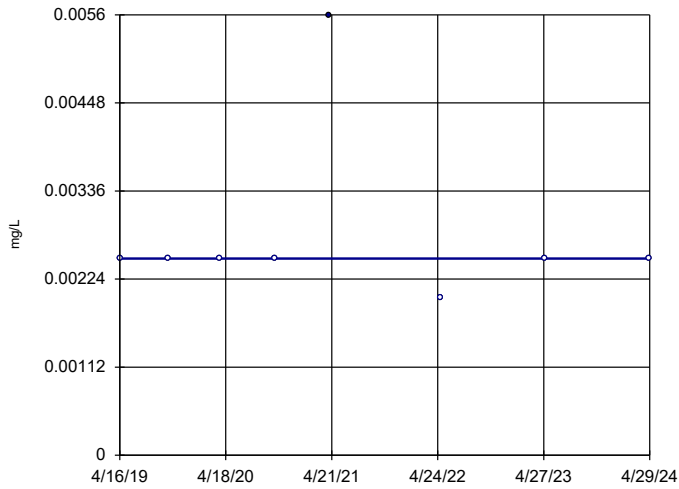


n = 8  
Slope = -0.0008372  
units per year.  
Mann-Kendall  
statistic = -14  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Cobalt Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-17A-00

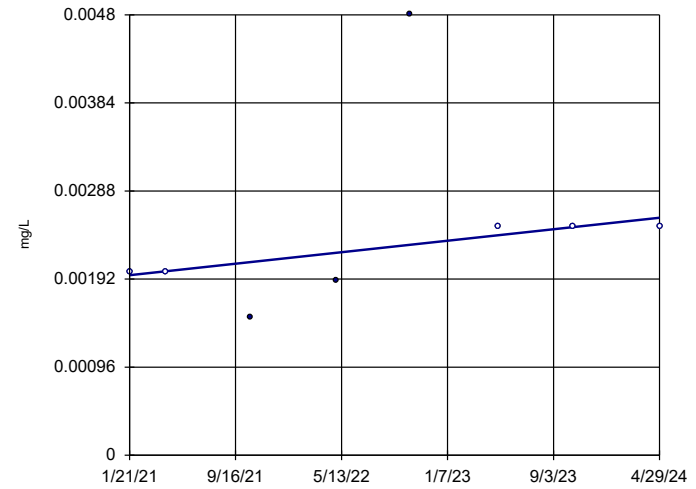


n = 8  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -1  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-18AR

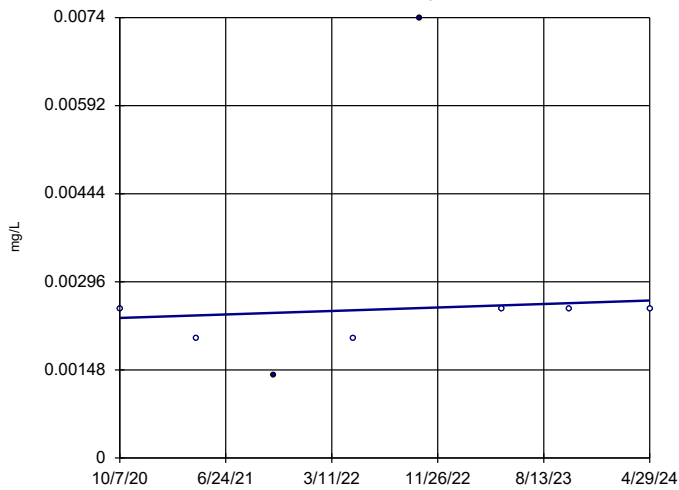


n = 8  
Slope = 0.0001911  
units per year.  
Mann-Kendall  
statistic = 10  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-201A

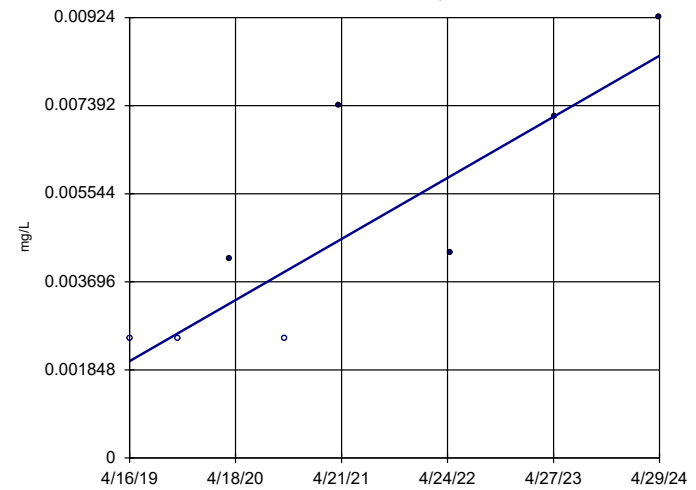


n = 8  
Slope = 0.00008206  
units per year.  
Mann-Kendall  
statistic = 7  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-204A

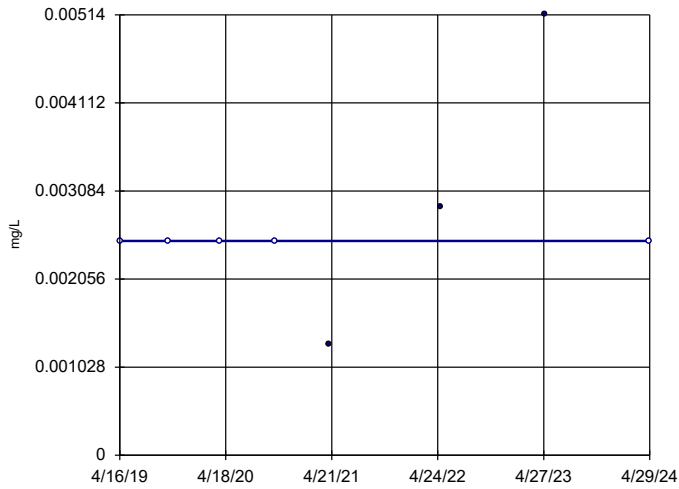


n = 8  
Slope = 0.001271  
units per year.  
Mann-Kendall  
statistic = 19  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-214A

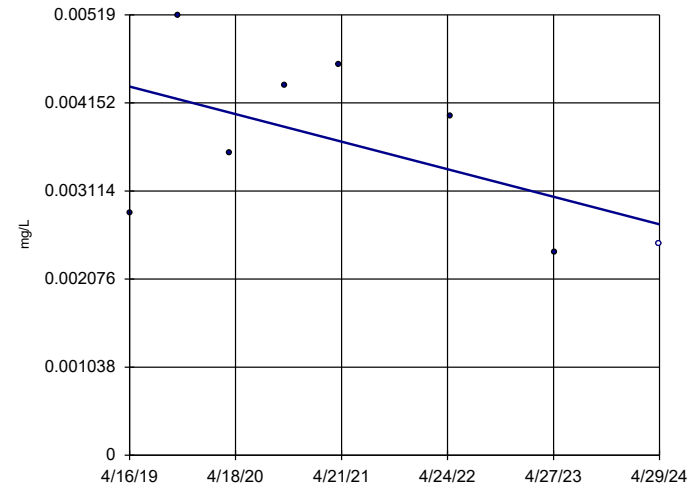


n = 8  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 6  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-215A

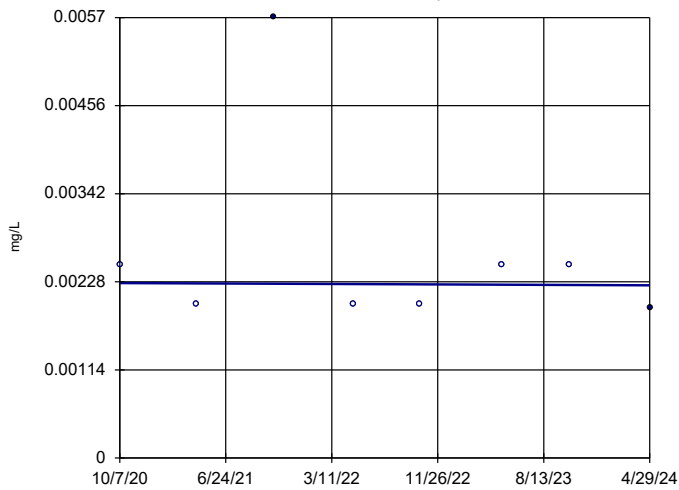


n = 8  
Slope = -0.0003221  
units per year.  
Mann-Kendall  
statistic = -8  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-219A

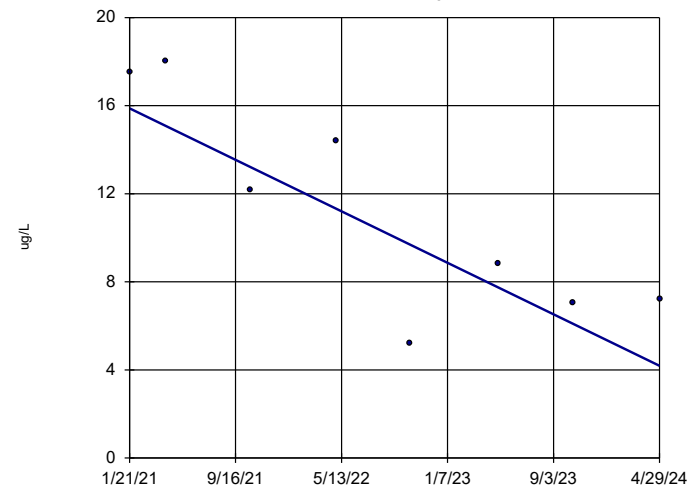


n = 8  
Slope = -0.000008206  
units per year.  
Mann-Kendall  
statistic = -6  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Copper Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-18AR



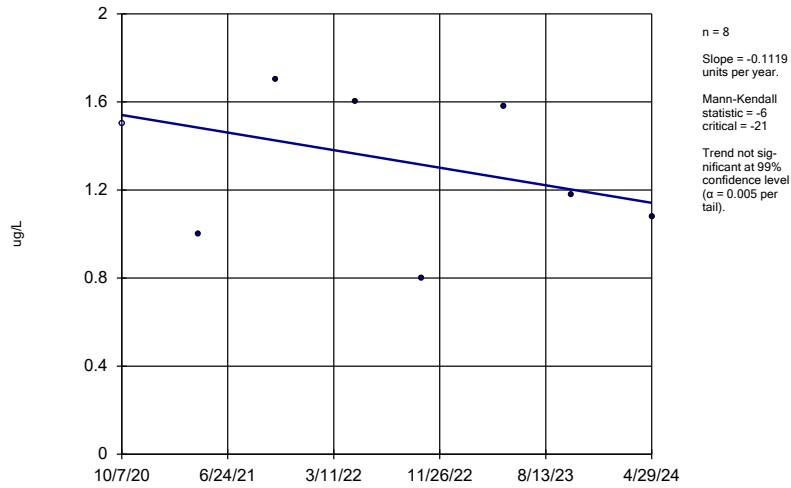
n = 8  
Slope = -3.573  
units per year.  
Mann-Kendall  
statistic = -16  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Dichlorodifluoromethane Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN



### Sen's Slope Estimator

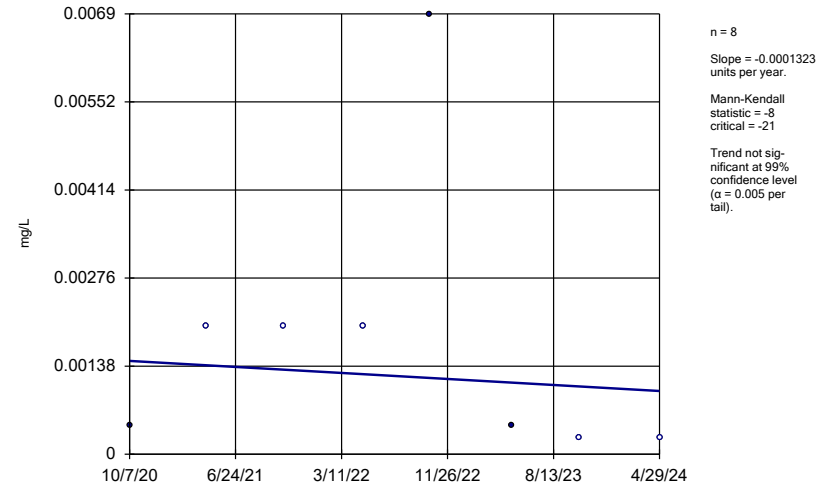
MW-200A



Constituent: Dichlorodifluoromethane Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

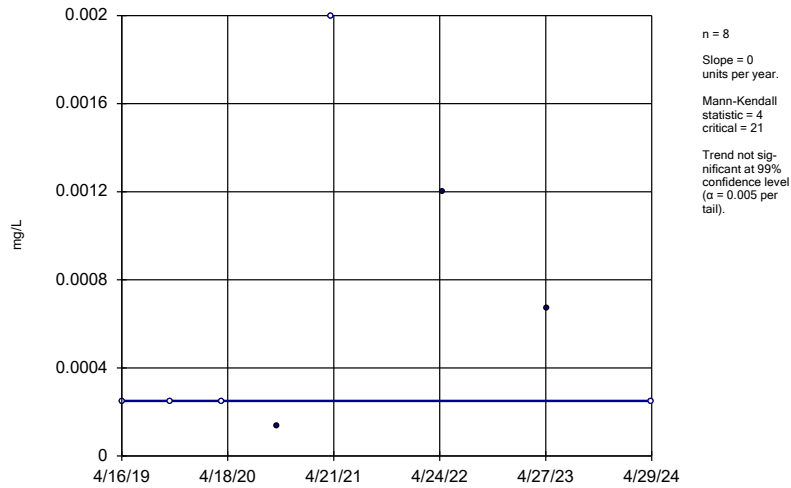
MW-201A



Constituent: Lead Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

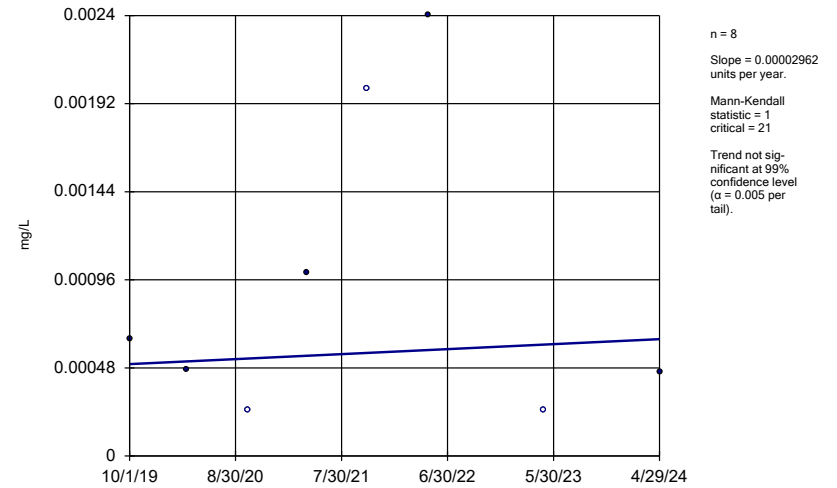
MW-202A



Constituent: Lead Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

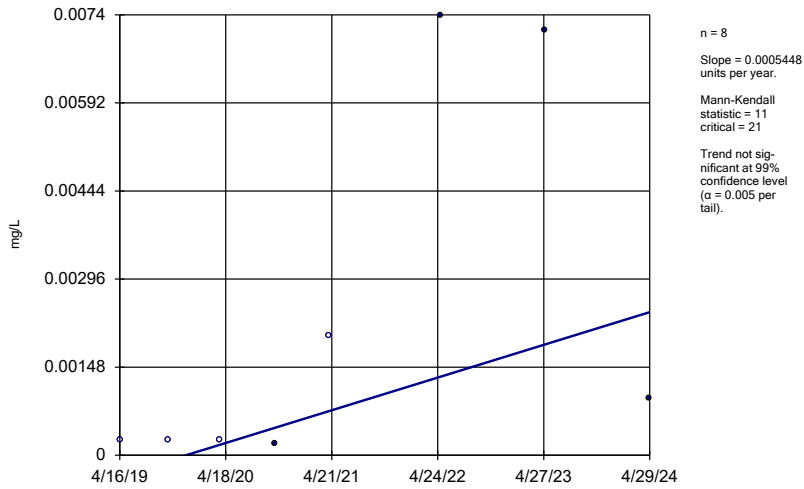
MW-205A



Constituent: Lead Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

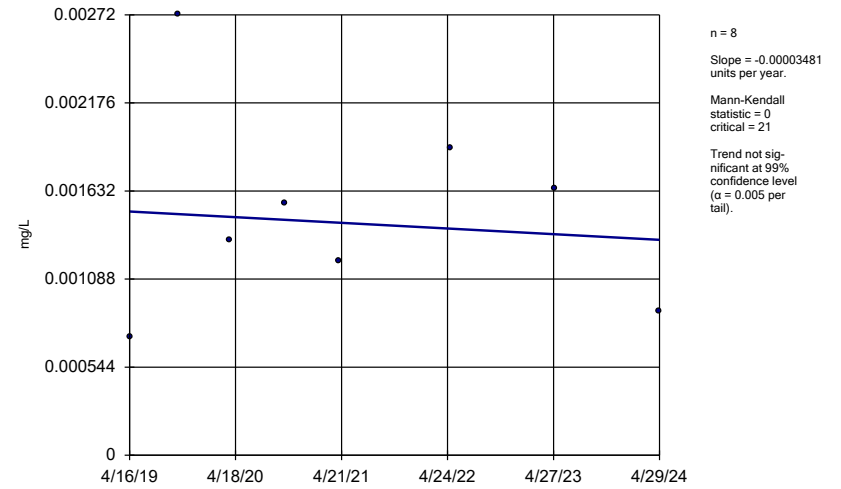
MW-214A



Constituent: Lead Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

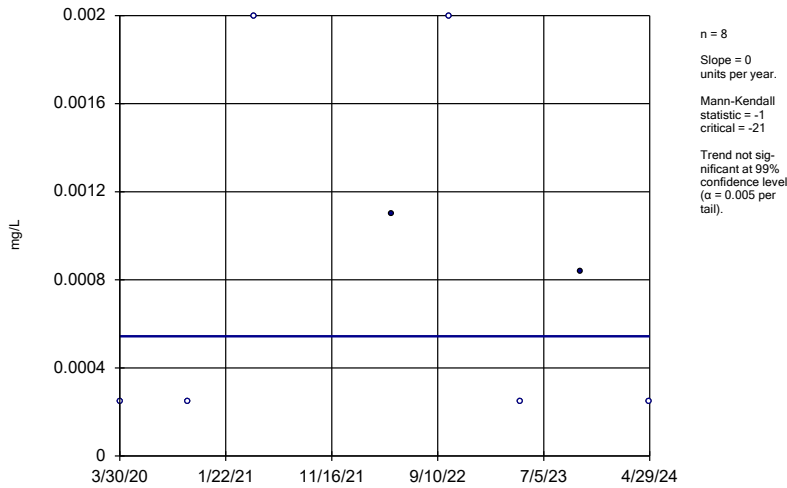
MW-215A



Constituent: Lead Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

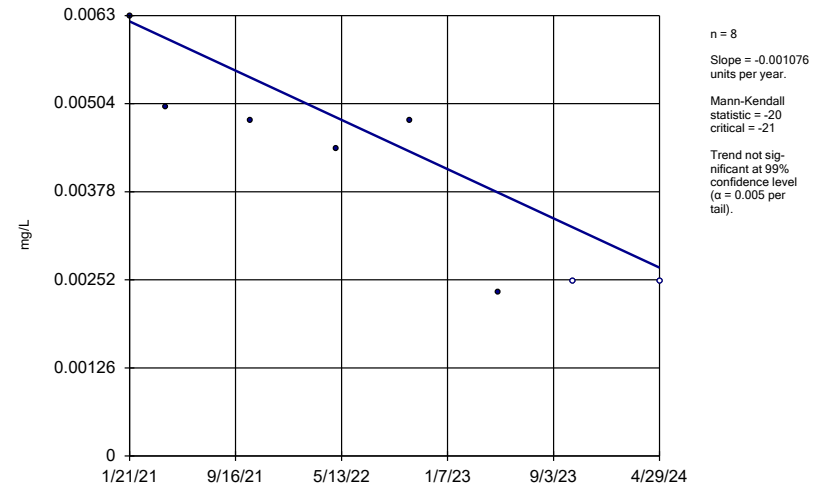
MW-24A



Constituent: Lead Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

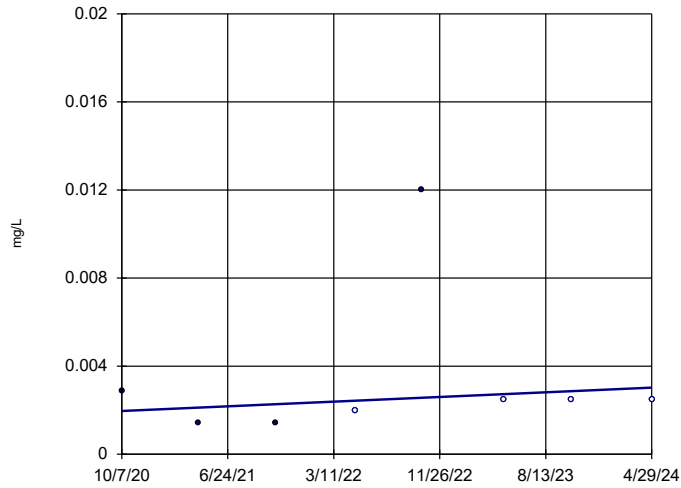
MW-18AR



Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-201A

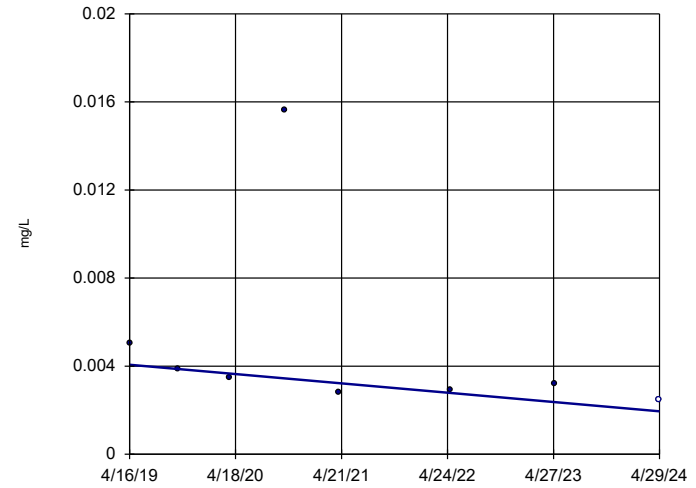


n = 8  
Slope = 0.0002969 units per year.  
Mann-Kendall statistic = 6  
critical = 21  
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-204A

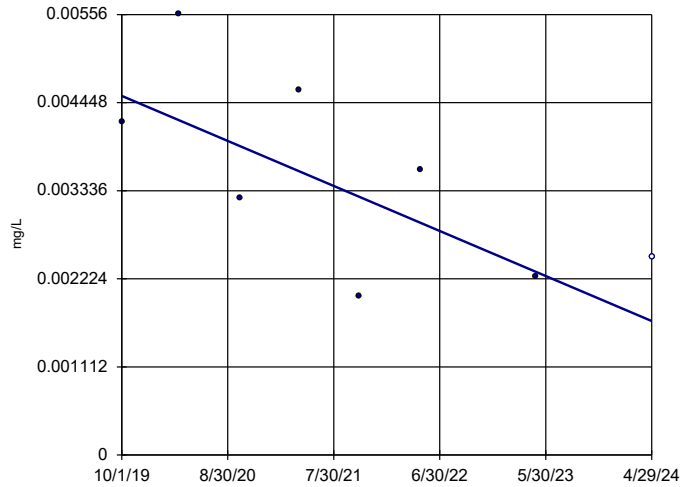


n = 8  
Slope = -0.00042 units per year.  
Mann-Kendall statistic = -16  
critical = -21  
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-213A

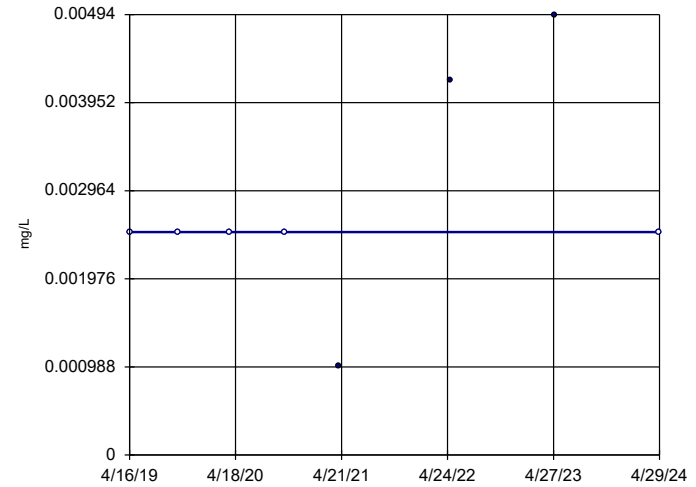


n = 8  
Slope = -0.0006204 units per year.  
Mann-Kendall statistic = -12  
critical = -21  
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-214A

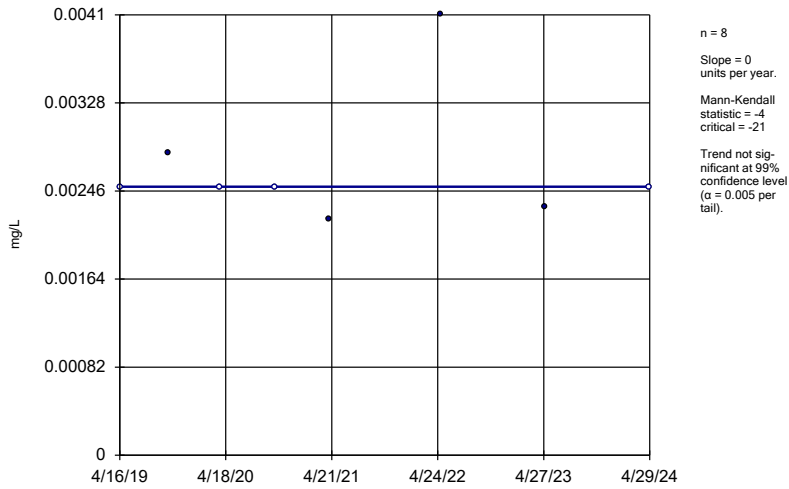


n = 8  
Slope = 0 units per year.  
Mann-Kendall statistic = 6  
critical = 21  
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

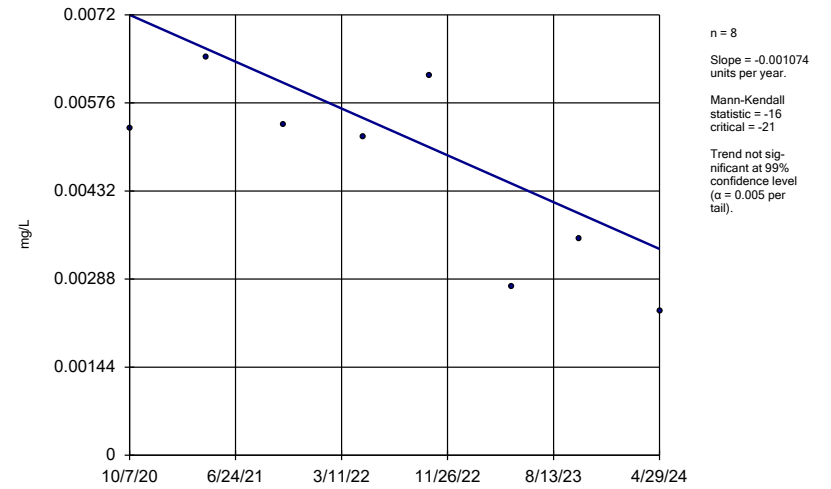
MW-215A



Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

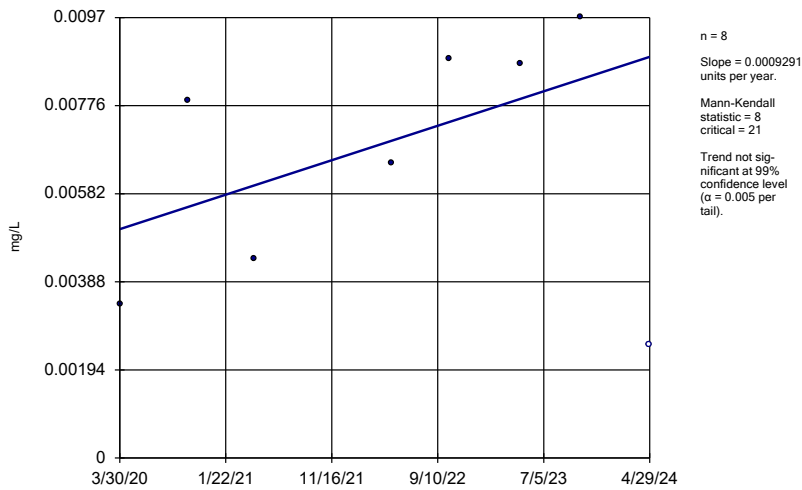
MW-216A



Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

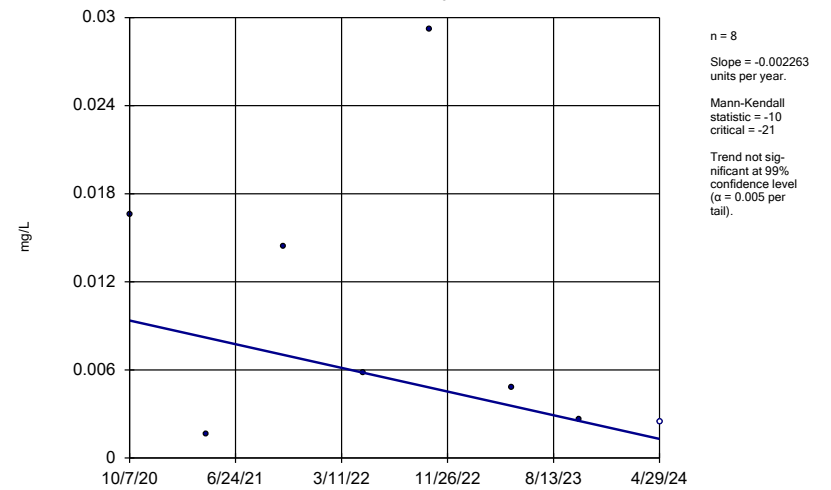
MW-24A



Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

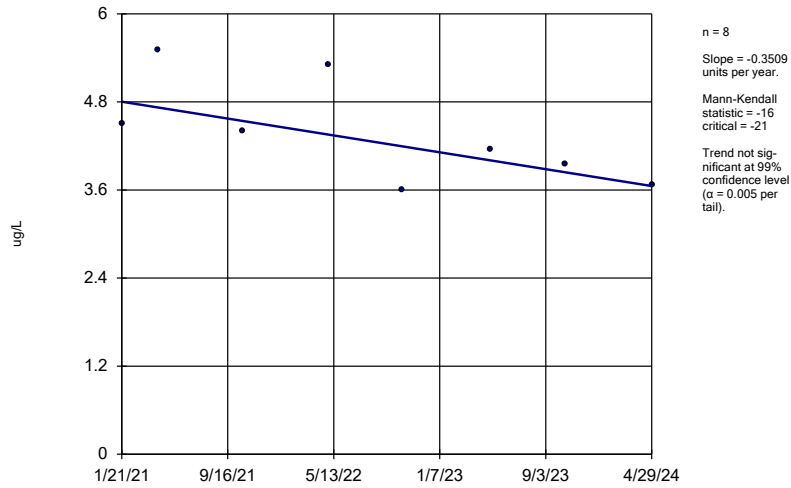
MW-29A



Constituent: Nickel Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-18AR

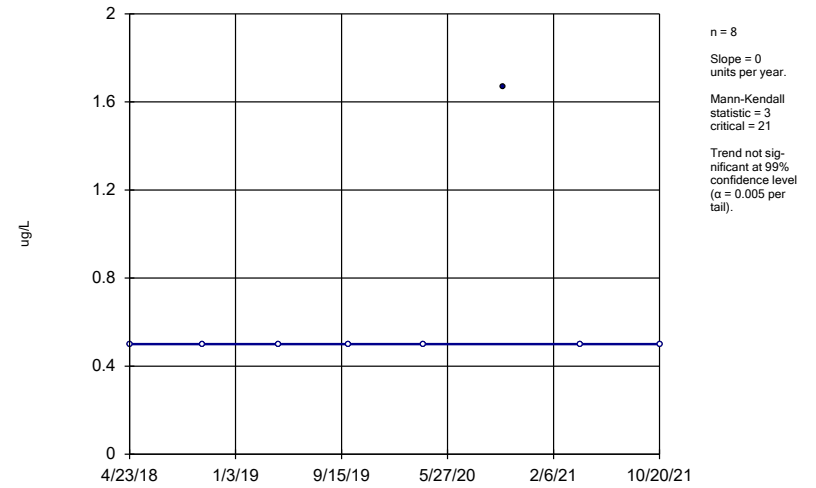


Constituent: Tetrachloroethene Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

Hollow symbols indicate censored values.

### Sen's Slope Estimator

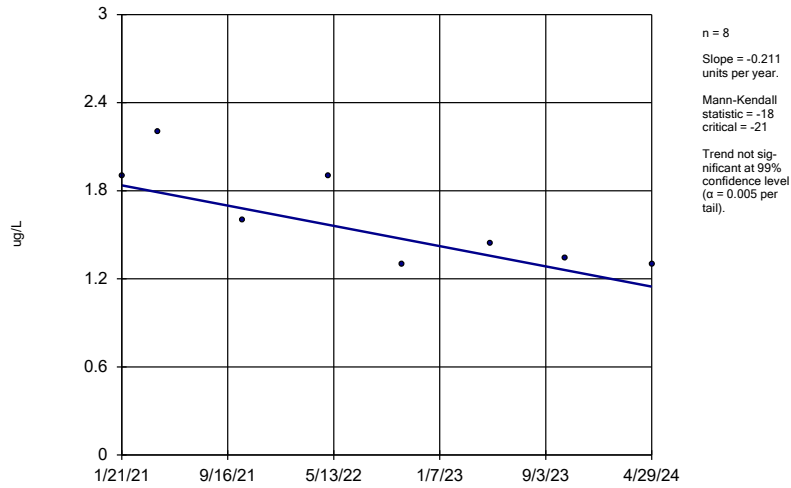
MW-205A



Constituent: Toluene Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

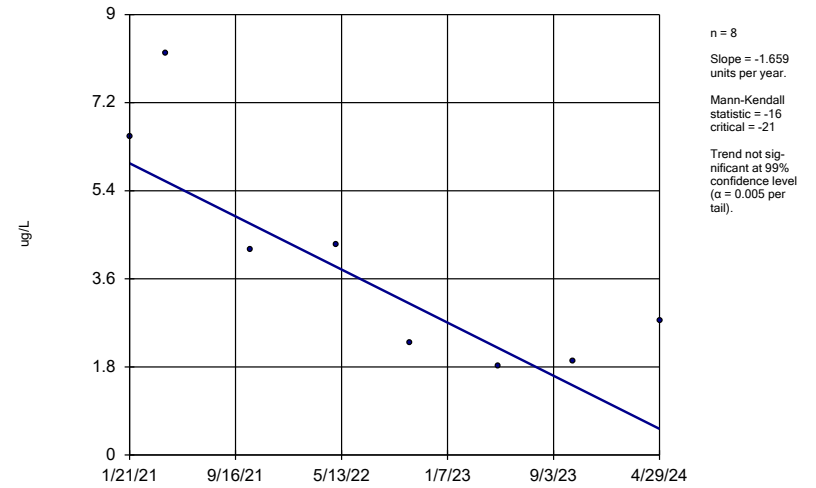
MW-18AR



Constituent: Trichloroethene Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

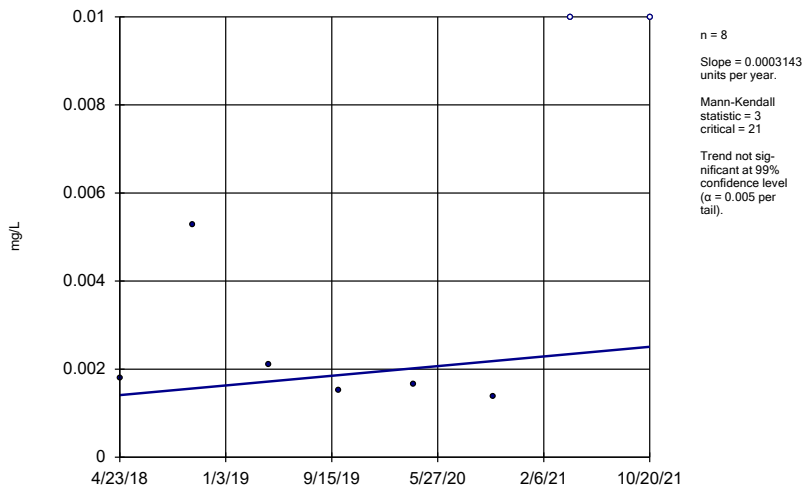
MW-18AR



Constituent: Trichlorofluoromethane Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

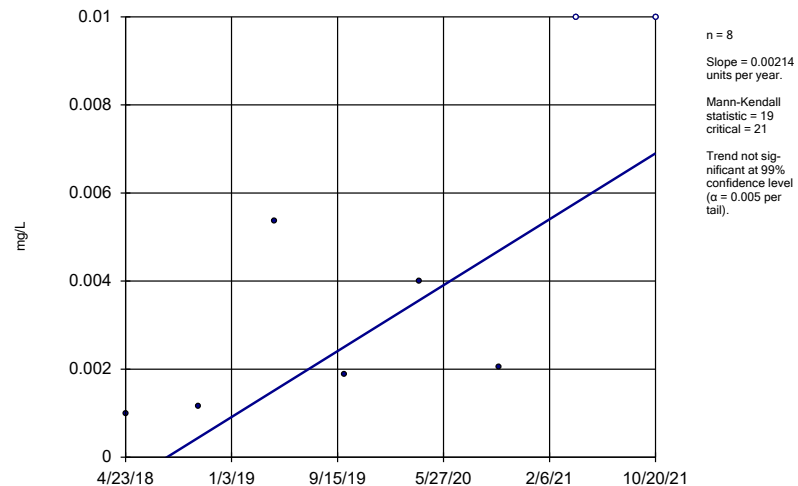
MW-200A



Constituent: Vanadium Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

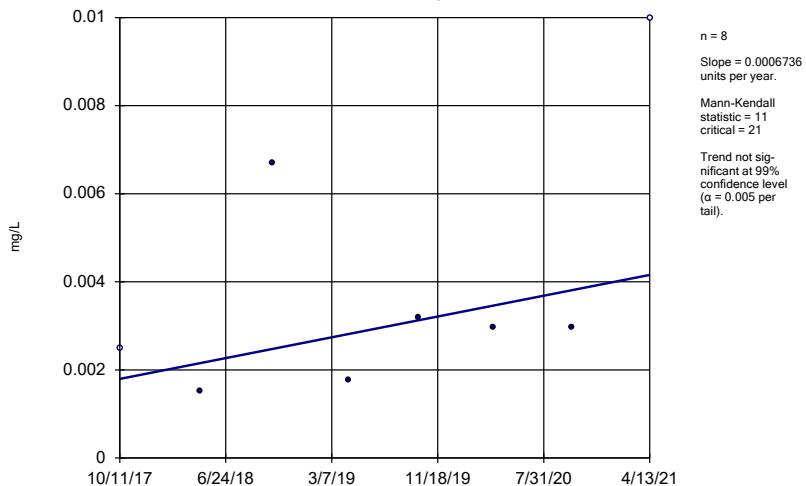
MW-213A



Constituent: Vanadium Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

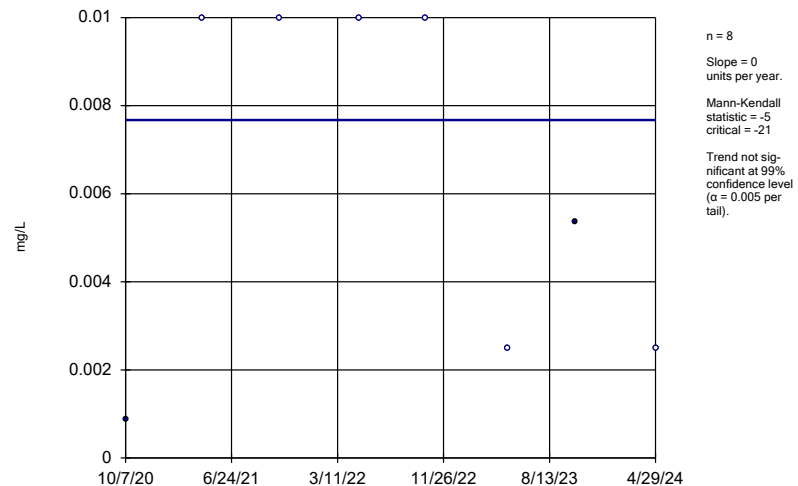
MW-215A



Constituent: Vanadium Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

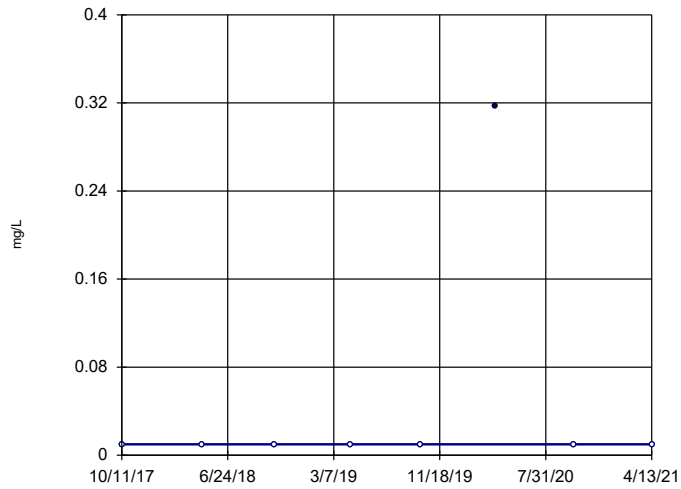
MW-217A



Constituent: Vanadium Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-202A

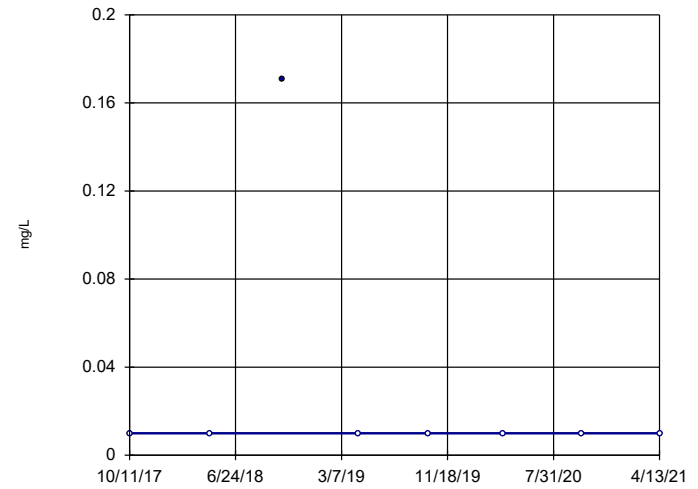


n = 8  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 3  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Zinc Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope Estimator

MW-204A



n = 8  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -3  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Zinc Analysis Run 6/3/2024 5:50 PM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

**Mann-Kendall Trend Test Summary Table and Graphs**  
**Series B**



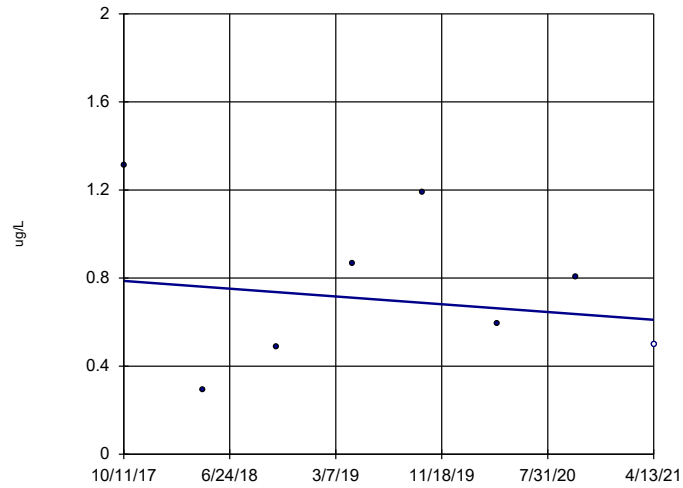
# Trend Test

Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF Series B-AM 2024SSN    Printed 6/4/2024, 10:10 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-14B	-0.05036	-2	-21	No	8	12.5	0.01	NP
1,1-Dichloroethane (ug/L)	MW-7B1	-0.01276	-6	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-8B	0	-2	-21	No	8	50	0.01	NP
Acetone (ug/L)	MW-8B	0.3455	11	21	No	8	37.5	0.01	NP
Arsenic (mg/L)	MW-14B	-0.0001698	-8	-21	No	8	12.5	0.01	NP
Arsenic (mg/L)	MW-208B	-0.002314	-8	-21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-210B	0.0003852	6	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-7B1	0.0001598	2	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-8B	0.001981	12	21	No	8	0	0.01	NP
Barium (mg/L)	MW-12B	0.01911	16	21	No	8	0	0.01	NP
Barium (mg/L)	MW-14B	-0.01735	-12	-21	No	8	0	0.01	NP
<b>Barium (mg/L)</b>	<b>MW-208B</b>	<b>-0.2018</b>	<b>-24</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>0.01</b>	<b>NP</b>
Barium (mg/L)	MW-210B	-0.03146	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-31B	0.01083	8	21	No	8	0	0.01	NP
Barium (mg/L)	MW-5B	-0.002769	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-7B1	0.003274	0	21	No	8	0	0.01	NP
Barium (mg/L)	MW-8B	-0.02566	-20	-21	No	8	0	0.01	NP
Bis[2-ethylhexyl]phthalate (ug/L)	MW-12B	0	0	14	No	6	66.67	0.01	NP
Cadmium (mg/L)	MW-12B	0.00006764	9	21	No	8	50	0.01	NP
Cadmium (mg/L)	MW-210B	0.00007566	10	21	No	8	0	0.01	NP
Chromium (mg/L)	MW-8B	0	8	21	No	8	75	0.01	NP
Cobalt (mg/L)	MW-12B	-0.00004624	-6	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-14B	-0.0005602	-4	-21	No	8	0	0.01	NP
<b>Cobalt (mg/L)</b>	<b>MW-208B</b>	<b>-0.004557</b>	<b>-28</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>0.01</b>	<b>NP</b>
Cobalt (mg/L)	MW-210B	-0.0003189	-9	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-31B	0.0001457	2	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-5B	-0.00001406	-5	-21	No	8	12.5	0.01	NP
Cobalt (mg/L)	MW-8B	0.0003876	12	21	No	8	0	0.01	NP
Copper (mg/L)	MW-14B	0	-2	-21	No	8	62.5	0.01	NP
Copper (mg/L)	MW-210B	0	1	21	No	8	37.5	0.01	NP
Copper (mg/L)	MW-31B	0.0004165	7	21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-210B	-0.000117	-10	-21	No	8	12.5	0.01	NP
Lead (mg/L)	MW-31B	-0.000274	-5	-21	No	8	12.5	0.01	NP
Lead (mg/L)	MW-8B	0.0000232	12	21	No	8	62.5	0.01	NP
Nickel (mg/L)	MW-12B	-0.0006677	-8	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-14B	-0.001052	-16	-21	No	8	0	0.01	NP
<b>Nickel (mg/L)</b>	<b>MW-208B</b>	<b>-0.005977</b>	<b>-23</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>25</b>	<b>0.01</b>	<b>NP</b>
Nickel (mg/L)	MW-210B	-0.001513	-18	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-31B	-0.00004546	-1	-21	No	8	25	0.01	NP
Nickel (mg/L)	MW-8B	0.0004939	6	21	No	8	12.5	0.01	NP
Selenium (mg/L)	MW-31B	0	3	21	No	8	87.5	0.01	NP
Sulfide (mg/L)	MW-8B	-0.3329	-10	-21	No	8	25	0.01	NP
Toluene (ug/L)	MW-5B	0	2	21	No	8	62.5	0.01	NP
Vanadium (mg/L)	MW-5B	0	1	21	No	8	50	0.01	NP
Vanadium (mg/L)	MW-8B	0.0001094	0	21	No	8	12.5	0.01	NP
Zinc (mg/L)	MW-5B	-0.009242	-9	-21	No	8	37.5	0.01	NP

### Sen's Slope Estimator

MW-14B

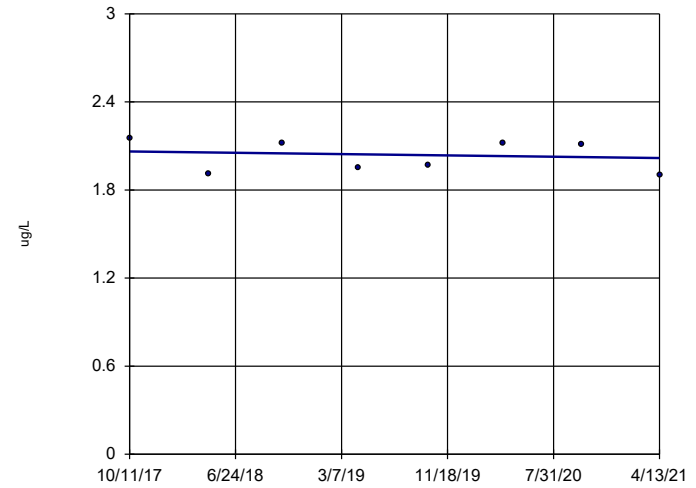


n = 8  
Slope = -0.05036  
units per year.  
Mann-Kendall  
statistic = -2  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: 1,1-Dichloroethane Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-7B1

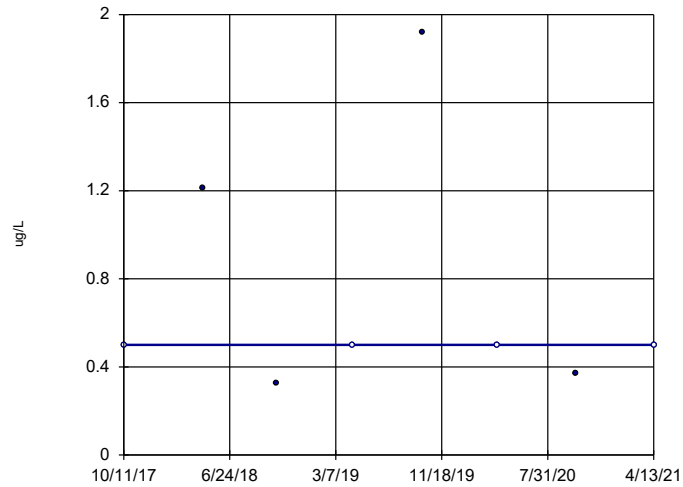


n = 8  
Slope = -0.01276  
units per year.  
Mann-Kendall  
statistic = -6  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: 1,1-Dichloroethane Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-8B

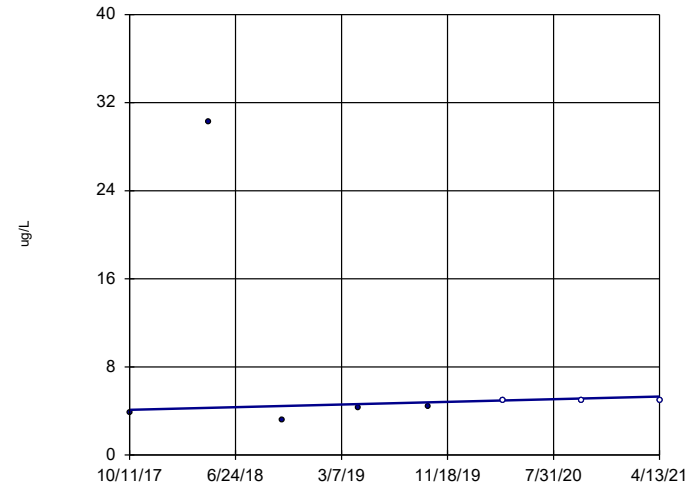


n = 8  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -2  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: 1,1-Dichloroethane Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-8B

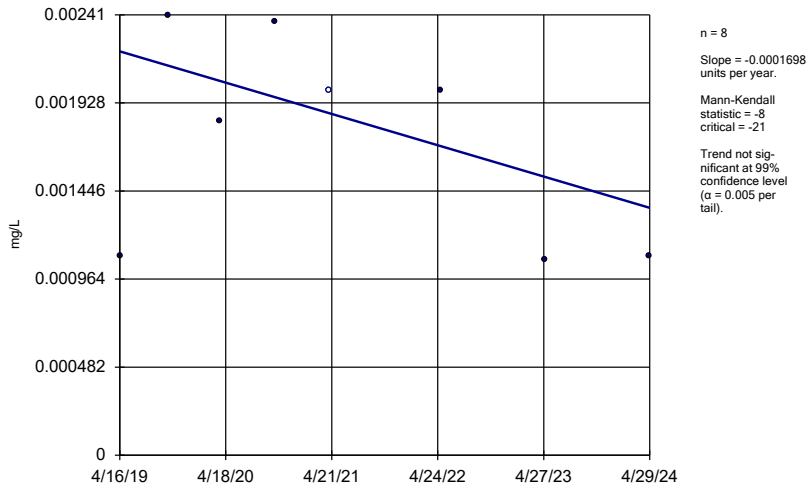


n = 8  
Slope = 0.3455  
units per year.  
Mann-Kendall  
statistic = 11  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Acetone Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

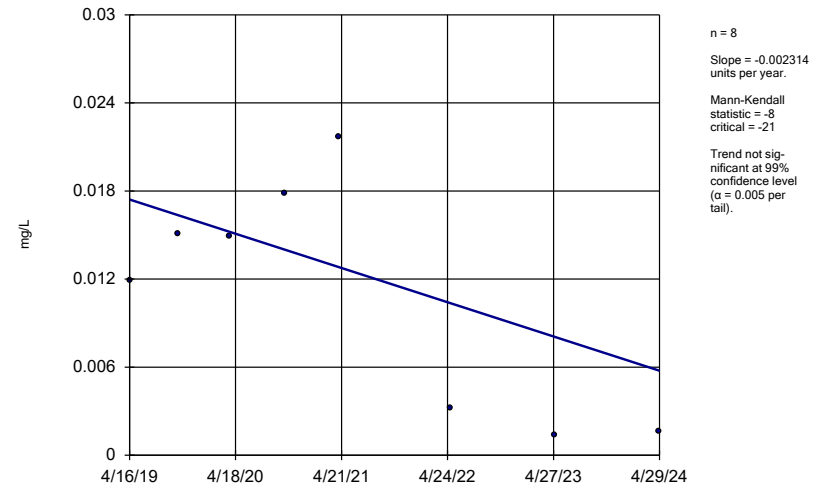
MW-14B



Constituent: Arsenic Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

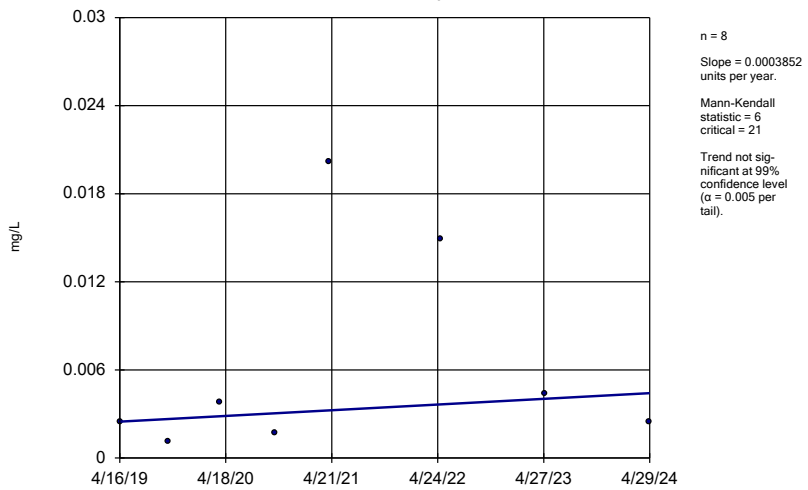
MW-208B



Constituent: Arsenic Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

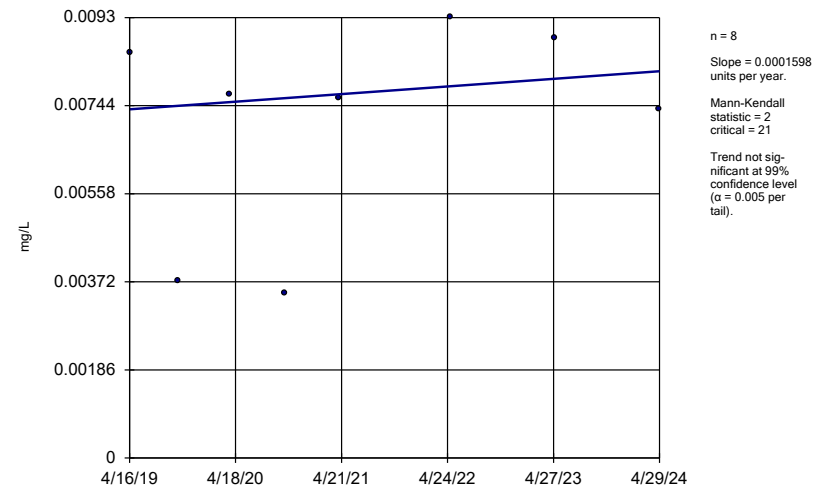
MW-210B



Constituent: Arsenic Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

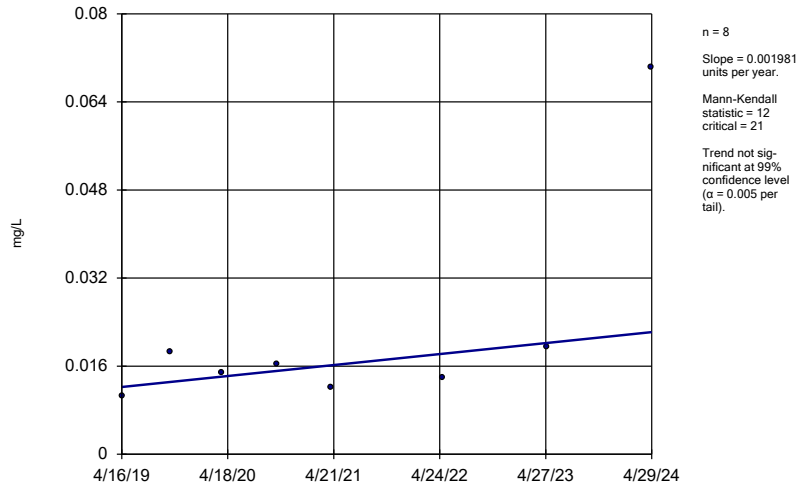
MW-7B1



Constituent: Arsenic Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

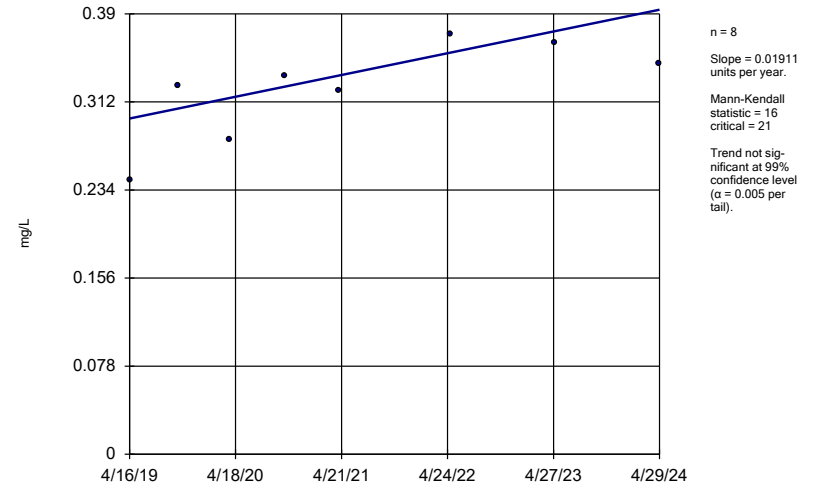
MW-8B



Constituent: Arsenic Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

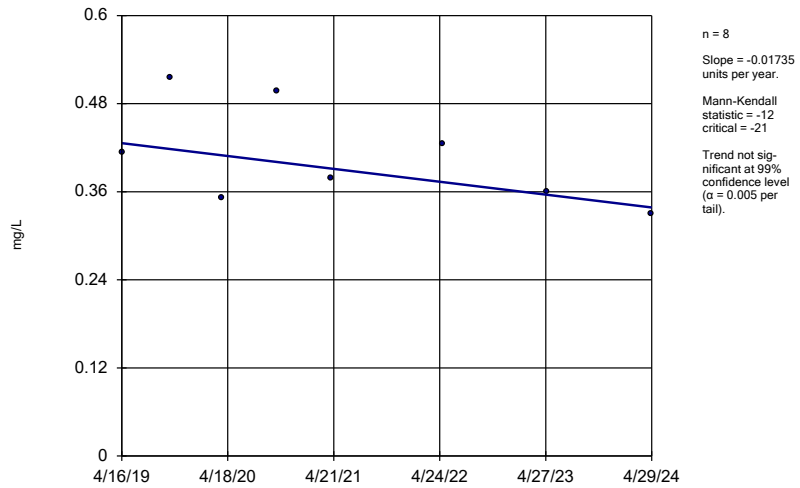
MW-12B



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

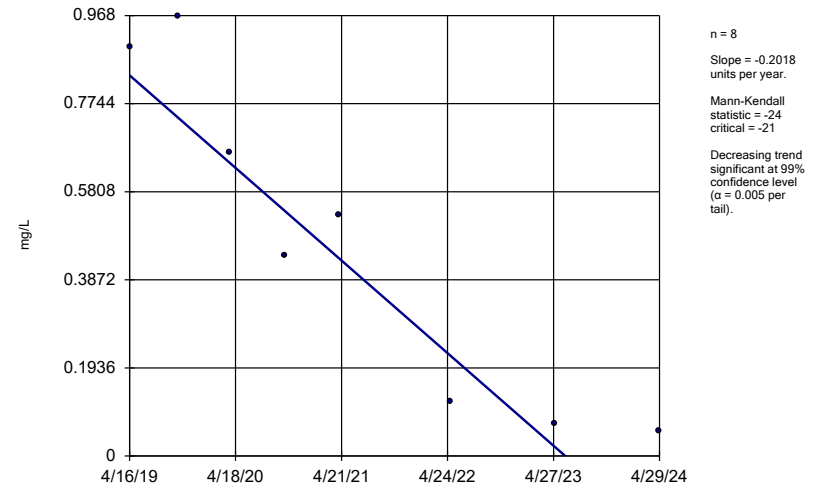
MW-14B



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

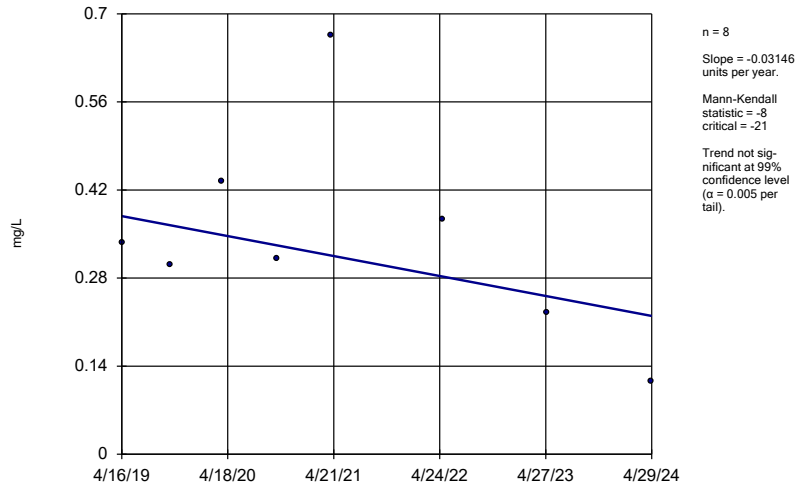
MW-208B



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

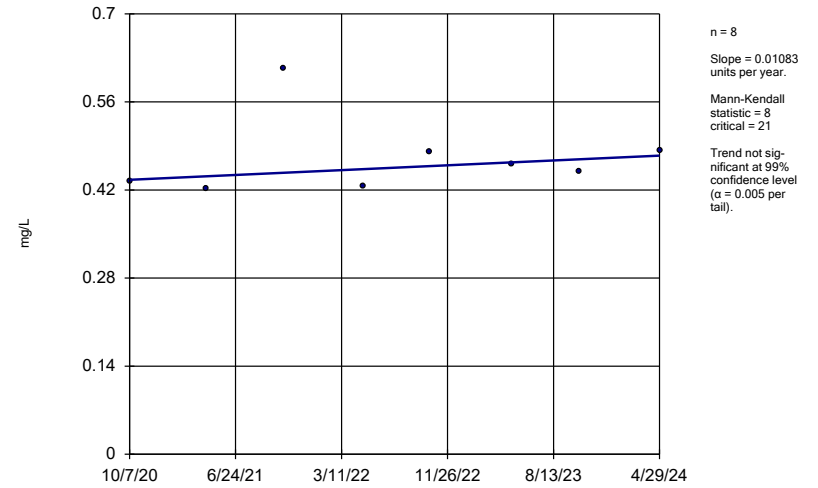
MW-210B



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

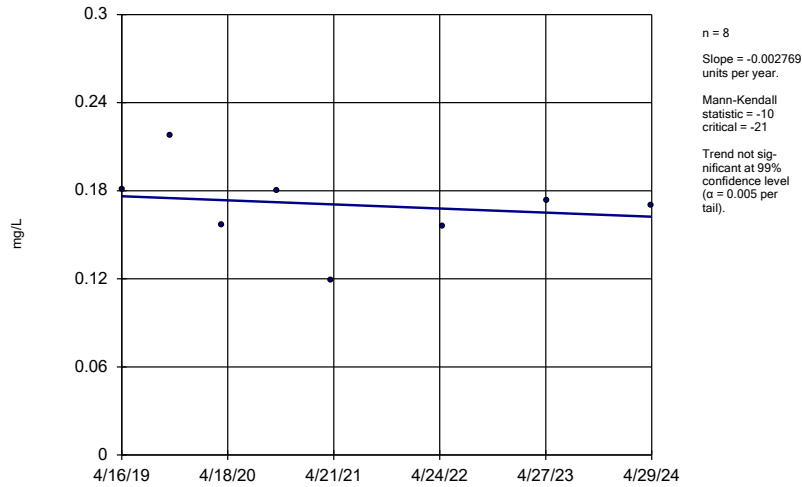
MW-31B



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

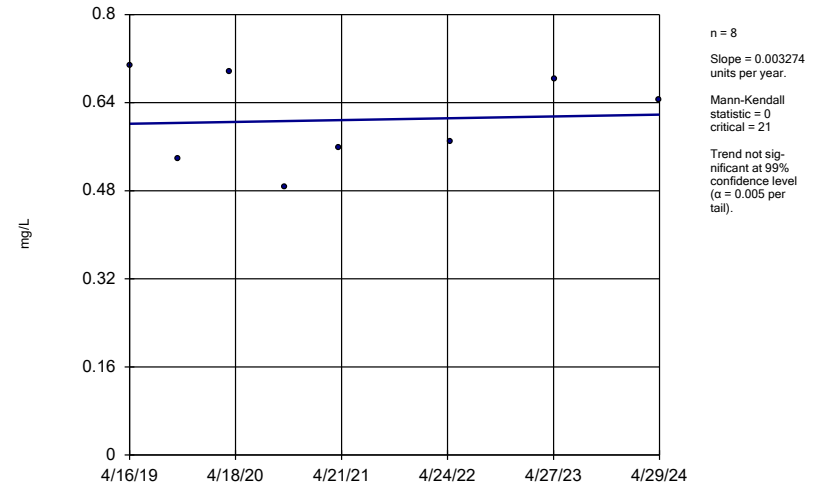
MW-5B



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

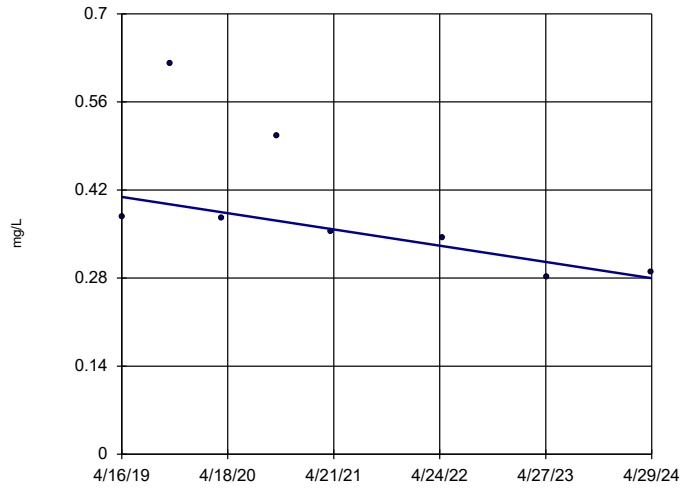
MW-7B1



Constituent: Barium Analysis Run 6/4/2024 10:07 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-8B

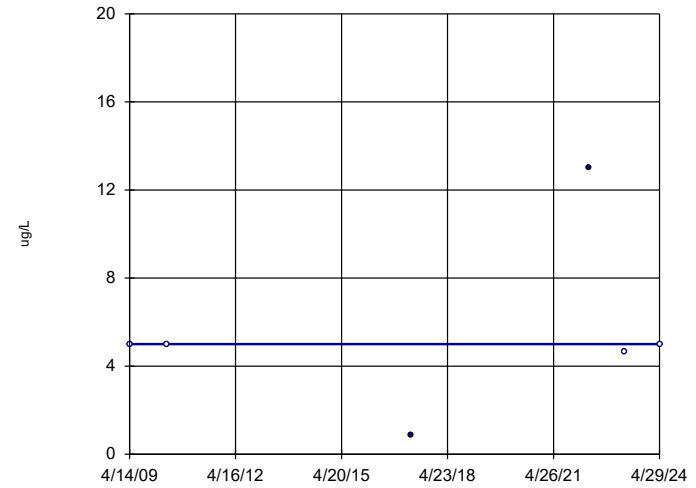


n = 8  
 Slope = -0.02566 units per year.  
 Mann-Kendall statistic = -20  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-12B

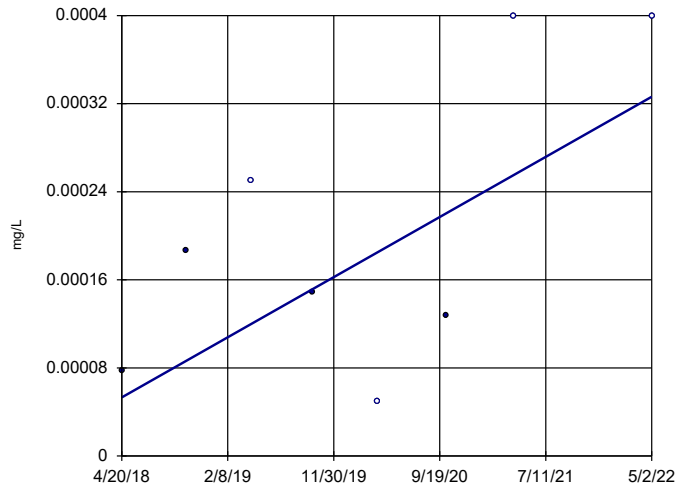


n = 6  
 Slope = 0 units per year.  
 Mann-Kendall statistic = 0  
 critical = 14  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Bis[2-ethylhexyl]phthalate Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-12B

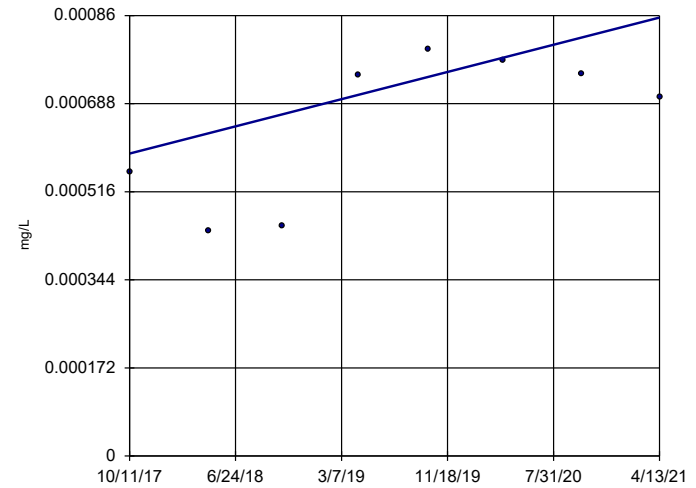


n = 8  
 Slope = 0.00006764 units per year.  
 Mann-Kendall statistic = 9  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cadmium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-210B

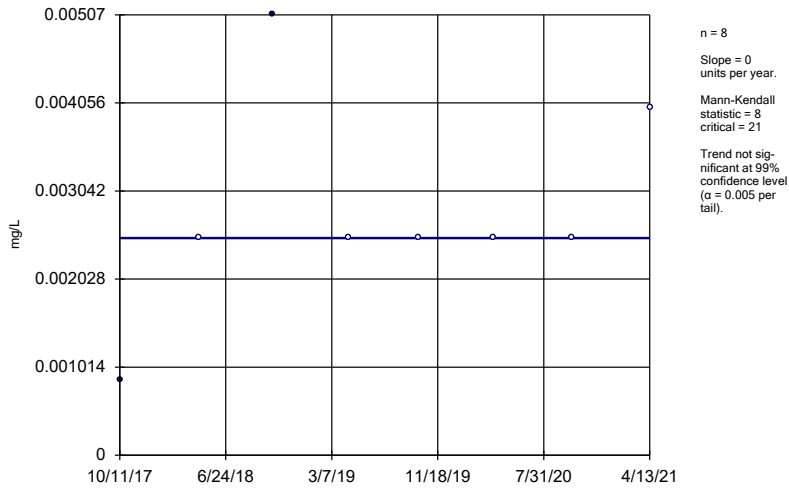


n = 8  
 Slope = 0.00007566 units per year.  
 Mann-Kendall statistic = 10  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cadmium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

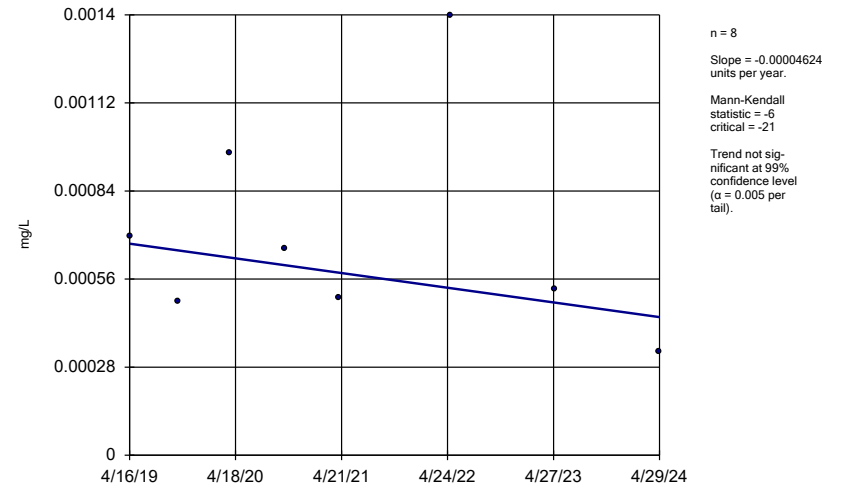
MW-8B



Constituent: Chromium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

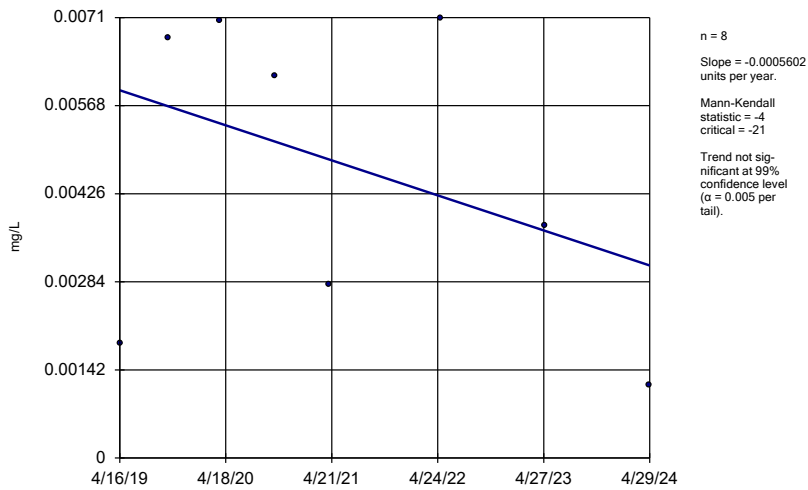
MW-12B



Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

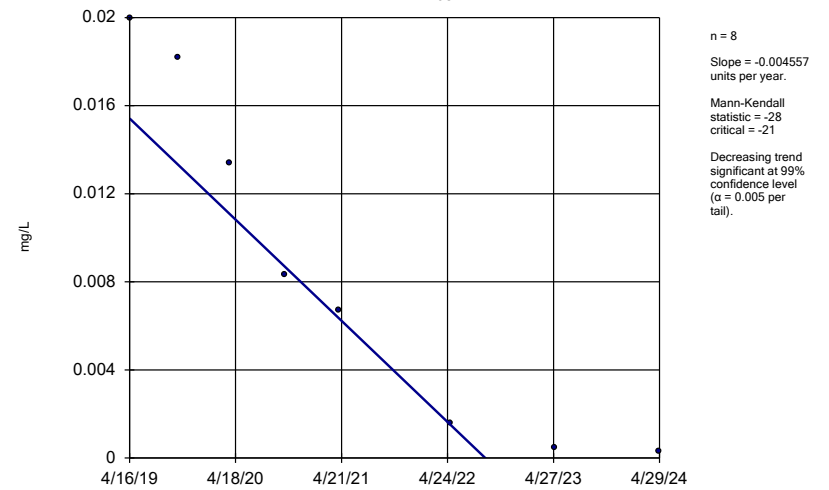
MW-14B



Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

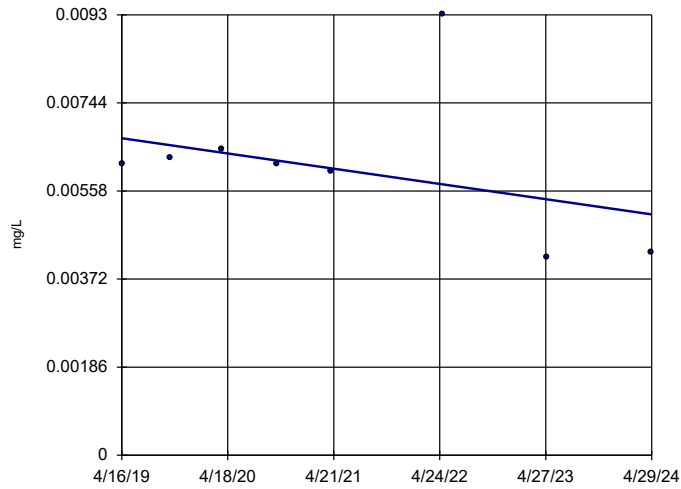
MW-208B



Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-210B

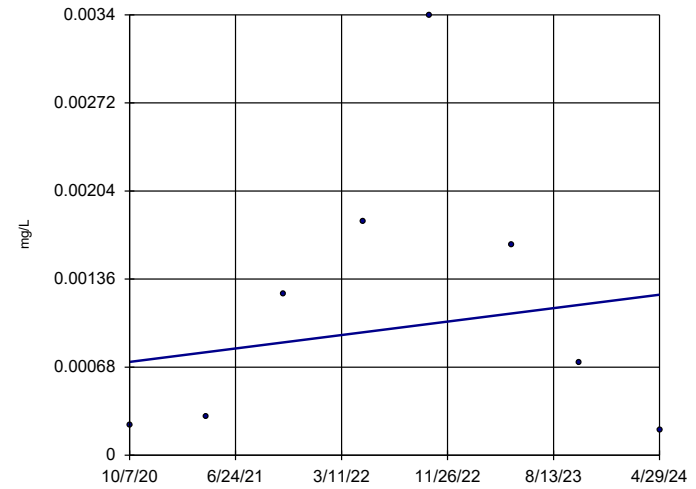


n = 8  
 Slope = -0.0003189 units per year.  
 Mann-Kendall statistic = -9  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-31B

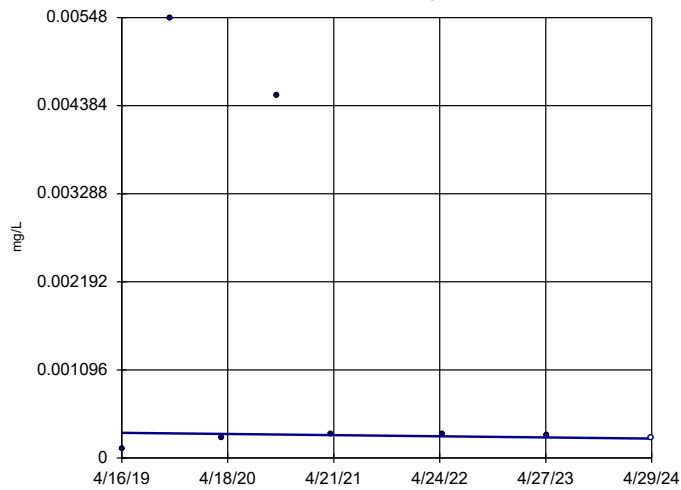


n = 8  
 Slope = 0.0001457 units per year.  
 Mann-Kendall statistic = 2  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-5B

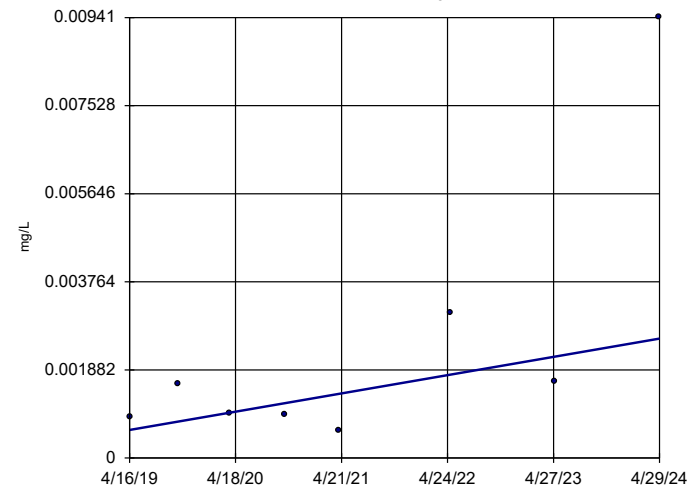


n = 8  
 Slope = -0.00001406 units per year.  
 Mann-Kendall statistic = -5  
 critical = -21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-8B



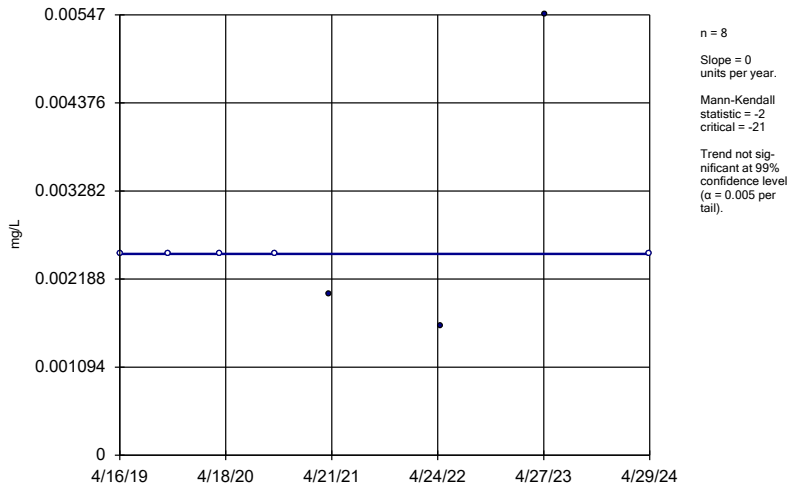
n = 8  
 Slope = 0.0003876 units per year.  
 Mann-Kendall statistic = 12  
 critical = 21  
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN



### Sen's Slope Estimator

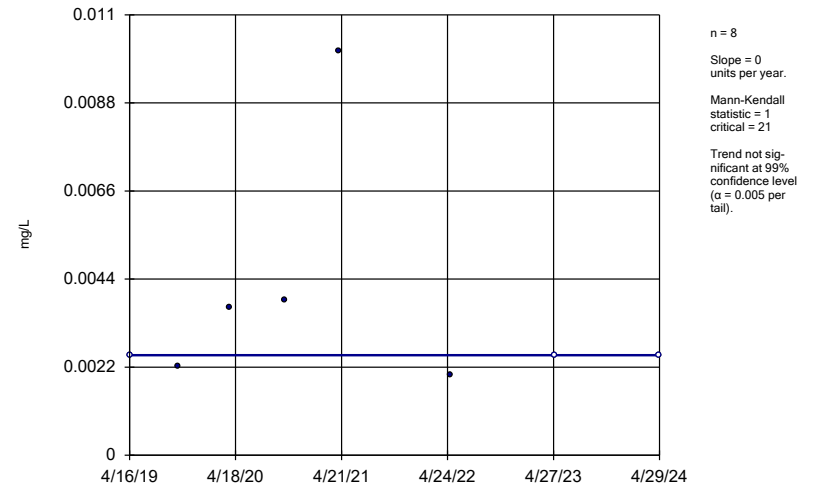
MW-14B



Constituent: Copper Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

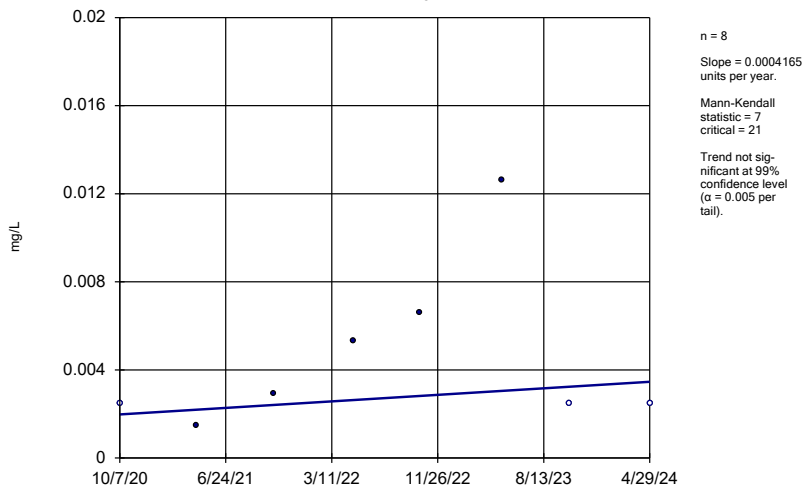
MW-210B



Constituent: Copper Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

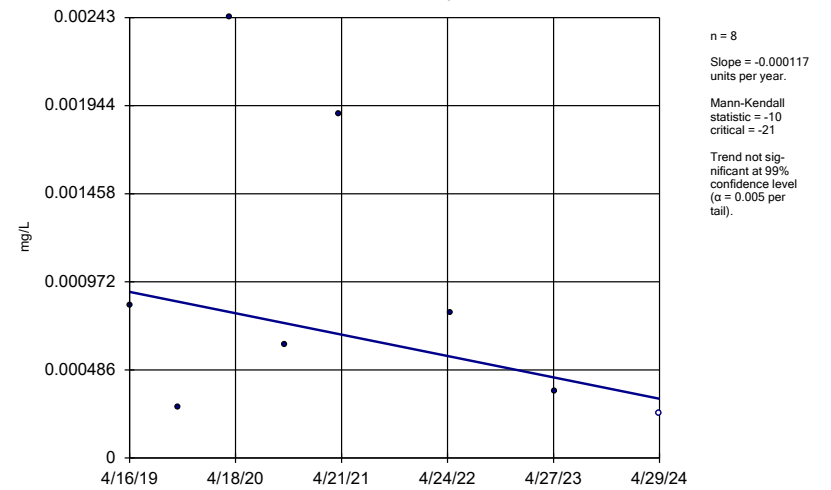
MW-31B



Constituent: Copper Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

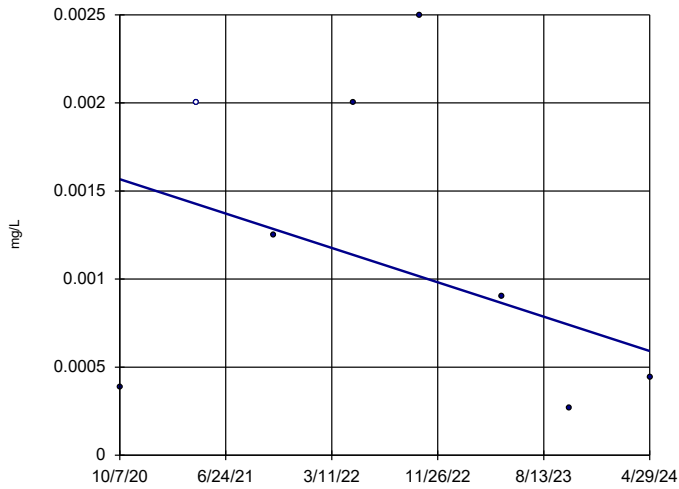
MW-210B



Constituent: Lead Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-31B

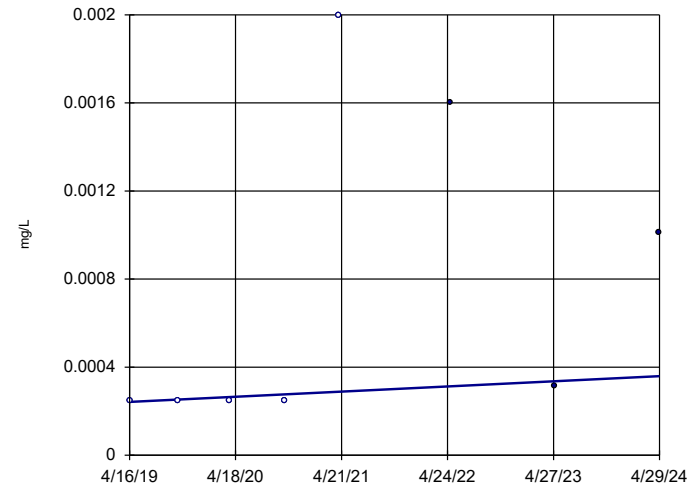


n = 8  
Slope = -0.000274  
units per year.  
Mann-Kendall  
statistic = -5  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Lead Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-8B

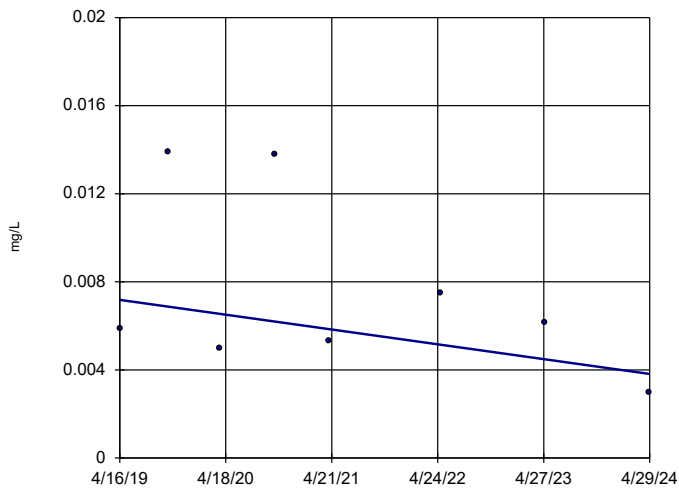


n = 8  
Slope = 0.0000232  
units per year.  
Mann-Kendall  
statistic = 12  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Lead Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-12B

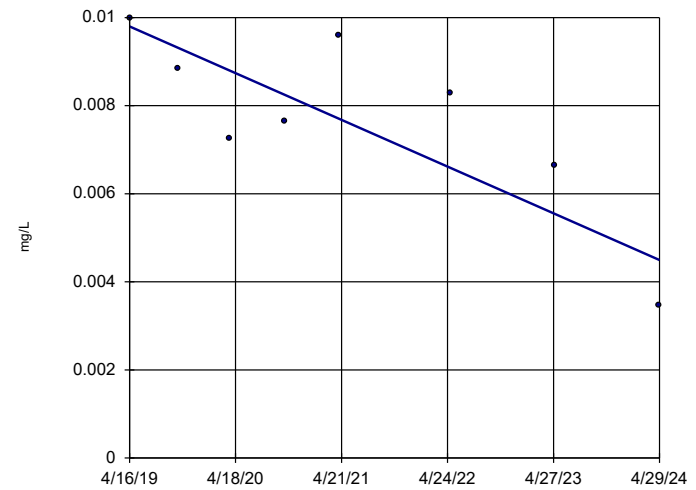


n = 8  
Slope = -0.0006677  
units per year.  
Mann-Kendall  
statistic = -8  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Nickel Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-14B

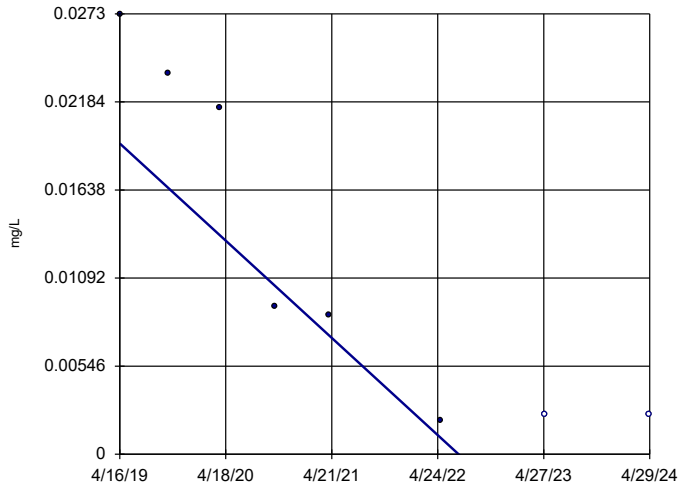


n = 8  
Slope = -0.001052  
units per year.  
Mann-Kendall  
statistic = -16  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Nickel Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-208B

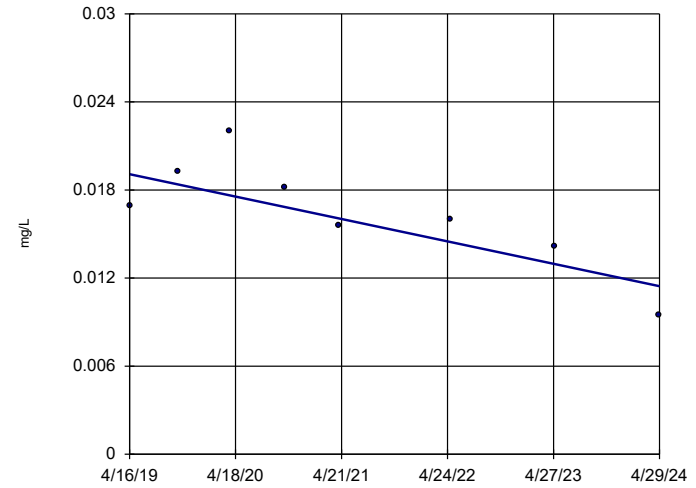


n = 8  
Slope = -0.005977  
units per year.  
Mann-Kendall  
statistic = -23  
critical = -21  
Decreasing trend  
significant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Nickel Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-210B

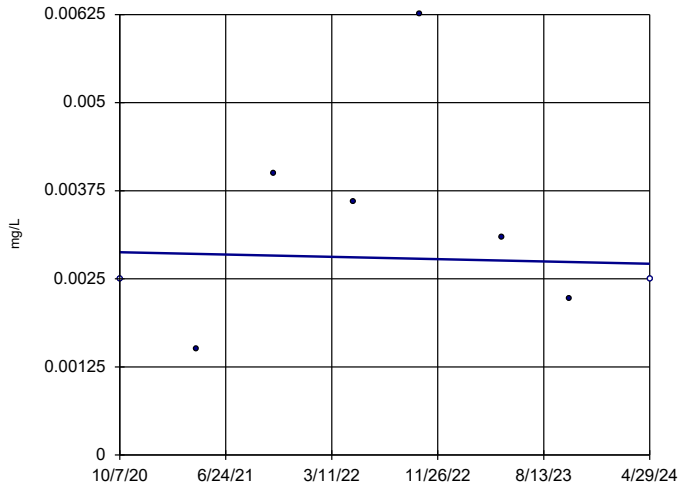


n = 8  
Slope = -0.001513  
units per year.  
Mann-Kendall  
statistic = -18  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Nickel Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-31B

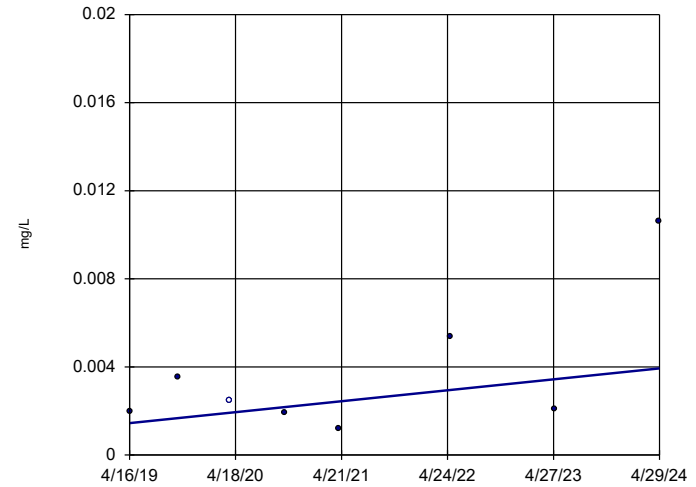


n = 8  
Slope = -0.00004546  
units per year.  
Mann-Kendall  
statistic = -1  
critical = -21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Nickel Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-8B

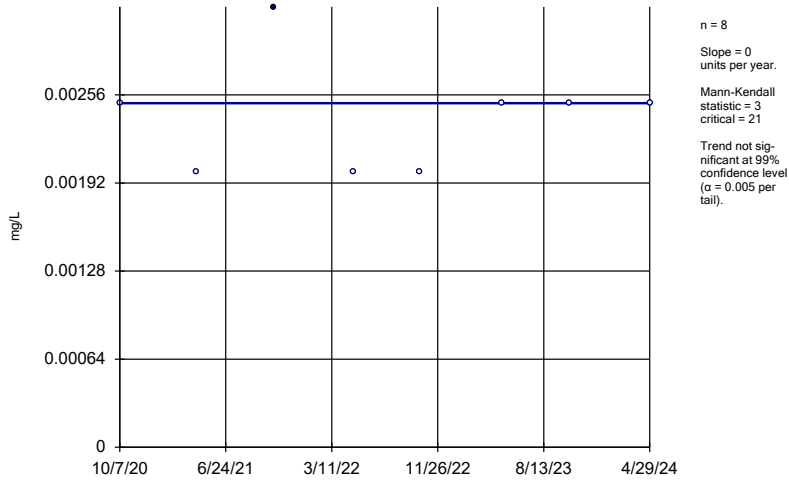


n = 8  
Slope = 0.0004939  
units per year.  
Mann-Kendall  
statistic = 6  
critical = 21  
Trend not sig-  
nificant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).

Constituent: Nickel Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

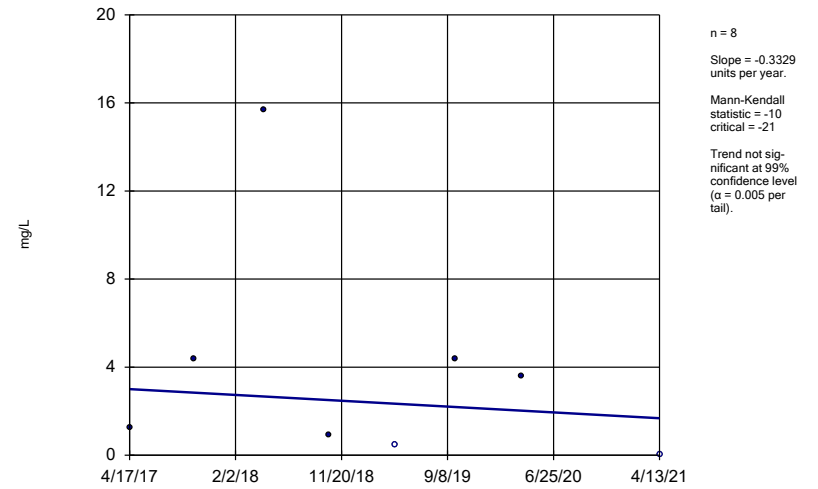
MW-31B



Constituent: Selenium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

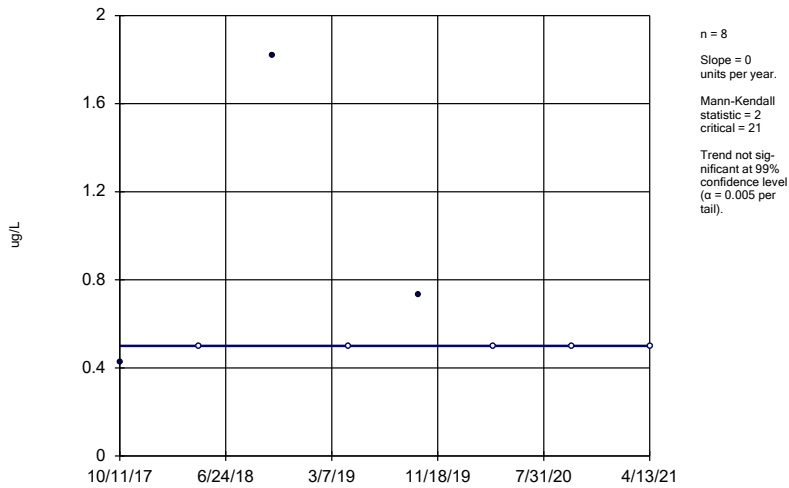
MW-8B



Constituent: Sulfide Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

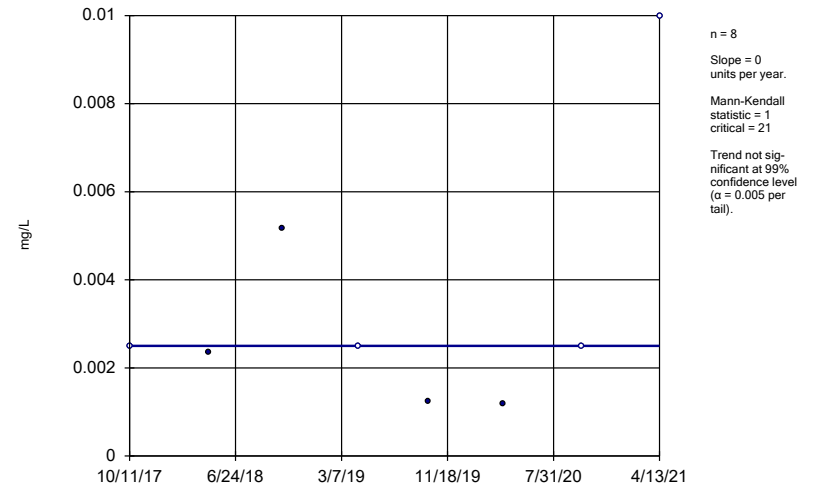
MW-5B



Constituent: Toluene Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

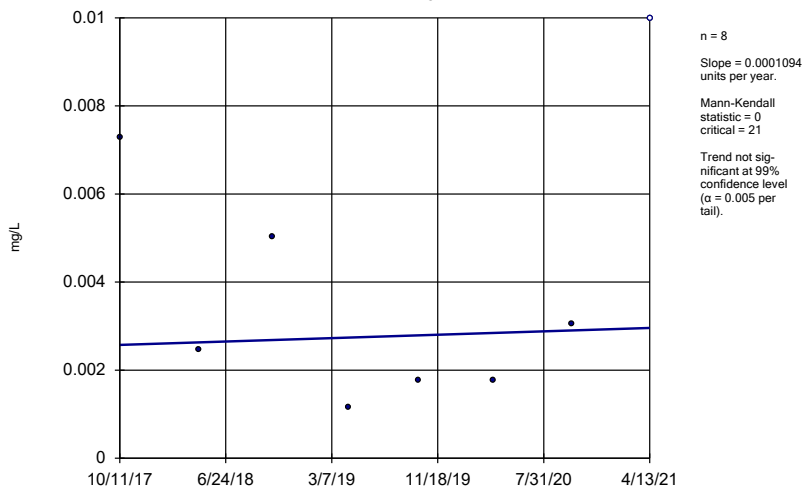
MW-5B



Constituent: Vanadium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

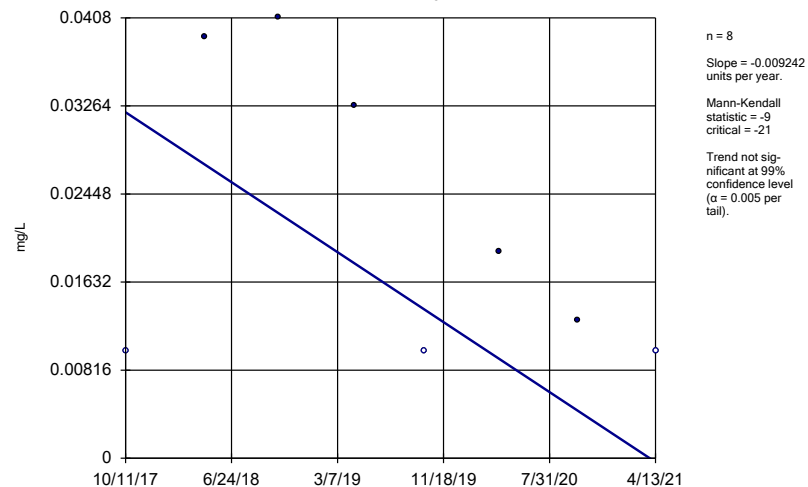
MW-8B



Constituent: Vanadium Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope Estimator

MW-5B



Constituent: Zinc Analysis Run 6/4/2024 10:08 AM View: 2024SSN - Mann Kendall  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

**Confidence Interval Summary Table and Graphs**  
**Series A**

# Confidence Interval

Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF Series A-AM 2024SSN    Printed 6/3/2024, 6:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-18AR	0.8488	0.3559	140	No	8	12.5	No	0.01	Param.
2-Butanone (ug/L)	MW-216A	11.6	2.5	4000	No	8	87.5	No	0.004	NP (NDs)
Antimony (mg/L)	MW-18AR	0.00167	0.0005	0.006	No	7	85.71	No	0.008	NP (NDs)
Antimony (mg/L)	MW-215A	0.0015	0.0005	0.006	No	8	75	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-201A	0.006	0.001	0.0222	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-204A	0.0689	0.00251	0.0222	No	8	0	No	0.004	NP (normality)
Arsenic (mg/L)	MW-205A	0.01213	0.004833	0.0222	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-24A	0.01751	0.004311	0.0222	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-17A-00	0.5286	0.4556	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-18AR	0.8777	0.6633	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-200A	1.021	0.8479	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-201A	0.3143	0.1727	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-202A	0.342	0.249	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-203A	0.3326	0.2854	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-204A	0.1908	0.1161	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-205A	0.3231	0.2282	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-213A	0.172	0.0384	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-214A	0.2906	0.2514	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-215A	0.1362	0.08122	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-217A	0.1067	0.08931	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-218A	0.271	0.2182	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-219A	0.6833	0.535	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-220A	0.3127	0.2728	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-23A	0.3449	0.2936	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-24A	0.605	0.263	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-25A-00	0.2202	0.1833	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-29A	0.2026	0.09941	2	No	8	0	No	0.01	Param.
Benzene (ug/L)	MW-204A	0.513	0.25	5	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-215A	0.0004	0.000073	0.005	No	8	62.5	No	0.004	NP (NDs)
Chromium (mg/L)	MW-214A	0.0072	0.0025	0.1	No	8	0	No	0.004	NP (normality)
Chromium (mg/L)	MW-215A	0.00625	0.0016	0.1	No	8	37.5	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-18AR	2.631	1.144	70	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-18AR	0.001735	0.0004795	0.01156	No	8	37.5	No	0.01	Param.
Cobalt (mg/L)	MW-201A	0.0089	0.0002	0.01156	No	8	37.5	No	0.004	NP (normality)
Cobalt (mg/L)	MW-204A	0.00433	0.0001	0.01156	No	8	25	No	0.004	NP (normality)
Cobalt (mg/L)	MW-205A	0.0003483	0.0001897	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-213A	0.0177	0.000426	0.01156	No	8	0	No	0.004	NP (normality)
Cobalt (mg/L)	MW-214A	0.00314	0.0001	0.01156	No	8	37.5	No	0.004	NP (normality)
Cobalt (mg/L)	MW-215A	0.001267	0.0004606	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-216A	0.0013	0.0001	0.01156	No	8	37.5	No	0.004	NP (normality)
Cobalt (mg/L)	MW-217A	0.0007035	0.0002	0.01156	No	8	75	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-220A	0.0007	0.0002	0.01156	No	8	87.5	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-23A	0.0012	0.00025	0.01156	No	8	50	No	0.004	NP (normality)
Cobalt (mg/L)	MW-24A	0.01185	0.005497	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-25A-00	0.0022	0.00012	0.01156	No	8	50	No	0.004	NP (normality)
Cobalt (mg/L)	MW-29A	0.004434	0	0.01156	No	8	12.5	No	0.01	Param.
Copper (mg/L)	MW-17A-00	0.0056	0.002	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-18AR	0.0048	0.0015	1.3	No	8	62.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-201A	0.0074	0.0014	1.3	No	8	75	No	0.004	NP (NDs)
Copper (mg/L)	MW-204A	0.007617	0.003636	1.3	No	8	37.5	No	0.01	Param.

# Confidence Interval

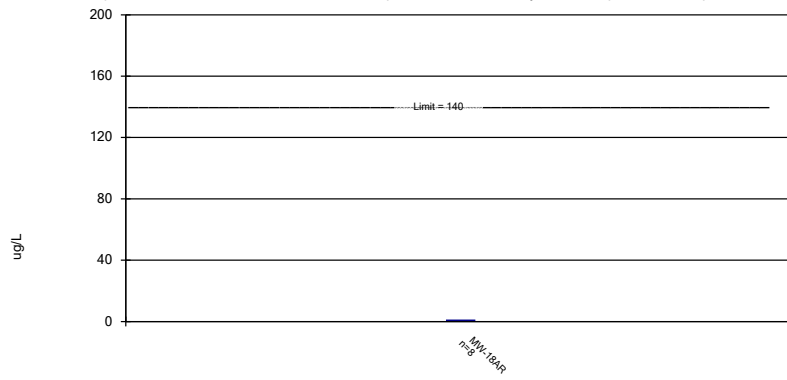
Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF Series A-AM 2024SSN    Printed 6/3/2024, 6:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-214A	0.00514	0.0013	1.3	No	8	62.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-215A	0.004776	0.002592	1.3	No	8	12.5	No	0.01	Param.
Copper (mg/L)	MW-219A	0.0057	0.00195	1.3	No	8	75	No	0.004	NP (NDs)
Dichlorodifluoromethane (ug/L)	MW-18AR	16.55	6.037	1000	No	8	0	No	0.01	Param.
Dichlorodifluoromethane (ug/L)	MW-200A	1.657	0.9532	1000	No	8	12.5	No	0.01	Param.
Lead (mg/L)	MW-201A	0.0069	0.00025	0.015	No	8	62.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-202A	0.002	0.000135	0.015	No	8	62.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-205A	0.001544	0.0001414	0.015	No	8	37.5	No	0.01	Param.
Lead (mg/L)	MW-214A	0.0074	0.000201	0.015	No	8	50	No	0.004	NP (normality)
Lead (mg/L)	MW-215A	0.002163	0.0008315	0.015	No	8	0	No	0.01	Param.
Lead (mg/L)	MW-24A	0.002	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Nickel (mg/L)	MW-18AR	0.005583	0.002833	0.105	No	8	25	No	0.01	Param.
Nickel (mg/L)	MW-201A	0.012	0.0014	0.105	No	8	50	No	0.004	NP (normality)
Nickel (mg/L)	MW-204A	0.0156	0.0025	0.105	No	8	12.5	No	0.004	NP (normality)
Nickel (mg/L)	MW-213A	0.004812	0.002178	0.105	No	8	12.5	No	0.01	Param.
Nickel (mg/L)	MW-214A	0.00494	0.001	0.105	No	8	62.5	No	0.004	NP (NDs)
Nickel (mg/L)	MW-215A	0.0041	0.0022	0.105	No	8	50	No	0.004	NP (normality)
Nickel (mg/L)	MW-216A	0.006327	0.003001	0.105	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-24A	0.009377	0.003588	0.105	No	8	12.5	No	0.01	Param.
Nickel (mg/L)	MW-29A	0.01996	0	0.105	No	8	12.5	No	0.01	Param.
Tetrachloroethene (ug/L)	MW-18AR	5.13	3.64	5	No	8	0	No	0.01	Param.
Toluene (ug/L)	MW-205A	1.67	0.5	1000	No	8	87.5	No	0.004	NP (NDs)
Trichloroethene (ug/L)	MW-18AR	1.983	1.262	5	No	8	0	No	0.01	Param.
Trichlorofluoromethane (ug/L)	MW-18AR	6.453	1.542	2000	No	8	0	No	0.01	Param.
Vanadium (mg/L)	MW-200A	0.01	0.00139	0.035	No	8	25	No	0.004	NP (normality)
Vanadium (mg/L)	MW-213A	0.004259	0.0008903	0.035	No	8	25	No	0.01	Param.
Vanadium (mg/L)	MW-215A	0.004668	0.001046	0.035	No	8	25	No	0.01	Param.
Vanadium (mg/L)	MW-217A	0.01	0.000867	0.035	No	8	75	No	0.004	NP (NDs)
Zinc (mg/L)	MW-202A	0.317	0.01	2	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	MW-204A	0.171	0.01	2	No	8	87.5	No	0.004	NP (NDs)



### Parametric Confidence Interval

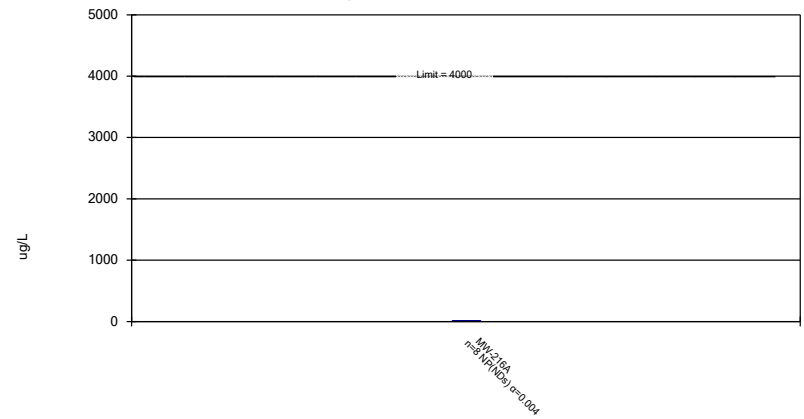
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Constituent: 1,1-Dichloroethane Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

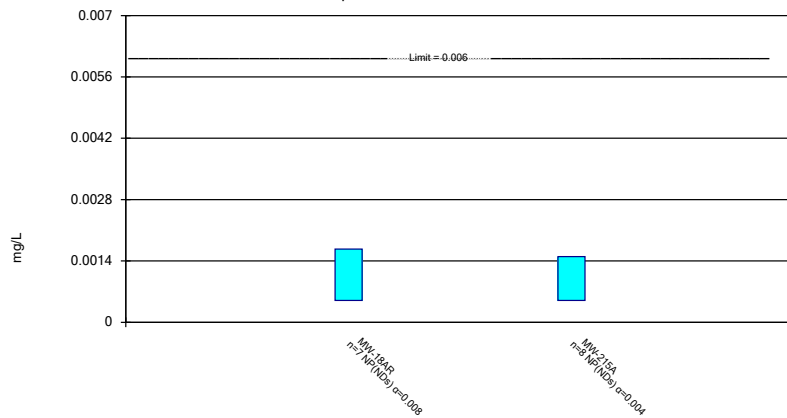
Compliance Limit is not exceeded.



Constituent: 2-Butanone Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

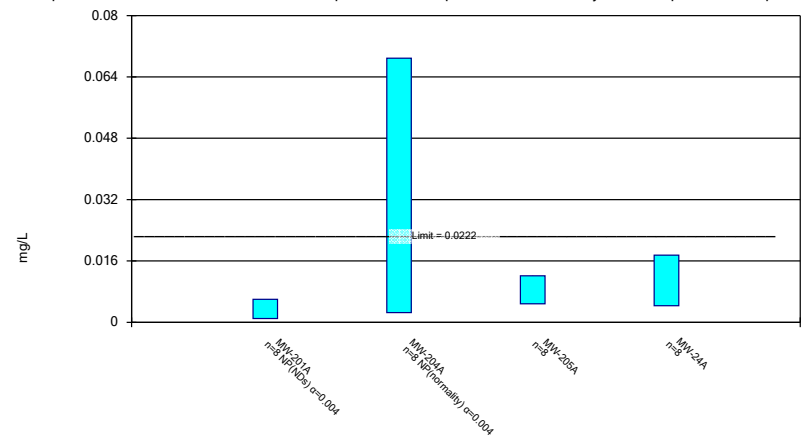
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

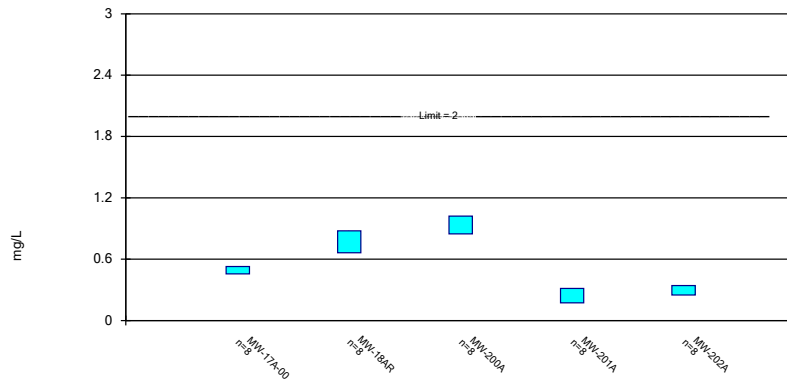
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

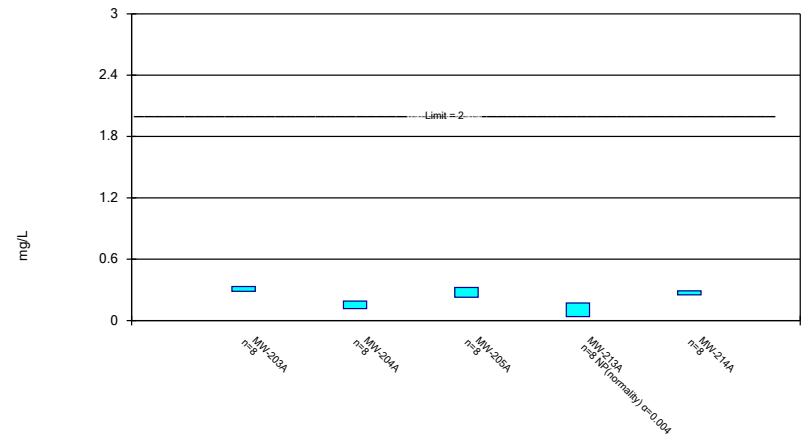
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

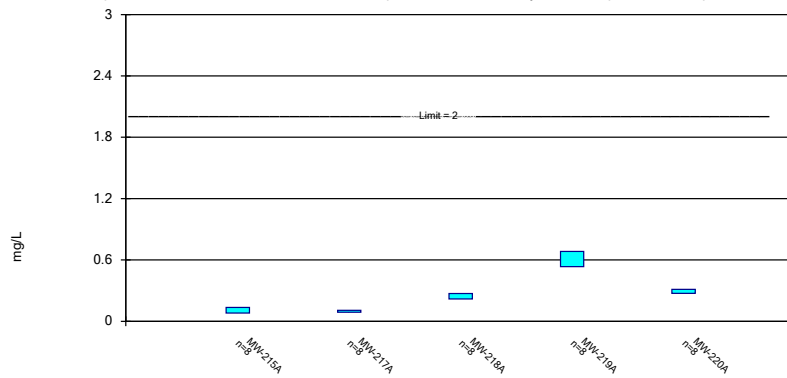
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

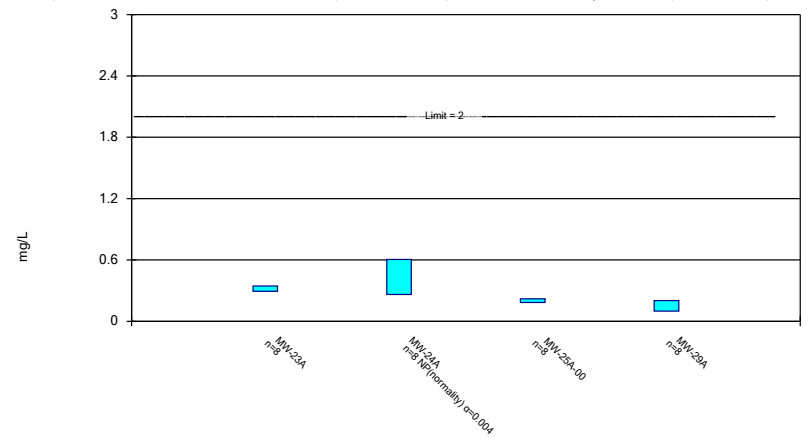
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

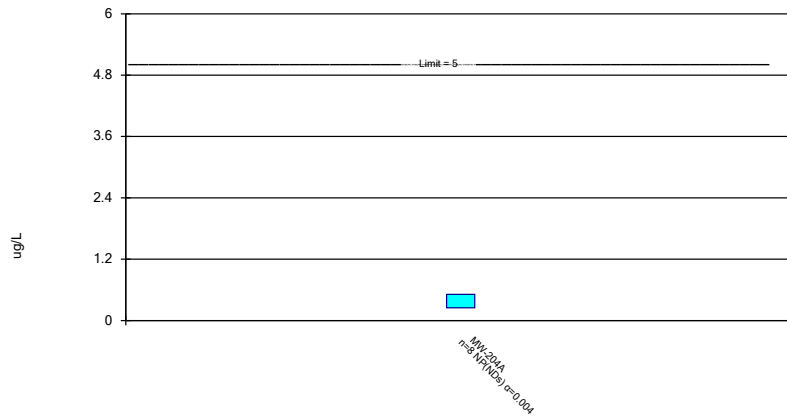
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Constituent: Barium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

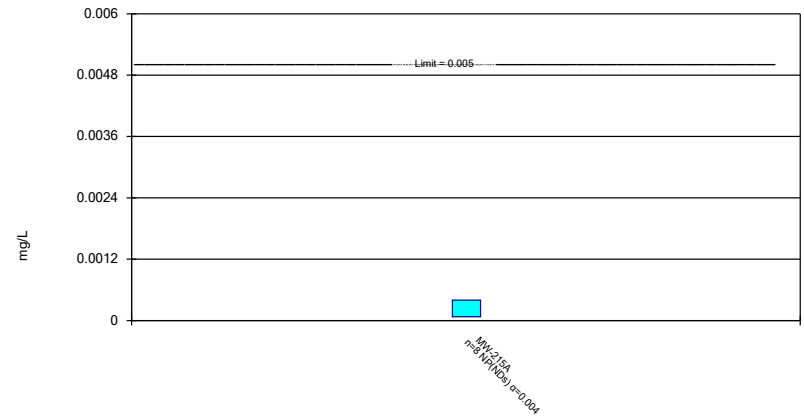
Compliance Limit is not exceeded.



Constituent: Benzene Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

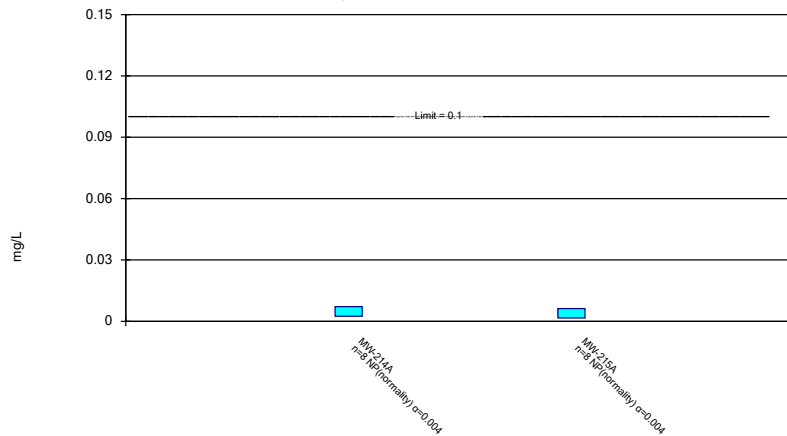
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

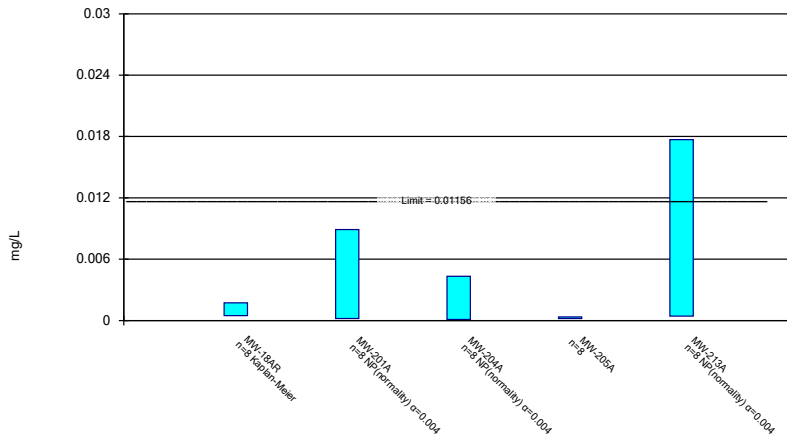
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: cis-1,2-Dichloroethene Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

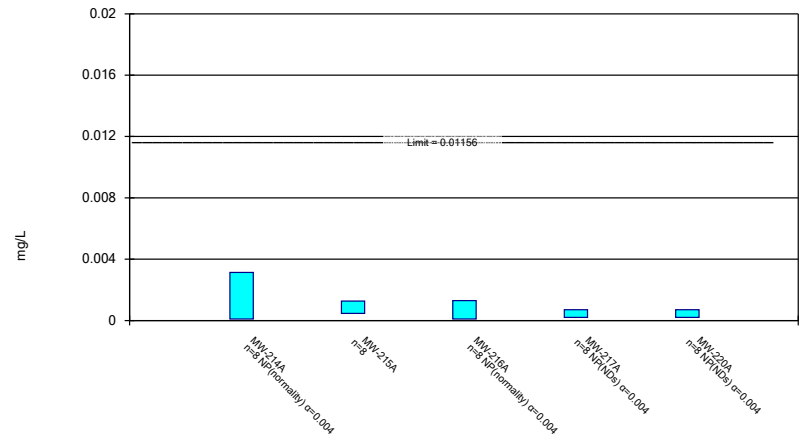
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Constituent: Cobalt Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

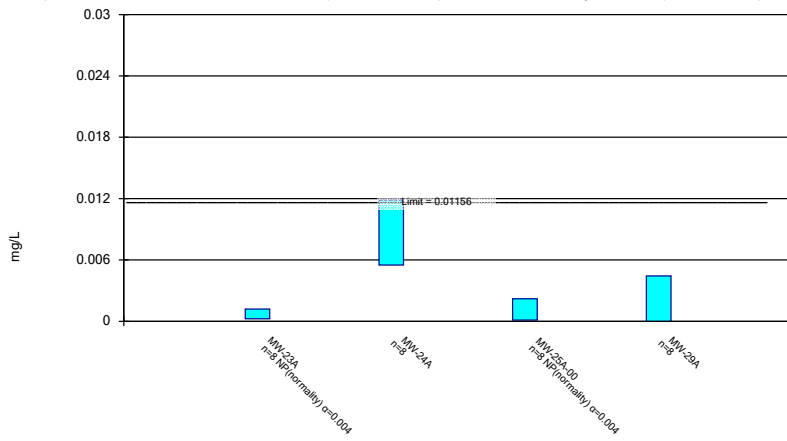
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Constituent: Cobalt Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

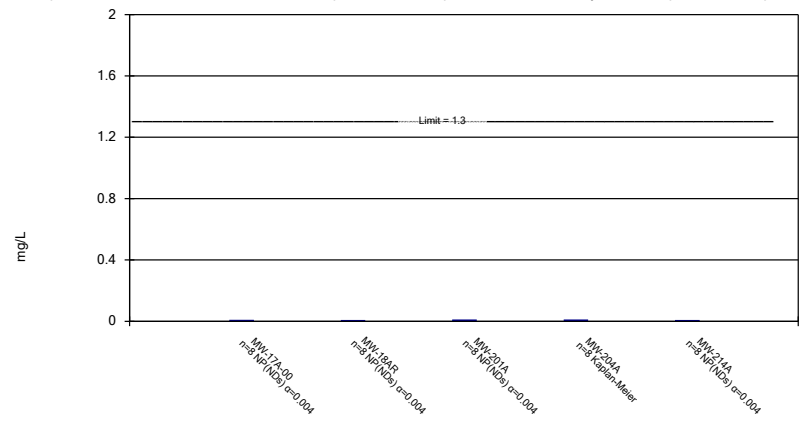
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Constituent: Cobalt Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

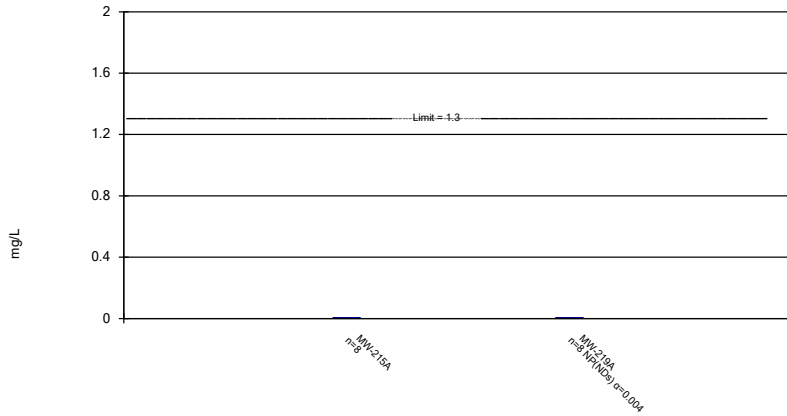
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Copper Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

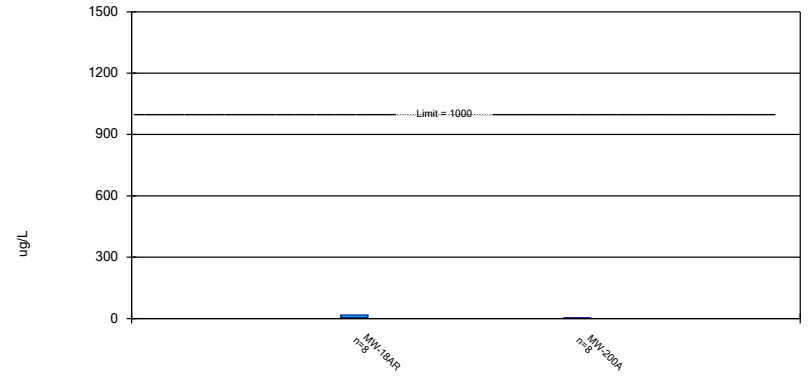
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Copper Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

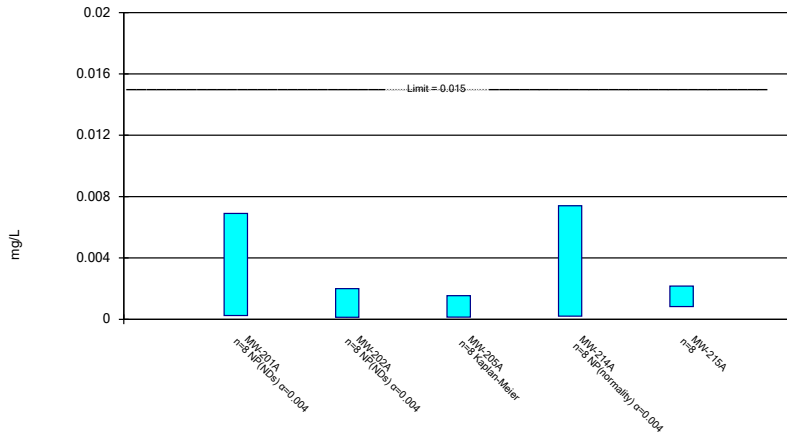
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Dichlorodifluoromethane Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

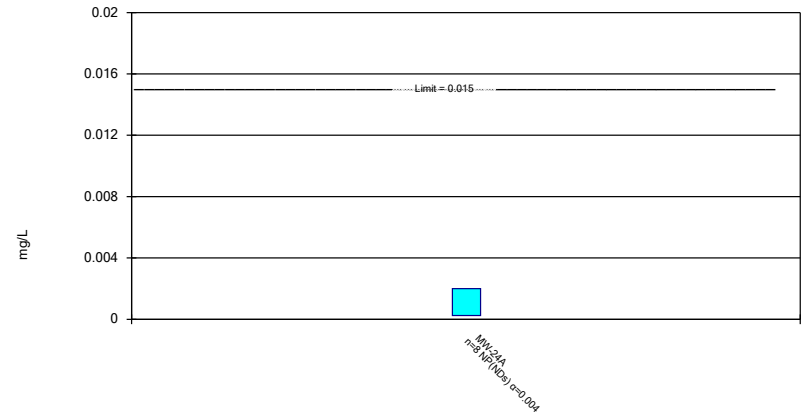
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lead Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

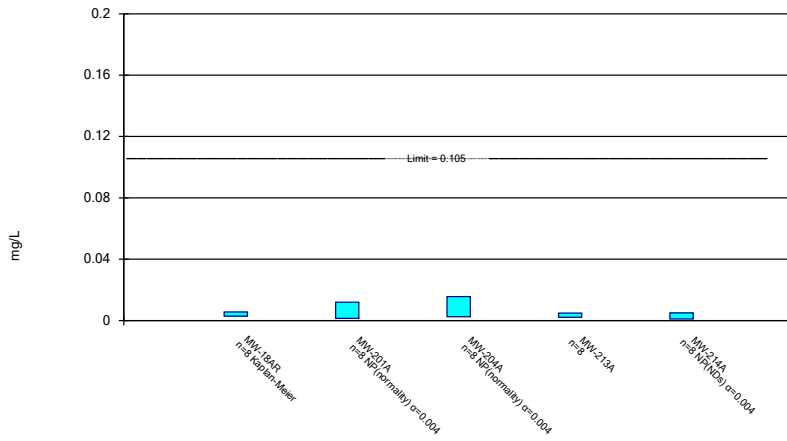
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

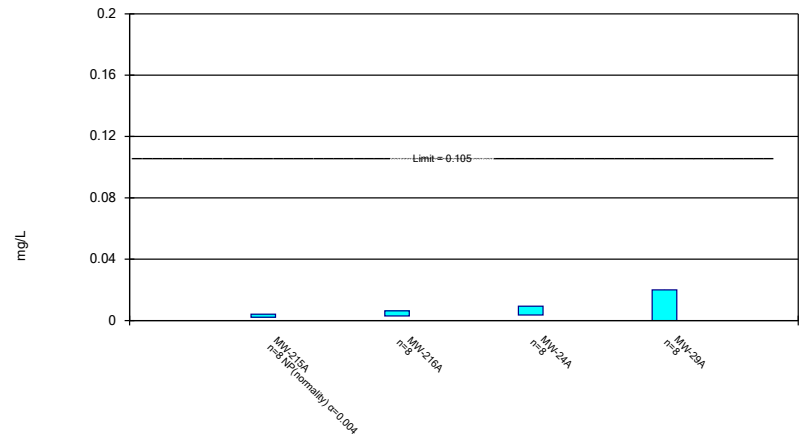
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Constituent: Nickel Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

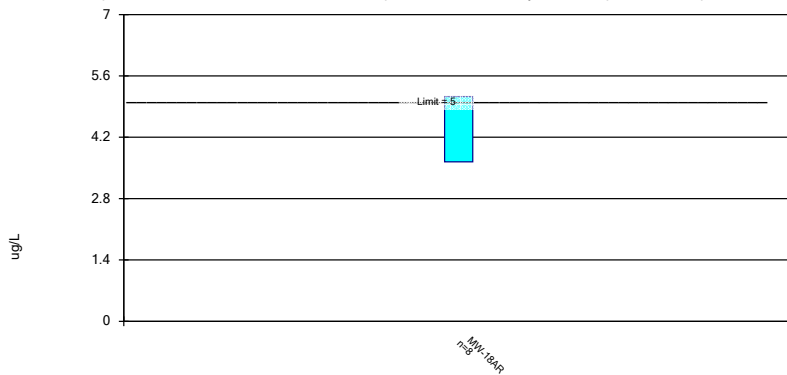
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

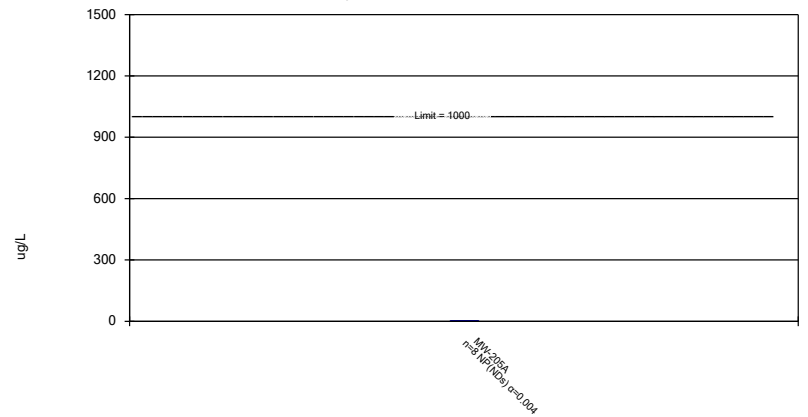
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Tetrachloroethene Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

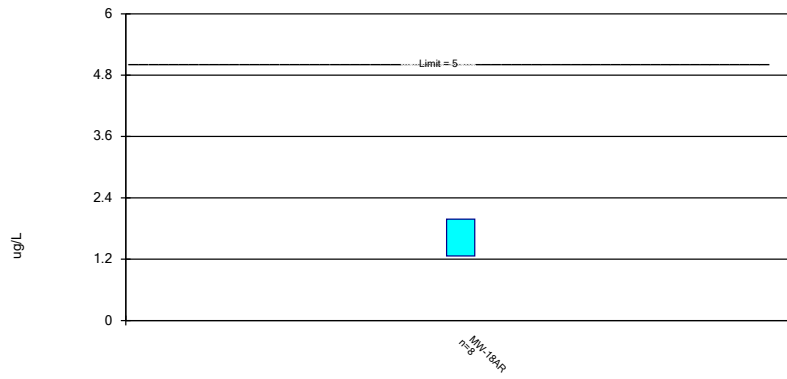
Compliance Limit is not exceeded.



Constituent: Toluene Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

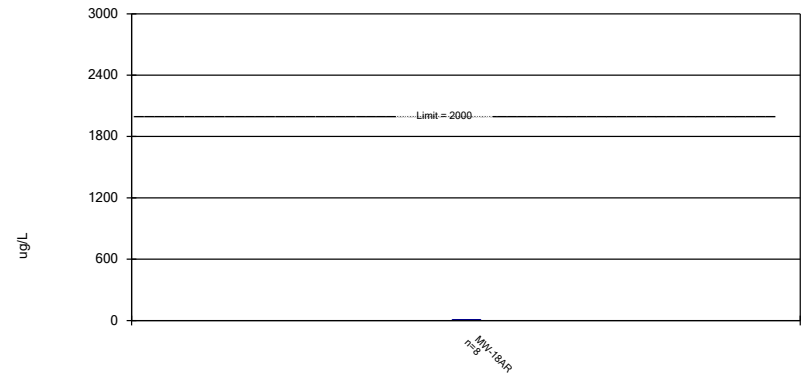
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Trichloroethene Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric Confidence Interval

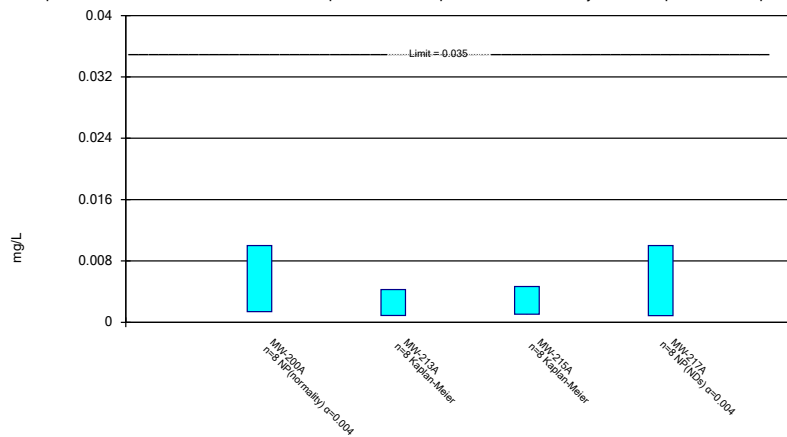
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Trichlorofluoromethane Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

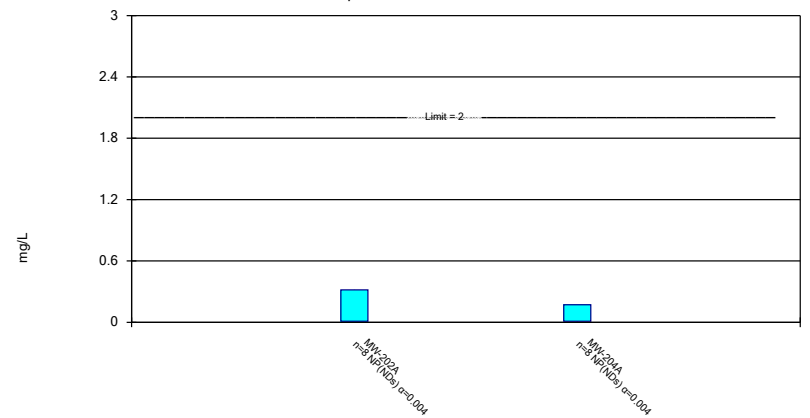
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Vanadium Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 6/3/2024 6:08 PM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

**Confidence Interval Summary Table and Graphs**  
**Series B**



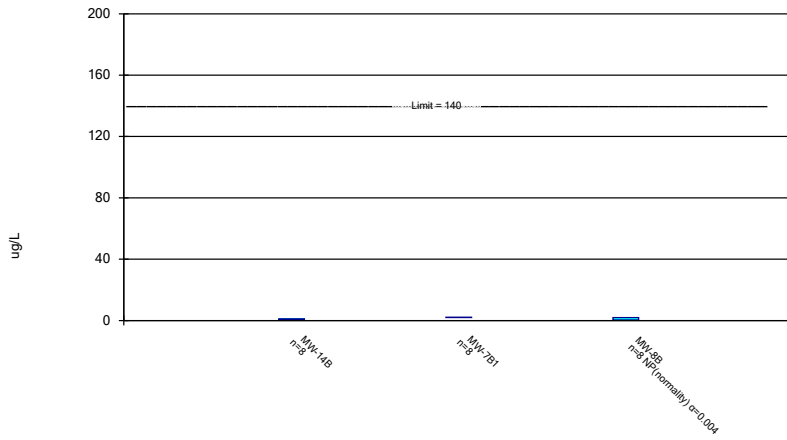
# Confidence Interval

Iowa City Landfill & Recycling    Client: SCS Engineers    Data: IACLF Series B-AM 2024SSN    Printed 6/4/2024, 10:35 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-14B	1.133	0.378	140	No	8	12.5	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-7B1	2.14	1.917	140	No	8	0	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-8B	1.92	0.327	140	No	8	50	No	0.004	NP (normality)
Acetone (ug/L)	MW-8B	30.3	3.15	6300	No	8	37.5	No	0.004	NP (normality)
Arsenic (mg/L)	MW-14B	0.002338	0.001127	0.0222	No	8	12.5	No	0.01	Param.
Arsenic (mg/L)	MW-208B	0.0193	0.002614	0.0222	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-210B	0.0202	0.00111	0.0222	No	8	0	No	0.004	NP (normality)
Arsenic (mg/L)	MW-7B1	0.009448	0.004707	0.0222	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-8B	0.0704	0.0105	0.0222	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-12B	0.3695	0.2775	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-14B	0.4813	0.337	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-210B	0.5157	0.175	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-31B	0.5366	0.4059	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-5B	0.1989	0.1396	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-7B1	0.6982	0.5233	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-8B	0.5157	0.2713	2	No	8	0	No	0.01	Param.
Bis[2-ethylhexyl]phthalate (ug/L)	MW-12B	13	0.856	6	No	6	66.67	No	0.0155	NP (NDs)
Cadmium (mg/L)	MW-12B	0.0001686	0.00007856	0.005	No	8	50	No	0.01	Param.
Cadmium (mg/L)	MW-210B	0.0008056	0.0004947	0.005	No	8	0	No	0.01	Param.
Chromium (mg/L)	MW-8B	0.00507	0.000867	0.1	No	8	75	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-12B	0.001056	0.0003338	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-14B	0.007199	0.001966	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-210B	0.007767	0.004432	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-31B	0.002348	0.00002976	0.01156	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-5B	0.00548	0.000111	0.01156	No	8	12.5	No	0.004	NP (normality)
Cobalt (mg/L)	MW-8B	0.00941	0.0006	0.01156	No	8	0	No	0.004	NP (normality)
Copper (mg/L)	MW-14B	0.00547	0.0016	1.3	No	8	62.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-210B	0.0101	0.002	1.3	No	8	37.5	No	0.004	NP (normality)
Copper (mg/L)	MW-31B	0.008185	0.0007217	1.3	No	8	37.5	No	0.01	Param.
Lead (mg/L)	MW-210B	0.001788	0.00008775	0.015	No	8	12.5	No	0.01	Param.
Lead (mg/L)	MW-31B	0.002129	0.0003075	0.015	No	8	12.5	No	0.01	Param.
Lead (mg/L)	MW-8B	0.002	0.00025	0.015	No	8	62.5	No	0.004	NP (NDs)
Nickel (mg/L)	MW-12B	0.01189	0.003243	0.105	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-14B	0.009909	0.005531	0.105	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-210B	0.0204	0.01253	0.105	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-31B	0.00479	0.001818	0.105	No	8	25	No	0.01	Param.
Nickel (mg/L)	MW-8B	0.006932	0.0003806	0.105	No	8	12.5	No	0.01	Param.
Selenium (mg/L)	MW-31B	0.0032	0.002	0.05	No	8	87.5	No	0.004	NP (NDs)
Sulfide (mg/L)	MW-8B	15.7	0.05	1	No	8	25	No	0.004	NP (normality)
Toluene (ug/L)	MW-5B	1.82	0.424	1000	No	8	62.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-5B	0.01	0.00119	0.035	No	8	50	No	0.004	NP (normality)
Vanadium (mg/L)	MW-8B	0.007401	0.0007394	0.035	No	8	12.5	No	0.01	Param.
Zinc (mg/L)	MW-5B	0.03562	0.01244	2	No	8	37.5	No	0.01	Param.

### Parametric and Non-Parametric (NP) Confidence Interval

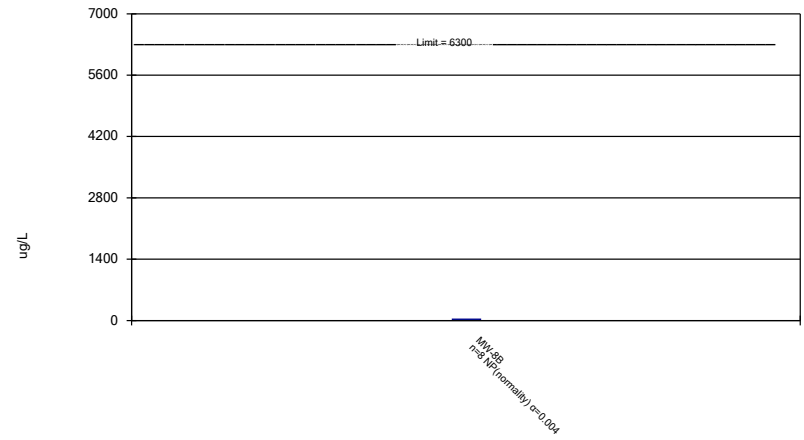
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: 1,1-Dichloroethane Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Non-Parametric Confidence Interval

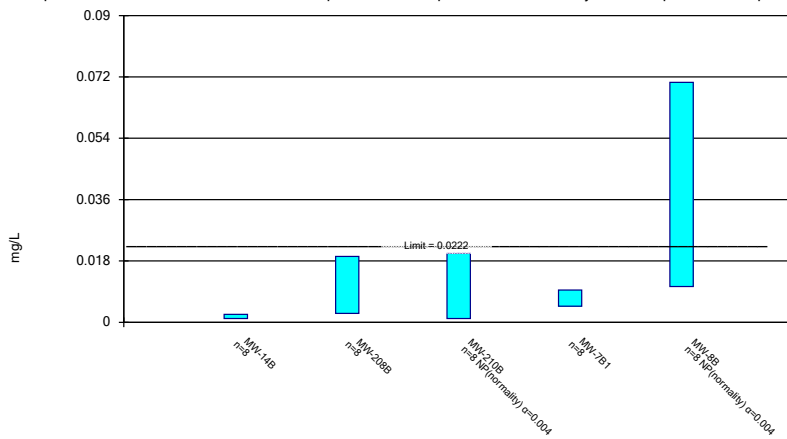
Compliance Limit is not exceeded.



Constituent: Acetone Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

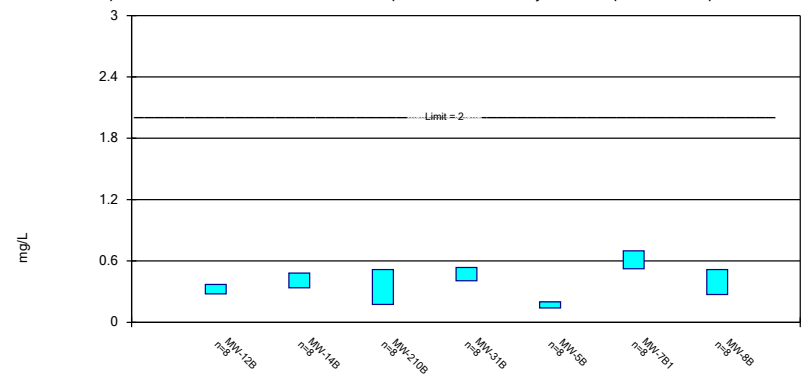
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric Confidence Interval

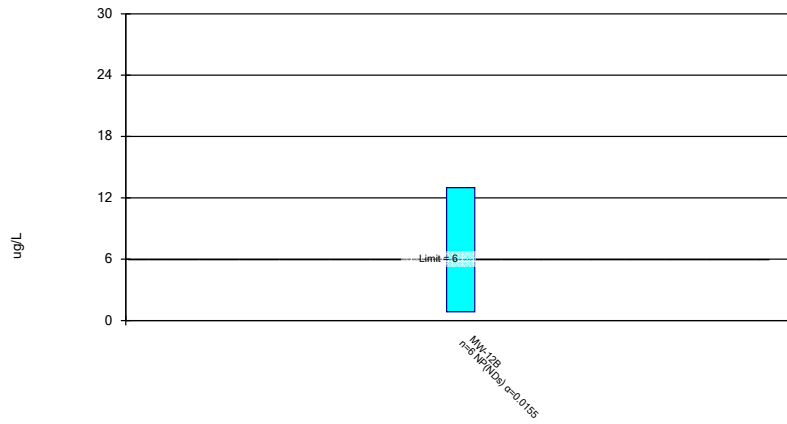
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Non-Parametric Confidence Interval

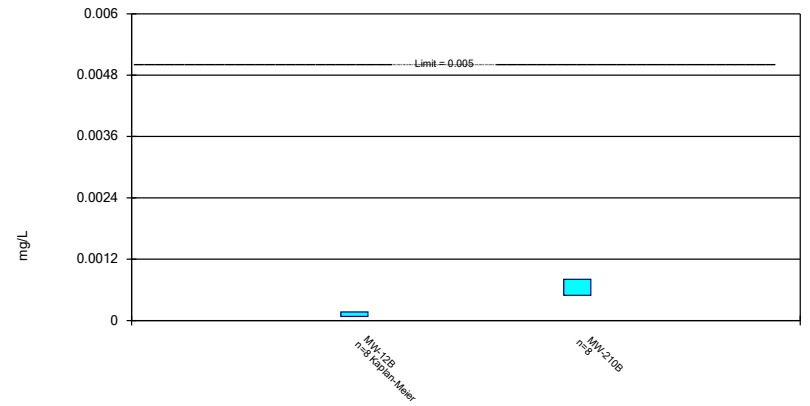
Compliance Limit is not exceeded.



Constituent: Bis[2-ethylhexyl]phthalate Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Inte  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric Confidence Interval

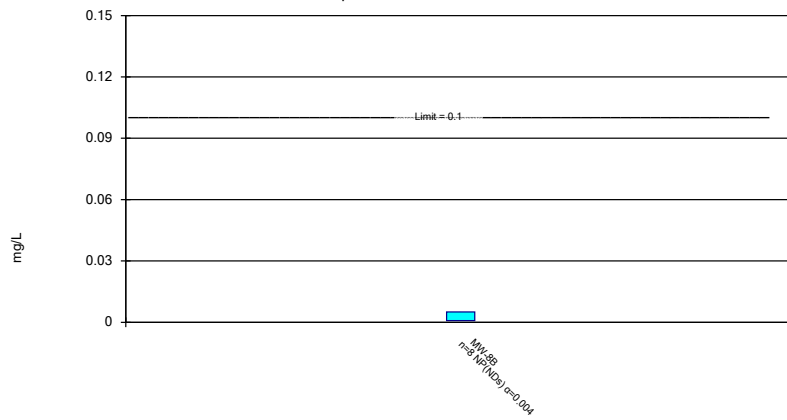
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Non-Parametric Confidence Interval

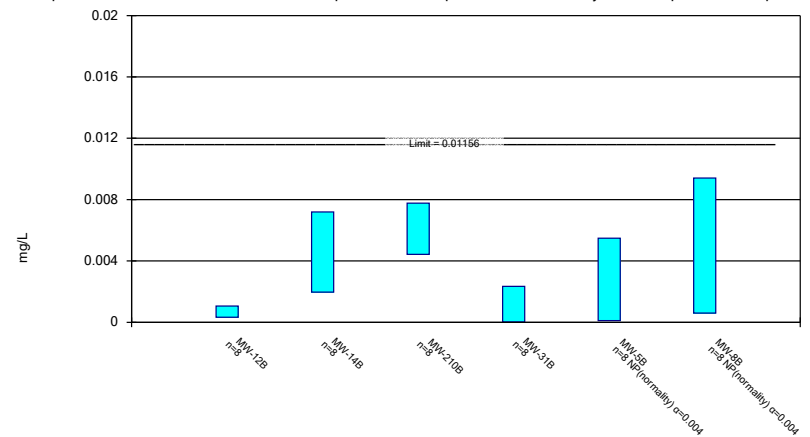
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

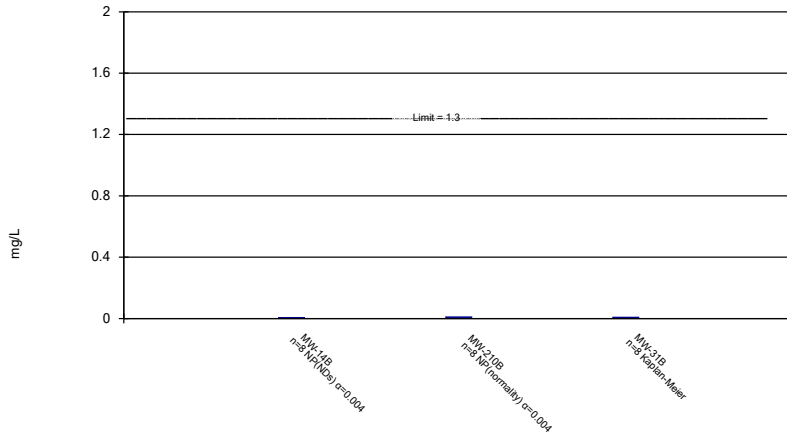
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

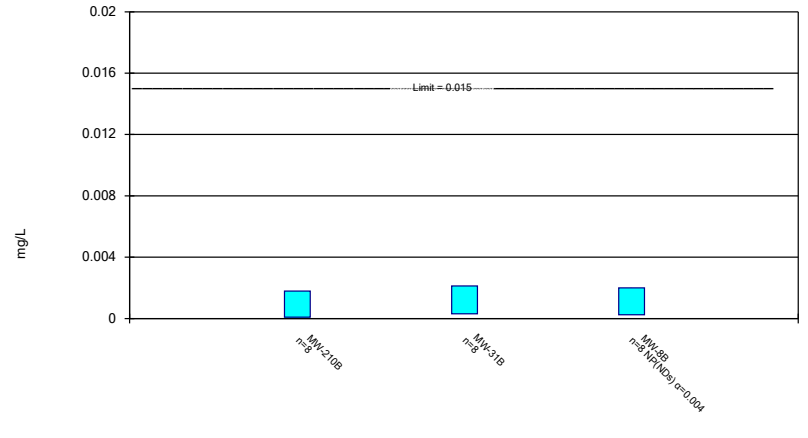
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Copper Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

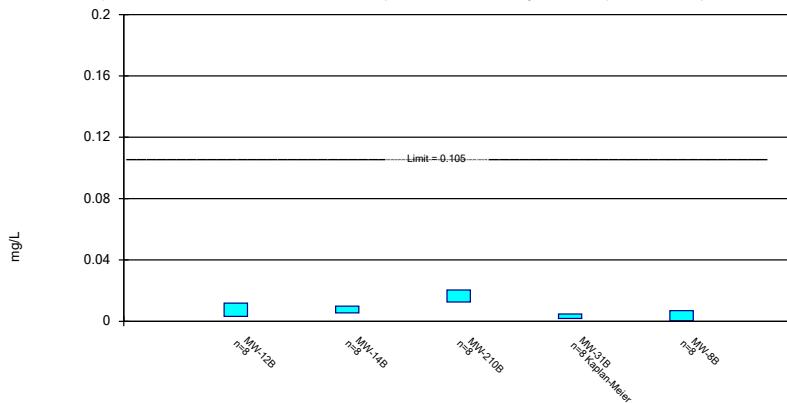
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lead Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Parametric Confidence Interval

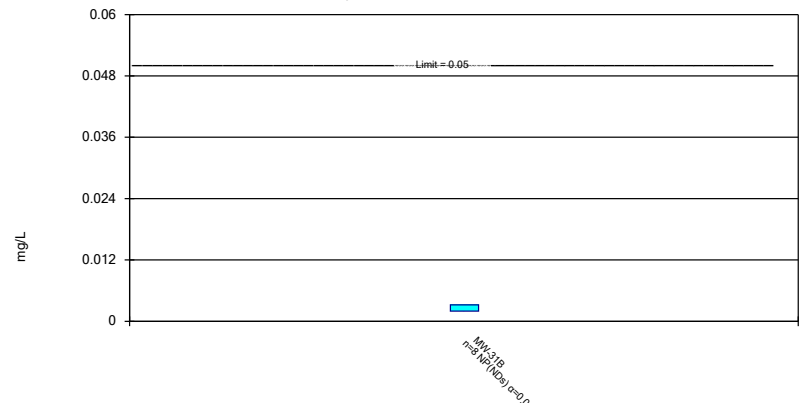
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Non-Parametric Confidence Interval

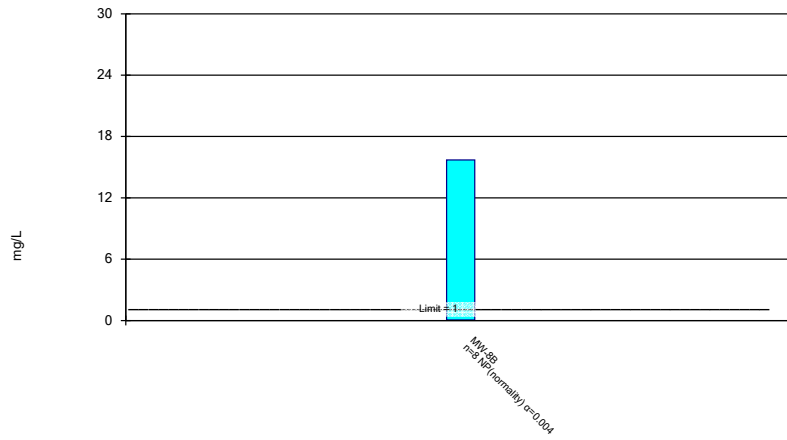
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Non-Parametric Confidence Interval

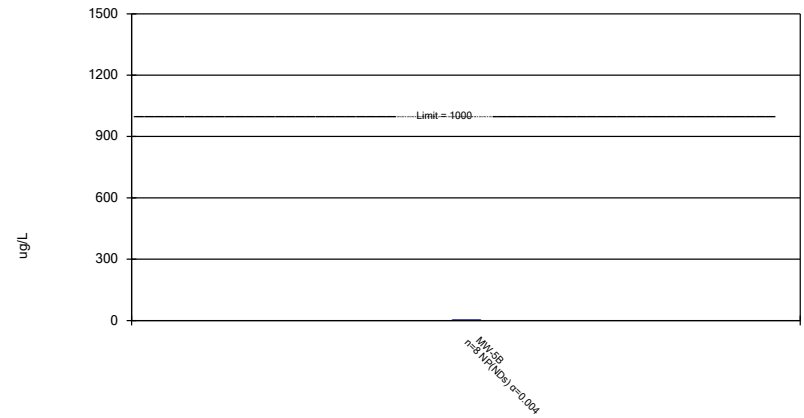
Compliance Limit is not exceeded.



Constituent: Sulfide Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL Series B-AM 2024SSN

### Non-Parametric Confidence Interval

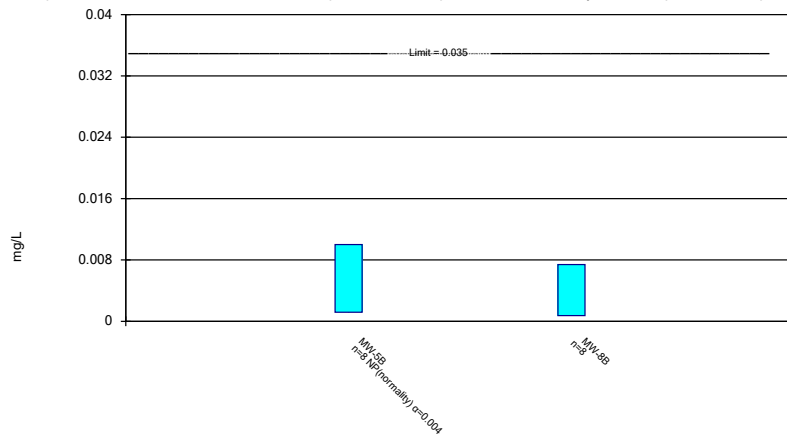
Compliance Limit is not exceeded.



Constituent: Toluene Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL Series B-AM 2024SSN

### Parametric and Non-Parametric (NP) Confidence Interval

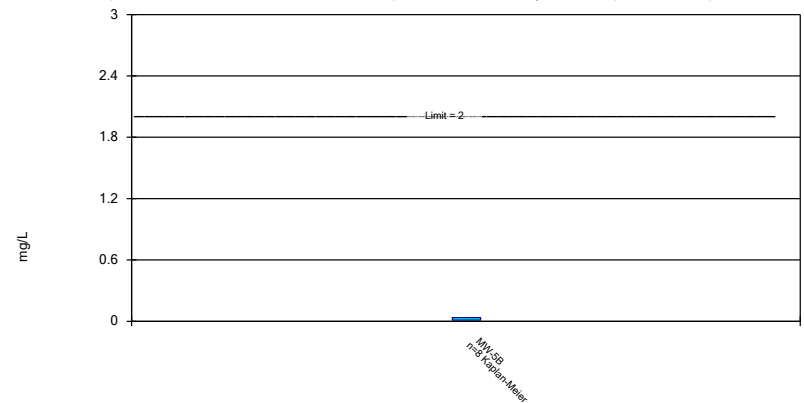
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Vanadium Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL Series B-AM 2024SSN

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Zinc Analysis Run 6/4/2024 10:32 AM View: 2024SSN - Confidence Interval  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACL Series B-AM 2024SSN

**Theil-Sen Trend Line Summary Table and Confidence Band Graphs**  
**Series A**

# Theil Sen/Trend Test

Iowa City Landfill & Recycling

Client: SCS Engineers

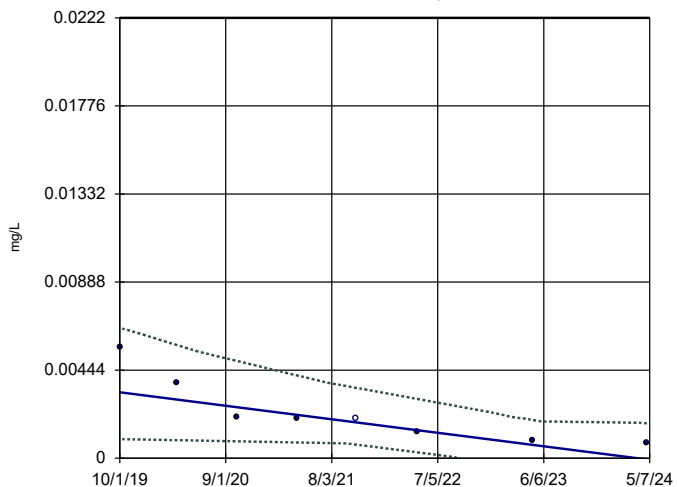
Data: IACLF Series A-AM 2024SSN

Printed 6/3/2024, 6:16 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
<b>Arsenic (mg/L)</b>	<b>MW-213A</b>	<b>-0.0007405</b>	<b>-27</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>12.5</b>	<b>0.01</b>	<b>NP</b>
<b>Barium (mg/L)</b>	<b>MW-216A</b>	<b>-0.07331</b>	<b>-24</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>0.01</b>	<b>NP</b>

### Sen's Slope and 99% Confidence Band

MW-213A

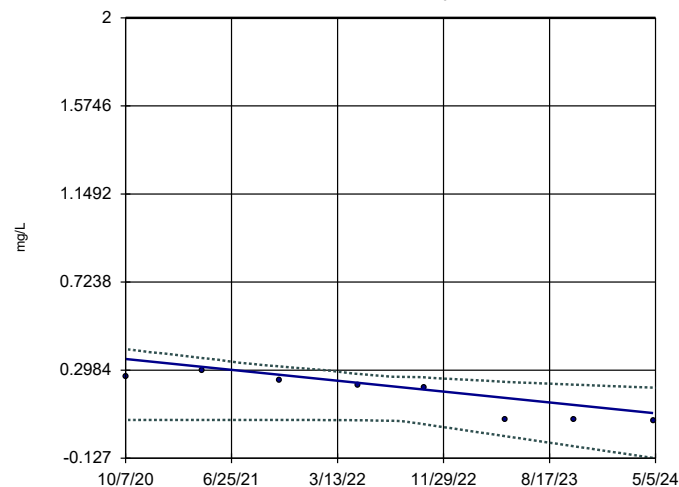


n = 8  
Slope = -0.0007405  
units per year.  
Mann-Kendall  
statistic = -27  
critical = -21  
Decreasing trend  
significant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).  
Confidence band is  
below SSGWPS mg/L  
(0.0222).

Constituent: Arsenic Analysis Run 6/3/2024 6:15 PM View: 2024SSN - Theil Sen  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN

### Sen's Slope and 99% Confidence Band

MW-216A



n = 8  
Slope = -0.07331  
units per year.  
Mann-Kendall  
statistic = -24  
critical = -21  
Decreasing trend  
significant at 99%  
confidence level  
( $\alpha = 0.005$  per  
tail).  
Confidence band is  
below GWPS mg/L (2).

Constituent: Barium Analysis Run 6/3/2024 6:15 PM View: 2024SSN - Theil Sen  
Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series A-AM 2024SSN



**Theil-Sen Trend Line Summary Table and Confidence Band Graphs**  
**Series B**

# Theil Sen/Trend Test

Iowa City Landfill & Recycling

Client: SCS Engineers

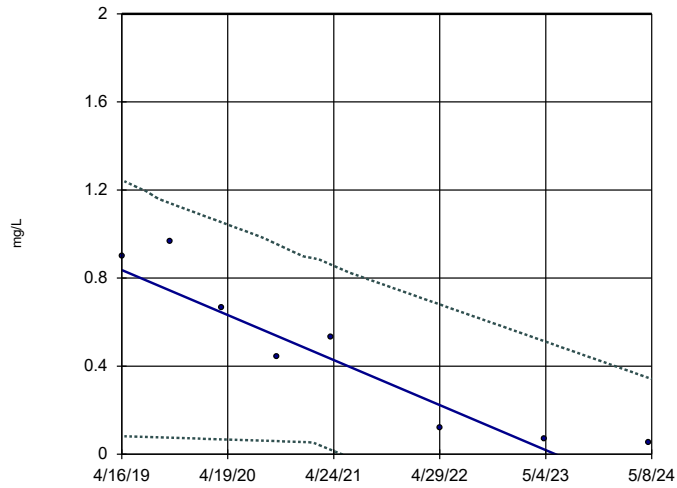
Data: IACLF Series B-AM 2024SSN

Printed 6/4/2024, 10:41 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
<b>Barium (mg/L)</b>	<b>MW-208B</b>	<b>-0.2018</b>	<b>-24</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>0.01</b>	<b>NP</b>
<b>Cobalt (mg/L)</b>	<b>MW-208B</b>	<b>-0.004557</b>	<b>-28</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>0.01</b>	<b>NP</b>
<b>Nickel (mg/L)</b>	<b>MW-208B</b>	<b>-0.005977</b>	<b>-23</b>	<b>-21</b>	<b>Yes</b>	<b>8</b>	<b>25</b>	<b>0.01</b>	<b>NP</b>

### Sen's Slope and 99% Confidence Band

MW-208B

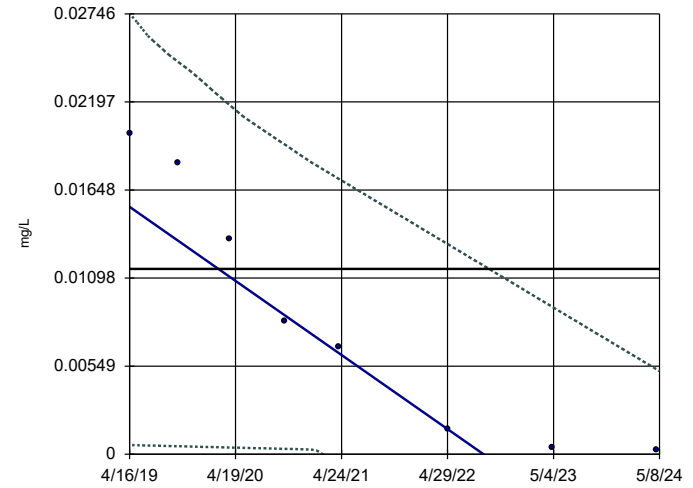


n = 8  
 Slope = -0.2018  
 units per year.  
 Mann-Kendall  
 statistic = -24  
 critical = -21  
 Decreasing trend  
 significant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).  
 Confidence band is  
 below GWPS mg/L (2).

Constituent: Barium Analysis Run 6/4/2024 10:40 AM View: 2024SSN - Theil Sen  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope and 99% Confidence Band

MW-208B

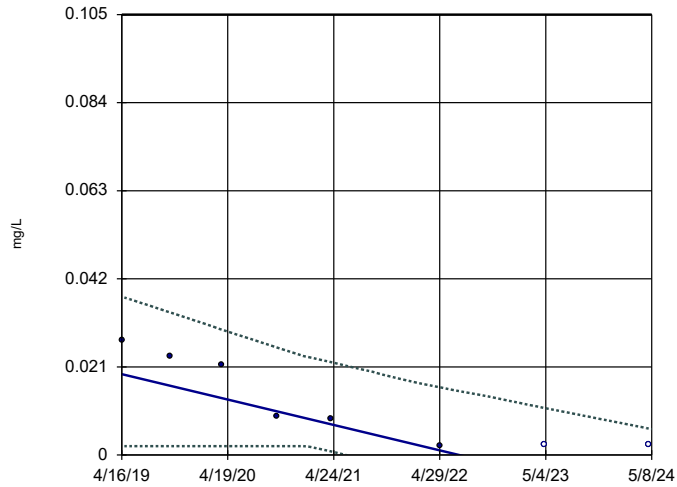


n = 8  
 Slope = -0.004557  
 units per year.  
 Mann-Kendall  
 statistic = -28  
 critical = -21  
 Decreasing trend  
 significant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).  
 Confidence band intersects  
 SS GWPS mg/L (0.01156)  
 on 09/27/22.

Constituent: Cobalt Analysis Run 6/4/2024 10:40 AM View: 2024SSN - Theil Sen  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN

### Sen's Slope and 99% Confidence Band

MW-208B



n = 8  
 Slope = -0.005977  
 units per year.  
 Mann-Kendall  
 statistic = -23  
 critical = -21  
 Decreasing trend  
 significant at 99%  
 confidence level  
 ( $\alpha = 0.005$  per  
 tail).  
 Confidence band is  
 below SS GWPS mg/L  
 (0.105).

Constituent: Nickel Analysis Run 6/4/2024 10:40 AM View: 2024SSN - Theil Sen  
 Iowa City Landfill & Recycling Client: SCS Engineers Data: IACLF Series B-AM 2024SSN