

**2026 DELINEATION REPORT
GROUNDWATER ASSESSMENT NEAR MW-8**

**DELAWARE COUNTY SANITARY LANDFILL
28-SDP-01-74C
DELHI, IOWA**

**by:
HLW Engineering Group
204 West Broad Street
P.O. Box 314
Story City, Iowa 50248
(515) 733-4144**

April, 2026



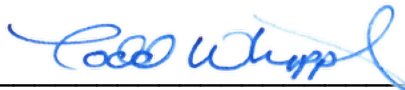
P.N. 6039.200

**2026 DELINEATION REPORT
GROUNDWATER ASSESSMENT NEAR MW-8**

**DELAWARE COUNTY SANITARY LANDFILL
28-SDP-01-74C**

by:
**HLW Engineering Group
204 West Broad Street
P.O. Box 314
Story City, Iowa 50248
(515) 733-4144**

Prepared 4/11/2026 by:



Todd Whipple, CPG

TABLE OF CONTENTS

Introduction
Study Area
Field Study Methods
Waste Boundary Delineation
Horizontal Delineation of Arsenic, Cobalt, and Nickel near MW-8
Horizontal Delineation of Methane near MW-8
Vertical Delineation
Characterization of Subsurface Conditions
Water Quality Evaluation of MW-8
Supplemental Landfill Gas Study
Conclusions

FIGURES

Figure	1 –	Site Plan
	2 -	Water Table Contour Map – March 2, 2026
	3 -	Site Plan – Cross Section Key
	4 -	Horizontal Delineation - Arsenic
	5 -	Horizontal Delineation - Cobalt
	6 -	Horizontal Delineation - Nickel
	7 -	Horizontal Delineation - Methane
	8 -	Cross Section A-A' – Arsenic and Cobalt
	9 -	Cross Section A-A' – Nickle and Methane
	10 -	Cross Section B-B' – Arsenic and Cobalt
	11 -	Cross Section B-B' – Nickle and Methane

APPENDICES

Appendix	A -	Sump Logs and Construction Diagrams
	B -	Soil Boring Logs (MW-26 to MW-29)
	C -	Temporary Monitoring Well Construction Documentation Forms
	D -	Laboratory Analytical Results
	E -	Summary of VOC Detections
	F -	Table 10 from the 2025 Annual Water Quality Report
	G -	Gas Vent Logs and Construction Diagrams

2026 Delineation Report

Introduction

The IDNR comment letters dated May 29, 2024 (Doc # 110158) and July 16, 2024 (Doc #110483) require the delineation of arsenic, cobalt, and nickel in the vicinity of MW-8 at the Delaware County Sanitary Landfill.

The Delaware County Sanitary Landfill Facility is illustrated in Figure 1, *Site Plan*. Figure 2, *Groundwater Contour Map* (March 2, 2026) illustrates the water table surface across the site, including the area of interest.

Field information from July, 2025 through March, 2026 is incorporated into this document.

Study Area

The 2025 Annual Water Quality Report (Doc #115958) confirms that MW-8 continues to demonstrate impact. Arsenic, cobalt, and nickel have been identified as compounds that have exhibited Statistically Significant Levels (SSL).

This study is focused near MW-8 situated on the south side of the landfill (Figure 1). Documentation is on file with IDNR dated March 18, 1996 (Doc #33930) that MW-8 is located within 38 feet of the waste boundary, less than the 50 feet allowed by rule.

Physical features including steep slopes, lack of level ground, trees, and fencing have limited the placement of monitoring wells in the vicinity of MW-8. MW-7 exists in the well cluster with MW-8, while MW-23 is located approximately 90 feet to the south of MW-8 (approximately 128 feet from waste - Figure 1). Sump-2, and Sump-3 (Appendix A) are located east of MW-8 on the flat lowland at the base of the slope below MW-8. MW-29 is located north of MW-8 along the south side of the landfill. MW-26, MW-27, and MW-28 are located west of MW-8 along the south side of the landfill.

Field Study Methods Near MW-8

On October 8, 2025, and October 9, 2025, four (4) soil borings were advanced along the property line fence on the south side of the western portion of the landfill (Figure 1). Each soil boring was continuously sampled and was completed as a temporary monitoring well (MW-26 through MW-29). Monitoring well construction conforms to IAC 113.10(2)"c", with the exception that the temporary monitoring wells do not have a steel protective cover set in-place over the well casing.

This field study incorporates the four (4) temporary monitoring wells (MW-26 through MW-29), the two (2) existing sumps, and existing monitoring wells MW-7, MW-8, and MW-23.

2026 Delineation Report

Any monitoring wells incorporated into a future Corrective Action Monitoring System will be improved to include the steel protective cover. Soil Boring Logs and Temporary Monitoring Well Construction information for MW-26 through MW-29 is included in Appendix B and Appendix C, respectively. All monitoring points utilized in this study area are illustrated on the attached figures.

Monitoring wells MW-26 through MW-29 were developed on October 9, 2025 and October 14, 2025, following construction and full hydration. Water elevation data and water samples were collected from all monitoring wells on site on March 2, 2026. Figure 2 illustrates the groundwater table contours based on the water elevation data collected March 2, 2026. Note that a table summarizing the March 2, 2026, water elevation data is included on Figure 2.

Waste Boundary Delineation

October 8, 2025, the soil boring activities at MW-26, MW-27, and MW-28 indicated that municipal solid waste (MSW) was encountered up to depths of approximately 16 feet below grade. MSW was not encountered at MW-29. Additional study in the area is proposed using excavated potholes to determine the waste boundary edge. Further, the potholes will help to determine whether the MSW is placed in an isolated location (i.e. a former site road ditch, etc.) or whether a contiguous MSW edge is indeed further south than originally recorded. Note that the screened intervals of MW-26 – MW-28 are sealed below the base of the encountered MSW.

Horizontal Delineation of Arsenic, Cobalt, and Nickel in Groundwater Near MW-8

In accordance with IAC 567-113.10(6)g(1)1 a groundwater assessment has been completed to delineate the horizontal limits of the arsenic, cobalt, and nickel plumes in the vicinity of MW-8.

MW-8, MW-7, MW-23, MW-26, MW-27, MW-28, MW-29, Sump-2, and Sump-3 were sampled during a distinct field event performed on March 2, 2026, and analyzed for total arsenic, total cobalt, and total nickel. The laboratory Analytical Report is included in Appendix D.

Summary tables of the detected compounds are presented below and include test results from July, 2025 to March, 2026. Compound concentrations that are reported above the Statistical Prediction Limit are in **bold** text. Compound concentrations that are reported above the IAC 567, Chapter 137 Statewide Standards for Protected Groundwater are highlighted in yellow.

2026 Delineation Report

All compounds in ug/L

Arsenic

Date	Prediction Limit	GWPS	MW-7	MW-8	MW-23	MW-26	MW-27	MW-28	MW-29	Sump 2	Sump 3
7/14/2025	4.0	10.0	---	12.2	---	---	---	---	---	8.1	5.4
9/17/2025	4.0	10.0	<2.0	13.8	<2.0	---	---	---	---	---	5.1
12/16/2025	4.0	10.0	---	17.4	---	<2.0	9.7	5.2	<2.0	---	---
3/2/2026	4.0	10.0	<2.0	16.2	<2.0	<2.0	9.21	10.6	<2.0	5.21	<2.0

All compounds in ug/L

Cobalt

Date	Prediction Limit	GWPS	MW-7	MW-8	MW-23	MW-26	MW-27	MW-28	MW-29	Sump 2	Sump 3
7/14/2025	2.2	2.2	---	9.3	---	---	---	---	---	<0.5	4.9
9/17/2025	2.2	2.2	<0.5	8.0	<0.5	---	---	---	---	---	4.4
12/16/2025	2.2	2.2	---	7.5	---	2.5	35.1	4.7	1.2	---	---
3/2/2026	2.2	2.2	0.741	7.97	<0.5	2.76	35.8	8.75	0.982	13.5	4.32

All compounds in ug/L

Nickel

Date	Prediction Limit	GWPS	MW-7	MW-8	MW-23	MW-26	MW-27	MW-28	MW-29	Sump 2	Sump 3
7/14/2025	10.5	100	---	160.	---	---	---	---	---	5.3	35.8
9/17/2025	10.5	100	<5.0	133	23.7	---	---	---	---	---	---
12/16/2025	10.5	100	---	127.	---	5.0	185.	8.2	<5.0	---	---
3/2/2026	10.5	100	9.27	135.	<5.0	5.26	194.	8.81	<5.0	24.7	48.1

Figure 4, Figure 5, and Figure 6 are offered as the horizontal delineation of impact by arsenic, cobalt, and nickel, respectively.

Horizontal Delineation of Methane in Groundwater Near MW-8

Based on historic detections of low-level VOC compounds in MW-8 (Appendix E), the potential for landfill gas impacts at MW-8 warrant investigation. Samples were collected for dissolved methane, ethane, and ethene at MW-8, MW-7, MW-23, MW-26, MW-28, MW-29, Sump-2, and Sump-3 during a distinct field event performed on March 2, 2026. MW-27 was not sampled for methane on March 2, 2026, due to a sample container problem. Results from this common sampling event are included on the table below along with methane testing results from a limited number of wells on September 17, 2025. Note that ethane and ethene have not been detected at any sampling point during any sampling event.

2026 Delineation Report

All compounds in ug/L

*Methane**

Date	Prediction Limit	GWPS	MW-7	MW-8	MW-23	MW-26	MW-28	MW-29	Sump 2	Sump 3
9/17/2025	N/A	N/A	11.7	1310	33.2	---	---	---	---	2360
3/2/2026	N/A	N/A	<5.0	1540	<5.0	6410	11200	922	2250	1980

* Ethane & Ethene were undetected.

Figure 7 is offered as the horizontal delineation of impact by methane. Appreciable concentrations of methane are reported at MW-8, MW-26, MW-28, MW-29 Sump-2, and Sump-3. Dissolved methane was undetected at MW-23 and MW-7.

Based on the geologic data and the water quality data presented, the horizontal limits are well defined to the east but remain poorly defined to the south (the two (2) primary directions of flow).

Vertical Delineation in Groundwater Near MW-8

Figure 8 and Figure 9 illustrate the North-South Cross Section A-A' which runs through MW-8. Figure 10 and Figure 11 illustrate the East-West Cross Section B-B' which runs through MW-8. The cross sections include ground surface, the water table, the well sections, and the approximate location of the waste mass relative to MW-8.

The interpreted limits of the arsenic, cobalt, nickel, and methane impact are illustrated on the cross sections Figure 8, Figure 9, Figure 10, and Figure 11. The limits of impact are based on water quality testing results March 2, 2026. Summary tables of the arsenic, cobalt, nickel, and methane results and the GWPS are included on Figure 8, Figure 9, Figure 10, and Figure 11.

The vertical delineation is well defined. MW-7 and MW-29, screened below the other monitoring points in the area of interest do not indicate any arsenic, cobalt, or nickel concentrations above a prediction limit, let alone a GWPS.

Characterization of Subsurface Conditions

Water was collected at monitoring points in the study area on July 14, 2025 (prior to installation of MW-26, MW-27, MW-28, and MW-29). The groundwater was analyzed in the field for temperature, dissolved oxygen, specific conductance, pH, and oxidation-reduction potential (ORP) to characterize subsurface conditions in the study area. A summary of the testing results is presented in the table below.

2026 Delineation Report

Monitoring Point	Temperature Degrees C	Dissolved Oxygen (%)	Dissolved Oxygen (mg/L)	Specific Conductance (us/cm)	pH	Oxidation-Reduction Potential (mv)
MW-7	12.4	12.0	1.35	4.3	7.02	-75.6
MW-8	12.9	3.6	0.38	3111	6.39	-79.6
Sump-2	19.6	16.1	1.42	636	7.13	-124.1
Sump-3	20.2	44.9	4.09	2272	6.55	-87.8
Pond	21.1	63.2	5.61	539	6.91	+1.5
MW-23	11.1	6.7	0.73	1233	6.37	+36.6

Review of the field data indicates that the dissolved oxygen concentration is lowest at MW-8. Generally, dissolved oxygen content increases from west to east in the study area, likely related to the proximity to the open water body (pond). It is also noted that MW-7 (clustered with MW-8) is screened deeper than MW-8 and has a higher dissolved oxygen content.

The specific conductance suggests that the greatest concentration of dissolved solids is recorded at MW-8, Sump-3, and MW-23.

The pH is described as neutral to slightly below neutral (acidic). The lowest pH is recorded at MW-8, Sump-3, and MW-23.

The oxygen-reduction potential (ORP) demonstrates reducing conditions (negative ORP) throughout the study area, except at MW-23 and in the pond.

MW-8 is the only monitoring point in the study area where both oxygen and pH are low while the ORP is negative.

Water Quality Evaluation of MW-8

An evaluation of the arsenic, cobalt, and nickel concentration compared to water elevation (available water column in MW-8) was submitted to IDNR on June 28, 2024 (Doc #110337). An inverse correlation between water column thickness and compound concentration appears to exist related to arsenic and nickel, but no correlation is observed for cobalt.

Table 10 from the 2025 Annual Water Quality Report (Doc #115958) is included in Appendix F. Table 10 illustrates the Confidence Intervals for arsenic, cobalt, and nickel at MW-8 relative to the GWPS.

Review of Table 10 (Appendix F) indicates that for the past four (4) sample collection

2026 Delineation Report

events the 95% LCL has dropped below the GWPS for arsenic and nickel. The 95% LCL for cobalt has consistently remained above the GWPS.

Supplemental Landfill Gas Study - Closed Landfill

On October 8, 2025 and October 9, 2025 seven (7) gas vents were installed in the south slope of the closed landfill (Figure 1). Each vent was excavated into the closed landfill using a backhoe. Each vent excavation extended approximately 9.5 feet below grade. The vent consists of 4-inch diameter machine slotted screen placed at the bottom of the excavation with solid-wall riser pipe extending to several feet above ground surface. The annular space in the waste was backfilled with pea gravel to a depth slightly above the screen, near the bottom of the landfill cap (approximately 4 feet below grade). Bentonite chips were placed to fill the annular space above the pea gravel and to reestablish the low-permeability landfill cap performance and to seal the granular backfill in the waste. Clay soil was used to fill the annular space in each vent above the bentonite to the ground surface. Logs and vent construction diagrams are included in Appendix G.

Explosive gas monitoring of the seven (7) vents was performed March 2, 2026, and is summarized in the Table below.

The closed Landfill waste mass is actively venting landfill gas and confirms the presence of sufficient gas pressure in the waste to ventilate passively.

Vent	Screen Top Elevation	Water Elevation	Feet of Screen Exposed	Measured Gas Concentration (%LEL)
GV-1	1063.7	1059.2	4.5	83.7
GV-2	1063.2	1058.7	4.5	84.7
GV-3	1061.3	1056.8	4.5	31.0
GV-4	1052.9	1048.4	4.5	15.5
GV-5	1051.8	1047.3	4.5	37.6
GV-6	1049.0	1044.5	4.5	79.9
GV-7	1043.7	1039.2	4.5	90.6

2026 Delineation Report

Conclusions

It is documented that MW-7 and MW-8 are located at distances less than 50 feet from the waste boundary along the south side of the landfill. It is also apparent that the temporary monitoring wells MW-26, MW-27, MW-28, and MW-29 are also located at distances less than 50 feet from the waste boundary along the south side of the site.

Soil sampling during installation of MW-26, MW-27, and MW-28 confirmed the presence of solid waste at the drilled locations (very near the south property line).

Groundwater is confirmed to demonstrate south and southeast components of flow based on water elevation data collected March 2, 2026.

The horizontal delineation is considered to be complete to the east of MW-8 but remains undetermined to the south of the current waste boundary.

The vertical delineation is considered complete and does not extend any appreciable depth below the screened interval elevation at MW-8 (elevation 1009 ft).

Methane dissolved in water is detected throughout the study area.

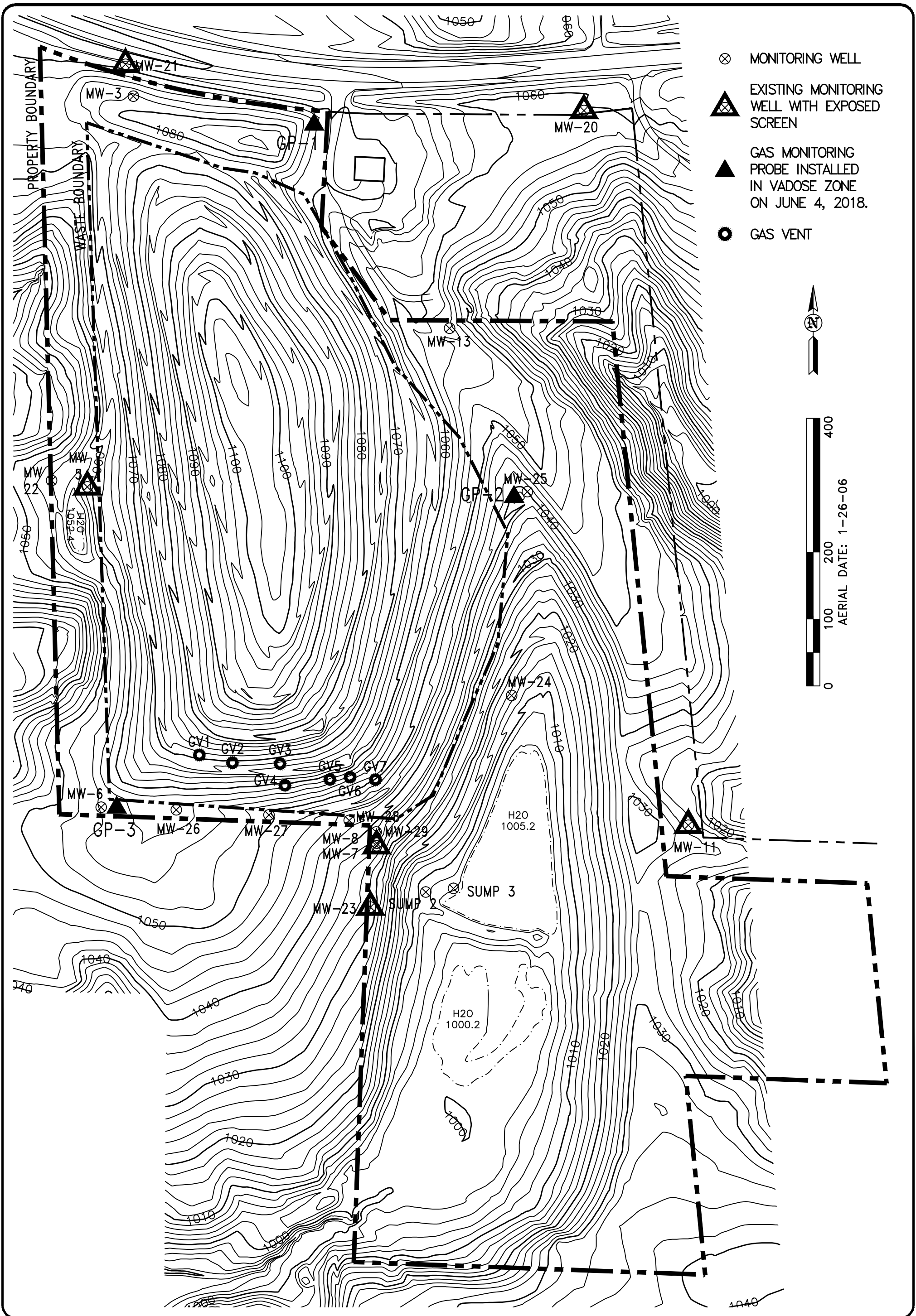
Characterization of the subsurface conditions in the study area indicate a reducing environment. The reducing environment does not appear to extend great distances to the south or beyond the pond to the east.

Landfill gas can be passively vented through the landfill cap as demonstrated at gas vent GV-1 through GV-7 installed October 8, 2025, and October 9, 2025.

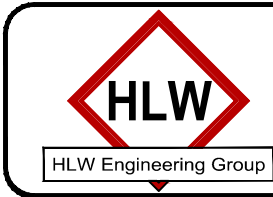
Recommendations

It is recommended that potholes or trenches be excavated along the south property line to determine whether the MSW encountered at MW-26 and MW-27 is contiguous with the waste mass in the landfill or exists as an isolated and accidental fill area at the site. It is plausible that MSW was used to fill a former ditch or low area during operation of the site. The excavated potholes will be useful in better defining the south waste boundary.

Continue to define the horizontal limits of arsenic, cobalt, and nickel concentrations to the south of the site prior to the IDNR imposed deadline of December 31, 2027 and in accordance with Iowa Administrative Code (IAC) 567, Chapter 113.10(6)"g". Once defined, the Assessment of Corrective measures should be completed in accordance with IAC 567, Chapter 113.10(7).



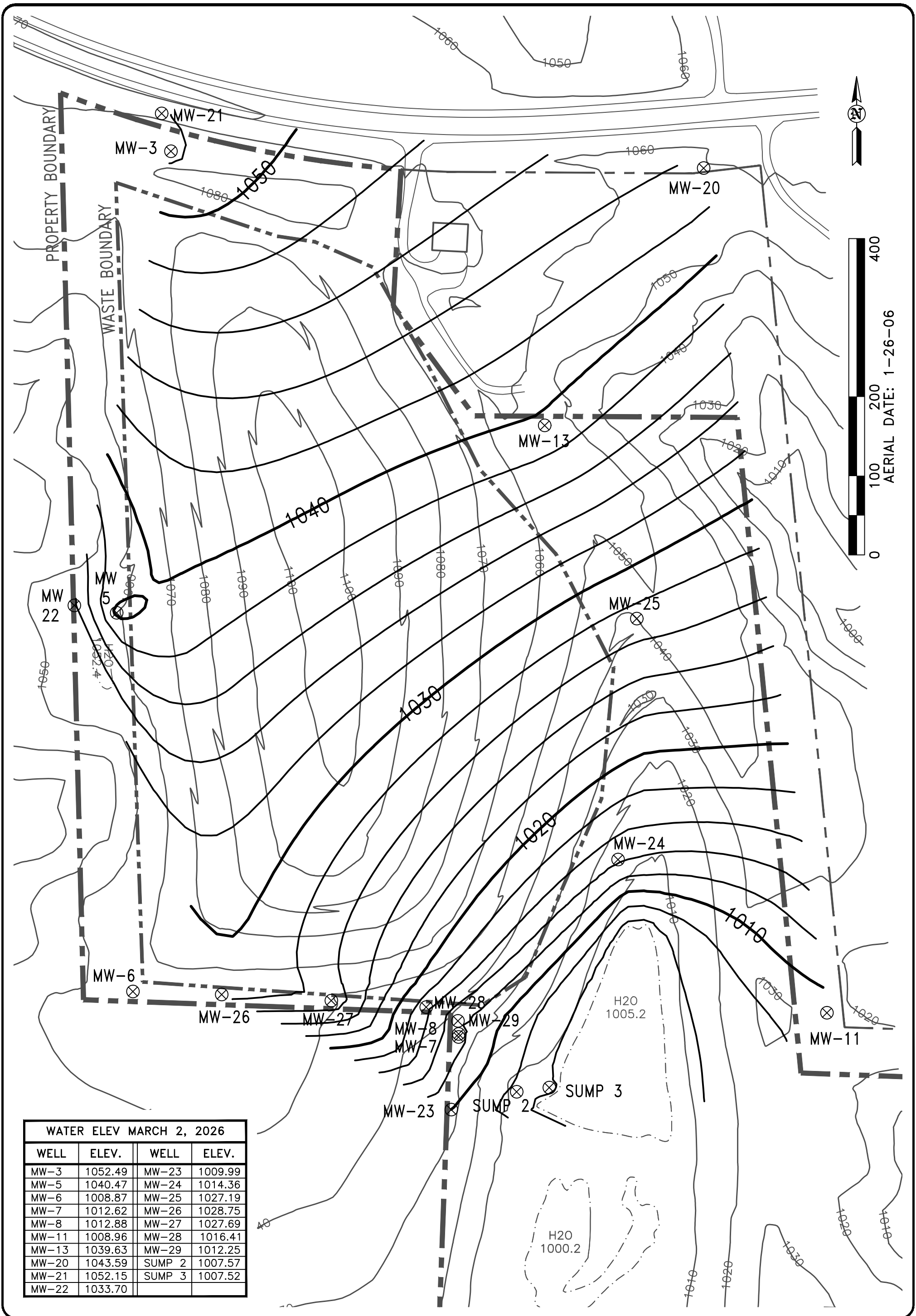
- ⊗ MONITORING WELL
- ▲ EXISTING MONITORING WELL WITH EXPOSED SCREEN
- ▲ GAS MONITORING PROBE INSTALLED IN VADOSE ZONE ON JUNE 4, 2018.
- ⊙ GAS VENT

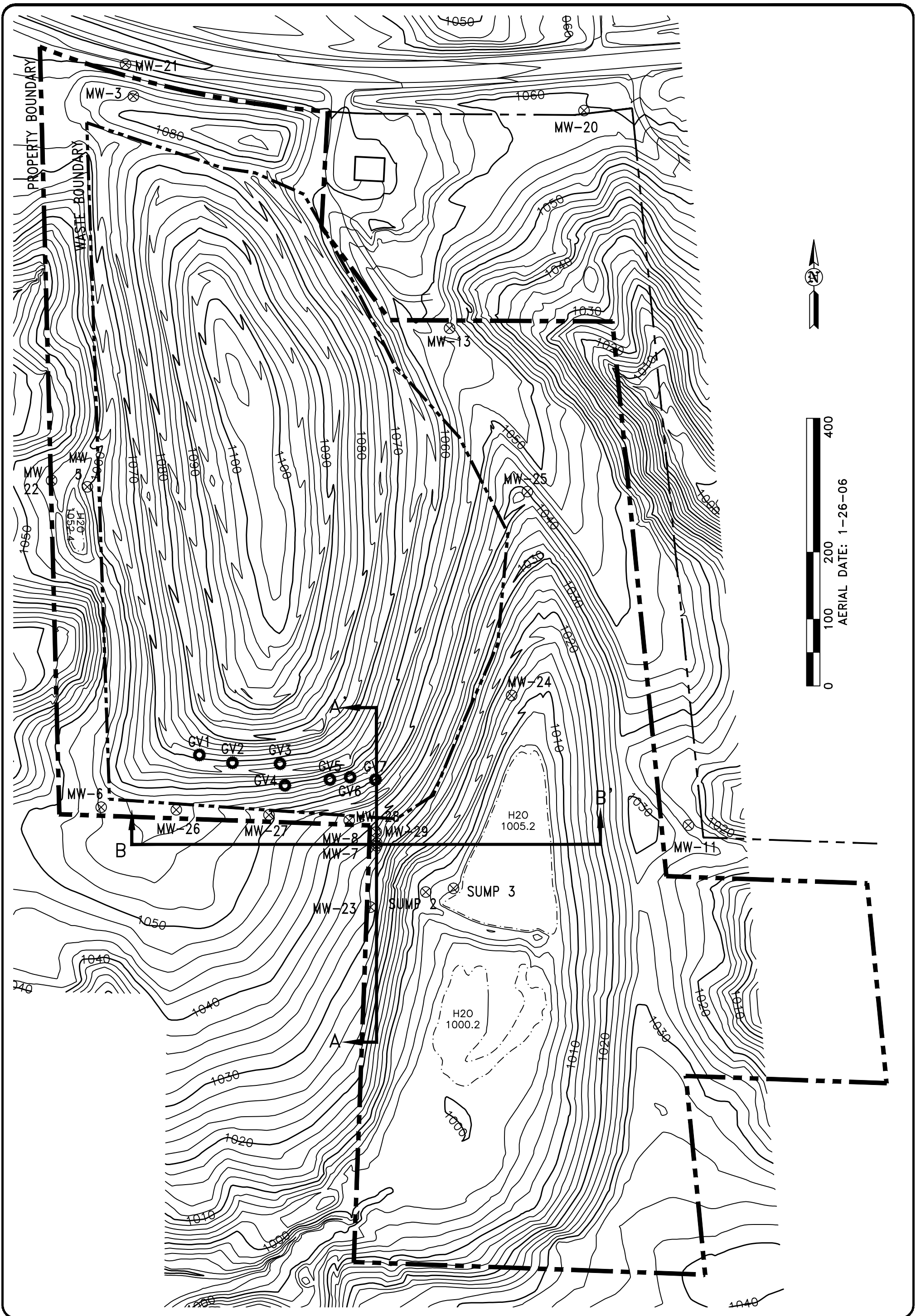



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146

SITE PLAN
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

FIGURE:		1
REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6039	DATE 4-3-26



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146

SITE PLAN
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

FIGURE:		3
REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6039	DATE 4-3-26

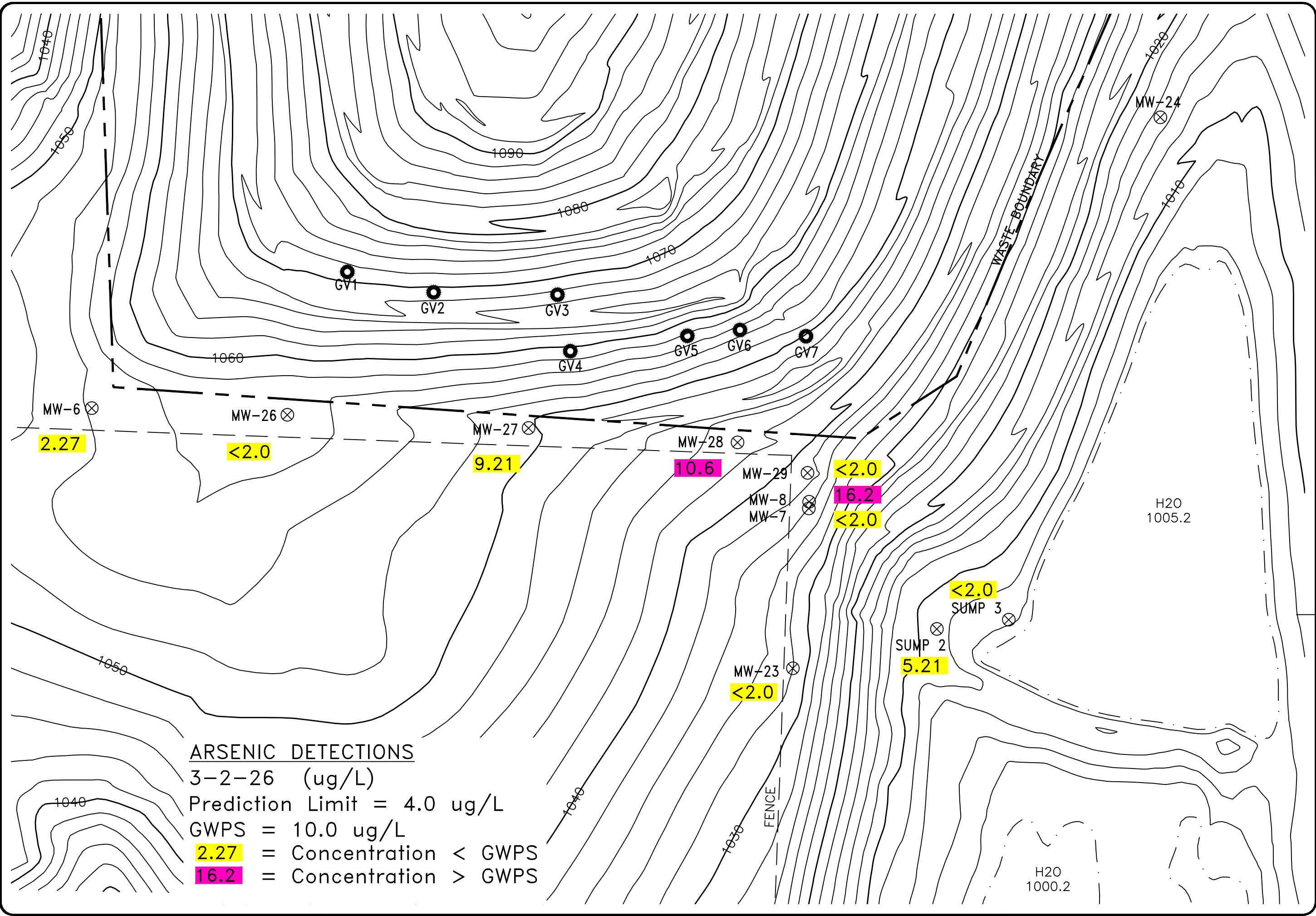
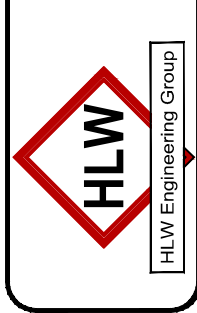


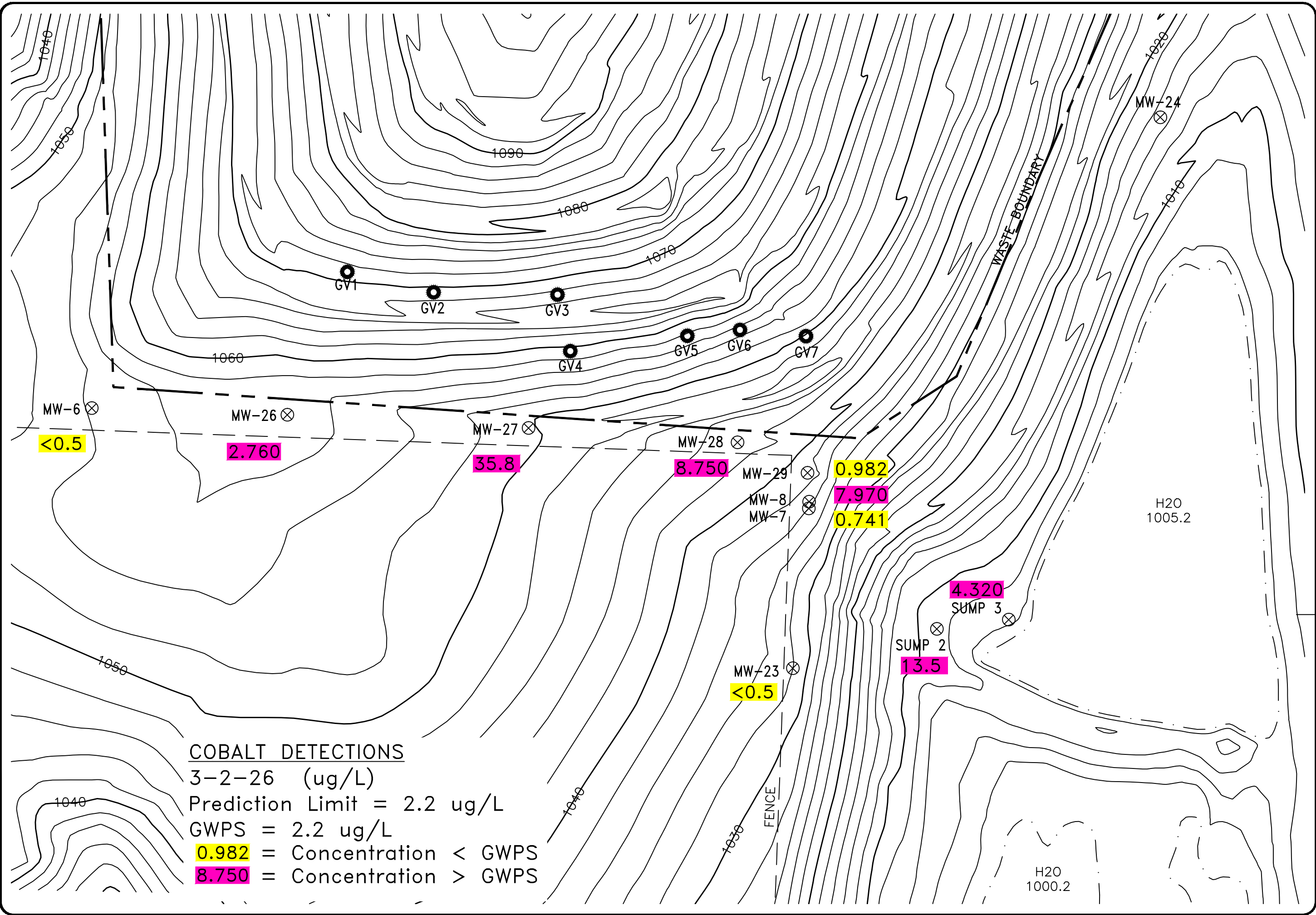
FIGURE: 4

REVISION	NO.	DATE
DRAWN	PROJECT NO. 6039	DATE 4-3-26
DRA		

HORIZONTAL DELINEATION
ARSENIC
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146



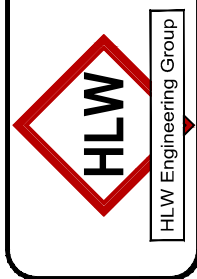


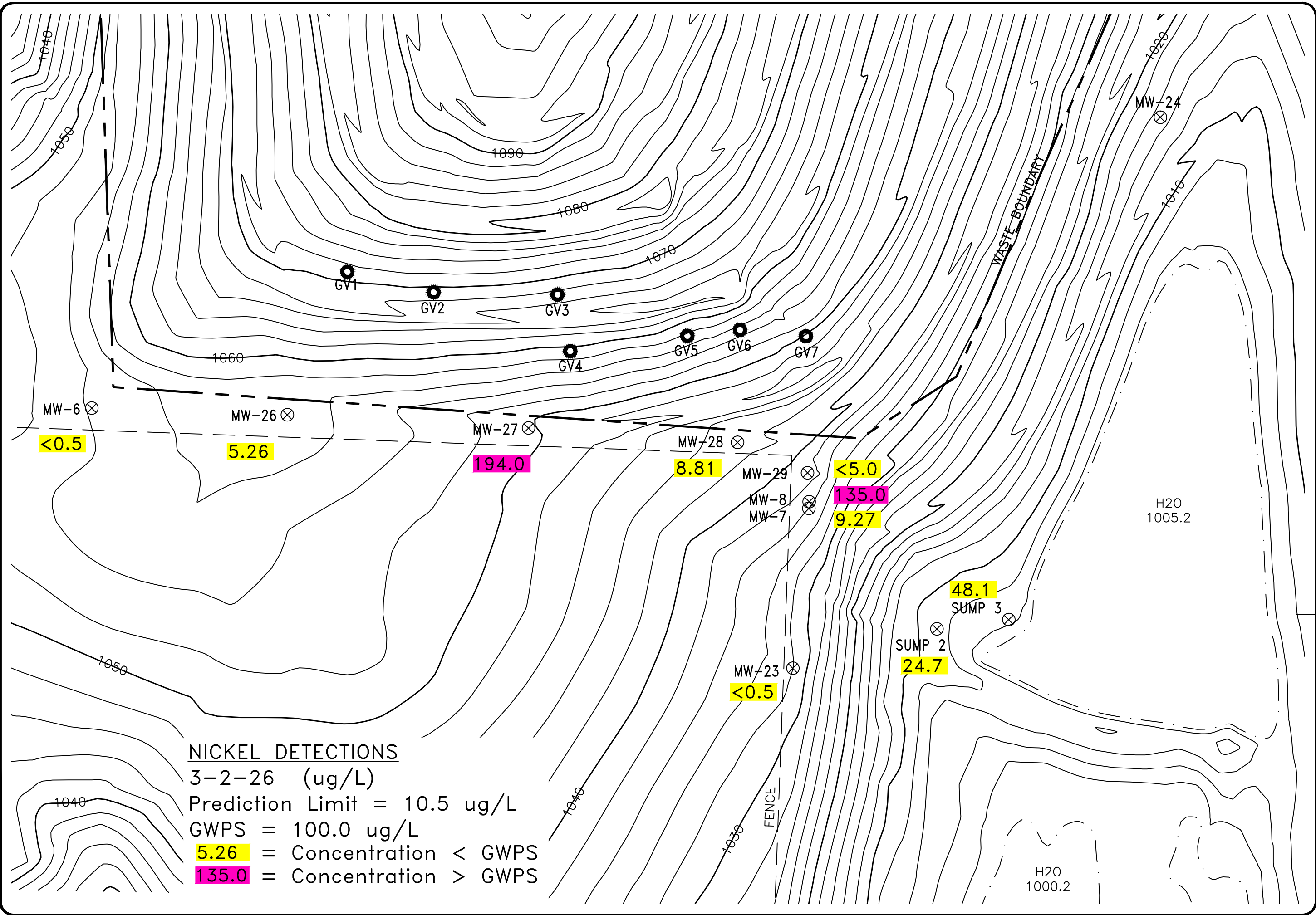
REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6039	4-3-26

FIGURE: 5

HORIZONTAL DELINEATION
COBALT
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146





NICKEL DETECTIONS

3-2-26 (ug/L)

Prediction Limit = 10.5 ug/L

GWPS = 100.0 ug/L

5.26 = Concentration < GWPS

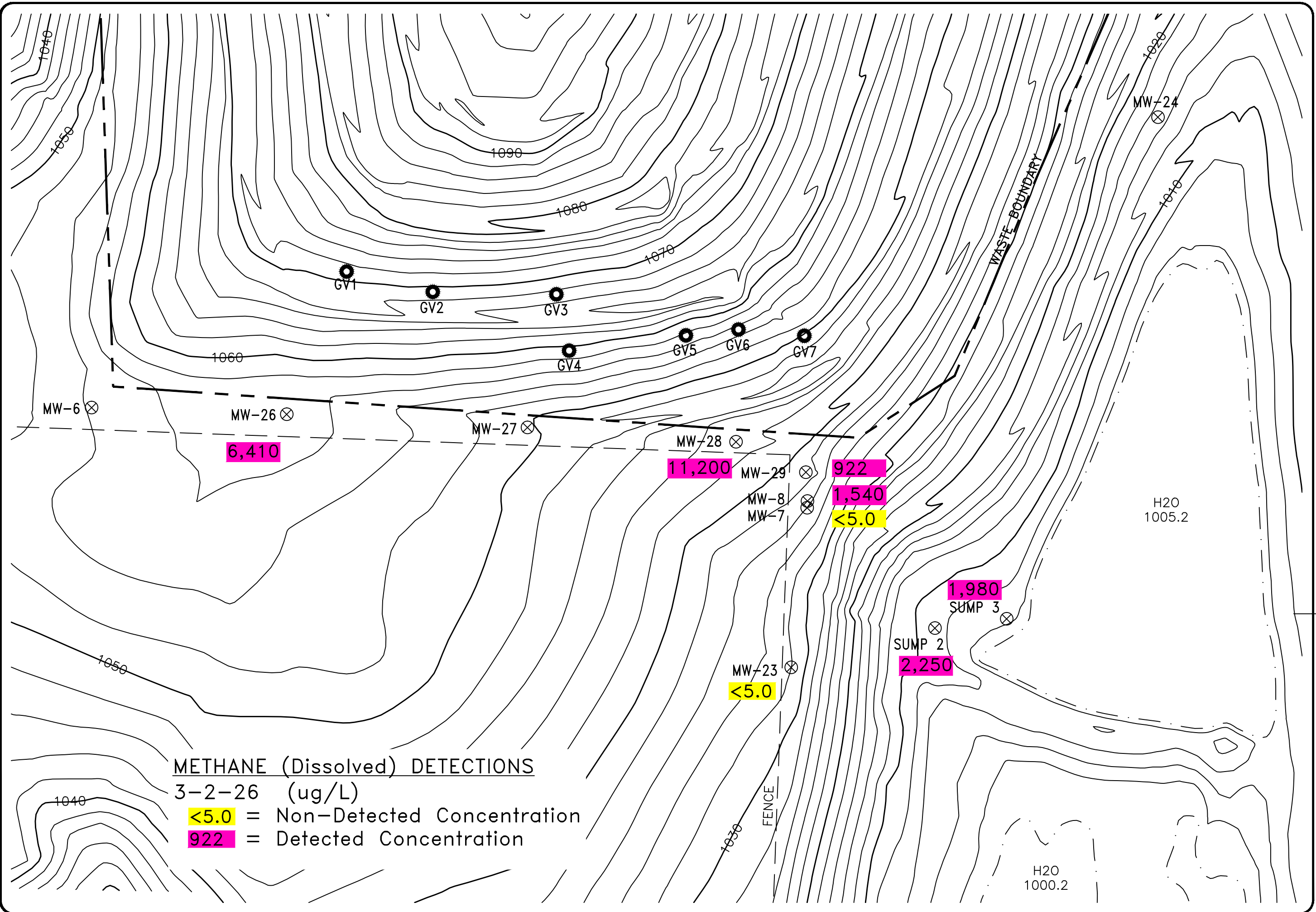
135.0 = Concentration > GWPS

**HORIZONTAL DELINEATION
NICKEL
DELAWARE COUNTY SANITARY LANDFILL
DELHI, IOWA**

HLW Engineering Group
204 West Broad Street, P.O. Box 314
Story City, Iowa 50248
Phone: (515) 733-4144
FAX: (515) 733-4146



FIGURE: 6		NO.	DATE
REVISION	DRAWN	PROJECT NO.	DATE
	DRA	6039	4-3-26



METHANE (Dissolved) DETECTIONS

3-2-26 (ug/L)

<5.0 = Non-Detected Concentration

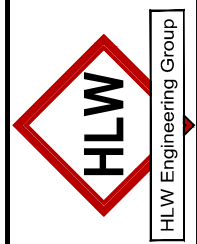
922 = Detected Concentration

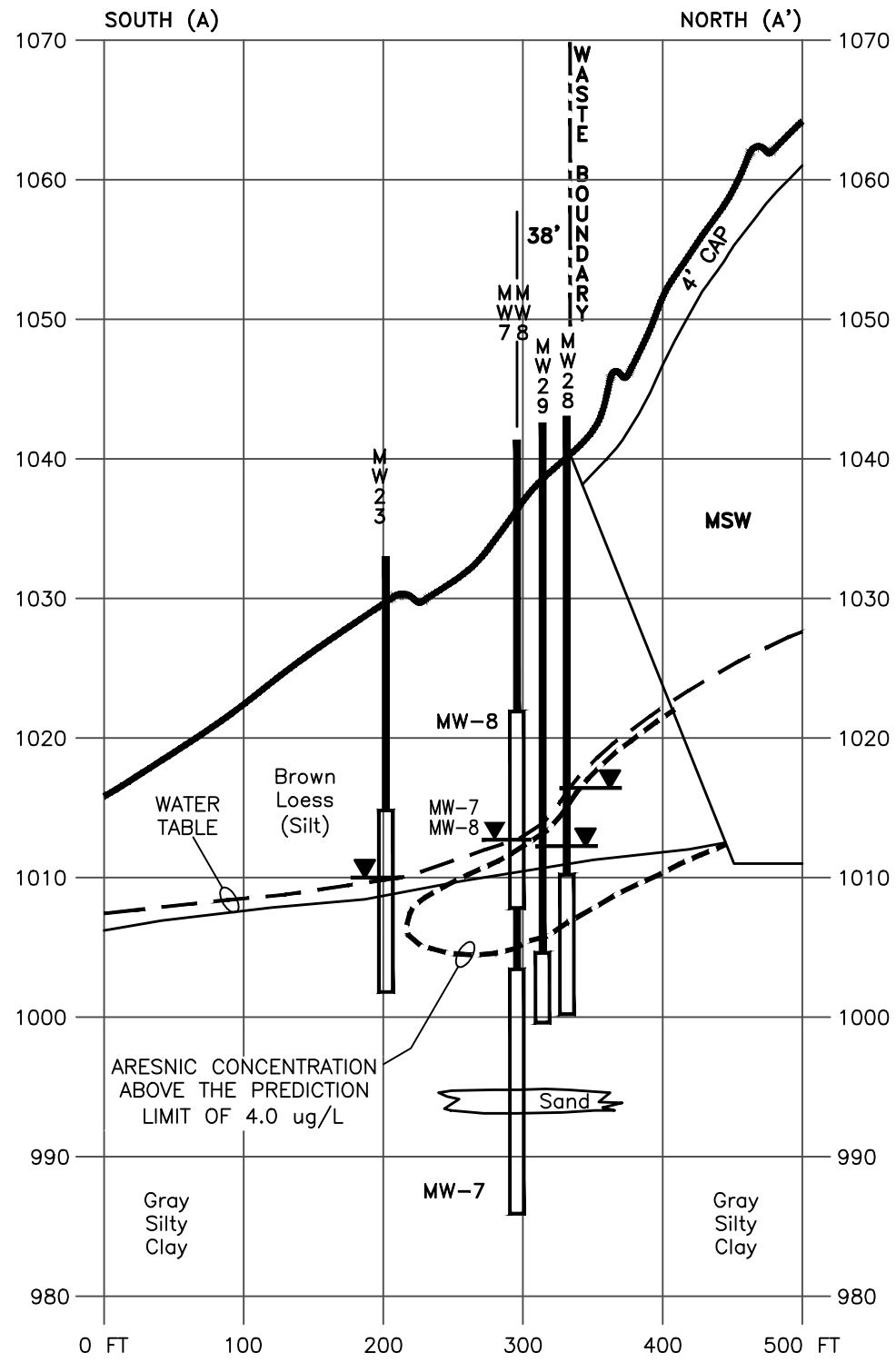
FIGURE: 7

REVISION	NO.	DATE
DRAWN	PROJECT NO. 6039	DATE 4-3-26
DRA		

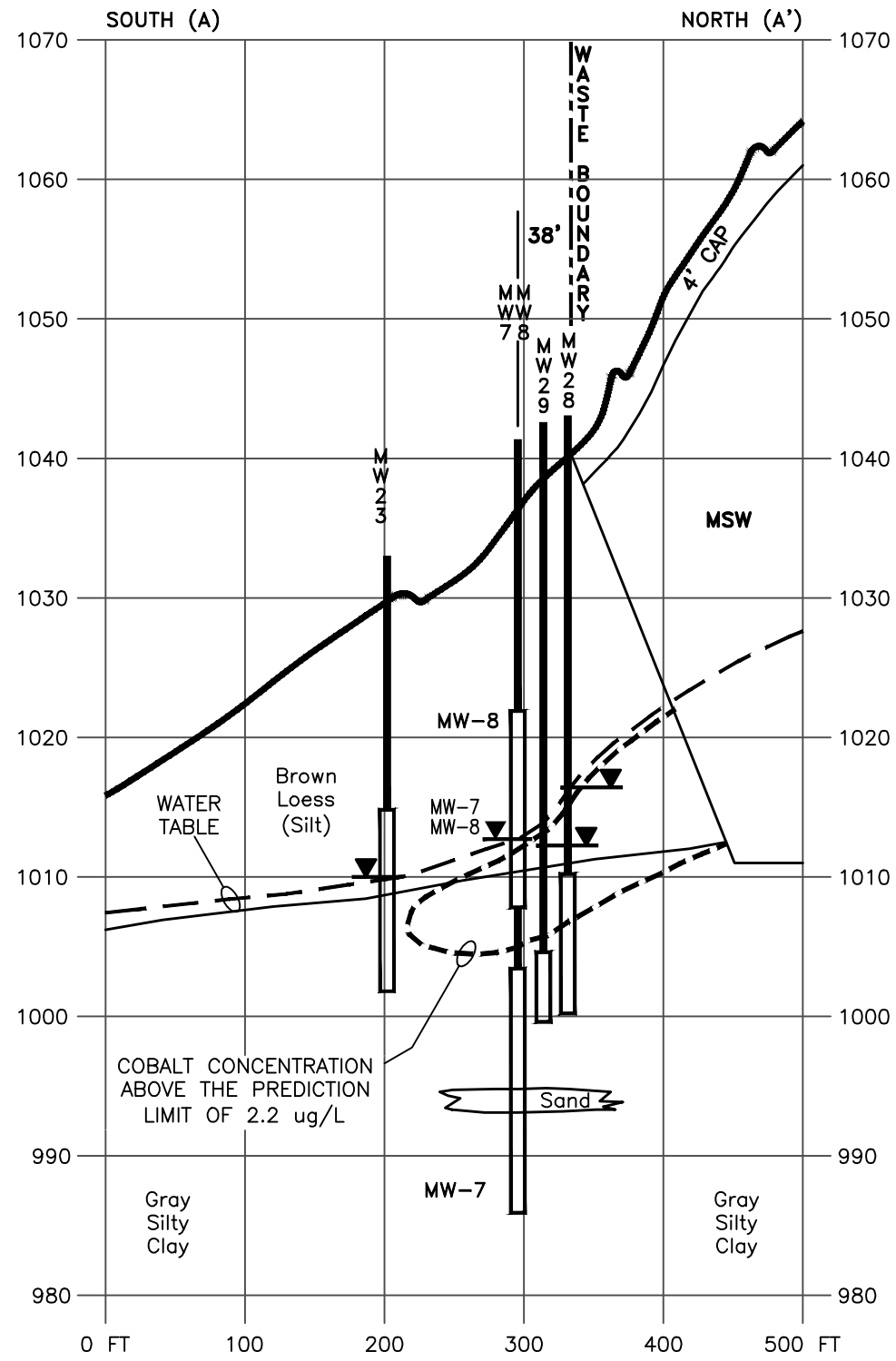
HORIZONTAL DELINEATION
METHANE
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146





ARESNIC RESULTS (ug/L)						
DATE	MW-7	MW-8	MW-23	MW-28	MW-29	GWPS
3-2-26	<2.0	16.2	<2.0	10.6	<2.0	10.0



COBALT RESULTS (ug/L)						
DATE	MW-7	MW-8	MW-23	MW-28	MW-29	GWPS
3-2-26	0.741	7.970	<0.5	8.750	0.982	2.2

NOTES:
 MW-28 IS BEHIND SECTION.
 VIEW LOOKING WEST.
 ELEVATIONS HAVE BEEN SCALED UP BY A FACTOR OF 10.

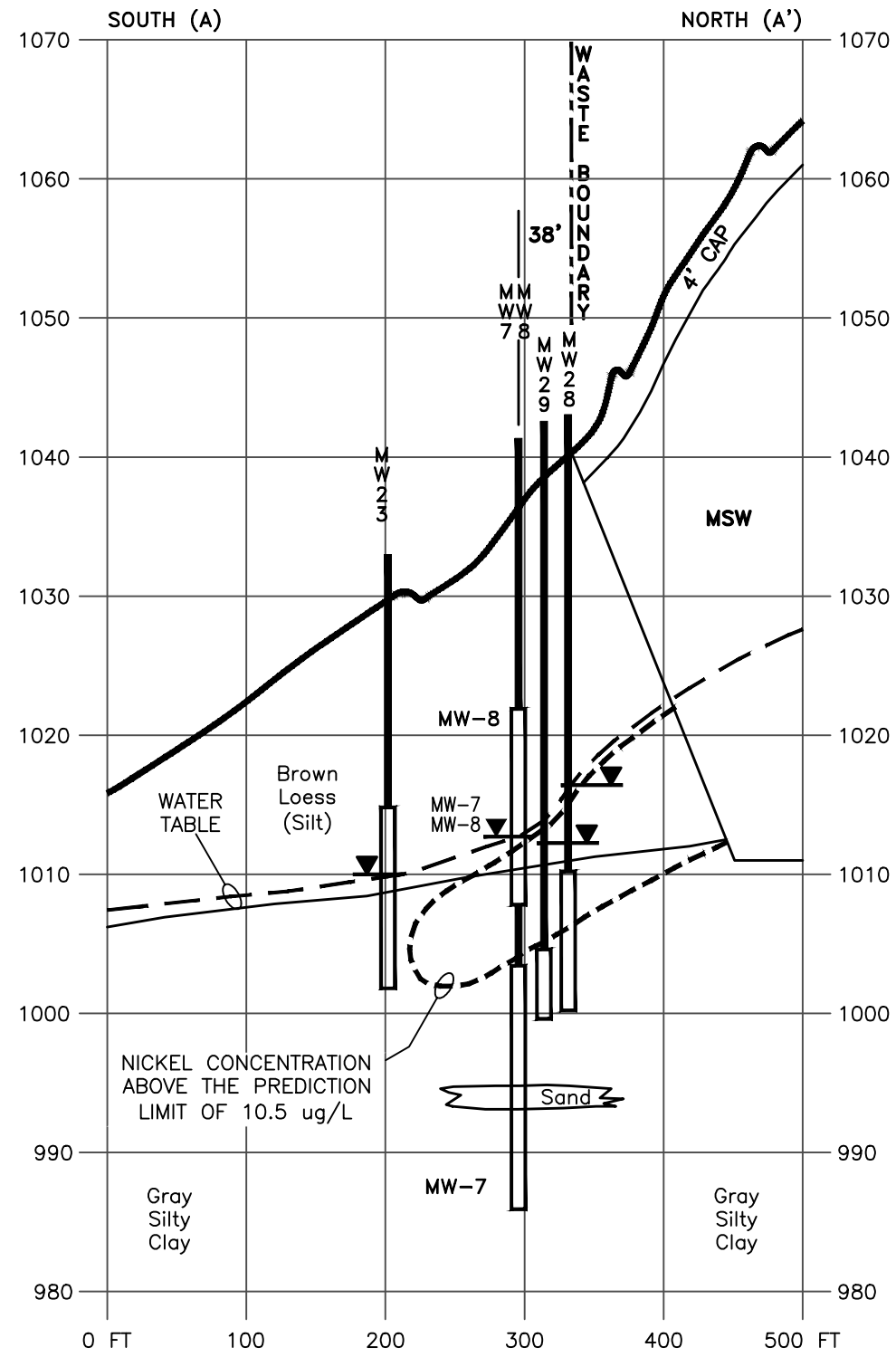
CROSS SECTION A-A
 ARESNIC & COBALT
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146

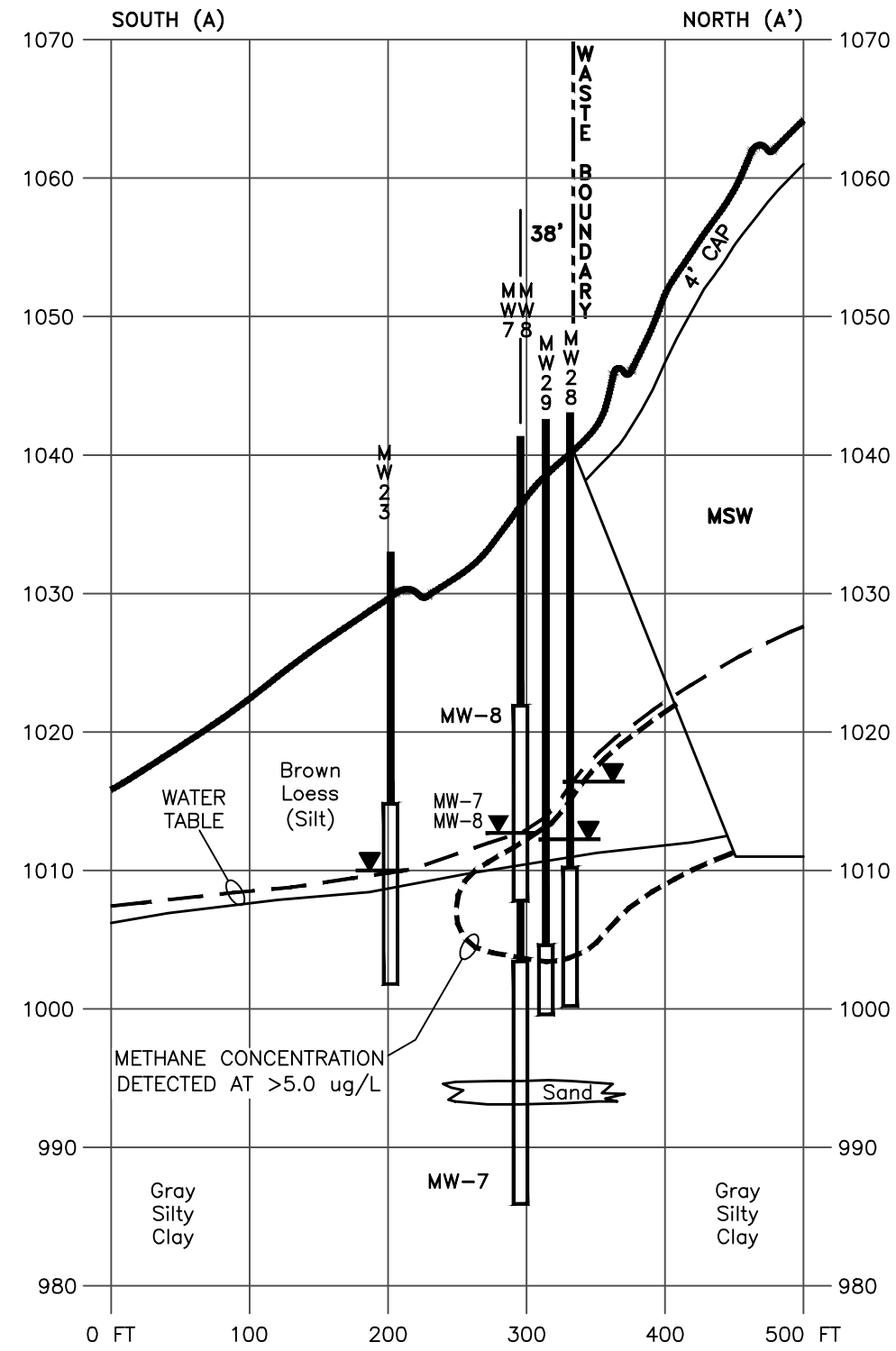


FIGURE: 8

REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6039	4-3-26



NICKEL RESULTS (ug/L)						
DATE	MW-7	MW-8	MW-23	MW-28	MW-29	GWPS
3-2-26	9.27	135.0	<5.0	8.81	<5.0	100.



METHANE RESULTS (ug/L)						
DATE	MW-7	MW-8	MW-23	MW-28	MW-29	GWPS
3-2-26	<5.0	1540.	<0.5	11,200.	922.	-

NOTES:
 MW-28 IS BEHIND SECTION.
 VIEW LOOKING WEST.
 ELEVATIONS HAVE BEEN SCALED UP BY A FACTOR OF 10.

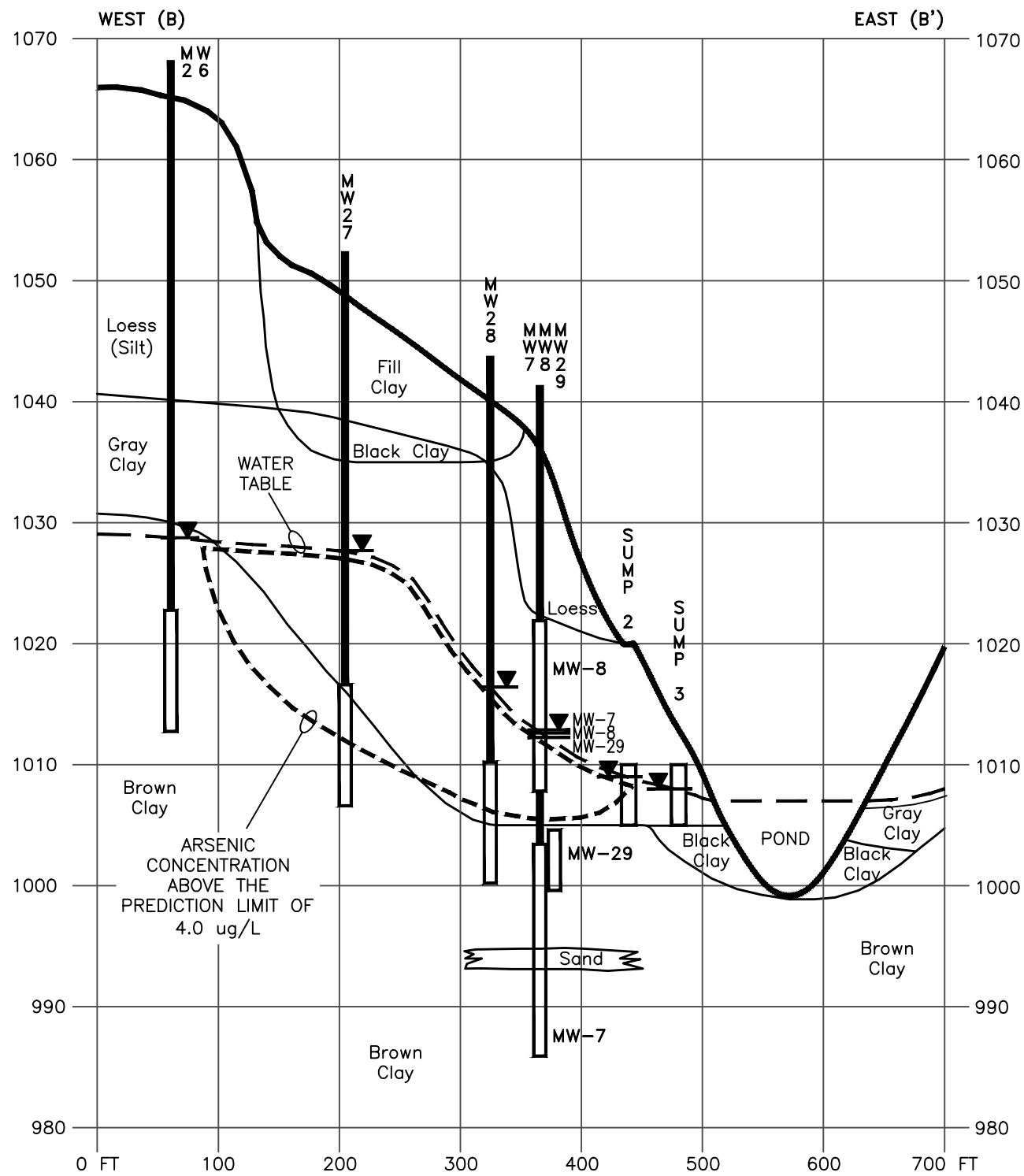
FIGURE: 9

CROSS SECTION A-A
 NICKEL & METHANE
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

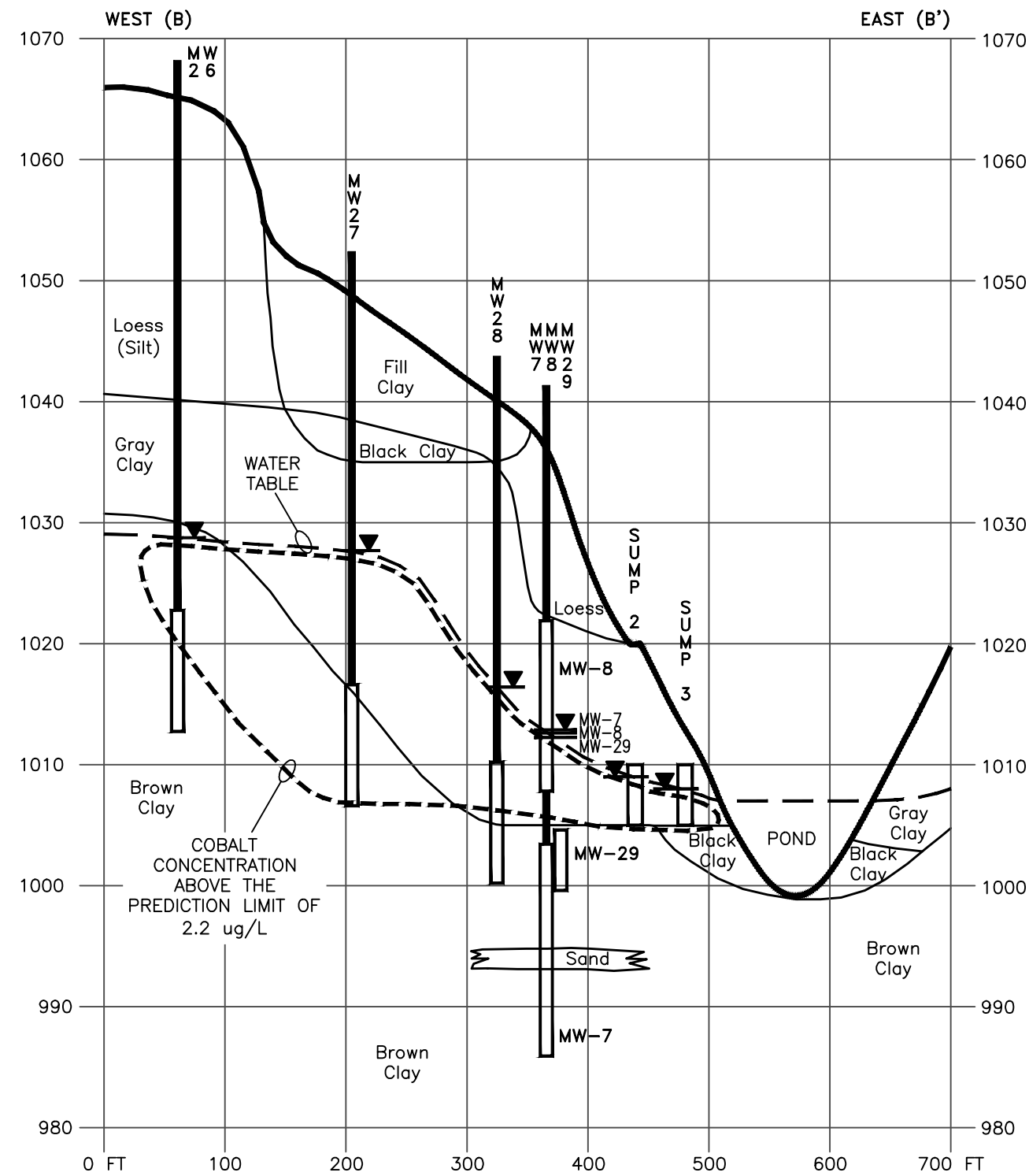
HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146



REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6039	4-3-26



ARSENIC RESULTS (ug/L)									
DATE	MW-7	MW-8	MW-26	MW-27	MW-28	MW-29	SUMP 2	SUMP 3	GWPS
3-2-26	<2.0	16.2	<2.0	9.21	10.6	<2.0	5.21	<2.0	10.0



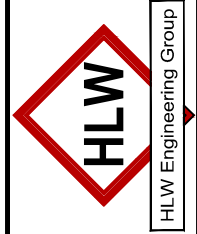
COBALT RESULTS (ug/L)									
DATE	MW-7	MW-8	MW-26	MW-27	MW-28	MW-29	SUMP 2	SUMP 3	GWPS
3-2-26	0.741	7.970	2.760	35.8	8.750	0.982	13.5	4.320	2.2

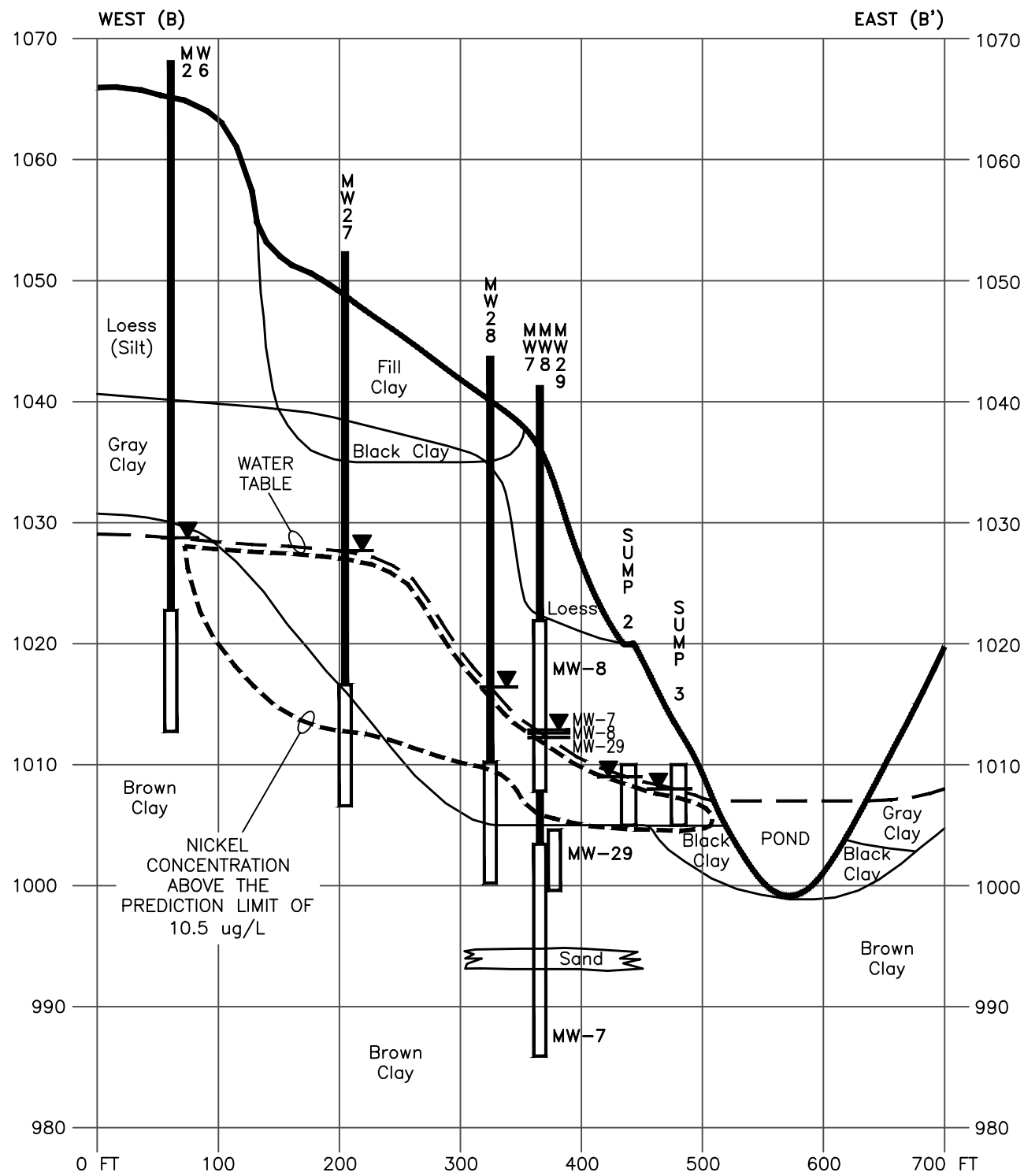
NOTES:
 MW-23, SUMPS 2 AND 3 ARE AHEAD OF SECTION.
 MW-26, 27, 28 AND 29 ARE BEHIND SECTION.
 VIEW LOOKING WEST.
 ELEVATIONS HAVE BEEN SCALED UP BY A FACTOR OF 10.

REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6039	4-3-26

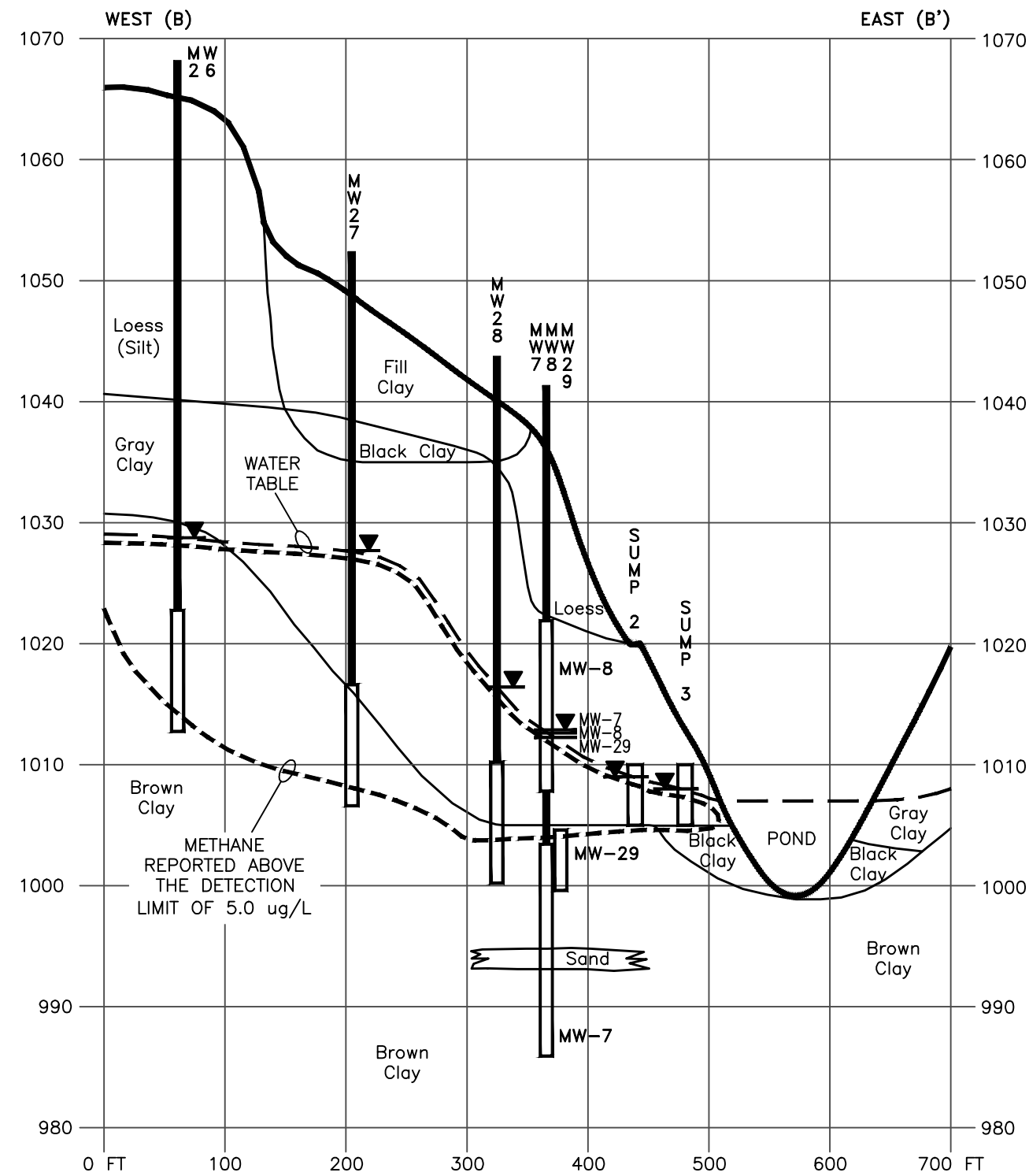
FIGURE: 10
 CROSS SECTION B-B
 ARSENIC & COBALT
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146





NICKEL RESULTS (ug/L)									
DATE	MW-7	MW-8	MW-26	MW-27	MW-28	MW-29	SUMP 2	SUMP 3	GWPS
3-2-26	9.27	135.0	5.26	194.0	8.81	<5.0	24.7	48.1	100.



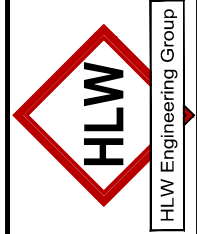
METHANE RESULTS (ug/L)									
DATE	MW-7	MW-8	MW-26	MW-27	MW-28	MW-29	SUMP 2	SUMP 3	GWPS
3-2-26	<5	1540.	6410	NT	11,200	922.	2250	1980	-

NOTES:
 MW-23, SUMPS 2 AND 3 ARE AHEAD OF SECTION.
 MW-26, 27, 28 AND 29 ARE BEHIND SECTION.
 VIEW LOOKING WEST.
 ELEVATIONS HAVE BEEN SCALED UP BY A FACTOR OF 10.

REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6039	4-3-26

FIGURE: 11
 CROSS SECTION B-B
 NICKEL & METHANE
 DELAWARE COUNTY SANITARY LANDFILL
 DELHI, IOWA

HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146



APPENDIX A

Sump Logs and Construction Diagrams



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Installed By: TDW Boring No. Sump-1 HLW Observer TDW
 HLW Project No. 6039-23A.200

Date Installed April 8, 2024 Project Delaware County Sanitary Landfill
 Surface Elevation 1010.3 ft/TOP PVC 1012.23 ft 28-SDP-01-74C
 Depth Installed 3.13 FT
 Install Method Hand Auger
 Depth to Water 5.0 ft @ completion (▽), 5.0 ft @ 8 wks.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
1.95'	2" PVC Plastic Wrap							DESTROYED
0								
1	Clay	Spin up and Cuttings		Brown and Gray Mottled	Moist	Firm		Silty Clay
2	Sand Pack							
3	End of Boring @ 3.13'							
4	<ul style="list-style-type: none"> - 0.006 Inch slot screen. 5.0 ft length. - End cap on bottom. - Plastic wrapped screen above sand pack. - Sand Pack - Granusil Filter Sand 4095. - Total length PVC = 5.08 ft. 							



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Installed By: TDW Boring No. Sump-2 HLW Observer TDW
 HLW Project No. 6039-23A.200

Date Installed April 8, 2024 Project Delaware County Sanitary Landfill
 Surface Elevation 1008.6 ft/TOP PVC 1010.27 ft 28-SDP-01-74C
 Depth Installed 3.60 FT
 Install Method Hand Auger
 Depth to Water 4.55 ft @ completion (▽), 3.45 ft @ 8 wks.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
1.70'	2" PVC Plastic Wrap							
1	Clay	Spin up and Cuttings		Brown and Gray Mottled	Moist	Firm		Silty Clay
2	Sand Pack							
End of Boring @ 3.60'								
4	<ul style="list-style-type: none"> - 0.006 Inch slot screen. 5.0 ft length. - Well point on bottom. - Plastic wrapped screen above sand pack. - Sand Pack - Granusil Filter Sand 4095. - Total length PVC = 5.08 ft. 							



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Installed By: TDW Boring No. Sump-3 HLW Observer TDW
 HLW Project No. 6039-23A.200

Date Installed April 8, 2024 Project Delaware County Sanitary Landfill
 Surface Elevation 1008.3 ft/TOP PVC 1009.83 ft 28-SDP-01-74C
 Depth Installed 3.65 FT
 Install Method Hand Auger
 Depth to Water 5.15 ft @ completion (▽), 4.04 ft @ 8 wks(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
1								
0								
1				Brown and Gray Mottled	Moist	Firm	1	Silty Clay
2				Black				
3								

End of Boring @ 3.65'

- 0.006 Inch slot screen. 5.0 ft length.
- Well point on bottom.
- Plastic wrapped screen above sand pack.
- Sand Pack - Granusil Filter Sand 4095.
- Total length PVC = 5.2 ft.

APPENDIX B

Soil Boring Logs



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Drillers Terracon - Cedar Rapids Boring No. MW-26 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/08/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1056.9 FT 28-SDP-01-74C
 Depth Drilled 45 FT SOUTH SIDE DELINEATION NEAR MW-8
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 29 ft @ 12 hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION				
		NO.	TYPE									
0		1	SS	Brown and Gray Mottled	Moist	Firm	10	Fill: Silty Clay Tracked MSW				
		2	SS									
		3	SS									
		4	SS									
10		5	SS	Gray				Stiff	26	Silt (Loess) Tracked MSW		
		6	SS									
		7	SS									
		8	SS	Brown and Gray						Very Moist	28	Very Silty Clay
20		9	SS									
		10	SS									
		11	SS									
		12	SS									
		13	SS									
		14	SS		Brown	42	Silty Clay, Trace Sand and Small Gravel					
30		15	SS									
		16	SS									
		17	SS									
		18	SS									
		19	SS									
		20	SS									
40		21	SS									
		22	SS									
		23	SS									

SS - Split Spoon Sampler E.O.B. @ 45 FT (1011.9)



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

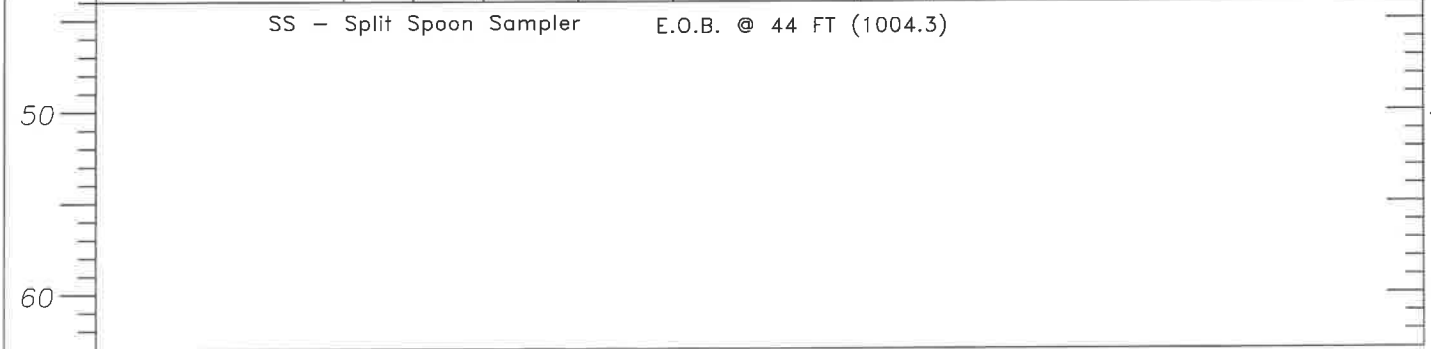
LOG OF TEST BORING

Drillers Terracon - Cedar Rapids Boring No. MW-27 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/08/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1049.3 FT 28-SDP-01-74C
 Depth Drilled 44 FT SOUTH SIDE DELINEATION NEAR MW-8
 Drilling Method HOLLOW STEM AUGER
 Depth to Water _____ ft @ completion (▽), 29 ft @ 12 hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION					
		NO.	TYPE										
0		1	SS	Brown	Damp	Firm	5	Fill: Clay					
		2	SS					Gray	Moist	12	Fill: Silty Clay Trace Sand		
		3	SS								Black	Wet	16
		4	SS	Moist	33	Silty Clay, Trace Sand and Small Gravel							
		5	SS				Brown						
		6	SS										
		7	SS										
		8	SS										
		9	SS										
		10	SS										
		11	SS										
		12	SS										
		13	SS										
		14	SS										
		15	SS										
		16	SS										
		17	SS										
		18	SS										
		19	SS										
		20	SS										
		21	SS										
		22	SS										

SS - Split Spoon Sampler E.O.B. @ 44 FT (1004.3)





HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Drillers Terracon - Cedar Rapids Boring No. MW-28 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/09/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1043.0 FT 28-SDP-01-74C
 Depth Drilled 44 FT SOUTH SIDE DELINEATION NEAR MW-8
 Drilling Method HOLLOW STEM AUGER
 Depth to Water Dry ft @ completion (▽), Dry ft @ 6 hrs.(▼), 34.6 ft @ 1 week.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0		1	SS	Brown and Gray	Damp	Firm	8	Fill: Silt and Silty Clay Trace MSW at 6 ft
		2	SS					
		3	SS					
		4	SS					
10		5	SS	Gray	Moist	Soft/Medium	8	Very Silty Clay
		6	SS					
		7	SS					
		8	SS					
		9	SS					
		10	SS					
		11	SS					
		12	SS					
		13	SS					
		14	SS					
		15	SS					
		16	SS					
		17	SS					
		18	SS					
		19	SS					
		20	SS					
		21	SS					
		22	SS	Dark Brown	Stiff	29	30	Silty Clay, Trace Sand and Small Gravel
							42	

SS - Split Spoon Sampler E.O.B. @ 44 FT (999.0)



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

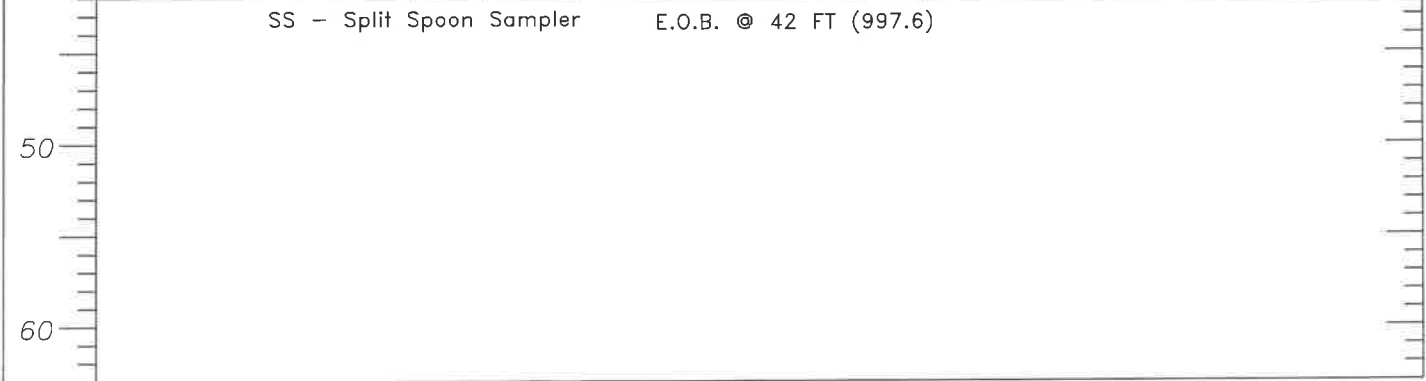
LOG OF TEST BORING

Drillers Terracon - Cedar Rapids Boring No. MW-29 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/09/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1039.6 FT 28-SDP-01-74C
 Depth Drilled 42 FT SOUTH SIDE DELINEATION NEAR MW-8
 Drilling Method HOLLOW STEM AUGER
 Depth to Water ft @ completion (▽), 33 ft @ 1 hrs.(▼), 28.3 ft @ 1 week.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0		1	SS	Brown	Dry	Firm	2	Fill: Topsoil
		2	SS	Brown and Gray	Moist	Medium	2	Very Silty Clay or Clayey Silt
		3	SS					
		4	SS					
		5	SS					
		6	SS					
		7	SS					
		8	SS					
		9	SS					
		10	SS	Gray	Wet	18		
		11	SS					
		12	SS					
		13	SS					
		14	SS	Gray and Brown	Moist	24		
		15	SS					
		16	SS					
		17	SS					
		18	SS	Brown		28	Stiff	
		19	SS					
		20	SS					
		21	SS					
					Wet		34	Silty Clay, Trace Sand and Small Gravel
							40	

SS - Split Spoon Sampler E.O.B. @ 42 FT (997.6)



APPENDIX C

Temporary Monitoring Well Construction Documentation Forms

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: Delaware County Sanitary Landfill Permit No.: 28-SDP-01-74C
Well/Piezometer No.: MW-26 Date Started: 10/8/2025 Date Completed: 10/8/2025
Applicable Requirements¹: 567 IAC 113 567 IAC 115 Site Permit
 567 IAC 114 567 IAC 139 Other: _____

A. SURVEYED LOCATION² AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 1056.90 Top of Protective Casing: N/A
Top of Well Casing: 1059.95
Site Coordinates: Northing: 9564.12 Easting: 19856.37
World Coordinates: Latitude: _____ Longitude: _____
Elevation and Coordinate Systems: Local

B. SOIL BORING INFORMATION

Certified Well Contractor Terracon
Address 3105 Capital Way, Ste 5 City, State, Zip Code Cedar Falls, IA 50613
Name of driller Duncan Cert No. 11183
Drilling method Hollow Stem Auger Drilling fluid N/A Bore hole diameter 8.25
Soil sampling method Continuous Split Spoon Depth of boring 45 feet

C. MONITORING WELL INSTALLATION

Casing material: PVC Schedule 40 Placement method: tremied
Length of casing: 37.45 Quantity: 11.1 cubic feet
Casing diameter: Nominal 2-inch Backfill (if different from seal): _____
Casing joint type: Flush Threaded Material: N/A
Casing/screen joint type: Flush Threaded Placement method: _____
Screen material: PVC Schedule 40 Quantity: _____
Screen opening size: 0.006 inch Surface seal design: _____
Screen length: 10.0 ft Material of protective casing: None
Material of grout between
Depth of Well: 47.45 length PVC protective casing and well casing: N/A
Filter Pack: Red Flint Protective cap: _____
Material: Silica Material: HDPE
Grain Size: 0.02 to 0.03 effective size Vented?: Y N Locking?: Y N
Quantity: 4.5 cubic ft Well cap: _____
Seal (minimum 3 ft. length above filter pack): _____ Material: HDPE
Material: Bentonite Vented?: Y N

D. GROUNDWATER MEASUREMENT (± 0.01 foot below top of inner well casing)

Water level 29.0 Stabilization time 12 hours
Well development method Surge & Pump
Average depth of frost line 48 inch

¹ Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

² The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

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

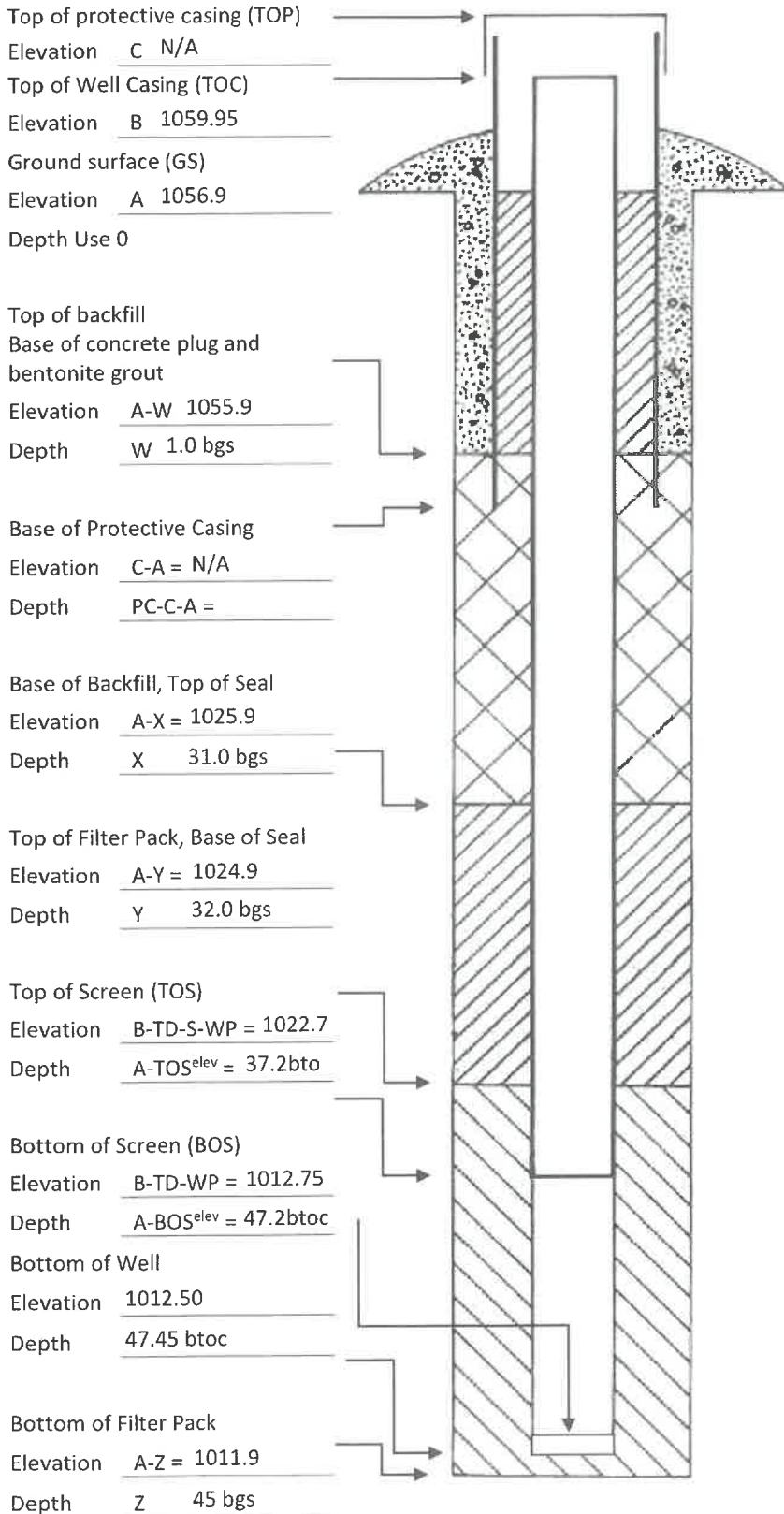
Signature Dave G for DL Certification # 11183 Date 1/30/26

Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.
Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: <u>0.0</u>	S: <u>10.0</u>
WP: <u>0.25</u>	TD: <u>47.45</u>

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: Delaware County Sanitary Landfill Permit No.: 28-SDP-01-74C
Well/Piezometer No.: MW-27 Date Started: 10/8/2025 Date Completed: 10/8/2025
Applicable Requirements¹: 567 IAC 113 567 IAC 115 Site Permit
 567 IAC 114 567 IAC 139 Other: _____

A. SURVEYED LOCATION² AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 1049.3 Top of Protective Casing: N/A
Top of Well Casing: 1052.35
Site Coordinates: Northing: 9556.53 Easting: 19994.80
World Coordinates: Latitude: _____ Longitude: _____
Elevation and Coordinate Systems: Local

B. SOIL BORING INFORMATION

Certified Well Contractor Terracon
Address 3105 Capital Way, Ste 5 City, State, Zip Code Cedar Falls, IA 50613
Name of driller Duncan Cert No. 11183
Drilling method Hollow Stem Auger Drilling fluid N/A Bore hole diameter 8.25
Soil sampling method Continuous Split Spoon Depth of boring 44 feet

C. MONITORING WELL INSTALLATION

Casing material: <u>PVC Schedule 40</u>	Placement method: <u>tremied</u>
Length of casing: <u>40.95</u>	Quantity: <u>12.6 cubic feet</u>
Casing diameter: <u>Nominal 2-inch</u>	Backfill (if different from seal): _____
Casing joint type: <u>Flush Threaded</u>	Material: <u>N/A</u>
Casing/screen joint type: <u>Flush Threaded</u>	Placement method: _____
Screen material: <u>PVC Schedule 40</u>	Quantity: _____
Screen opening size: <u>0.006 inch</u>	Surface seal design: _____
Screen length: <u>5.0 ft</u>	Material of protective casing: <u>None</u>
Depth of Well: <u>45.95 length PVC</u>	Material of grout between protective casing and well casing: <u>N/A</u>
Filter Pack: <u>Red Flint</u>	Protective cap: _____
Material: <u>Silica</u>	Material: <u>HDPE</u>
Grain Size: <u>0.02 to 0.03 effective size</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Quantity: <u>2.8 cubic ft</u>	Well cap: _____
Seal (minimum 3 ft. length above filter pack): _____	Material: <u>HDPE</u>
Material: <u>Bentonite</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N

D. GROUNDWATER MEASUREMENT (± 0.01 foot below top of inner well casing)

Water level 20.0 Stabilization time 12 hours
Well development method Surge & Pump
Average depth of frost line 48 inch

¹ Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

² The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

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

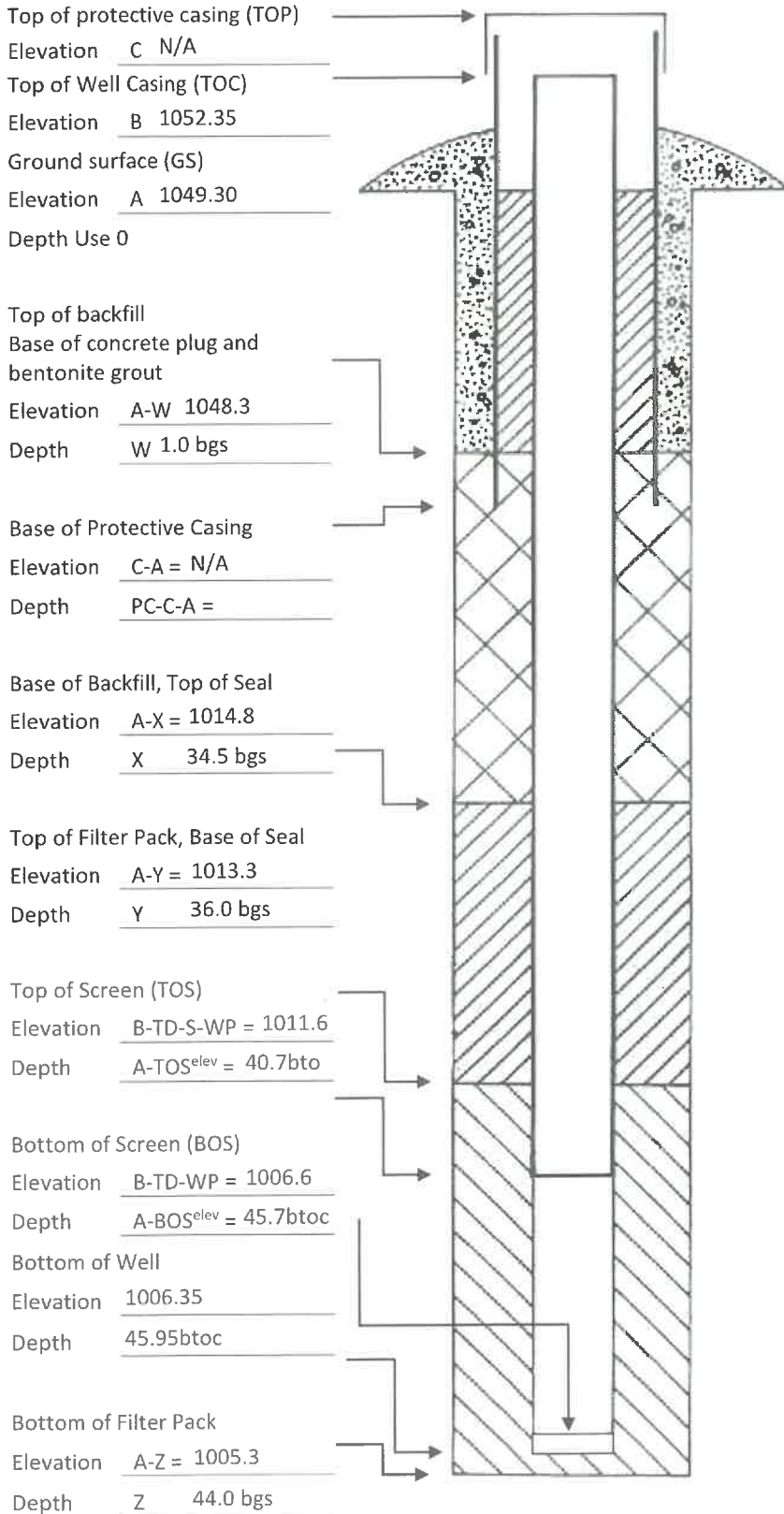
Signature Dan Eg for DL Certification # 11183 Date 1/30/26

Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.
Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: <u>0.0</u>	S: <u>5.0</u>
WP: <u>0.25</u>	TD: <u>45.95</u>

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: Delaware County Sanitary Landfill Permit No.: 28-SDP-01-74C
Well/Piezometer No.: MW-28 Date Started: 10/9/2025 Date Completed: 10/9/2025
Applicable Requirements¹: 567 IAC 113 567 IAC 115 Site Permit
 567 IAC 114 567 IAC 139 Other: _____

A. SURVEYED LOCATION² AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 1043.0 Top of Protective Casing: N/A
Top of Well Casing: 1046.32
Site Coordinates: Northing: 9548.26 Easting: 20117.71
World Coordinates: Latitude: _____ Longitude: _____
Elevation and Coordinate Systems: Local

B. SOIL BORING INFORMATION

Certified Well Contractor Terracon
Address 3105 Capital Way, Ste 5 City, State, Zip Code Cedar Falls, IA 50613
Name of driller Duncan Cert No. 11183
Drilling method Hollow Stem Auger Drilling fluid N/A Bore hole diameter 8.25
Soil sampling method Continuous Split Spoon Depth of boring 44 feet

C. MONITORING WELL INSTALLATION

Casing material: PVC Schedule 40 Placement method: tremied
Length of casing: 36.34 Quantity: 11.1 cubic feet
Casing diameter: Nominal 2-inch Backfill (if different from seal): _____
Casing joint type: Flush Threaded Material: N/A
Casing/screen joint type: Flush Threaded Placement method: _____
Screen material: PVC Schedule 40 Quantity: _____
Screen opening size: 0.006 inch Surface seal design: _____
Screen length: 10.0 ft Material of protective casing: None
Material of grout between
protective casing and well casing: N/A
Depth of Well: 46.34 length PVC Protective cap: _____
Filter Pack: Red Flint Material: HDPE
Material: Silica Vented?: Y N Locking?: Y N
Grain Size: 0.02 to 0.03 effective size Well cap: _____
Quantity: 4.5 cubic ft Material: HDPE
Seal (minimum 3 ft. length above filter pack): _____ Vented?: Y N
Material: Bentonite

D. GROUNDWATER MEASUREMENT (± 0.01 foot below top of inner well casing)

Water level Dry @ 8hrs Stabilization time 34.6 @ 1 week
Well development method Surge & Pump
Average depth of frost line 48 inch

¹ Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

² The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

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

Signature Dan Gysler DL Certification # 11183 Date 1/30/26

Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers. Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface

Top of protective casing (TOP)	→	
Elevation	C	N/A
Top of Well Casing (TOC)	→	
Elevation	B	1046.32
Ground surface (GS)		
Elevation	A	1043.0
Depth	Use 0	
Top of backfill		
Base of concrete plug and bentonite grout	→	
Elevation	A-W	1042.0
Depth	W	1.0 bgs
Base of Protective Casing	→	
Elevation	C-A	= N/A
Depth	PC-C-A	=
Base of Backfill, Top of Seal		
Elevation	A-X	= 1014.0
Depth	X	29.0 bgs
Top of Filter Pack, Base of Seal		
Elevation	A-Y	= 1011.0
Depth	Y	32.0 bgs
Top of Screen (TOS)	→	
Elevation	B-TD-S-WP	= 1010.2
Depth	A-TOS ^{elev}	= 36.1bto
Bottom of Screen (BOS)	→	
Elevation	B-TD-WP	= 1000.23
Depth	A-BOS ^{elev}	= 46.1btoc
Bottom of Well	→	
Elevation		999.8
Depth		46.34 btoc
Bottom of Filter Pack	→	
Elevation	A-Z	= 999.0
Depth	Z	44.0 bgs

Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC:	<u>0.0</u>	S:	<u>10.0</u>
WP:	<u>0.25</u>	TD:	<u>46.34</u>

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: Delaware County Sanitary Landfill Permit No.: 28-SDP-01-74C
Well/Piezometer No.: MW-29 Date Started: 10/9/2025 Date Completed: 10/9/2025
Applicable Requirements¹: 567 IAC 113 567 IAC 115 Site Permit
 567 IAC 114 567 IAC 139 Other: _____

A. SURVEYED LOCATION² AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 1039.6 Top of Protective Casing: N/A
Top of Well Casing: 1041.46
Site Coordinates: Northing: 9529.90 Easting: 20155.80
World Coordinates: Latitude: _____ Longitude: _____
Elevation and Coordinate Systems: Local

B. SOIL BORING INFORMATION

Certified Well Contractor Terracon
Address 3105 Capital Way, Ste 5 City, State, Zip Code Cedar Falls, IA 50613
Name of driller Duncan Cert No. 11183
Drilling method Hollow Stem Auger Drilling fluid N/A Bore hole diameter 8.25
Soil sampling method Continuous Split Spoon Depth of boring 40 feet

C. MONITORING WELL INSTALLATION

Casing material: <u>PVC Schedule 40</u>	Placement method: <u>tremied</u>
Length of casing: <u>37.1</u>	Quantity: <u>10.8 cubic feet</u>
Casing diameter: <u>Nominal 2-inch</u>	Backfill (if different from seal): _____
Casing joint type: <u>Flush Threaded</u>	Material: <u>N/A</u>
Casing/screen joint type: <u>Flush Threaded</u>	Placement method: _____
Screen material: <u>PVC Schedule 40</u>	Quantity: _____
Screen opening size: <u>0.006 inch</u>	Surface seal design: _____
Screen length: <u>5.0 ft</u>	Material of protective casing: <u>None</u>
	Material of grout between protective casing and well casing: <u>N/A</u>
Depth of Well: <u>42.1 length PVC</u>	Protective cap: _____
Filter Pack: <u>Red Flint</u>	Material: <u>HDPE</u>
Material: <u>Silica</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size: <u>0.02 to 0.03 effective size</u>	Well cap: _____
Quantity: <u>3.1 cubic ft</u>	Material: <u>HDPE</u>
Seal (minimum 3 ft. length above filter pack): _____	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material: <u>Bentonite</u>	

D. GROUNDWATER MEASUREMENT (± 0.01 foot below top of inner well casing)

Water level 33.0 Stabilization time 1 hr
Well development method Surge & Pump
Average depth of frost line 48 inch

¹ Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

² The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

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

Signature Eric Day for DL Certification # 11183 Date 1-30-26

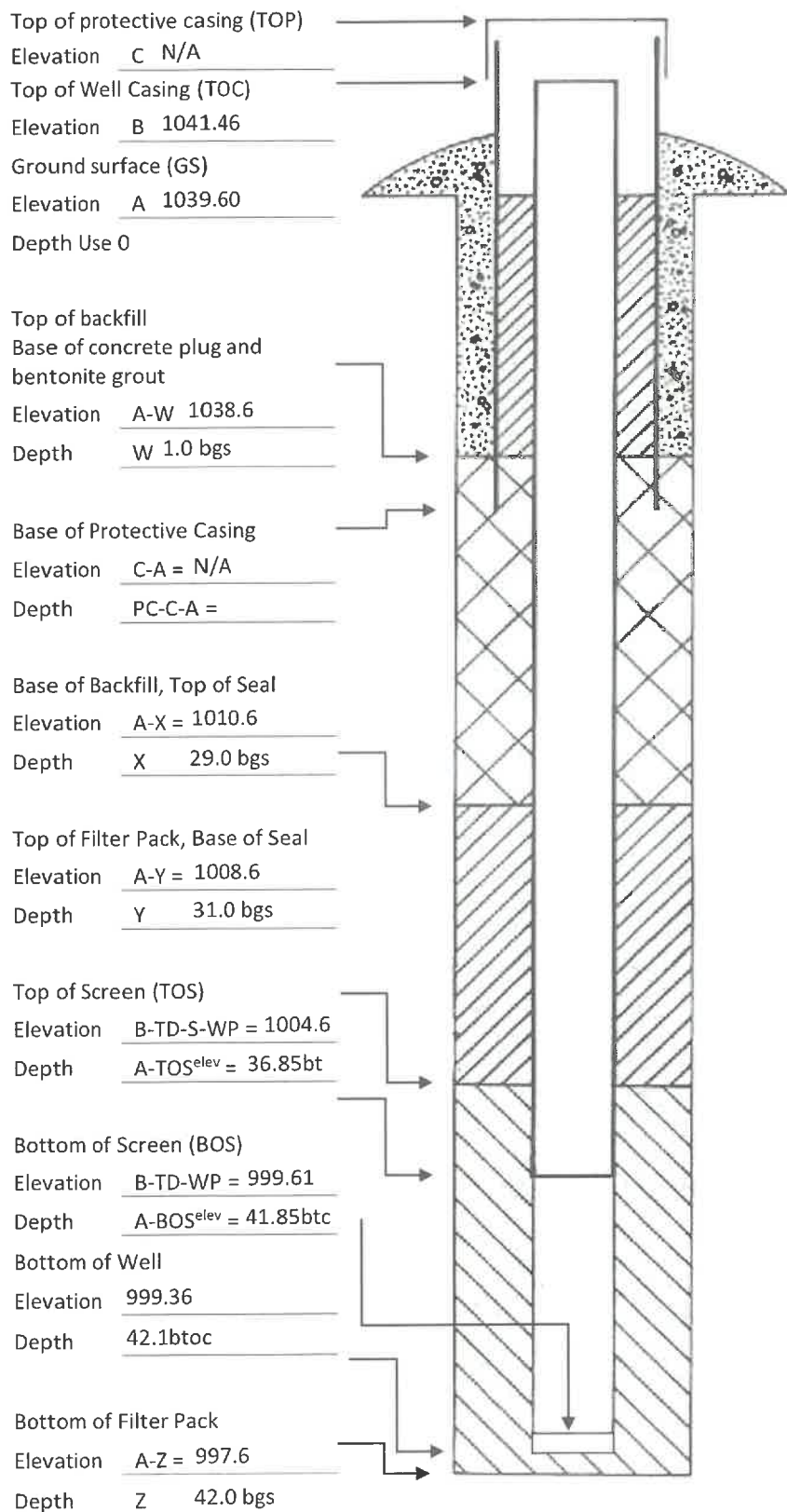
Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: <u>0.0</u>	S: <u>5.0</u>
WP: <u>0.25</u>	TD: <u>42.1</u>

APPENDIX D

Laboratory Analytical Results



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Project Description

6039

For:

Todd Whipple

HLW Engineering

204 West Broad St

Story City, IA 50248

Heather Murphy

Customer Relationship Specialist

Wednesday, March 18, 2026

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

HLW Engineering

Project Name: 6039

Todd Whipple
204 West Broad St
Story City, IA 50248

Project / PO Number: N/A
Received: 03/03/2026
Reported: 03/18/2026

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
MW-11 (b)	1JC0415-01	Aqueous	GRAB		03/02/26 08:40	03/03/26 11:15
MW-20 (b)	1JC0415-02	Aqueous	GRAB		03/02/26 09:40	03/03/26 11:15
MW-5	1JC0415-03	Aqueous	GRAB		03/02/26 10:35	03/03/26 11:15
MW-6	1JC0415-04	Aqueous	GRAB		03/02/26 10:58	03/03/26 11:15
MW-7	1JC0415-05	Aqueous	GRAB		03/02/26 12:33	03/03/26 11:15
MW-8	1JC0415-06	Aqueous	GRAB		03/02/26 12:50	03/03/26 11:15
MW-23	1JC0415-07	Aqueous	GRAB		03/02/26 13:25	03/03/26 11:15
MW-25	1JC0415-08	Aqueous	GRAB		03/02/26 09:11	03/03/26 11:15
MW-21	1JC0415-09	Aqueous	GRAB		03/02/26 10:06	03/03/26 11:15
Duplicate	1JC0415-10	Aqueous	GRAB		03/02/26 00:00	03/03/26 11:15



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Analytical Testing Parameters

Client Sample ID:	MW-11 (b)	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 8:40
Lab Sample ID:	1JC0415-01		

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260D							
Chloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Vinyl Chloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Bromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Chloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Trichlorofluoromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,1-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Acetone	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Methyl Iodide	<1.0	1.0	ug/L		03/15/26 0000	03/15/26 1318	BDF
Carbon Disulfide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Methylene Chloride	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Acrylonitrile	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,1-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Vinyl Acetate	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
2-Butanone (MEK)	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Bromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Chloroform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,1,1-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Carbon Tetrachloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Benzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,2-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Trichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,2-Dichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Dibromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Bromodichloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Toluene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,1,2-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Tetrachloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
2-Hexanone (MBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Dibromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,2-Dibromoethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Chlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Ethylbenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Xylenes, total	<2.0	2.0	ug/L		03/06/26 0000	03/06/26 1334	RAF
Styrene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1334	RAF

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-11 (b)
Sample Matrix: Aqueous
Lab Sample ID: 1JC0415-01

Collected By: Whipple, Todd
Collection Date: 03/02/2026 8:40

Table with 8 columns: Determination of Volatile Organic Compounds, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include Bromoform, 1,2,3-Trichloropropane, trans-1,4-Dichloro-2-butene, 1,1,2,2-Tetrachloroethane, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, and various Surrogate compounds.

Table with 8 columns: Metals Total by ICPMS, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID:	MW-20 (b)	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 9:40
Lab Sample ID:	1JC0415-02		

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1711	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1711	RVV
Barium	0.189	0.00100	mg/L		03/06/26 1545	03/09/26 1711	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1711	RVV
Cadmium	<0.000200	0.000200	mg/L		03/06/26 1545	03/09/26 1711	RVV
Chromium	0.00534	0.00100	mg/L		03/06/26 1545	03/09/26 1711	RVV
Cobalt	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1711	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1711	RVV
Lead	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1711	RVV
Nickel	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1711	RVV
Selenium	0.00302	0.00200	mg/L		03/06/26 1545	03/09/26 1711	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1711	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1711	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1711	RVV
Zinc	0.0184	0.00500	mg/L		03/06/26 1545	03/09/26 1711	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-5
Sample Matrix: Aqueous
Lab Sample ID: 1JC0415-03

Collected By: Whipple, Todd
Collection Date: 03/02/2026 10:35

Table with 8 columns: Determination of Volatile Organic Compounds, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include EPA 5030B/EPA 8260D and various chemical compounds like Chloromethane, Vinyl Chloride, etc.

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-5	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 10:35
Lab Sample ID: 1JC0415-03	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1357	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1357	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1357	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1357	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1357	RAF
Surrogate: Dibromofluoromethane	99.3	Limit: 75-136	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: Dibromofluoromethane	99.3	Limit: 57-128	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: 1,2-Dichloroethane-d4	99.1	Limit: 49-135	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: 1,2-Dichloroethane-d4	99.1	Limit: 61-142	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: Toluene-d8	98.7	Limit: 82-121	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: Toluene-d8	98.7	Limit: 82-116	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: 4-Bromofluorobenzene	97.8	Limit: 77-114	% Rec		03/06/26 0000	03/06/26 1357	RAF
Surrogate: 4-Bromofluorobenzene	97.8	Limit: 80-116	% Rec		03/06/26 0000	03/06/26 1357	RAF

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1713	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1713	RVV
Barium	0.389	0.00100	mg/L		03/06/26 1545	03/09/26 1713	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1713	RVV
Cadmium	<0.000200	0.000200	mg/L		03/06/26 1545	03/09/26 1713	RVV
Chromium	0.00323	0.00100	mg/L		03/06/26 1545	03/09/26 1713	RVV
Cobalt	0.000559	0.000500	mg/L		03/06/26 1545	03/09/26 1713	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1713	RVV
Lead	0.00282	0.00100	mg/L		03/06/26 1545	03/09/26 1713	RVV
Nickel	0.0156	0.00500	mg/L		03/06/26 1545	03/09/26 1713	RVV
Selenium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1713	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1713	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1713	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1713	RVV
Zinc	0.00948	0.00500	mg/L		03/06/26 1545	03/09/26 1713	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-6	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 10:58
Lab Sample ID: 1JC0415-04	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260D							
Chloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Vinyl Chloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Bromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Chloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Trichlorofluoromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,1-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Acetone	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Methyl Iodide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Carbon Disulfide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Methylene Chloride	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Acrylonitrile	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,1-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Vinyl Acetate	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
2-Butanone (MEK)	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Bromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Chloroform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,1,1-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Carbon Tetrachloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Benzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,2-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Trichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,2-Dichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Dibromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Bromodichloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Toluene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,1,2-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Tetrachloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
2-Hexanone (MBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Dibromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,2-Dibromoethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Chlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Ethylbenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Xylenes, total	<2.0	2.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Styrene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
Bromoform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF
1,2,3-Trichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1420	RAF

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-6
Sample Matrix: Aqueous
Lab Sample ID: 1JC0415-04

Collected By: Whipple, Todd
Collection Date: 03/02/2026 10:58

Table with 8 columns: Determination of Volatile Organic Compounds, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include trans-1,4-Dichloro-2-butene, 1,1,2,2-Tetrachloroethane, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, and various Surrogate compounds.

Table with 8 columns: Metals Total by ICPMS, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-7
Sample Matrix: Aqueous
Lab Sample ID: 1JC0415-05

Collected By: Whipple, Todd
Collection Date: 03/02/2026 12:33

Table with 8 columns: Determination of Volatile Organic Compounds, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include EPA 5030B/EPA 8260D and various chemical compounds like Chloromethane, Vinyl Chloride, etc.

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-7	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 12:33
Lab Sample ID: 1JC0415-05	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1442	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1442	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1442	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1442	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1442	RAF
Surrogate: Dibromofluoromethane	99.2	Limit: 75-136	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: Dibromofluoromethane	99.2	Limit: 57-128	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: 1,2-Dichloroethane-d4	99.6	Limit: 49-135	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: 1,2-Dichloroethane-d4	99.6	Limit: 61-142	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: Toluene-d8	99.2	Limit: 82-116	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: Toluene-d8	99.2	Limit: 82-121	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: 4-Bromofluorobenzene	98.0	Limit: 77-114	% Rec		03/06/26 0000	03/06/26 1442	RAF
Surrogate: 4-Bromofluorobenzene	98.0	Limit: 80-116	% Rec		03/06/26 0000	03/06/26 1442	RAF

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1719	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1719	RVV
Barium	0.356	0.00100	mg/L		03/06/26 1545	03/09/26 1719	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1719	RVV
Cadmium	0.000226	0.000200	mg/L		03/06/26 1545	03/09/26 1719	RVV
Chromium	0.00215	0.00100	mg/L		03/06/26 1545	03/09/26 1719	RVV
Cobalt	0.000741	0.000500	mg/L		03/06/26 1545	03/09/26 1719	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1719	RVV
Lead	0.00331	0.00100	mg/L		03/06/26 1545	03/09/26 1719	RVV
Nickel	0.00927	0.00500	mg/L		03/06/26 1545	03/09/26 1719	RVV
Selenium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1719	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1719	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1719	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1719	RVV
Zinc	0.00513	0.00500	mg/L		03/06/26 1545	03/09/26 1719	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-8
Sample Matrix: Aqueous
Lab Sample ID: 1JC0415-06

Collected By: Whipple, Todd
Collection Date: 03/02/2026 12:50

Table with 8 columns: Determination of Volatile Organic Compounds, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include EPA 5030B/EPA 8260D and various chemical compounds like Chloromethane, Vinyl Chloride, etc.

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-8	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 12:50
Lab Sample ID: 1JC0415-06	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1505	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1505	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1505	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1505	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1505	RAF
Surrogate: Dibromofluoromethane	100	Limit: 75-136	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: Dibromofluoromethane	100	Limit: 57-128	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: 1,2-Dichloroethane-d4	99.9	Limit: 61-142	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: 1,2-Dichloroethane-d4	99.9	Limit: 49-135	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: Toluene-d8	99.1	Limit: 82-116	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: Toluene-d8	99.1	Limit: 82-121	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: 4-Bromofluorobenzene	96.5	Limit: 80-116	% Rec		03/06/26 0000	03/06/26 1505	RAF
Surrogate: 4-Bromofluorobenzene	96.5	Limit: 77-114	% Rec		03/06/26 0000	03/06/26 1505	RAF

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1721	RVV
Arsenic	0.0162	0.00200	mg/L		03/06/26 1545	03/09/26 1721	RVV
Barium	1.12	0.00100	mg/L		03/06/26 1545	03/09/26 1721	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1721	RVV
Cadmium	0.00478	0.000200	mg/L		03/06/26 1545	03/09/26 1721	RVV
Chromium	0.00200	0.00100	mg/L		03/06/26 1545	03/09/26 1721	RVV
Cobalt	0.00797	0.000500	mg/L		03/06/26 1545	03/09/26 1721	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1721	RVV
Lead	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1721	RVV
Nickel	0.135	0.00500	mg/L		03/06/26 1545	03/09/26 1721	RVV
Selenium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1721	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1721	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1721	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1721	RVV
Zinc	0.0100	0.00500	mg/L		03/06/26 1545	03/09/26 1721	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-23	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 13:25
Lab Sample ID: 1JC0415-07	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260D							
Chloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Vinyl Chloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Bromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Chloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Trichlorofluoromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,1-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Acetone	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Methyl Iodide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Carbon Disulfide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Methylene Chloride	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Acrylonitrile	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,1-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Vinyl Acetate	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
2-Butanone (MEK)	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Bromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Chloroform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,1,1-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Carbon Tetrachloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Benzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,2-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Trichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,2-Dichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Dibromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Bromodichloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Toluene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,1,2-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Tetrachloroethylene	2.7	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
2-Hexanone (MBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Dibromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,2-Dibromoethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Chlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Ethylbenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Xylenes, total	<2.0	2.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Styrene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Bromoform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,2,3-Trichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-23	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 13:25
Lab Sample ID: 1JC0415-07	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1528	RAF
Surrogate: Dibromofluoromethane	101	Limit: 75-136	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: Dibromofluoromethane	101	Limit: 57-128	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: 1,2-Dichloroethane-d4	101	Limit: 49-135	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: 1,2-Dichloroethane-d4	101	Limit: 61-142	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: Toluene-d8	98.6	Limit: 82-121	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: Toluene-d8	98.6	Limit: 82-116	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: 4-Bromofluorobenzene	96.3	Limit: 77-114	% Rec		03/06/26 0000	03/06/26 1528	RAF
Surrogate: 4-Bromofluorobenzene	96.3	Limit: 80-116	% Rec		03/06/26 0000	03/06/26 1528	RAF

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1724	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1724	RVV
Barium	0.148	0.00100	mg/L		03/06/26 1545	03/09/26 1724	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1724	RVV
Cadmium	<0.000200	0.000200	mg/L		03/06/26 1545	03/09/26 1724	RVV
Chromium	0.00800	0.00100	mg/L		03/06/26 1545	03/09/26 1724	RVV
Cobalt	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1724	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1724	RVV
Lead	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1724	RVV
Nickel	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1724	RVV
Selenium	0.00359	0.00200	mg/L		03/06/26 1545	03/09/26 1724	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1724	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1724	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1724	RVV
Zinc	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1724	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-25	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 9:11
Lab Sample ID: 1JC0415-08	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
---	--------	----	-------	------	----------	----------	---------

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260D							
Chloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Vinyl Chloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Bromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Chloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Trichlorofluoromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,1-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Acetone	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Methyl Iodide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Carbon Disulfide	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Methylene Chloride	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Acrylonitrile	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,1-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Vinyl Acetate	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
2-Butanone (MEK)	<10.0	10.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Bromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Chloroform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,1,1-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Carbon Tetrachloride	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Benzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,2-Dichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Trichloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,2-Dichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Dibromomethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Bromodichloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Toluene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,1,2-Trichloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Tetrachloroethylene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
2-Hexanone (MBK)	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Dibromochloromethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,2-Dibromoethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Chlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Ethylbenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Xylenes, total	<2.0	2.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Styrene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Bromoform	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,2,3-Trichloropropane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-25	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 9:11
Lab Sample ID: 1JC0415-08	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1551	RAF
Surrogate: Dibromofluoromethane	97.8	Limit: 75-136	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: Dibromofluoromethane	97.8	Limit: 57-128	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: 1,2-Dichloroethane-d4	98.8	Limit: 49-135	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: 1,2-Dichloroethane-d4	98.8	Limit: 61-142	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: Toluene-d8	99.8	Limit: 82-121	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: Toluene-d8	99.8	Limit: 82-116	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: 4-Bromofluorobenzene	97.6	Limit: 77-114	% Rec		03/06/26 0000	03/06/26 1551	RAF
Surrogate: 4-Bromofluorobenzene	97.6	Limit: 80-116	% Rec		03/06/26 0000	03/06/26 1551	RAF

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1726	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1726	RVV
Barium	0.317	0.00100	mg/L		03/06/26 1545	03/09/26 1726	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1726	RVV
Cadmium	<0.000200	0.000200	mg/L		03/06/26 1545	03/09/26 1726	RVV
Chromium	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1726	RVV
Cobalt	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1726	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1726	RVV
Lead	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1726	RVV
Nickel	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1726	RVV
Selenium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1726	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1726	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1726	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1726	RVV
Zinc	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1726	RVV

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-21
Sample Matrix: Aqueous
Lab Sample ID: 1JC0415-09

Collected By: Whipple, Todd
Collection Date: 03/02/2026 10:06

Table with columns: Determination of Volatile Organic Compounds, Result, RL, Units, Note, Prepared, Analyzed, Analyst. Rows include EPA 5030B/EPA 8260D and various chemical compounds like Chloromethane, Vinyl Chloride, etc.

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: MW-21	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 10:06
Lab Sample ID: 1JC0415-09	

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1614	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1614	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1614	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		03/06/26 0000	03/06/26 1614	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		03/06/26 0000	03/06/26 1614	RAF
Surrogate: Dibromofluoromethane	99.3	Limit: 57-128	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: Dibromofluoromethane	99.3	Limit: 75-136	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: 1,2-Dichloroethane-d4	99.4	Limit: 61-142	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: 1,2-Dichloroethane-d4	99.4	Limit: 49-135	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: Toluene-d8	98.8	Limit: 82-121	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: Toluene-d8	98.8	Limit: 82-116	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: 4-Bromofluorobenzene	96.5	Limit: 77-114	% Rec		03/06/26 0000	03/06/26 1614	RAF
Surrogate: 4-Bromofluorobenzene	96.5	Limit: 80-116	% Rec		03/06/26 0000	03/06/26 1614	RAF

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1729	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1729	RVV
Barium	0.213	0.00100	mg/L		03/06/26 1545	03/09/26 1729	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1729	RVV
Cadmium	<0.000200	0.000200	mg/L		03/06/26 1545	03/09/26 1729	RVV
Chromium	0.00154	0.00100	mg/L		03/06/26 1545	03/09/26 1729	RVV
Cobalt	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1729	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1729	RVV
Lead	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1729	RVV
Nickel	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1729	RVV
Selenium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1729	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1729	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1729	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1729	RVV
Zinc	0.0147	0.00500	mg/L		03/06/26 1545	03/09/26 1729	RVV

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Client Sample ID: Duplicate	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026
Lab Sample ID: 1JC0415-10	

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Antimony	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1736	RVV
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1736	RVV
Barium	0.206	0.00100	mg/L		03/06/26 1545	03/09/26 1736	RVV
Beryllium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1736	RVV
Cadmium	<0.000200	0.000200	mg/L		03/06/26 1545	03/09/26 1736	RVV
Chromium	0.00140	0.00100	mg/L		03/06/26 1545	03/09/26 1736	RVV
Cobalt	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1736	RVV
Copper	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1736	RVV
Lead	<0.00100	0.00100	mg/L		03/06/26 1545	03/09/26 1736	RVV
Nickel	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1736	RVV
Selenium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1736	RVV
Silver	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1736	RVV
Thallium	<0.000500	0.000500	mg/L		03/06/26 1545	03/09/26 1736	RVV
Vanadium	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1736	RVV
Zinc	0.0185	0.00500	mg/L		03/06/26 1545	03/09/26 1736	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260D	1JC0338	1JC0338-BS1	
		1JC0338-BSD1	
		1JC0338-BLK1	
		1JC0415-01	MW-11 (b)
		1JC0415-03	MW-5
		1JC0415-04	MW-6
		1JC0415-05	MW-7
		1JC0415-06	MW-8
		1JC0415-07	MW-23
		1JC0415-08	MW-25
		1JC0415-09	MW-21
		1JC0338-MS1	1JC0415-01
		1JC0338-MSD1	1JC0415-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1JC0365	1JC0365-BLK1	
		1JC0365-BS1	
		1JC0415-01	MW-11 (b)
		1JC0365-MS1	1JC0415-01
		1JC0365-MSD1	1JC0415-01
		1JC0365-PS1	1JC0415-01
		1JC0415-02	MW-20 (b)
		1JC0415-03	MW-5
		1JC0415-04	MW-6
		1JC0415-05	MW-7
		1JC0415-06	MW-8
		1JC0415-07	MW-23
		1JC0415-08	MW-25
		1JC0415-09	MW-21

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1JC0509	1JC0509-BLK1	
		1JC0509-BS1	
		1JC0509-MS1	1JC0768-01
		1JC0509-MSD1	1JC0768-01
		1JC0509-PS1	1JC0768-01
		1JC0509-MS2	1JC0768-08
		1JC0509-MSD2	1JC0768-08
		1JC0509-PS2	1JC0768-08

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260D	1JC0823	1JC0823-BS1	
		1JC0823-BSD1	
		1JC0823-MS1	1JC1110-01
		1JC0823-MSD1	1JC1110-01
		1JC0823-BLK1	

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0338 - EPA 5030B - EPA 8260D										
Blank (1JC0338-BLK1)										
Prepared: 03/06/26 00:00 Analyzed: 03/06/26 11:17										
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							
Chloroethane	<1.0	1.0	ug/L							
Trichlorofluoromethane	<1.0	1.0	ug/L							
1,1-Dichloroethylene	<1.0	1.0	ug/L							
Acetone	35.18	10.0	ug/L							B1
Methyl Iodide	1.09	1.0	ug/L							B1
Carbon Disulfide	<1.0	1.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
Acrylonitrile	<5.0	5.0	ug/L							
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L							
1,1-Dichloroethane	<1.0	1.0	ug/L							
Vinyl Acetate	<5.0	5.0	ug/L							
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Bromochloromethane	<1.0	1.0	ug/L							
Chloroform	2.88	1.0	ug/L							B1
1,1,1-Trichloroethane	<1.0	1.0	ug/L							
Carbon Tetrachloride	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0338 - EPA 5030B - EPA 8260D										
Blank (1JC0338-BLK1)										
Prepared: 03/06/26 00:00 Analyzed: 03/06/26 11:17										
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
Surrogate: Dibromofluoromethane	50.0		ug/L	50.2		99.6	57-128			
Surrogate: Dibromofluoromethane	50.0		ug/L	50.2		99.6	75-136			
Surrogate: 1,2-Dichloroethane-d4	49.4		ug/L	50.4		98.1	49-135			
Surrogate: 1,2-Dichloroethane-d4	49.4		ug/L	50.4		98.1	61-142			
Surrogate: Toluene-d8	50.3		ug/L	50.5		99.6	82-116			
Surrogate: Toluene-d8	50.3		ug/L	50.5		99.6	82-121			
Surrogate: 4-Bromofluorobenzene	49.2		ug/L	50.2		98.0	77-114			
Surrogate: 4-Bromofluorobenzene	49.2		ug/L	50.2		98.0	80-116			
LCS (1JC0338-BS1)										
Prepared: 03/06/26 00:00 Analyzed: 03/06/26 10:08										
Chloromethane	28.25	1.0	ug/L	30.3		93.2	63-155			
Vinyl Chloride	31.04	1.0	ug/L	30.2		103	70-154			
Bromomethane	31.10	1.0	ug/L	30.1		103	52-176			
Chloroethane	30.99	1.0	ug/L	30.3		102	72-148			
Trichlorofluoromethane	32.71	1.0	ug/L	30.3		108	70-152			
1,1-Dichloroethylene	53.89	1.0	ug/L	50.1		108	70-148			
Acetone	118.1	10.0	ug/L	100		118	43-172			
Methyl Iodide	119.7	1.0	ug/L	100		120	69-170			
Carbon Disulfide	107.1	1.0	ug/L	100		107	72-162			
Methylene Chloride	49.63	5.0	ug/L	50.1		99.1	68-142			
Acrylonitrile	53.24	5.0	ug/L	50.4		106	33-163			
trans-1,2-Dichloroethylene	55.54	1.0	ug/L	50.1		111	66-148			
1,1-Dichloroethane	54.94	1.0	ug/L	50.1		110	66-143			
Vinyl Acetate	186.4	5.0	ug/L	131		142	43-153			
cis-1,2-Dichloroethylene	55.05	1.0	ug/L	50.4		109	71-149			
2-Butanone (MEK)	109.2	10.0	ug/L	100		109	52-159			
Bromochloromethane	54.18	1.0	ug/L	50.4		108	69-143			
Chloroform	55.28	1.0	ug/L	50.1		110	69-144			
1,1,1-Trichloroethane	55.02	1.0	ug/L	50.1		110	62-129			
Carbon Tetrachloride	56.68	1.0	ug/L	50.1		113	63-141			
Benzene	54.29	1.0	ug/L	50.4		108	71-134			
1,2-Dichloroethane	52.66	1.0	ug/L	50.1		105	72-132			
Trichloroethylene	53.06	1.0	ug/L	50.1		106	71-135			
1,2-Dichloropropane	53.75	1.0	ug/L	50.1		107	69-136			
Dibromomethane	52.72	1.0	ug/L	50.4		105	73-147			
Bromodichloromethane	54.21	1.0	ug/L	50.1		108	68-129			
cis-1,3-Dichloropropene	57.15	1.0	ug/L	50.1		114	65-134			
4-Methyl-2-pentanone (MIBK)	114.7	5.0	ug/L	100		115	58-147			
Toluene	55.43	1.0	ug/L	50.5		110	72-133			
trans-1,3-Dichloropropene	57.11	1.0	ug/L	50.1		114	67-130			

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0338 - EPA 5030B - EPA 8260D										
LCS (1JC0338-BS1)										
				Prepared: 03/06/26 00:00 Analyzed: 03/06/26 10:08						
1,1,2-Trichloroethane	54.61	1.0	ug/L	50.1		109	69-135			
Tetrachloroethylene	55.13	1.0	ug/L	50.1		110	69-130			
2-Hexanone (MBK)	119.0	5.0	ug/L	100		119	55-144			
Dibromochloromethane	55.76	1.0	ug/L	50.1		111	73-127			
1,2-Dibromoethane	54.64	1.0	ug/L	50.2		109	67-132			
Chlorobenzene	53.13	1.0	ug/L	50.1		106	72-123			
1,1,1,2-Tetrachloroethane	55.04	1.0	ug/L	50.3		109	73-127			
Ethylbenzene	54.75	1.0	ug/L	50.2		109	71-127			
Xylenes, total	164.1	2.0	ug/L	151		109	74-127			
Styrene	57.38	1.0	ug/L	50.4		114	66-126			
Bromoform	55.30	1.0	ug/L	50.1		110	68-130			
1,2,3-Trichloropropane	54.67	1.0	ug/L	50.3		109	63-136			
trans-1,4-Dichloro-2-butene	119.7	5.0	ug/L	100		120	54-134			
1,1,2,2-Tetrachloroethane	53.03	1.0	ug/L	50.1		106	61-131			
1,4-Dichlorobenzene	52.98	1.0	ug/L	50.1		106	70-129			
1,2-Dichlorobenzene	54.05	1.0	ug/L	50.1		108	69-126			
1,2-Dibromo-3-chloropropane	54.77	5.0	ug/L	50.1		109	50-143			
Surrogate: Dibromofluoromethane	50.5		ug/L	50.2		101	57-128			
Surrogate: Dibromofluoromethane	50.5		ug/L	50.2		101	75-136			
Surrogate: 1,2-Dichloroethane-d4	49.8		ug/L	50.4		98.9	49-135			
Surrogate: 1,2-Dichloroethane-d4	49.8		ug/L	50.4		98.9	61-142			
Surrogate: Toluene-d8	50.4		ug/L	50.5		99.9	82-116			
Surrogate: Toluene-d8	50.4		ug/L	50.5		99.9	82-121			
Surrogate: 4-Bromofluorobenzene	50.1		ug/L	50.2		99.8	77-114			
Surrogate: 4-Bromofluorobenzene	50.1		ug/L	50.2		99.8	80-116			
LCS Dup (1JC0338-BS1)										
				Prepared: 03/06/26 00:00 Analyzed: 03/06/26 10:31						
Chloromethane	24.98	1.0	ug/L	30.3		82.4	63-155	12.3	24	
Vinyl Chloride	26.79	1.0	ug/L	30.2		88.6	70-154	14.7	25	
Bromomethane	27.92	1.0	ug/L	30.1		92.7	52-176	10.8	27	
Chloroethane	27.47	1.0	ug/L	30.3		90.6	72-148	12.0	25	
Trichlorofluoromethane	28.50	1.0	ug/L	30.3		94.0	70-152	13.8	26	
1,1-Dichloroethylene	48.07	1.0	ug/L	50.1		95.9	70-148	11.4	24	
Acetone	114.8	10.0	ug/L	100		115	43-172	2.90	30	
Methyl Iodide	115.9	1.0	ug/L	100		116	69-170	3.17	30	
Carbon Disulfide	94.88	1.0	ug/L	100		94.9	72-162	12.1	24	
Methylene Chloride	44.82	5.0	ug/L	50.1		89.5	68-142	10.2	21	
Acrylonitrile	48.49	5.0	ug/L	50.4		96.3	33-163	9.34	28	
trans-1,2-Dichloroethylene	49.13	1.0	ug/L	50.1		98.1	66-148	12.2	27	
1,1-Dichloroethane	49.99	1.0	ug/L	50.1		99.8	66-143	9.43	24	
Vinyl Acetate	168.1	5.0	ug/L	131		128	43-153	10.3	30	
cis-1,2-Dichloroethylene	49.53	1.0	ug/L	50.4		98.4	71-149	10.6	26	
2-Butanone (MEK)	106.9	10.0	ug/L	100		107	52-159	2.12	27	
Bromochloromethane	49.22	1.0	ug/L	50.4		97.7	69-143	9.59	23	



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Table with columns: Determination of Volatile Organic Compounds, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Includes data for various compounds like Chloroform, Benzene, etc.

Table with columns: Surrogate, Result, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Lists surrogate compounds and their results.

Table with columns: Matrix Spike (1JC0338-MS1), Source: 1JC0415-01, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Lists matrix spike results.



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0338 - EPA 5030B - EPA 8260D										
Matrix Spike (1JC0338-MS1)	Source: 1JC0415-01			Prepared: 03/06/26 00:00 Analyzed: 03/06/26 20:49						
Trichlorofluoromethane	329.4	10.0	ug/L	303	ND	109	62-163			
1,1-Dichloroethylene	539.8	10.0	ug/L	501	ND	108	70-148			
Acetone	1188	100	ug/L	1000	ND	119	45-173			
Methyl Iodide	1182	10.0	ug/L	1000	ND	118	62-167			
Carbon Disulfide	1037	10.0	ug/L	1000	ND	104	71-163			
Methylene Chloride	467.7	50.0	ug/L	501	ND	93.3	69-140			
Acrylonitrile	512.5	50.0	ug/L	504	ND	102	32-159			
trans-1,2-Dichloroethylene	532.0	10.0	ug/L	501	ND	106	69-144			
1,1-Dichloroethane	528.4	10.0	ug/L	501	ND	105	70-138			
Vinyl Acetate	1560	50.0	ug/L	1310	ND	119	58-142			
cis-1,2-Dichloroethylene	518.4	10.0	ug/L	504	ND	103	68-151			
2-Butanone (MEK)	1120	100	ug/L	1000	ND	112	50-160			
Bromochloromethane	514.0	10.0	ug/L	504	ND	102	65-143			
Chloroform	502.0	10.0	ug/L	501	ND	100	71-143			
1,1,1-Trichloroethane	534.5	10.0	ug/L	501	ND	107	63-133			
Carbon Tetrachloride	542.9	10.0	ug/L	501	ND	108	63-142			
Benzene	516.8	10.0	ug/L	504	ND	102	69-133			
1,2-Dichloroethane	501.8	10.0	ug/L	501	ND	100	63-138			
Trichloroethylene	517.2	10.0	ug/L	501	ND	103	71-133			
1,2-Dichloropropane	508.6	10.0	ug/L	501	ND	102	69-132			
Dibromomethane	503.7	10.0	ug/L	504	ND	100	70-147			
Bromodichloromethane	510.3	10.0	ug/L	501	ND	102	67-130			
cis-1,3-Dichloropropene	510.1	10.0	ug/L	501	ND	102	61-126			
4-Methyl-2-pentanone (MIBK)	1086	50.0	ug/L	1000	ND	109	55-147			
Toluene	527.8	10.0	ug/L	505	ND	105	71-133			
trans-1,3-Dichloropropene	511.1	10.0	ug/L	501	ND	102	63-124			
1,1,2-Trichloroethane	514.9	10.0	ug/L	501	ND	103	69-133			
Tetrachloroethylene	541.8	10.0	ug/L	501	ND	108	70-124			
2-Hexanone (MBK)	1155	50.0	ug/L	1000	ND	116	53-141			
Dibromochloromethane	525.2	10.0	ug/L	501	ND	105	74-122			
1,2-Dibromoethane	522.2	10.0	ug/L	502	ND	104	66-127			
Chlorobenzene	515.8	10.0	ug/L	501	ND	103	76-116			
1,1,1,2-Tetrachloroethane	521.1	10.0	ug/L	503	ND	104	77-121			
Ethylbenzene	525.9	10.0	ug/L	502	ND	105	73-124			
Xylenes, total	1579	20.0	ug/L	1510	ND	105	75-123			
Styrene	546.1	10.0	ug/L	504	ND	108	70-120			
Bromoform	519.3	10.0	ug/L	501	ND	104	70-124			
1,2,3-Trichloropropane	527.7	10.0	ug/L	503	ND	105	62-135			
trans-1,4-Dichloro-2-butene	1081	50.0	ug/L	1000	ND	108	50-120			
1,1,2,2-Tetrachloroethane	525.5	10.0	ug/L	501	ND	105	63-126			
1,4-Dichlorobenzene	503.0	10.0	ug/L	501	ND	100	72-119			
1,2-Dichlorobenzene	529.3	10.0	ug/L	501	ND	106	71-117			
1,2-Dibromo-3-chloropropane	578.2	50.0	ug/L	501	ND	115	49-134			

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0338 - EPA 5030B - EPA 8260D										
Matrix Spike (1JC0338-MS1)		Source: 1JC0415-01			Prepared: 03/06/26 00:00 Analyzed: 03/06/26 20:49					
Surrogate: Dibromofluoromethane	498		ug/L	502		99.1	57-128			
Surrogate: Dibromofluoromethane	498		ug/L	502		99.1	75-136			
Surrogate: 1,2-Dichloroethane-d4	496		ug/L	504		98.5	49-135			
Surrogate: 1,2-Dichloroethane-d4	496		ug/L	504		98.5	61-142			
Surrogate: Toluene-d8	502		ug/L	505		99.4	82-116			
Surrogate: Toluene-d8	502		ug/L	505		99.4	82-121			
Surrogate: 4-Bromofluorobenzene	504		ug/L	502		100	77-114			
Surrogate: 4-Bromofluorobenzene	504		ug/L	502		100	80-116			
Matrix Spike Dup (1JC0338-MSD1)		Source: 1JC0415-01			Prepared: 03/06/26 00:00 Analyzed: 03/06/26 21:11					
Chloromethane	255.9	10.0	ug/L	303	ND	84.4	61-152	5.95	26	
Vinyl Chloride	281.5	10.0	ug/L	302	ND	93.1	66-149	6.63	23	
Bromomethane	268.6	10.0	ug/L	301	ND	89.2	43-171	8.04	29	
Chloroethane	286.2	10.0	ug/L	303	ND	94.4	69-148	4.51	25	
Trichlorofluoromethane	309.6	10.0	ug/L	303	ND	102	62-163	6.20	25	
1,1-Dichloroethylene	504.7	10.0	ug/L	501	ND	101	70-148	6.72	22	
Acetone	1202	100	ug/L	1000	ND	120	45-173	1.15	30	
Methyl Iodide	1214	10.0	ug/L	1000	ND	121	62-167	2.65	24	
Carbon Disulfide	976.6	10.0	ug/L	1000	ND	97.7	71-163	6.02	22	
Methylene Chloride	456.3	50.0	ug/L	501	ND	91.1	69-140	2.47	19	
Acrylonitrile	500.3	50.0	ug/L	504	ND	99.4	32-159	2.41	30	
trans-1,2-Dichloroethylene	510.8	10.0	ug/L	501	ND	102	69-144	4.07	22	
1,1-Dichloroethane	505.7	10.0	ug/L	501	ND	101	70-138	4.39	20	
Vinyl Acetate	1562	50.0	ug/L	1310	ND	119	58-142	0.0961	24	
cis-1,2-Dichloroethylene	492.5	10.0	ug/L	504	ND	97.8	68-151	5.12	22	
2-Butanone (MEK)	1093	100	ug/L	1000	ND	109	50-160	2.44	23	
Bromochloromethane	520.3	10.0	ug/L	504	ND	103	65-143	1.22	22	
Chloroform	488.9	10.0	ug/L	501	ND	97.6	71-143	2.64	21	
1,1,1-Trichloroethane	513.1	10.0	ug/L	501	ND	102	63-133	4.09	23	
Carbon Tetrachloride	518.8	10.0	ug/L	501	ND	104	63-142	4.54	22	
Benzene	497.2	10.0	ug/L	504	ND	98.6	69-133	3.87	18	
1,2-Dichloroethane	498.9	10.0	ug/L	501	ND	99.6	63-138	0.580	20	
Trichloroethylene	488.8	10.0	ug/L	501	ND	97.6	71-133	5.65	23	
1,2-Dichloropropane	503.1	10.0	ug/L	501	ND	100	69-132	1.09	20	
Dibromomethane	511.7	10.0	ug/L	504	ND	102	70-147	1.58	22	
Bromodichloromethane	506.4	10.0	ug/L	501	ND	101	67-130	0.767	21	
cis-1,3-Dichloropropene	510.9	10.0	ug/L	501	ND	102	61-126	0.157	21	
4-Methyl-2-pentanone (MIBK)	1076	50.0	ug/L	1000	ND	108	55-147	0.869	23	
Toluene	510.6	10.0	ug/L	505	ND	101	71-133	3.31	19	
trans-1,3-Dichloropropene	519.7	10.0	ug/L	501	ND	104	63-124	1.67	21	
1,1,2-Trichloroethane	521.6	10.0	ug/L	501	ND	104	69-133	1.29	19	
Tetrachloroethylene	507.8	10.0	ug/L	501	ND	101	70-124	6.48	24	
2-Hexanone (MBK)	1121	50.0	ug/L	1000	ND	112	53-141	3.01	24	
Dibromochloromethane	520.1	10.0	ug/L	501	ND	104	74-122	0.976	21	

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Table with columns: Determination of Volatile Organic Compounds, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Includes data for Batch 1JC0338 - EPA 5030B - EPA 8260D and Matrix Spike Dup (1JC0338-MSD1).

Batch 1JC0823 - EPA 5030B - EPA 8260D

Table with columns: Blank (1JC0823-BLK1), Result, RL, Units. Includes data for various compounds like Chloromethane, Vinyl Chloride, Bromomethane, etc.



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0823 - EPA 5030B - EPA 8260D										
Blank (1JC0823-BLK1)										
Prepared: 03/15/26 00:00 Analyzed: 03/15/26 12:32										
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							
<i>Surrogate: Dibromofluoromethane</i>	51.4		ug/L	50.2			102 75-136			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	52.0		ug/L	50.4			103 61-142			
<i>Surrogate: Toluene-d8</i>	49.8		ug/L	50.5			98.7 82-121			
<i>Surrogate: 4-Bromofluorobenzene</i>	48.4		ug/L	50.2			96.4 80-116			
LCS (1JC0823-BS1)										
Prepared: 03/15/26 00:00 Analyzed: 03/15/26 09:52										
Chloromethane	20.77	1.0	ug/L	30.3			68.5 63-155			
Vinyl Chloride	20.98	1.0	ug/L	30.2			69.4 70-154			Q3
Bromomethane	21.35	1.0	ug/L	30.1			70.9 52-176			
Chloroethane	21.93	1.0	ug/L	30.3			72.3 72-148			
Trichlorofluoromethane	24.13	1.0	ug/L	30.3			79.6 70-152			
1,1-Dichloroethylene	51.72	1.0	ug/L	50.1			103 70-148			
Acetone	104.5	10.0	ug/L	100			105 43-172			
Methyl Iodide	118.2	1.0	ug/L	100			118 69-170			
Carbon Disulfide	100.6	1.0	ug/L	100			101 72-162			
Methylene Chloride	45.47	5.0	ug/L	50.1			90.7 68-142			

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0823 - EPA 5030B - EPA 8260D										
LCS (1JC0823-BS1)										
Prepared: 03/15/26 00:00 Analyzed: 03/15/26 09:52										
trans-1,2-Dichloroethylene	52.22	1.0	ug/L	50.1		104	66-148			
1,1-Dichloroethane	51.48	1.0	ug/L	50.1		103	66-143			
Vinyl Acetate	118.5	5.0	ug/L	131		90.3	43-153			
cis-1,2-Dichloroethylene	50.02	1.0	ug/L	50.4		99.3	71-149			
2-Butanone (MEK)	100.9	10.0	ug/L	100		101	52-159			
Bromochloromethane	51.81	1.0	ug/L	50.4		103	69-143			
Chloroform	49.31	1.0	ug/L	50.1		98.5	69-144			
1,1,1-Trichloroethane	53.42	1.0	ug/L	50.1		107	62-129			
Carbon Tetrachloride	53.68	1.0	ug/L	50.1		107	63-141			
Benzene	50.55	1.0	ug/L	50.4		100	71-134			
1,2-Dichloroethane	51.83	1.0	ug/L	50.1		103	72-132			
Trichloroethylene	50.88	1.0	ug/L	50.1		102	71-135			
1,2-Dichloropropane	50.62	1.0	ug/L	50.1		101	69-136			
Dibromomethane	49.73	1.0	ug/L	50.4		98.7	73-147			
Bromodichloromethane	51.86	1.0	ug/L	50.1		104	68-129			
cis-1,3-Dichloropropane	51.15	1.0	ug/L	50.1		102	65-134			
4-Methyl-2-pentanone (MIBK)	105.3	5.0	ug/L	100		105	58-147			
Toluene	51.70	1.0	ug/L	50.5		102	72-133			
trans-1,3-Dichloropropene	51.42	1.0	ug/L	50.1		103	67-130			
1,1,2-Trichloroethane	49.88	1.0	ug/L	50.1		99.6	69-135			
Tetrachloroethylene	53.03	1.0	ug/L	50.1		106	69-130			
2-Hexanone (MBK)	110.6	5.0	ug/L	100		111	55-144			
Dibromochloromethane	52.51	1.0	ug/L	50.1		105	73-127			
1,2-Dibromoethane	49.61	1.0	ug/L	50.2		98.8	67-132			
Chlorobenzene	50.03	1.0	ug/L	50.1		99.9	72-123			
1,1,1,2-Tetrachloroethane	53.17	1.0	ug/L	50.3		106	73-127			
Ethylbenzene	51.17	1.0	ug/L	50.2		102	71-127			
Xylenes, total	153.1	2.0	ug/L	151		101	74-127			
Styrene	52.96	1.0	ug/L	50.4		105	66-126			
Bromoform	51.59	1.0	ug/L	50.1		103	68-130			
1,2,3-Trichloropropane	50.97	1.0	ug/L	50.3		101	63-136			
trans-1,4-Dichloro-2-butene	115.5	5.0	ug/L	100		116	54-134			
1,1,2,2-Tetrachloroethane	48.50	1.0	ug/L	50.1		96.8	61-131			
1,4-Dichlorobenzene	49.35	1.0	ug/L	50.1		98.5	70-129			
1,2-Dichlorobenzene	51.90	1.0	ug/L	50.1		104	69-126			
1,2-Dibromo-3-chloropropane	54.85	5.0	ug/L	50.1		109	50-143			
Surrogate: Dibromofluoromethane	50.7		ug/L	50.2		101	75-136			
Surrogate: 1,2-Dichloroethane-d4	50.7		ug/L	50.4		101	61-142			
Surrogate: Toluene-d8	49.9		ug/L	50.5		98.9	82-121			
Surrogate: 4-Bromofluorobenzene	50.7		ug/L	50.2		101	80-116			

LCS Dup (1JC0823-BSD1)										
Prepared: 03/15/26 00:00 Analyzed: 03/15/26 10:15										
Chloromethane	19.82	1.0	ug/L	30.3		65.4	63-155	4.68	24	



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0823 - EPA 5030B - EPA 8260D										
LCS Dup (1JC0823-BSD1)										
				Prepared: 03/15/26 00:00 Analyzed: 03/15/26 10:15						
Vinyl Chloride	20.43	1.0	ug/L	30.2		67.5	70-154	2.66	25	Q3
Bromomethane	20.89	1.0	ug/L	30.1		69.4	52-176	2.18	27	
Chloroethane	21.61	1.0	ug/L	30.3		71.3	72-148	1.47	25	Q3
Trichlorofluoromethane	23.20	1.0	ug/L	30.3		76.6	70-152	3.93	26	
1,1-Dichloroethylene	50.47	1.0	ug/L	50.1		101	70-148	2.45	24	
Acetone	105.0	10.0	ug/L	100		105	43-172	0.420	30	
Methyl Iodide	123.8	1.0	ug/L	100		124	69-170	4.65	30	
Carbon Disulfide	98.03	1.0	ug/L	100		98.0	72-162	2.57	24	
Methylene Chloride	45.21	5.0	ug/L	50.1		90.2	68-142	0.573	21	
trans-1,2-Dichloroethylene	51.18	1.0	ug/L	50.1		102	66-148	2.01	27	
1,1-Dichloroethane	51.43	1.0	ug/L	50.1		103	66-143	0.0972	24	
Vinyl Acetate	116.5	5.0	ug/L	131		88.8	43-153	1.74	30	
cis-1,2-Dichloroethylene	49.96	1.0	ug/L	50.4		99.2	71-149	0.120	26	
2-Butanone (MEK)	102.0	10.0	ug/L	100		102	52-159	1.08	27	
Bromochloromethane	52.53	1.0	ug/L	50.4		104	69-143	1.38	23	
Chloroform	48.95	1.0	ug/L	50.1		97.7	69-144	0.733	23	
1,1,1-Trichloroethane	52.62	1.0	ug/L	50.1		105	62-129	1.51	24	
Carbon Tetrachloride	52.92	1.0	ug/L	50.1		106	63-141	1.43	25	
Benzene	50.06	1.0	ug/L	50.4		99.3	71-134	0.974	24	
1,2-Dichloroethane	50.90	1.0	ug/L	50.1		102	72-132	1.81	24	
Trichloroethylene	49.92	1.0	ug/L	50.1		99.7	71-135	1.90	24	
1,2-Dichloropropane	50.90	1.0	ug/L	50.1		102	69-136	0.552	24	
Dibromomethane	50.14	1.0	ug/L	50.4		99.5	73-147	0.821	25	
Bromodichloromethane	52.15	1.0	ug/L	50.1		104	68-129	0.558	22	
cis-1,3-Dichloropropene	51.98	1.0	ug/L	50.1		104	65-134	1.61	23	
4-Methyl-2-pentanone (MIBK)	109.4	5.0	ug/L	100		109	58-147	3.87	27	
Toluene	51.59	1.0	ug/L	50.5		102	72-133	0.213	24	
trans-1,3-Dichloropropene	52.68	1.0	ug/L	50.1		105	67-130	2.42	24	
1,1,2-Trichloroethane	50.75	1.0	ug/L	50.1		101	69-135	1.73	23	
Tetrachloroethylene	50.92	1.0	ug/L	50.1		102	69-130	4.06	25	
2-Hexanone (MBK)	112.7	5.0	ug/L	100		113	55-144	1.90	25	
Dibromochloromethane	52.43	1.0	ug/L	50.1		105	73-127	0.152	22	
1,2-Dibromoethane	50.54	1.0	ug/L	50.2		101	67-132	1.86	24	
Chlorobenzene	50.06	1.0	ug/L	50.1		100	72-123	0.0600	23	
1,1,1,2-Tetrachloroethane	52.61	1.0	ug/L	50.3		104	73-127	1.06	24	
Ethylbenzene	50.66	1.0	ug/L	50.2		101	71-127	1.00	26	
Xylenes, total	153.0	2.0	ug/L	151		101	74-127	0.0915	25	
Styrene	52.82	1.0	ug/L	50.4		105	66-126	0.265	23	
Bromoform	51.24	1.0	ug/L	50.1		102	68-130	0.681	23	
1,2,3-Trichloropropane	49.65	1.0	ug/L	50.3		98.6	63-136	2.62	24	
trans-1,4-Dichloro-2-butene	115.8	5.0	ug/L	100		116	54-134	0.259	27	
1,1,2,2-Tetrachloroethane	50.00	1.0	ug/L	50.1		99.8	61-131	3.05	29	
1,4-Dichlorobenzene	49.87	1.0	ug/L	50.1		99.5	70-129	1.05	24	

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---	--------	----	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1JC0823 - EPA 5030B - EPA 8260D

LCS Dup (1JC0823-BSD1)

Prepared: 03/15/26 00:00 Analyzed: 03/15/26 10:15

1,2-Dichlorobenzene	51.87	1.0	ug/L	50.1		104	69-126	0.0578	26	
1,2-Dibromo-3-chloropropane	56.00	5.0	ug/L	50.1		112	50-143	2.07	30	
Surrogate: Dibromofluoromethane	49.4		ug/L	50.2		98.3	75-136			
Surrogate: 1,2-Dichloroethane-d4	50.2		ug/L	50.4		99.7	61-142			
Surrogate: Toluene-d8	50.1		ug/L	50.5		99.2	82-121			
Surrogate: 4-Bromofluorobenzene	50.5		ug/L	50.2		101	80-116			

Matrix Spike (1JC0823-MS1)

Source: 1JC1110-01

Prepared: 03/15/26 00:00 Analyzed: 03/15/26 10:38

Chloromethane	181.3	10.0	ug/L	303	ND	59.8	61-152			M2
Vinyl Chloride	194.1	10.0	ug/L	302	ND	64.2	66-149			M2
Bromomethane	198.4	10.0	ug/L	301	ND	65.9	43-171			
Chloroethane	205.8	10.0	ug/L	303	ND	67.9	69-148			M2
Trichlorofluoromethane	228.6	10.0	ug/L	303	ND	75.4	62-163			
1,1-Dichloroethylene	492.6	10.0	ug/L	501	ND	98.3	70-148			
Acetone	1104	100	ug/L	1000	ND	110	45-173			
Methyl Iodide	1199	10.0	ug/L	1000	ND	120	62-167			
Carbon Disulfide	952.8	10.0	ug/L	1000	ND	95.3	71-163			
Methylene Chloride	437.9	50.0	ug/L	501	ND	87.4	69-140			
trans-1,2-Dichloroethylene	502.8	10.0	ug/L	501	ND	100	69-144			
1,1-Dichloroethane	503.3	10.0	ug/L	501	ND	100	70-138			
Vinyl Acetate	1283	50.0	ug/L	1310	ND	97.8	58-142			
cis-1,2-Dichloroethylene	486.7	10.0	ug/L	504	ND	96.7	68-151			
2-Butanone (MEK)	1060	100	ug/L	1000	ND	106	50-160			
Bromochloromethane	507.1	10.0	ug/L	504	ND	101	65-143			
Chloroform	478.1	10.0	ug/L	501	ND	95.5	71-143			
1,1,1-Trichloroethane	526.9	10.0	ug/L	501	ND	105	63-133			
Carbon Tetrachloride	533.5	10.0	ug/L	501	ND	107	63-142			
Benzene	486.2	10.0	ug/L	504	ND	96.4	69-133			
1,2-Dichloroethane	491.1	10.0	ug/L	501	ND	98.1	63-138			
Trichloroethylene	494.6	10.0	ug/L	501	ND	98.7	71-133			
1,2-Dichloropropane	487.9	10.0	ug/L	501	ND	97.4	69-132			
Dibromomethane	494.1	10.0	ug/L	504	ND	98.1	70-147			
Bromodichloromethane	505.1	10.0	ug/L	501	ND	101	67-130			
cis-1,3-Dichloropropene	508.5	10.0	ug/L	501	ND	102	61-126			
4-Methyl-2-pentanone (MIBK)	1084	50.0	ug/L	1000	ND	108	55-147			
Toluene	506.7	10.0	ug/L	505	ND	100	71-133			
trans-1,3-Dichloropropene	513.3	10.0	ug/L	501	ND	103	63-124			
1,1,2-Trichloroethane	495.1	10.0	ug/L	501	ND	98.8	69-133			
Tetrachloroethylene	524.0	10.0	ug/L	501	ND	105	70-124			
2-Hexanone (MBK)	1167	50.0	ug/L	1000	ND	117	53-141			
Dibromochloromethane	526.0	10.0	ug/L	501	ND	105	74-122			
1,2-Dibromoethane	505.6	10.0	ug/L	502	ND	101	66-127			
Chlorobenzene	498.3	10.0	ug/L	501	ND	99.5	76-116			

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0823 - EPA 5030B - EPA 8260D										
Matrix Spike (1JC0823-MS1)		Source: 1JC1110-01			Prepared: 03/15/26 00:00 Analyzed: 03/15/26 10:38					
1,1,1,2-Tetrachloroethane	524.3	10.0	ug/L	503	ND	104	77-121			
Ethylbenzene	513.3	10.0	ug/L	502	ND	102	73-124			
Xylenes, total	1540	20.0	ug/L	1510	ND	102	75-123			
Styrene	527.4	10.0	ug/L	504	ND	105	70-120			
Bromoform	521.6	10.0	ug/L	501	ND	104	70-124			
1,2,3-Trichloropropane	504.5	10.0	ug/L	503	ND	100	62-135			
trans-1,4-Dichloro-2-butene	1191	50.0	ug/L	1000	ND	119	50-120			
1,1,1,2-Tetrachloroethane	494.8	10.0	ug/L	501	ND	98.8	63-126			
1,4-Dichlorobenzene	491.4	10.0	ug/L	501	ND	98.0	72-119			
1,2-Dichlorobenzene	512.4	10.0	ug/L	501	ND	102	71-117			
1,2-Dibromo-3-chloropropane	552.6	50.0	ug/L	501	ND	110	49-134			
Surrogate: Dibromofluoromethane	494		ug/L	502		98.4	75-136			
Surrogate: 1,2-Dichloroethane-d4	503		ug/L	504		99.9	61-142			
Surrogate: Toluene-d8	498		ug/L	505		98.7	82-121			
Surrogate: 4-Bromofluorobenzene	510		ug/L	502		102	80-116			
Matrix Spike Dup (1JC0823-MSD1)		Source: 1JC1110-01			Prepared: 03/15/26 00:00 Analyzed: 03/15/26 11:01					
Chloromethane	178.8	10.0	ug/L	303	ND	59.0	61-152	1.39	26	M2
Vinyl Chloride	187.4	10.0	ug/L	302	ND	62.0	66-149	3.51	23	M2
Bromomethane	191.6	10.0	ug/L	301	ND	63.6	43-171	3.49	29	
Chloroethane	198.3	10.0	ug/L	303	ND	65.4	69-148	3.71	25	M2
Trichlorofluoromethane	219.2	10.0	ug/L	303	ND	72.3	62-163	4.20	25	
1,1-Dichloroethylene	479.8	10.0	ug/L	501	ND	95.7	70-148	2.63	22	
Acetone	1140	100	ug/L	1000	ND	114	45-173	3.25	30	
Methyl Iodide	1188	10.0	ug/L	1000	ND	119	62-167	0.855	24	
Carbon Disulfide	926.4	10.0	ug/L	1000	ND	92.6	71-163	2.81	22	
Methylene Chloride	425.4	50.0	ug/L	501	ND	84.9	69-140	2.90	19	
trans-1,2-Dichloroethylene	490.8	10.0	ug/L	501	ND	98.0	69-144	2.42	22	
1,1-Dichloroethane	488.0	10.0	ug/L	501	ND	97.4	70-138	3.09	20	
Vinyl Acetate	1280	50.0	ug/L	1310	ND	97.5	58-142	0.281	24	
cis-1,2-Dichloroethylene	478.2	10.0	ug/L	504	ND	95.0	68-151	1.76	22	
2-Butanone (MEK)	1143	100	ug/L	1000	ND	114	50-160	7.54	23	
Bromochloromethane	502.7	10.0	ug/L	504	ND	99.7	65-143	0.871	22	
Chloroform	469.2	10.0	ug/L	501	ND	93.7	71-143	1.88	21	
1,1,1-Trichloroethane	508.5	10.0	ug/L	501	ND	101	63-133	3.55	23	
Carbon Tetrachloride	521.1	10.0	ug/L	501	ND	104	63-142	2.35	22	
Benzene	478.5	10.0	ug/L	504	ND	94.9	69-133	1.60	18	
1,2-Dichloroethane	489.6	10.0	ug/L	501	ND	97.8	63-138	0.306	20	
Trichloroethylene	483.9	10.0	ug/L	501	ND	96.6	71-133	2.19	23	
1,2-Dichloropropane	486.0	10.0	ug/L	501	ND	97.0	69-132	0.390	20	
Dibromomethane	486.7	10.0	ug/L	504	ND	96.6	70-147	1.51	22	
Bromodichloromethane	498.4	10.0	ug/L	501	ND	99.5	67-130	1.34	21	
cis-1,3-Dichloropropene	501.8	10.0	ug/L	501	ND	100	61-126	1.33	21	

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---	--------	----	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1JC0823 - EPA 5030B - EPA 8260D

Matrix Spike Dup (1JC0823-MSD1) Source: 1JC1110-01 Prepared: 03/15/26 00:00 Analyzed: 03/15/26 11:01

4-Methyl-2-pentanone (MIBK)	1090	50.0	ug/L	1000	ND	109	55-147	0.607	23	
Toluene	496.7	10.0	ug/L	505	ND	98.4	71-133	1.99	19	
trans-1,3-Dichloropropene	510.6	10.0	ug/L	501	ND	102	63-124	0.527	21	
1,1,2-Trichloroethane	486.9	10.0	ug/L	501	ND	97.2	69-133	1.67	19	
Tetrachloroethylene	502.8	10.0	ug/L	501	ND	100	70-124	4.13	24	
2-Hexanone (MBK)	1154	50.0	ug/L	1000	ND	115	53-141	1.05	24	
Dibromochloromethane	509.7	10.0	ug/L	501	ND	102	74-122	3.15	21	
1,2-Dibromoethane	491.7	10.0	ug/L	502	ND	97.9	66-127	2.79	23	
Chlorobenzene	486.0	10.0	ug/L	501	ND	97.0	76-116	2.50	21	
1,1,1,2-Tetrachloroethane	510.3	10.0	ug/L	503	ND	101	77-121	2.71	25	
Ethylbenzene	497.8	10.0	ug/L	502	ND	99.2	73-124	3.07	20	
Xylenes, total	1486	20.0	ug/L	1510	ND	98.3	75-123	3.61	20	
Styrene	507.7	10.0	ug/L	504	ND	101	70-120	3.81	23	
Bromoform	507.0	10.0	ug/L	501	ND	101	70-124	2.84	22	
1,2,3-Trichloropropane	506.8	10.0	ug/L	503	ND	101	62-135	0.455	28	
trans-1,4-Dichloro-2-butene	1159	50.0	ug/L	1000	ND	116	50-120	2.71	26	
1,1,2,2-Tetrachloroethane	490.7	10.0	ug/L	501	ND	97.9	63-126	0.832	24	
1,4-Dichlorobenzene	485.1	10.0	ug/L	501	ND	96.8	72-119	1.29	24	
1,2-Dichlorobenzene	508.0	10.0	ug/L	501	ND	101	71-117	0.862	24	
1,2-Dibromo-3-chloropropane	570.2	50.0	ug/L	501	ND	114	49-134	3.14	28	

Surrogate: Dibromofluoromethane	506		ug/L	502		101	75-136			
Surrogate: 1,2-Dichloroethane-d4	506		ug/L	504		100	61-142			
Surrogate: Toluene-d8	501		ug/L	505		99.3	82-121			
Surrogate: 4-Bromofluorobenzene	493		ug/L	502		98.2	80-116			

Metals Total by ICPMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
-----------------------	--------	----	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1JC0365 - EPA 3005A Total Recoverable Metals - EPA 6020A

Blank (1JC0365-BLK1) Prepared: 03/06/26 15:45 Analyzed: 03/09/26 16:50

Antimony	<0.00100	0.00100	mg/L							
Arsenic	<0.00200	0.00200	mg/L							
Barium	<0.00100	0.00100	mg/L							
Beryllium	<0.000500	0.000500	mg/L							
Cadmium	<0.000200	0.000200	mg/L							
Chromium	<0.00100	0.00100	mg/L							
Cobalt	<0.000500	0.000500	mg/L							
Copper	<0.00500	0.00500	mg/L							
Lead	<0.00100	0.00100	mg/L							
Nickel	<0.00500	0.00500	mg/L							
Selenium	<0.00200	0.00200	mg/L							
Silver	<0.00500	0.00500	mg/L							
Thallium	<0.000500	0.000500	mg/L							

B



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Metals Total by ICPMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0365 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1JC0365-BLK1)				Prepared: 03/06/26 15:45 Analyzed: 03/09/26 16:50						
Vanadium	<0.00200	0.00200	mg/L							
Zinc	<0.00500	0.00500	mg/L							
LCS (1JC0365-BS1)				Prepared: 03/06/26 15:45 Analyzed: 03/09/26 16:53						
Antimony	0.101	0.00400	mg/L	0.100		101	80-120			
Arsenic	0.101	0.00800	mg/L	0.100		101	80-120			
Barium	0.114	0.00400	mg/L	0.100		114	80-120			
Beryllium	0.0991	0.00200	mg/L	0.100		99.1	80-120			
Cadmium	0.0994	0.000800	mg/L	0.100		99.4	80-120			
Chromium	0.103	0.00400	mg/L	0.100		103	80-120			
Cobalt	0.102	0.00200	mg/L	0.100		102	80-120			
Copper	0.103	0.0200	mg/L	0.100		103	80-120			
Lead	0.101	0.00400	mg/L	0.100		101	80-120			
Nickel	0.105	0.0200	mg/L	0.100		105	80-120			
Selenium	0.0998	0.00800	mg/L	0.100		99.8	80-120			
Silver	0.104	0.0200	mg/L	0.100		104	80-120			
Thallium	0.102	0.00200	mg/L	0.100		102	80-120			
Vanadium	0.101	0.00800	mg/L	0.100		101	80-120			
Zinc	0.105	0.0200	mg/L	0.100		105	80-120			
Matrix Spike (1JC0365-MS1)				Source: 1JC0415-01		Prepared: 03/06/26 15:45 Analyzed: 03/09/26 16:58				
Antimony	0.100	0.00400	mg/L	0.100	ND	100	75-125			
Arsenic	0.0998	0.00800	mg/L	0.100	ND	99.8	75-125			
Barium	0.222	0.00400	mg/L	0.100	0.125	96.4	75-125			
Beryllium	0.0997	0.00200	mg/L	0.100	ND	99.7	75-125			
Cadmium	0.0971	0.000800	mg/L	0.100	ND	97.1	75-125			
Chromium	0.100	0.00400	mg/L	0.100	ND	100	75-125			
Cobalt	0.0973	0.00200	mg/L	0.100	0.000276	97.0	75-125			
Copper	0.0978	0.0200	mg/L	0.100	ND	97.8	75-125			
Lead	0.0976	0.00400	mg/L	0.100	ND	97.6	75-125			
Nickel	0.0995	0.0200	mg/L	0.100	0.00201	97.5	75-125			
Selenium	0.102	0.00800	mg/L	0.100	ND	102	75-125			
Silver	0.0991	0.0200	mg/L	0.100	ND	99.1	75-125			
Thallium	0.0995	0.00200	mg/L	0.100	ND	99.5	75-125			
Vanadium	0.0990	0.00800	mg/L	0.100	ND	99.0	75-125			
Zinc	0.104	0.0200	mg/L	0.100	ND	104	75-125			
Matrix Spike Dup (1JC0365-MSD1)				Source: 1JC0415-01		Prepared: 03/06/26 15:45 Analyzed: 03/09/26 17:06				
Antimony	0.104	0.00400	mg/L	0.100	ND	104	75-125	4.37	20	
Arsenic	0.106	0.00800	mg/L	0.100	ND	106	75-125	6.07	20	
Barium	0.237	0.00400	mg/L	0.100	0.125	112	75-125	6.89	20	
Beryllium	0.105	0.00200	mg/L	0.100	ND	105	75-125	5.05	20	
Cadmium	0.102	0.000800	mg/L	0.100	ND	102	75-125	4.79	20	
Chromium	0.105	0.00400	mg/L	0.100	ND	105	75-125	4.22	20	
Cobalt	0.101	0.00200	mg/L	0.100	0.000276	101	75-125	3.86	20	
Copper	0.102	0.0200	mg/L	0.100	ND	102	75-125	4.47	20	

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Metals Total by ICPMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JC0365 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Matrix Spike Dup (1JC0365-MSD1) Source: 1JC0415-01 Prepared: 03/06/26 15:45 Analyzed: 03/09/26 17:06										
Lead	0.103	0.00400	mg/L	0.100	ND	103	75-125	5.70	20	
Nickel	0.103	0.0200	mg/L	0.100	0.00201	101	75-125	3.47	20	
Selenium	0.107	0.00800	mg/L	0.100	ND	107	75-125	5.16	20	
Silver	0.105	0.0200	mg/L	0.100	ND	105	75-125	5.90	20	
Thallium	0.105	0.00200	mg/L	0.100	ND	105	75-125	5.36	20	
Vanadium	0.104	0.00800	mg/L	0.100	ND	104	75-125	5.03	20	
Zinc	0.109	0.0200	mg/L	0.100	ND	109	75-125	4.45	20	
Post Spike (1JC0365-PS1) Source: 1JC0415-01 Prepared: 03/06/26 15:45 Analyzed: 03/09/26 17:08										
Antimony	0.0216		mg/L	0.0200	0.000274	106	80-120			
Arsenic	0.0215		mg/L	0.0200	0.000205	106	80-120			
Barium	0.145		mg/L	0.0200	0.125	97.0	80-120			
Beryllium	0.0207		mg/L	0.0200	0.000030	104	80-120			
Cadmium	0.0211		mg/L	0.0200	0.000010	105	80-120			
Chromium	0.0217		mg/L	0.0200	0.000910	104	80-120			
Cobalt	0.0214		mg/L	0.0200	0.000276	106	80-120			
Copper	0.0215		mg/L	0.0200	0.00104	102	80-120			
Lead	0.0212		mg/L	0.0200	0.000190	105	80-120			
Nickel	0.0225		mg/L	0.0200	0.00201	102	80-120			
Selenium	0.0220		mg/L	0.0200	0.000113	110	80-120			
Silver	0.0215		mg/L	0.0200	0.000383	105	80-120			
Thallium	0.0209		mg/L	0.0200	0.000220	104	80-120			
Vanadium	0.0213		mg/L	0.0200	0.000730	106	80-120			
Zinc	0.0241		mg/L	0.0200	0.00407	100	80-120			
Batch 1JC0509 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1JC0509-BLK1) Prepared: 03/10/26 15:51 Analyzed: 03/12/26 17:46										
Cadmium	<0.000200	0.000200	mg/L							
Selenium	<0.00200	0.00200	mg/L							
LCS (1JC0509-BS1) Prepared: 03/10/26 15:51 Analyzed: 03/12/26 17:48										
Cadmium	0.0986	0.000800	mg/L	0.100		98.6	80-120			
Selenium	0.0959	0.00800	mg/L	0.100		95.9	80-120			
Matrix Spike (1JC0509-MS1) Source: 1JC0768-01 Prepared: 03/10/26 15:51 Analyzed: 03/12/26 18:06										
Cadmium	0.104	0.000800	mg/L	0.100	ND	104	75-125			
Selenium	0.105	0.00800	mg/L	0.100	ND	105	75-125			
Matrix Spike (1JC0509-MS2) Source: 1JC0768-08 Prepared: 03/10/26 15:51 Analyzed: 03/12/26 18:36										
Cadmium	0.0943	0.000800	mg/L	0.100	ND	94.3	75-125			
Selenium	0.100	0.00800	mg/L	0.100	ND	100	75-125			
Matrix Spike Dup (1JC0509-MSD1) Source: 1JC0768-01 Prepared: 03/10/26 15:51 Analyzed: 03/12/26 18:08										
Cadmium	0.0926	0.000800	mg/L	0.100	ND	92.6	75-125	11.7	20	
Selenium	0.0944	0.00800	mg/L	0.100	ND	94.4	75-125	11.1	20	
Matrix Spike Dup (1JC0509-MSD2) Source: 1JC0768-08 Prepared: 03/10/26 15:51 Analyzed: 03/12/26 18:39										
Cadmium	0.0986	0.000800	mg/L	0.100	ND	98.6	75-125	4.39	20	

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0415

Table with columns: Metals Total by ICPMS, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Includes sections for Matrix Spike Dup, Post Spike (PS1), and Post Spike (PS2).

Definitions

- B: The target analyte was detected in the blank at or above the method acceptance criteria.
B1: The target analyte was detected in the method blank at or above the method acceptance criteria. The sample concentration is below the method acceptance criteria.
M2: Matrix spike recovery is below acceptance limits.
Q3: LCS recovery is below acceptance limits. The reported value is estimated.
RL: Reporting Limit
RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 0.1°C

Cooler Inspection Checklist

Table with 4 columns: Item, Status, Description, Status. Rows include Custody Seals, COC/Labels Agree, and Received On Ice.

Report Comments

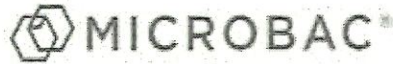
The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.

Reviewed and Approved By:

Handwritten signature of Heather Murphy

Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
03/18/26 13:38

CHAIN OF CUSTODY RECORD



600 East 17th Street South
 Newton, IA 50208
 Phone: 641-792-8451

Page 1 of 2
 Printed: 2/3/2026 10:18:10AM

COC #1

SITE INFORMATION

Sampler:

Project: Delaware Co. Landfill - New Regs
 6039

REPORT TO

Todd Whipple
 HLW Engineering
 204 West Broad St
 Story City, IA 50248

INVOICE TO

Erin Learn
 Delaware County Solid Waste Commission
 804 W 2nd St
 Washington, IA 52353

SPECIAL INSTRUCTIONS

None

Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

1 J C 0 4 1 5
 HLW Engineering
 PM: Heather Murphy

Temperature: 0.1 oC

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	# Containers	Analyses	Lab Sample Number
01-001	MW-11 (b)	Aqueous	GRAB	3/2/26	8:40	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	01
02-001	MW-20 (b)	Aqueous	GRAB	3/2/26	9:40	1	Indfil-app1-metals-6020 Indfil-app1-voc-group	02
03-001	MW-5	Aqueous	GRAB	3/2/26	10:35	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	03
04-001	MW-6	Aqueous	GRAB	3/2/26	10:58	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	04
05-001	MW-7	Aqueous	GRAB	3/2/26	12:33	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	05
06-001	MW-8	Aqueous	GRAB	3/2/26	12:50	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	06
07-001	MW-23	Aqueous	GRAB	3/2/26	13:25	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	07
08-001	MW-24 FROZEN @ 2-7 ft	Aqueous	GRAB	3/2/26	—	FROZEN @	Indfil-app1-metals-6020 Indfil-app1-voc-group	—
09-001	MW-25	Aqueous	GRAB	3/2/26	9:11	7	Indfil-app1-metals-6020 Indfil-app1-voc-group	08
10-001	Duplicate	Aqueous	GRAB	3/2/26	✓	1	Indfil-app1-metals-6020 Indfil-app1-voc-group	10

Relinquished By [Signature] Date/Time 3/3/26

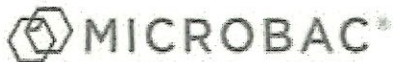
Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____

Received for Lab By [Signature] Date/Time 3/3/26 11:15

Remarks:

CHAIN OF CUSTODY RECORD



600 East 17th Street South
 Newton, IA 50208
 Phone: 641-792-8451

Page 2 of 2
 Printed: 2/3/2026 10:18:10AM

SITE INFORMATION

Sampler:

Project: Delaware Co. Landfill - New Regs
 6039

SPECIAL INSTRUCTIONS

None

Turn Around Time

Standard RUSH, need by ___/___/___

REPORT TO

Todd Whipple
 HLW Engineering
 204 West Broad St
 Story City, IA 50248

INVOICE TO

Erin Learn
 Delaware County Solid Waste Commission
 804 W 2nd St
 Washington, IA 52353

LAB USE ONLY



1 J C 0 4 1 5

HLW Engineering
 PM: Heather Murphy

Temperature: _____oC

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	# Containers	Analyses	Lab Sample Number
11-001	MW-21	Aqueous	GRAB	3/2/26	10:06	7	Indfil-metals 6020 Indfil-App1-voc-Group	09

[Signature] 3/3/26
 Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

David Zway 3/3/26 11:15
 Received for Lab By Date/Time

Remarks:



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0417

Project Description

6039

For:

Todd Whipple

HLW Engineering

204 West Broad St

Story City, IA 50248

Heather Murphy

Customer Relationship Specialist

Monday, March 16, 2026

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0417

HLW Engineering

Todd Whipple
204 West Broad St
Story City, IA 50248

Project Name: 6039

Project / PO Number: N/A
Received: 03/03/2026
Reported: 03/16/2026

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
Sump-2	1JC0417-01	Aqueous	GRAB		03/02/26 13:55	03/03/26 11:15
Sump-3	1JC0417-02	Aqueous	GRAB		03/02/26 14:07	03/03/26 11:15
MW-26	1JC0417-03	Aqueous	GRAB		03/02/26 11:30	03/03/26 11:15
MW-27	1JC0417-04	Aqueous	GRAB		03/02/26 11:45	03/03/26 11:15
MW-28	1JC0417-05	Aqueous	GRAB		03/02/26 11:59	03/03/26 11:15
MW-29	1JC0417-06	Aqueous	GRAB		03/02/26 12:14	03/03/26 11:15



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0417

Analytical Testing Parameters

Client Sample ID:	Sump-2	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 13:55
Lab Sample ID:	1JC0417-01		

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Arsenic	0.00521	0.00200	mg/L		03/06/26 1545	03/09/26 1739	RVV
Cobalt	0.0135	0.000500	mg/L		03/06/26 1545	03/09/26 1739	RVV
Nickel	0.0247	0.00500	mg/L		03/06/26 1545	03/09/26 1739	RVV

Client Sample ID:	Sump-3	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 14:07
Lab Sample ID:	1JC0417-02		

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1741	RVV
Cobalt	0.00432	0.000500	mg/L		03/06/26 1545	03/09/26 1741	RVV
Nickel	0.0481	0.00500	mg/L		03/06/26 1545	03/09/26 1741	RVV

Client Sample ID:	MW-26	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 11:30
Lab Sample ID:	1JC0417-03		

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1744	RVV
Cobalt	0.00276	0.000500	mg/L		03/06/26 1545	03/09/26 1744	RVV
Nickel	0.00526	0.00500	mg/L		03/06/26 1545	03/09/26 1744	RVV

Client Sample ID:	MW-27	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 11:45
Lab Sample ID:	1JC0417-04		

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Arsenic	0.00921	0.00200	mg/L		03/06/26 1545	03/09/26 1746	RVV
Cobalt	0.0358	0.000500	mg/L		03/06/26 1545	03/09/26 1746	RVV
Nickel	0.194	0.00500	mg/L		03/06/26 1545	03/09/26 1746	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0417

Client Sample ID: MW-28	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 11:59
Lab Sample ID: 1JC0417-05	

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Arsenic	0.0106	0.00200	mg/L		03/06/26 1545	03/09/26 1749	RVV
Cobalt	0.00875	0.000500	mg/L		03/06/26 1545	03/09/26 1749	RVV
Nickel	0.00881	0.00500	mg/L		03/06/26 1545	03/09/26 1749	RVV

Client Sample ID: MW-29	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 12:14
Lab Sample ID: 1JC0417-06	

Metals Total by ICPMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A							
Arsenic	<0.00200	0.00200	mg/L		03/06/26 1545	03/09/26 1751	RVV
Cobalt	0.000982	0.000500	mg/L		03/06/26 1545	03/09/26 1751	RVV
Nickel	<0.00500	0.00500	mg/L		03/06/26 1545	03/09/26 1751	RVV



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0417

Batch Log Summary

Table with 4 columns: Method, Batch, Laboratory ID, Client / Source ID. Rows include EPA 6020A for batch 1JC0365 and 1JC0417-01 to 1JC0417-06.

Table with 4 columns: Method, Batch, Laboratory ID, Client / Source ID. Rows include EPA 6020A for batch 1JC0509 and 1JC0509-BLK1 to 1JC0509-PS2.

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Main data table with columns: Metals Total by ICPMS, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Includes sections for Blank, LCS, Matrix Spike, Matrix Spike Dup, and Post Spike.

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0417

Table with columns: Metals Total by ICPMS, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Includes sections for Blank, LCS, Matrix Spike, and Post Spike.

Definitions

RL: Reporting Limit
RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 0.1°C

Cooler Inspection Checklist

Checklist table with columns: Item, Yes/No, Item, Yes/No. Items include Custody Seals, COC/Labels Agree, Received On Ice, Containers Intact, Preservation Confirmed.

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

Reviewed and Approved By:

Handwritten signature of Heather Murphy

Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
03/16/26 16:27

CHAIN OF CUSTODY RECORD



600 East 17th Street South
 Newton, IA 50208
 Phone: 641-792-8451

COC #2

SITE INFORMATION

Sampler: Todd Whipple

Project: Delaware Co. Landfill - New Regs
 6039

REPORT TO

Todd Whipple
 HLW Engineering
 204 West Broad St
 Story City, IA 50248

INVOICE TO

Erin Learn
 Delaware County Solid Waste Commission
 804 W 2nd St
 Washington, IA 52353

SPECIAL INSTRUCTIONS

None

Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

1 J C 0 4 1 7

HLW Engineering
 PM: Heather Murphy

Temperature: 0.1 °C

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	# Containers	Analyses	Lab Sample Number
01-001	Sump-1 Destroyed	Aqueous	GRAB	3/2/26			6020A As 6020A Ni	6020A Co —
02-001	Sump-2	Aqueous	GRAB	3/2/26	13:55	4	6020A As 6020A Ni	6020A Co 01
03-001	Sump-3	Aqueous	GRAB	3/2/26	14:07	4	6020A As 6020A Ni	6020A Co 02
04-001	MW-26	Aqueous	GRAB	3/2/26	11:30	4	6020A As 6020A Ni	6020A Co 03
05-001	MW-27	Aqueous	GRAB	3/2/26	11:45	4	6020A As 6020A Ni	6020A Co 04
06-001	MW-28	Aqueous	GRAB	3/2/26	11:59	4	6020A As 6020A Ni	6020A Co 05
07-001	MW-29	Aqueous	GRAB	3/2/26	12:14	4	6020A As 6020A Ni	6020A Co 06

Relinquished By [Signature] Date/Time 3/3/26

Received By _____ Date/Time _____

Relinquished By _____ Date/Time _____

Received for Lab By [Signature] Date/Time 3/3/26 11:15

Remarks:



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0418

Project Description

6039

For:

Todd Whipple

HLW Engineering

204 West Broad St

Story City, IA 50248

Heather Murphy

Customer Relationship Specialist

Friday, March 20, 2026

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0418

HLW Engineering

Todd Whipple
204 West Broad St
Story City, IA 50248

Project Name: 6039

Project / PO Number: N/A
Received: 03/03/2026
Reported: 03/20/2026

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
MW-7	1JC0418-01	Aqueous	GRAB		03/02/26 12:33	03/03/26 11:15
MW-8	1JC0418-02	Aqueous	GRAB		03/02/26 12:50	03/03/26 11:15
MW-23	1JC0418-03	Aqueous	GRAB		03/02/26 13:25	03/03/26 11:15
MW-29	1JC0418-04	Aqueous	GRAB		03/02/26 12:14	03/03/26 11:15
MW-26	1JC0418-05	Aqueous	GRAB		03/02/26 11:30	03/03/26 11:15
Sump-2	1JC0418-06	Aqueous	GRAB		03/02/26 13:55	03/03/26 11:15
Sump-3	1JC0418-07	Aqueous	GRAB		03/02/26 14:07	03/03/26 11:15
MW-28	1JC0418-08	Aqueous	GRAB		03/02/26 11:59	03/03/26 11:15



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0418

Analytical Testing Parameters

Client Sample ID:	MW-7	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 12:33
Lab Sample ID:	1JC0418-01		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	<5.00	5.00	ug/L			03/13/26 1115	KJB
Ethene	<5.00	5.00	ug/L			03/13/26 1115	KJB
Ethane	<5.00	5.00	ug/L			03/13/26 1115	KJB

Client Sample ID:	MW-8	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 12:50
Lab Sample ID:	1JC0418-02		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	1540	100	ug/L	D3		03/13/26 1115	KJB
Ethene	<100	100	ug/L			03/13/26 1115	KJB
Ethane	<100	100	ug/L			03/13/26 1115	KJB

Client Sample ID:	MW-23	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 13:25
Lab Sample ID:	1JC0418-03		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	<5.00	5.00	ug/L			03/13/26 1115	KJB
Ethene	<5.00	5.00	ug/L			03/13/26 1115	KJB
Ethane	<5.00	5.00	ug/L			03/13/26 1115	KJB

Client Sample ID:	MW-29	Collected By:	Whipple, Todd
Sample Matrix:	Aqueous	Collection Date:	03/02/2026 12:14
Lab Sample ID:	1JC0418-04		

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	922	100	ug/L	D3		03/13/26 1115	KJB
Ethene	<100	100	ug/L			03/13/26 1115	KJB
Ethane	<100	100	ug/L			03/13/26 1115	KJB

Microbac Laboratories, Inc., Newton

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0418

Client Sample ID: MW-26	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 11:30
Lab Sample ID: 1JC0418-05	

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	6410	100	ug/L	D3		03/13/26 1115	KJB
Ethene	<100	100	ug/L			03/13/26 1115	KJB
Ethane	<100	100	ug/L			03/13/26 1115	KJB

Client Sample ID: Sump-2	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 13:55
Lab Sample ID: 1JC0418-06	

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	2250	100	ug/L	D3		03/13/26 1115	KJB
Ethene	<100	100	ug/L			03/13/26 1115	KJB
Ethane	<100	100	ug/L			03/13/26 1115	KJB

Client Sample ID: Sump-3	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 14:07
Lab Sample ID: 1JC0418-07	

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	1980	100	ug/L	D3		03/13/26 1115	KJB
Ethene	<100	100	ug/L			03/13/26 1115	KJB
Ethane	<100	100	ug/L			03/13/26 1115	KJB

Client Sample ID: MW-28	Collected By: Whipple, Todd
Sample Matrix: Aqueous	Collection Date: 03/02/2026 11:59
Lab Sample ID: 1JC0418-08	

Analyses Performed by: Microbac Laboratories Inc., - Marietta, OH

Volatile Organic Compounds by GCMS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA RSK-175							
Methane	11200	500	ug/L	D3		03/16/26 1452	KJB
Ethene	<100	100	ug/L			03/13/26 1115	KJB
Ethane	<100	100	ug/L			03/13/26 1115	KJB



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0418

Batch Log Summary

Table with 4 columns: Method, Batch, Laboratory ID, Client / Source ID. Contains two sections of data for EPA RSK-175 method across different batches and laboratory IDs.

Batch Quality Control Summary: Microbac Laboratories Inc., - Marietta, OH

Main data table with columns: Volatile Organic Compounds by GCMS, Result, RL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Notes. Includes sections for Batch B6C0813 and Batch B6C0921.



Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JC0418

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6C0921 - 5021 - EPA RSK-175										
LCS (B6C0921-BS1)										
				Prepared: 03/16/26 17:54 Analyzed: 03/16/26 18:10						
Ethene	153	5.00	ug/L	149.7655		102	85-115			
Ethane	164	5.00	ug/L	160.4974		102	85-115			
LCS Dup (B6C0921-BSD1)										
				Prepared & Analyzed: 03/16/26 18:25						
Methane	77.8	5.00	ug/L	85.64131		90.9	85-115	9.81	40	
Ethene	140	5.00	ug/L	149.7655		93.7	85-115	8.62	40	
Ethane	149	5.00	ug/L	160.4974		93.1	85-115	9.05	40	

Definitions

- D3:** Dilution was performed due to high target analyte concentration.
- RL:** Reporting Limit
- RPD:** Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 0.1°C

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <<https://www.microbac.com/standard-terms-conditions>>.

Reviewed and Approved By:

Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
03/20/26 10:41

CHAIN OF CUSTODY

Keystone
LABORATORIES, INC.

600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

3012 An
Waterloo
Phone: 641-792-8451
Fax: 641-792-7989



HLW Engineering
PM: Heather Murphy

205 E VanBuren St
Centerville, IA 52544
Phone: 641-437-7023
Fax: 641-437-7040

PAGE 1 OF 1

COC #3

PRINT OR TYPE INFORMATION BELOW

SAMPLER: Todd Whipple
SITE NAME: _____
ADDRESS: _____
CITY/ST/ZIP: _____
PHONE: _____

REPORT TO:
NAME: Todd Whipple
COMPANY NAME: HLW Engineering
ADDRESS: P.O. Box 314
CITY/ST/ZIP: Story City IA 50248
PHONE: 515 733 4144
FAX: 4146

BILL TO:
NAME: Ms Erin Learn, City Clerk
COMPANY NAME: Manchester, City of
ADDRESS: 208 E Main Street
CITY/ST/ZIP: Manchester IA 52057
PHONE: _____
Keystone Quote No: _____
(If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED						LAB USE ONLY			
							Methane	Ethane	Ethene							
MW-7	3/2/26	12:33	MW-7	3	W	G	X	X	X							01
MW-8	3/2/26	12:50	MW-8	3	W	G	X	X	X							02
MW-23	3/2/26	13:25	MW-23	3	W	G	X	X	X							03
MW-29	3/2/26	12:14	MW-29	3	W	G	X	X	X							04
Sump MW-26	3/2/26	11:30	Sump MW-26	3	W	G	X	X	X							05
Sump 2	3/2/26	13:55	Sump 2	3	W	G	X	X	X							06
Sump 3	3/2/26	14:07	Sump 3	3	W	G	X	X	X							07
MW-28	3/2/26	11:59	MW-28	3	W	G	X	X	X							08

SAMPLE TEMPERATURE UPON RECEIPT:
0.1 °C

SAMPLE CONDITION/COMMENTS

Relinquished by: (Signature) <u>Todd Whipple</u>	Date <u>3/3/26</u> Time	Received by: (Signature) <u>David Sw...</u>	Date <u>3/3/26</u> Time <u>11:5</u>	Turn-Around: <input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush	Remarks:
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature)	Date Time	Contact Lab Prior to Submission	

APPENDIX E

Summary of VOC Detections

Attachment C

Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	MW-11	9/05/2017		20.6	10.0	ug/L
4-methyl-2-pentanone (mibk)	MW-20	9/08/2015		9.7	5.0	ug/L
Tetrachloroethylene	MW-20	3/01/2024		2.4	1.0	ug/L
1,1-dichloroethane	MW-21	3/20/2009		3.0	1.0	ug/L
1,1-dichloroethane	MW-21	6/15/2009		3.0	1.0	ug/L
1,1-dichloroethane	MW-21	7/13/2009		2.6	1.0	ug/L
1,1-dichloroethane	MW-21	9/02/2009		1.8	1.0	ug/L
1,1-dichloroethane	MW-21	3/24/2010		2.4	1.0	ug/L
1,1-dichloroethane	MW-21	3/24/2010		2.4	1.0	ug/L
1,1-dichloroethane	MW-21	6/10/2010		1.6	1.0	ug/L
1,1-dichloroethane	MW-21	6/10/2010		1.6	1.0	ug/L
1,1-dichloroethane	MW-21	10/20/2010		1.7	1.0	ug/L
1,1-dichloroethane	MW-21	9/12/2011		1.5	1.0	ug/L
1,1-dichloroethane	MW-21	9/12/2011		1.5	1.0	ug/L
1,1-dichloroethane	MW-21	3/15/2012		2.8	1.0	ug/L
1,1-dichloroethane	MW-21	9/04/2012		4.6	1.0	ug/L
1,1-dichloroethane	MW-21	9/11/2013		2.5	1.0	ug/L
1,1-dichloroethane	MW-21	4/11/2014		1.6	1.0	ug/L
1,1-dichloroethane	MW-21	9/22/2014		1.7	1.0	ug/L
1,1-dichloroethane	MW-21	4/21/2015		3.0	1.0	ug/L
1,1-dichloroethane	MW-21	2/25/2016		1.0	1.0	ug/L
1,1-dichloroethane	MW-21	9/06/2016		3.0	1.0	ug/L
1,1-dichloroethane	MW-21	3/06/2017		2.7	1.0	ug/L
1,1-dichloroethane	MW-21	9/05/2017		2.4	1.0	ug/L
1,1-dichloroethane	MW-21	3/02/2018		4.3	1.0	ug/L
1,1-dichloroethane	MW-21	3/27/2019		2.5	1.0	ug/L
1,1-dichloroethane	MW-21	9/26/2023		5.0	1.0	ug/L
1,1-dichloroethane	MW-21	3/01/2024		3.3	1.0	ug/L
1,1-dichloroethane	MW-21	9/11/2024		2.5	1.0	ug/L
1,1-dichloroethane	MW-21	3/17/2025		2.7	1.0	ug/L
1,1-dichloroethane	MW-21	9/17/2025		2.4	1.0	ug/L
1,1-dichloroethane	MW-21	3/02/2026		3.0	1.0	ug/L
Acetone	MW-21	9/05/2017		17	10	ug/L
Dichlorodifluoromethane	MW-21	9/11/2013		2.2	1.0	ug/L
Dichlorodifluoromethane	MW-21	9/06/2016		2.8	1.0	ug/L
Dichlorodifluoromethane	MW-21	3/06/2017		1.3	1.0	ug/L
Dichlorodifluoromethane	MW-21	9/05/2017		1.2	1.0	ug/L
Dichlorodifluoromethane	MW-21	3/02/2018		3.1	1.0	ug/L
Dichlorodifluoromethane	MW-21	3/01/2024		2.0	1.0	ug/L
1,1-dichloroethane	MW-22	3/20/2009		2.2	1.0	ug/L
1,1-dichloroethane	MW-22	7/13/2009		1.8	1.0	ug/L
1,1-dichloroethane	MW-22	9/02/2009		1.9	1.0	ug/L
1,1-dichloroethane	MW-22	3/24/2010		1.5	1.0	ug/L
1,1-dichloroethane	MW-22	6/10/2010		1.1	1.0	ug/L
1,1-dichloroethane	MW-22	10/20/2010		1.6	1.0	ug/L
1,1-dichloroethane	MW-22	3/14/2011		1.2	1.0	ug/L
1,1-dichloroethane	MW-22	9/12/2011		1.4	1.0	ug/L
1,1-dichloroethane	MW-22	3/15/2012		2.0	1.0	ug/L
1,1-dichloroethane	MW-22	9/04/2012		2.0	1.0	ug/L
1,1-dichloroethane	MW-22	4/03/2013		1.1	1.0	ug/L
1,1-dichloroethane	MW-22	9/11/2013		1.3	1.0	ug/L
1,1-dichloroethane	MW-22	4/11/2014		1.9	1.0	ug/L
1,1-dichloroethane	MW-22	9/22/2014		1.3	1.0	ug/L
1,1-dichloroethane	MW-22	4/21/2015		1.5	1.0	ug/L
1,1-dichloroethane	MW-22	9/08/2015		1.9	1.0	ug/L
1,1-dichloroethane	MW-22	2/25/2016		1.7	1.0	ug/L
1,1-dichloroethane	MW-22	9/06/2016		1.9	1.0	ug/L
1,1-dichloroethane	MW-22	3/06/2017		2.4	1.0	ug/L
1,1-dichloroethane	MW-22	9/05/2017		2.0	1.0	ug/L
1,1-dichloroethane	MW-22	3/02/2018		2.2	1.0	ug/L
1,1-dichloroethane	MW-22	3/27/2019		1.9	1.0	ug/L
4,4'-ddt	MW-22	4/03/2013		22.70	.05	ug/L
Acetone	MW-22	9/05/2017		17.9	10.0	ug/L
Cis-1,2-dichloroethylene	MW-22	9/02/2009		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-22	3/24/2010		4.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-22	9/16/2010		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-22	3/14/2011		5.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-22	9/12/2011		5.5	1.0	ug/L
Dieldrin	MW-22	4/03/2013		17.00	.05	ug/L
Endrin	MW-22	4/03/2013		16.60	.05	ug/L
Heptachlor epoxide	MW-22	4/03/2013		18.80	.05	ug/L
Hexachlorobenzene	MW-22	4/03/2013		15.50	.05	ug/L
Methoxychlor	MW-22	4/03/2013		50.40	.05	ug/L
Trichloroethylene	MW-22	9/02/2009		2.7	1.0	ug/L
1,1-dichloroethane	MW-23	9/04/2012		1.2	1.0	ug/L
Acetone	MW-23	9/05/2017		13	10	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Bis(2-ethylhexyl)phthalate	MW-23	4/11/2014		9	8	ug/L
Bis(2-ethylhexyl)phthalate	MW-23	3/27/2019		64	6	ug/L
Cis-1,2-dichloroethylene	MW-23	3/17/2025		1	1	ug/L
Methane	MW-23	9/17/2025		33.2	5.0	ug/L
Tetrachloroethylene	MW-23	3/20/2009		2.2	1.0	ug/L
Tetrachloroethylene	MW-23	9/02/2009		2.8	1.0	ug/L
Tetrachloroethylene	MW-23	3/24/2010		2.1	1.0	ug/L
Tetrachloroethylene	MW-23	6/10/2010		2.5	1.0	ug/L
Tetrachloroethylene	MW-23	6/10/2010		3.7	1.0	ug/L
Tetrachloroethylene	MW-23	9/16/2010		2.1	1.0	ug/L
Tetrachloroethylene	MW-23	3/14/2011		3.7	1.0	ug/L
Tetrachloroethylene	MW-23	9/12/2011		3.2	1.0	ug/L
Tetrachloroethylene	MW-23	3/15/2012		4.3	1.0	ug/L
Tetrachloroethylene	MW-23	9/04/2012		3.8	1.0	ug/L
Tetrachloroethylene	MW-23	4/03/2013		3.0	1.0	ug/L
Tetrachloroethylene	MW-23	9/11/2013		2.9	1.0	ug/L
Tetrachloroethylene	MW-23	4/11/2014		3.7	1.0	ug/L
Tetrachloroethylene	MW-23	9/22/2014		2.9	1.0	ug/L
Tetrachloroethylene	MW-23	4/21/2015		4.0	1.0	ug/L
Tetrachloroethylene	MW-23	9/08/2015		2.3	1.0	ug/L
Tetrachloroethylene	MW-23	2/25/2016		3.9	1.0	ug/L
Tetrachloroethylene	MW-23	9/06/2016		2.6	1.0	ug/L
Tetrachloroethylene	MW-23	3/06/2017		4.9	1.0	ug/L
Tetrachloroethylene	MW-23	9/05/2017		3.7	1.0	ug/L
Tetrachloroethylene	MW-23	3/02/2018		5.0	1.0	ug/L
Tetrachloroethylene	MW-23	9/04/2018		4.0	1.0	ug/L
Tetrachloroethylene	MW-23	3/27/2019		3.2	1.0	ug/L
Tetrachloroethylene	MW-23	9/07/2019		3.9	1.0	ug/L
Tetrachloroethylene	MW-23	3/30/2020		2.4	1.0	ug/L
Tetrachloroethylene	MW-23	9/01/2020		2.7	1.0	ug/L
Tetrachloroethylene	MW-23	3/03/2021		2.7	1.0	ug/L
Tetrachloroethylene	MW-23	9/10/2021		3.6	1.0	ug/L
Tetrachloroethylene	MW-23	3/04/2022		3.8	1.0	ug/L
Tetrachloroethylene	MW-23	3/21/2023		2.4	1.0	ug/L
Tetrachloroethylene	MW-23	3/02/2026		2.7	1.0	ug/L
Trichloroethylene	MW-23	9/04/2012		1.4	1.0	ug/L
Bis(2-ethylhexyl)phthalate	MW-24	6/15/2017		7	6	ug/L
Cis-1,2-dichloroethylene	MW-24	10/12/2016		3.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/06/2017		4.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	6/15/2017		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/02/2018		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/04/2018		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/27/2019		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/07/2019		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/30/2020		2.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/01/2020		1.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/03/2021		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/10/2021		3.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/04/2022		3.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/02/2022		2.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/21/2023		2.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/26/2023		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/01/2024		1.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	9/11/2024		1.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-24	3/17/2025		2.7	1.0	ug/L
Dichlorodifluoromethane	MW-24	3/21/2023		1	1	ug/L
Trans-1,2-dichloroethylene	MW-24	3/02/2018		3.7	1.0	ug/L
1,1-dichloropropene	MW-25	9/10/2021		4.5	1.0	ug/L
Acetone	MW-25	9/05/2017		15.5	10.0	ug/L
Bis(2-ethylhexyl)phthalate	MW-25	9/01/2020		6	6	ug/L
Bis(2-ethylhexyl)phthalate	MW-25	9/10/2021		9	6	ug/L
1,1-dichloroethane	MW-3	3/20/2009		4.3	1.0	ug/L
1,1-dichloroethane	MW-3	6/15/2009		4.9	1.0	ug/L
1,1-dichloroethane	MW-3	7/13/2009		4.9	1.0	ug/L
1,1-dichloroethane	MW-3	9/02/2009		4.5	1.0	ug/L
1,1-dichloroethane	MW-3	3/24/2010		9.2	1.0	ug/L
1,1-dichloroethane	MW-3	3/24/2010		3.6	1.0	ug/L
1,1-dichloroethane	MW-3	6/10/2010		7.4	1.0	ug/L
1,1-dichloroethane	MW-3	6/10/2010		3.5	1.0	ug/L
1,1-dichloroethane	MW-3	9/16/2010		4.2	1.0	ug/L
1,1-dichloroethane	MW-3	9/16/2010		10.1	1.0	ug/L
1,1-dichloroethane	MW-3	10/20/2010		4.4	1.0	ug/L
1,1-dichloroethane	MW-3	3/14/2011		9.5	1.0	ug/L
1,1-dichloroethane	MW-3	9/12/2011		13.3	1.0	ug/L
1,1-dichloroethane	MW-3	3/15/2012		9.0	1.0	ug/L
1,1-dichloroethane	MW-3	9/04/2012		9.7	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,1-dichloroethane	MW-3	4/03/2013		8.5	1.0	ug/L
1,1-dichloroethane	MW-3	9/11/2013		8.1	1.0	ug/L
1,1-dichloroethane	MW-3	4/11/2014		8.0	1.0	ug/L
1,1-dichloroethane	MW-3	9/22/2014		6.5	1.0	ug/L
1,1-dichloroethane	MW-3	4/21/2015		7.2	1.0	ug/L
1,1-dichloroethane	MW-3	9/08/2015		7.6	1.0	ug/L
1,1-dichloroethane	MW-3	2/25/2016		6.0	1.0	ug/L
1,1-dichloroethane	MW-3	9/06/2016		7.6	1.0	ug/L
1,1-dichloroethane	MW-3	3/06/2017		8.0	1.0	ug/L
1,1-dichloroethane	MW-3	9/05/2017		8.5	1.0	ug/L
1,1-dichloroethane	MW-3	3/02/2018		8.1	1.0	ug/L
1,1-dichloroethane	MW-3	9/04/2018		6.9	1.0	ug/L
1,1-dichloroethane	MW-3	3/27/2019		7.6	1.0	ug/L
1,1-dichloroethane	MW-3	9/07/2019		5.5	1.0	ug/L
1,1-dichloroethane	MW-3	3/30/2020		5.9	1.0	ug/L
1,1-dichloroethane	MW-3	9/01/2020		7.4	1.0	ug/L
1,1-dichloroethane	MW-3	3/03/2021		7.2	1.0	ug/L
1,1-dichloroethane	MW-3	9/10/2021		6.4	1.0	ug/L
1,1-dichloroethane	MW-3	3/04/2022		7.5	1.0	ug/L
1,1-dichloroethane	MW-3	9/02/2022		6.3	1.0	ug/L
1,1-dichloroethane	MW-3	3/21/2023		6.5	1.0	ug/L
1,2-dichlorobenzene	MW-3	9/04/2012		1.3	1.0	ug/L
1,2-dichlorobenzene	MW-3	4/03/2013		1.4	1.0	ug/L
1,2-dichlorobenzene	MW-3	9/11/2013		1.5	1.0	ug/L
1,2-dichlorobenzene	MW-3	4/11/2014		1.1	1.0	ug/L
1,2-dichlorobenzene	MW-3	9/22/2014		1.5	1.0	ug/L
1,2-dichlorobenzene	MW-3	3/06/2017		1.2	1.0	ug/L
1,2-dichlorobenzene	MW-3	9/05/2017		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-3	3/03/2021		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-3	3/04/2022		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-3	9/02/2022		1.0	1.0	ug/L
1,2-dichlorobenzene	MW-3	3/21/2023		1.3	1.0	ug/L
1,2-dichloroethane	MW-3	3/20/2009		4.3	1.0	ug/L
1,2-dichloroethane	MW-3	6/15/2009		4.9	1.0	ug/L
1,2-dichloroethane	MW-3	7/13/2009		4.9	1.0	ug/L
1,2-dichloroethane	MW-3	9/02/2009		4.5	1.0	ug/L
1,2-dichloroethane	MW-3	3/24/2010		3.6	1.0	ug/L
1,2-dichloroethane	MW-3	3/24/2010		3.6	.4	ug/L
1,2-dichloroethane	MW-3	6/10/2010		3.5	1.0	ug/L
1,2-dichloroethane	MW-3	6/10/2010		3.5	.4	ug/L
1,2-dichloroethane	MW-3	9/16/2010		4.2	1.0	ug/L
1,2-dichloroethane	MW-3	9/16/2010		4.2	.4	ug/L
1,2-dichloroethane	MW-3	10/20/2010		4.4	1.0	ug/L
1,2-dichloroethane	MW-3	3/14/2011		4.0	.4	ug/L
1,2-dichloroethane	MW-3	3/14/2011		4.0	1.0	ug/L
1,2-dichloroethane	MW-3	9/12/2011		4.4	.4	ug/L
1,2-dichloroethane	MW-3	9/12/2011		4.4	1.0	ug/L
1,2-dichloroethane	MW-3	3/15/2012		3.6	.4	ug/L
1,2-dichloroethane	MW-3	9/04/2012		3.3	1.0	ug/L
1,2-dichloroethane	MW-3	4/03/2013		2.9	1.0	ug/L
1,2-dichloroethane	MW-3	9/11/2013		2.3	1.0	ug/L
1,2-dichloroethane	MW-3	4/11/2014		2.7	1.0	ug/L
1,2-dichloroethane	MW-3	9/22/2014		2.6	1.0	ug/L
1,2-dichloroethane	MW-3	4/21/2015		2.4	1.0	ug/L
1,2-dichloroethane	MW-3	9/08/2015		2.6	1.0	ug/L
1,2-dichloroethane	MW-3	2/25/2016		2.4	1.0	ug/L
1,2-dichloroethane	MW-3	9/06/2016		2.8	1.0	ug/L
1,2-dichloroethane	MW-3	3/06/2017		2.9	1.0	ug/L
1,2-dichloroethane	MW-3	9/05/2017		3.2	1.0	ug/L
1,2-dichloroethane	MW-3	3/02/2018		3.0	1.0	ug/L
1,2-dichloroethane	MW-3	9/04/2018		1.4	1.0	ug/L
1,2-dichloroethane	MW-3	3/27/2019		2.6	1.0	ug/L
1,2-dichloroethane	MW-3	9/01/2020		2.5	1.0	ug/L
1,2-dichloroethane	MW-3	3/03/2021		2.3	1.0	ug/L
1,2-dichloroethane	MW-3	9/10/2021		2.6	1.0	ug/L
1,2-dichloroethane	MW-3	3/04/2022		2.1	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/20/2009		5.8	1.0	ug/L
1,4-dichlorobenzene	MW-3	6/15/2009		3.4	1.0	ug/L
1,4-dichlorobenzene	MW-3	7/13/2009		4.9	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/02/2009		4.2	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/24/2010		10.8	1.0	ug/L
1,4-dichlorobenzene	MW-3	6/10/2010		5.0	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/16/2010		5.8	1.0	ug/L
1,4-dichlorobenzene	MW-3	10/20/2010		2.9	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/14/2011		9.3	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/12/2011		8.3	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,4-dichlorobenzene	MW-3	3/15/2012		6.5	1.0	ug/L
1,4-dichlorobenzene	MW-3	4/03/2013		20.4	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/11/2013		14.2	1.0	ug/L
1,4-dichlorobenzene	MW-3	4/11/2014		10.2	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/22/2014		11.5	1.0	ug/L
1,4-dichlorobenzene	MW-3	4/21/2015		5.7	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/08/2015		8.2	1.0	ug/L
1,4-dichlorobenzene	MW-3	2/25/2016		3.2	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/06/2016		6.5	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/06/2017		7.6	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/05/2017		8.1	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/02/2018		2.7	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/04/2018		3.7	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/07/2019		11.7	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/01/2020		15.6	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/03/2021		12.7	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/10/2021		8.3	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/04/2022		11.8	1.0	ug/L
1,4-dichlorobenzene	MW-3	9/02/2022		11.3	1.0	ug/L
1,4-dichlorobenzene	MW-3	3/21/2023		6.9	1.0	ug/L
Benzene	MW-3	3/20/2009		1.2	1.0	ug/L
Benzene	MW-3	9/12/2011		1.1	1.0	ug/L
Benzene	MW-3	4/03/2013		1.3	1.0	ug/L
Chlorobenzene	MW-3	9/04/2012		1.5	1.0	ug/L
Chlorobenzene	MW-3	4/03/2013		2.2	1.0	ug/L
Chlorobenzene	MW-3	9/11/2013		1.9	1.0	ug/L
Chlorobenzene	MW-3	4/11/2014		1.5	1.0	ug/L
Chlorobenzene	MW-3	9/22/2014		1.5	1.0	ug/L
Chlorobenzene	MW-3	9/08/2015		1.2	1.0	ug/L
Chlorobenzene	MW-3	3/06/2017		1.5	1.0	ug/L
Chlorobenzene	MW-3	9/05/2017		1.3	1.0	ug/L
Chlorobenzene	MW-3	3/02/2018		1.0	1.0	ug/L
Chlorobenzene	MW-3	9/04/2018		1.1	1.0	ug/L
Chlorobenzene	MW-3	3/27/2019		1.3	1.0	ug/L
Chlorobenzene	MW-3	9/01/2020		1.7	1.0	ug/L
Chlorobenzene	MW-3	3/03/2021		2.0	1.0	ug/L
Chlorobenzene	MW-3	9/10/2021		1.9	1.0	ug/L
Chlorobenzene	MW-3	3/04/2022		2.0	1.0	ug/L
Chlorobenzene	MW-3	9/02/2022		1.6	1.0	ug/L
Chlorobenzene	MW-3	3/21/2023		2.7	1.0	ug/L
Chloroethane	MW-3	4/03/2013		1.3	1.0	ug/L
Chloroethane	MW-3	4/11/2014		1.0	1.0	ug/L
Chloroethane	MW-3	9/22/2014		1.0	1.0	ug/L
Chloroethane	MW-3	9/01/2020		1.1	1.0	ug/L
Chloroethane	MW-3	3/03/2021		1.2	1.0	ug/L
Chloroethane	MW-3	3/04/2022		1.2	1.0	ug/L
Chloroethane	MW-3	3/21/2023		1.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/02/2009		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/24/2010		4.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/16/2010		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/14/2011		5.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/12/2011		5.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/15/2012		4.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/04/2012		4.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	4/03/2013		4.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/11/2013		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	4/11/2014		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/22/2014		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	4/21/2015		3.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/08/2015		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	2/25/2016		2.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/06/2016		3.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/06/2017		3.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/05/2017		3.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/02/2018		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/04/2018		3.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/27/2019		3.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/07/2019		2.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/30/2020		1.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/01/2020		2.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/03/2021		3.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/10/2021		2.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/04/2022		3.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	9/02/2022		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-3	3/21/2023		2.5	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/20/2009		16.2	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Dichlorodifluoromethane	MW-3	6/15/2009		17.3	1.0	ug/L
Dichlorodifluoromethane	MW-3	7/13/2009		15.1	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/02/2009		15.2	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/24/2010		12.8	1.0	ug/L
Dichlorodifluoromethane	MW-3	6/10/2010		8.1	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/16/2010		17.1	1.0	ug/L
Dichlorodifluoromethane	MW-3	10/20/2010		13.3	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/14/2011		15.8	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/12/2011		16.9	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/15/2012		16.7	1.0	ug/L
Dichlorodifluoromethane	MW-3	4/03/2013		11.3	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/11/2013		10.0	1.0	ug/L
Dichlorodifluoromethane	MW-3	4/11/2014		9.5	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/22/2014		11.2	1.0	ug/L
Dichlorodifluoromethane	MW-3	4/21/2015		7.6	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/08/2015		7.7	1.0	ug/L
Dichlorodifluoromethane	MW-3	2/25/2016		6.1	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/06/2016		8.0	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/06/2017		9.0	1.0	ug/L
Dichlorodifluoromethane	MW-3	9/05/2017		7.6	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/02/2018		5.7	1.0	ug/L
Dichlorodifluoromethane	MW-3	3/27/2019		3.3	1.0	ug/L
Ethylbenzene	MW-3	9/02/2022		6.6	1.0	ug/L
Phorate	MW-3	4/11/2014		.5	.4	ug/L
Phorate	MW-3	9/08/2015		.4	.4	ug/L
Tetrachloroethylene	MW-3	3/20/2009		1.2	1.0	ug/L
Tetrachloroethylene	MW-3	6/15/2009		1.2	1.0	ug/L
Tetrachloroethylene	MW-3	7/13/2009		1.5	1.0	ug/L
Tetrachloroethylene	MW-3	9/02/2009		1.3	1.0	ug/L
Tetrachloroethylene	MW-3	3/24/2010		1.3	1.0	ug/L
Tetrachloroethylene	MW-3	9/16/2010		1.3	1.0	ug/L
Tetrachloroethylene	MW-3	10/20/2010		1.2	1.0	ug/L
Tetrachloroethylene	MW-3	3/14/2011		1.5	1.0	ug/L
Tetrachloroethylene	MW-3	9/12/2011		1.7	1.0	ug/L
Tetrachloroethylene	MW-3	4/03/2013		1.1	1.0	ug/L
Trans-1,2-dichloroethylene	MW-3	3/02/2018		3.4	1.0	ug/L
Trichloroethylene	MW-3	3/20/2009		1.6	1.0	ug/L
Trichloroethylene	MW-3	6/15/2009		1.6	1.0	ug/L
Trichloroethylene	MW-3	7/13/2009		1.9	1.0	ug/L
Trichloroethylene	MW-3	9/02/2009		1.6	1.0	ug/L
Trichloroethylene	MW-3	3/24/2010		1.5	1.0	ug/L
Trichloroethylene	MW-3	6/10/2010		1.2	1.0	ug/L
Trichloroethylene	MW-3	9/16/2010		1.6	1.0	ug/L
Trichloroethylene	MW-3	10/20/2010		1.5	1.0	ug/L
Trichloroethylene	MW-3	3/14/2011		1.8	1.0	ug/L
Trichloroethylene	MW-3	9/12/2011		2.4	1.0	ug/L
Trichloroethylene	MW-3	3/15/2012		1.6	1.0	ug/L
Trichloroethylene	MW-3	9/04/2012		1.5	1.0	ug/L
Trichloroethylene	MW-3	4/03/2013		1.4	1.0	ug/L
Trichloroethylene	MW-3	9/11/2013		1.2	1.0	ug/L
Trichloroethylene	MW-3	4/11/2014		1.2	1.0	ug/L
Trichloroethylene	MW-3	9/22/2014		1.2	1.0	ug/L
Trichloroethylene	MW-3	3/06/2017		1.2	1.0	ug/L
Vinyl chloride	MW-3	3/20/2009		1.1	1.0	ug/L
Vinyl chloride	MW-3	7/13/2009		1.2	1.0	ug/L
Vinyl chloride	MW-3	9/02/2009		1.1	1.0	ug/L
Vinyl chloride	MW-3	3/24/2010		1.1	1.0	ug/L
Vinyl chloride	MW-3	9/16/2010		1.4	1.0	ug/L
Vinyl chloride	MW-3	10/20/2010		1.0	1.0	ug/L
Vinyl chloride	MW-3	3/14/2011		1.3	1.0	ug/L
Vinyl chloride	MW-3	9/12/2011		1.8	1.0	ug/L
Vinyl chloride	MW-3	3/15/2012		1.5	1.0	ug/L
Vinyl chloride	MW-3	9/04/2012		1.5	1.0	ug/L
Vinyl chloride	MW-3	4/03/2013		1.4	1.0	ug/L
Vinyl chloride	MW-3	9/11/2013		1.3	1.0	ug/L
Vinyl chloride	MW-3	4/11/2014		1.1	1.0	ug/L
Vinyl chloride	MW-3	9/22/2014		1.4	1.0	ug/L
Vinyl chloride	MW-3	3/06/2017		1.2	1.0	ug/L
Vinyl chloride	MW-3	9/05/2017		1.0	1.0	ug/L
1,1-dichloroethane	MW-5	3/20/2009		1.6	1.0	ug/L
1,1-dichloroethane	MW-5	6/15/2009		1.7	1.0	ug/L
1,1-dichloroethane	MW-5	7/13/2009		1.4	1.0	ug/L
1,1-dichloroethane	MW-5	9/02/2009		1.3	1.0	ug/L
1,1-dichloroethane	MW-5	3/24/2010		1.5	1.0	ug/L
1,1-dichloroethane	MW-5	6/10/2010		2.4	1.0	ug/L
1,1-dichloroethane	MW-5	9/16/2010		1.6	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,1-dichloroethane	MW-5	10/20/2010		2.2	1.0	ug/L
1,1-dichloroethane	MW-5	3/14/2011		1.4	1.0	ug/L
1,1-dichloroethane	MW-5	9/12/2011		3.0	1.0	ug/L
1,1-dichloroethane	MW-5	3/15/2012		1.4	1.0	ug/L
1,1-dichloroethane	MW-5	9/04/2012		3.3	1.0	ug/L
1,1-dichloroethane	MW-5	4/03/2013		2.1	1.0	ug/L
1,1-dichloroethane	MW-5	9/11/2013		2.3	1.0	ug/L
1,1-dichloroethane	MW-5	4/11/2014		1.9	1.0	ug/L
1,1-dichloroethane	MW-5	9/22/2014		1.6	1.0	ug/L
1,1-dichloroethane	MW-5	9/08/2015		1.4	1.0	ug/L
1,1-dichloroethane	MW-5	9/06/2016		4.3	1.0	ug/L
1,1-dichloroethane	MW-5	9/05/2017		1.4	1.0	ug/L
1,1-dichloroethane	MW-5	3/02/2018		1.2	1.0	ug/L
1,1-dichloroethane	MW-5	9/04/2018		1.1	1.0	ug/L
1,1-dichloroethane	MW-5	3/03/2021		1.1	1.0	ug/L
1,4-dichlorobenzene	MW-5	3/20/2009		2.1	1.0	ug/L
1,4-dichlorobenzene	MW-5	6/15/2009		2.2	1.0	ug/L
1,4-dichlorobenzene	MW-5	7/13/2009		2.4	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/02/2009		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-5	3/24/2010		2.4	1.0	ug/L
1,4-dichlorobenzene	MW-5	6/10/2010		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/16/2010		1.7	1.0	ug/L
1,4-dichlorobenzene	MW-5	10/20/2010		2.0	1.0	ug/L
1,4-dichlorobenzene	MW-5	3/14/2011		1.3	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/12/2011		2.5	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/04/2012		2.6	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/11/2013		1.7	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/22/2014		1.4	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/08/2015		1.4	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/06/2016		1.2	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/05/2017		1.6	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/04/2018		1.2	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/07/2019		1.5	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/01/2020		1.7	1.0	ug/L
1,4-dichlorobenzene	MW-5	3/03/2021		1.8	1.0	ug/L
1,4-dichlorobenzene	MW-5	9/26/2023		1.2	1.0	ug/L
Acetone	MW-5	9/05/2017		19.6	10.0	ug/L
Benzene	MW-5	3/20/2009		1.0	1.0	ug/L
Benzene	MW-5	6/15/2009		1.1	1.0	ug/L
Benzene	MW-5	7/13/2009		1.1	1.0	ug/L
Benzene	MW-5	9/02/2009		1.2	1.0	ug/L
Benzene	MW-5	3/24/2010		1.1	1.0	ug/L
Benzene	MW-5	6/10/2010		1.1	1.0	ug/L
Benzene	MW-5	10/20/2010		1.2	1.0	ug/L
Benzene	MW-5	9/12/2011		1.2	1.0	ug/L
Benzene	MW-5	9/04/2012		1.2	1.0	ug/L
Benzene	MW-5	3/03/2021		1.2	1.0	ug/L
Bis(2-ethylhexyl)phthalate	MW-5	3/27/2019		76	6	ug/L
Bis(2-ethylhexyl)phthalate	MW-5	3/01/2024		13	6	ug/L
Chlorobenzene	MW-5	3/20/2009		6.0	1.0	ug/L
Chlorobenzene	MW-5	6/15/2009		6.4	1.0	ug/L
Chlorobenzene	MW-5	7/13/2009		7.7	1.0	ug/L
Chlorobenzene	MW-5	9/02/2009		6.9	1.0	ug/L
Chlorobenzene	MW-5	3/24/2010		5.9	1.0	ug/L
Chlorobenzene	MW-5	6/10/2010		5.0	1.0	ug/L
Chlorobenzene	MW-5	9/16/2010		4.0	1.0	ug/L
Chlorobenzene	MW-5	10/20/2010		5.5	1.0	ug/L
Chlorobenzene	MW-5	3/14/2011		2.9	1.0	ug/L
Chlorobenzene	MW-5	9/12/2011		4.9	1.0	ug/L
Chlorobenzene	MW-5	9/12/2011		4.9	1.0	ug/L
Chlorobenzene	MW-5	3/15/2012		2.8	1.0	ug/L
Chlorobenzene	MW-5	9/04/2012		6.9	1.0	ug/L
Chlorobenzene	MW-5	4/03/2013		1.7	1.0	ug/L
Chlorobenzene	MW-5	9/11/2013		3.9	1.0	ug/L
Chlorobenzene	MW-5	9/22/2014		2.8	1.0	ug/L
Chlorobenzene	MW-5	9/08/2015		4.0	1.0	ug/L
Chlorobenzene	MW-5	9/06/2016		4.4	1.0	ug/L
Chlorobenzene	MW-5	3/06/2017		1.1	1.0	ug/L
Chlorobenzene	MW-5	9/05/2017		5.3	1.0	ug/L
Chlorobenzene	MW-5	3/02/2018		2.6	1.0	ug/L
Chlorobenzene	MW-5	9/04/2018		4.8	1.0	ug/L
Chlorobenzene	MW-5	3/27/2019		3.0	1.0	ug/L
Chlorobenzene	MW-5	9/07/2019		3.4	1.0	ug/L
Chlorobenzene	MW-5	9/01/2020		5.3	1.0	ug/L
Chlorobenzene	MW-5	3/03/2021		6.4	1.0	ug/L
Chlorobenzene	MW-5	9/10/2021		2.5	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-5	3/04/2022		1.3	1.0	ug/L
Chlorobenzene	MW-5	9/02/2022		1.5	1.0	ug/L
Chlorobenzene	MW-5	3/21/2023		1.2	1.0	ug/L
Chlorobenzene	MW-5	9/26/2023		3.9	1.0	ug/L
Chlorobenzene	MW-5	3/17/2025		1.8	1.0	ug/L
Chloroethane	MW-5	3/20/2009		3.3	1.0	ug/L
Chloroethane	MW-5	6/15/2009		3.6	1.0	ug/L
Chloroethane	MW-5	7/13/2009		3.4	1.0	ug/L
Chloroethane	MW-5	9/02/2009		3.3	1.0	ug/L
Chloroethane	MW-5	3/24/2010		2.2	1.0	ug/L
Chloroethane	MW-5	6/10/2010		2.2	1.0	ug/L
Chloroethane	MW-5	9/16/2010		1.5	1.0	ug/L
Chloroethane	MW-5	10/20/2010		3.0	1.0	ug/L
Chloroethane	MW-5	3/14/2011		1.8	1.0	ug/L
Chloroethane	MW-5	9/12/2011		2.5	1.0	ug/L
Chloroethane	MW-5	3/15/2012		1.6	1.0	ug/L
Chloroethane	MW-5	9/04/2012		1.8	1.0	ug/L
Chloroethane	MW-5	9/11/2013		1.1	1.0	ug/L
Chloroethane	MW-5	9/22/2014		1.0	1.0	ug/L
Chloroethane	MW-5	3/03/2021		1.0	1.0	ug/L
Bis(2-ethylhexyl)phthalate	MW-6	3/14/2011		24	1	ug/L
Bis(2-ethylhexyl)phthalate	MW-6	3/14/2011		24	8	ug/L
Bis(2-ethylhexyl)phthalate	MW-6	9/11/2013		10	10	ug/L
Bis(2-ethylhexyl)phthalate	MW-6	9/06/2016		12	10	ug/L
Methane	MW-6	9/17/2025		87.3	5.0	ug/L
Acetone	MW-7	9/05/2017		19.8	10.0	ug/L
Cis-1,2-dichloroethylene	MW-7	9/11/2024		1	1	ug/L
Methane	MW-7	9/17/2025		18.3	5.0	ug/L
1,1-dichloroethane	MW-8	3/20/2009		8.8	1.0	ug/L
1,1-dichloroethane	MW-8	6/15/2009		9.6	1.0	ug/L
1,1-dichloroethane	MW-8	7/13/2009		9.0	1.0	ug/L
1,1-dichloroethane	MW-8	9/02/2009		8.0	1.0	ug/L
1,1-dichloroethane	MW-8	3/24/2010		6.6	1.0	ug/L
1,1-dichloroethane	MW-8	6/10/2010		7.3	1.0	ug/L
1,1-dichloroethane	MW-8	9/16/2010		7.6	1.0	ug/L
1,1-dichloroethane	MW-8	10/20/2010		8.4	1.0	ug/L
1,1-dichloroethane	MW-8	3/14/2011		7.4	1.0	ug/L
1,1-dichloroethane	MW-8	9/12/2011		9.3	1.0	ug/L
1,1-dichloroethane	MW-8	3/15/2012		5.6	1.0	ug/L
1,1-dichloroethane	MW-8	9/04/2012		5.5	1.0	ug/L
1,1-dichloroethane	MW-8	4/03/2013		5.2	1.0	ug/L
1,1-dichloroethane	MW-8	9/11/2013		6.0	1.0	ug/L
1,1-dichloroethane	MW-8	4/11/2014		6.1	1.0	ug/L
1,1-dichloroethane	MW-8	9/22/2014		5.8	1.0	ug/L
1,1-dichloroethane	MW-8	4/21/2015		6.1	1.0	ug/L
1,1-dichloroethane	MW-8	9/08/2015		2.3	1.0	ug/L
1,1-dichloroethane	MW-8	2/25/2016		4.0	1.0	ug/L
1,1-dichloroethane	MW-8	9/06/2016		4.6	1.0	ug/L
1,1-dichloroethane	MW-8	3/06/2017		4.8	1.0	ug/L
1,1-dichloroethane	MW-8	9/05/2017		2.8	1.0	ug/L
1,1-dichloroethane	MW-8	3/02/2018		4.8	1.0	ug/L
1,1-dichloroethane	MW-8	9/04/2018		2.7	1.0	ug/L
1,1-dichloroethane	MW-8	3/27/2019		1.6	1.0	ug/L
1,1-dichloroethane	MW-8	9/07/2019		2.6	1.0	ug/L
1,1-dichloroethane	MW-8	3/30/2020		2.1	1.0	ug/L
1,1-dichloroethane	MW-8	9/01/2020		3.5	1.0	ug/L
1,1-dichloroethane	MW-8	3/03/2021		5.9	1.0	ug/L
1,1-dichloroethane	MW-8	9/10/2021		3.1	1.0	ug/L
1,1-dichloroethane	MW-8	3/04/2022		3.4	1.0	ug/L
1,1-dichloroethane	MW-8	3/21/2023		1.6	1.0	ug/L
1,1-dichloroethane	MW-8	3/01/2024		1.0	1.0	ug/L
Bis(2-ethylhexyl)phthalate	MW-8	3/27/2019		42	6	ug/L
Bis(2-ethylhexyl)phthalate	MW-8	3/01/2024		21	6	ug/L
Chlorobenzene	MW-8	3/27/2019		1.4	1.0	ug/L
Chlorobenzene	MW-8	3/30/2020		1.0	1.0	ug/L
Chloroethane	MW-8	3/20/2009		2.1	1.0	ug/L
Chloroethane	MW-8	6/15/2009		1.3	1.0	ug/L
Chloroethane	MW-8	7/13/2009		1.2	1.0	ug/L
Chloroethane	MW-8	9/02/2009		1.9	1.0	ug/L
Chloroethane	MW-8	3/24/2010		1.3	1.0	ug/L
Chloroethane	MW-8	6/10/2010		1.4	1.0	ug/L
Chloroethane	MW-8	9/16/2010		1.9	1.0	ug/L
Chloroethane	MW-8	10/20/2010		1.9	1.0	ug/L
Chloroethane	MW-8	3/14/2011		1.4	1.0	ug/L
Chloroethane	MW-8	9/12/2011		1.8	1.0	ug/L
Chloroethane	MW-8	3/15/2012		1.5	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chloroethane	MW-8	9/11/2013		1.4	1.0	ug/L
Chloroethane	MW-8	4/11/2014		1.3	1.0	ug/L
Chloroethane	MW-8	9/22/2014		1.7	1.0	ug/L
Chloroethane	MW-8	4/21/2015		1.7	1.0	ug/L
Chloroethane	MW-8	2/25/2016		1.2	1.0	ug/L
Chloroethane	MW-8	3/06/2017		1.6	1.0	ug/L
Chloroethane	MW-8	9/05/2017		1.4	1.0	ug/L
Chloroethane	MW-8	3/02/2018		1.5	1.0	ug/L
Chloroethane	MW-8	9/04/2018		1.0	1.0	ug/L
Chloroethane	MW-8	9/01/2020		1.3	1.0	ug/L
Chloroethane	MW-8	3/03/2021		1.1	1.0	ug/L
Chloroethane	MW-8	9/10/2021		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/02/2009		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/24/2010		3.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/24/2010		4.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	6/10/2010		4.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/16/2010		4.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/16/2010		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/14/2011		5.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/14/2011		4.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/12/2011		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/15/2012		3.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/04/2012		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	4/03/2013		2.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/11/2013		3.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	4/11/2014		3.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/22/2014		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	4/21/2015		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	2/25/2016		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/06/2016		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/06/2017		2.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/05/2017		1.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/02/2018		2.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/04/2018		1.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/27/2019		1.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/30/2020		1.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/01/2020		1.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/03/2021		4.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/10/2021		1.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/04/2022		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	9/02/2022		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/21/2023		1.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/17/2025		1.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8	3/02/2026		1.0	1.0	ug/L
Dichlorodifluoromethane	MW-8	3/20/2009		1.8	1.0	ug/L
Dichlorodifluoromethane	MW-8	7/13/2009		2.5	1.0	ug/L
Dichlorodifluoromethane	MW-8	9/02/2009		2.2	1.0	ug/L
Dichlorodifluoromethane	MW-8	3/24/2010		1.4	1.0	ug/L
Dichlorodifluoromethane	MW-8	10/20/2010		2.2	1.0	ug/L
Dichlorodifluoromethane	MW-8	3/14/2011		3.0	1.0	ug/L
Dichlorodifluoromethane	MW-8	3/15/2012		1.7	1.0	ug/L
Dichlorodifluoromethane	MW-8	4/03/2013		1.1	1.0	ug/L
Dichlorodifluoromethane	MW-8	9/11/2013		1.3	1.0	ug/L
Dichlorodifluoromethane	MW-8	4/11/2014		1.1	1.0	ug/L
Dichlorodifluoromethane	MW-8	9/22/2014		1.3	1.0	ug/L
Dichlorodifluoromethane	MW-8	4/21/2015		1.6	1.0	ug/L
Dinoseb	MW-8	4/11/2014		.6	.5	ug/L
Methane	MW-8	3/17/2025		439	25	ug/L
Methane	MW-8	9/17/2025		1310	50	ug/L
Trans-1,2-dichloroethylene	MW-8	3/02/2018		2.9	1.0	ug/L
Methane	Sump 2	3/17/2025		30.5	5.0	ug/L
Methane	Sump 3	9/17/2025		2360	50	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

APPENDIX F

Table 10 from the 2025 Annual Water Quality Report

Table 10
Historic SSI & SSL
Annual Water Quality Report
Delaware County Sanitary Landfill
Permit No. 28-SDP-01-74C

KEY: SSI

SSL LCL>GWPS SSL UCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)
MW-8	Arsenic	9/6/2016	5.30	4.00	2.258	5.492	10
MW-8	Arsenic	3/6/2017	<4.0	4.00	1.434	5.316	10
MW-8	Arsenic	9/5/2017	<4.0	4.00	0.884	4.766	10
MW-8	Arsenic	3/2/2018	6.30	4.00	1.275	6.525	10
MW-8	Arsenic	9/4/2018	<4.0	4.00	0.546	5.604	10
MW-8	Arsenic	3/27/2019	<4.0	4.00	0.546	5.604	10
MW-8	Arsenic	9/7/2019	4.50	4.00	1.234	6.166	10
MW-8	Arsenic	3/30/2020	<4.0	4.00	1.155	4.095	10
MW-8	Arsenic	9/1/2020	9.40	4.00	0.372	8.578	10
MW-8	Arsenic	3/3/2021	7.20	4.00	1.991	9.559	10
MW-8	Arsenic	9/10/2021	14.20	4.00	2.245	14.155	10
MW-8	Arsenic	3/4/2022	15.40	4.00	6.975	16.125	10
MW-8	Arsenic	9/2/2022	15.60	4.00	8.416	17.784	10
MW-8	Arsenic	3/21/2023	14.60	4.00	14.173	15.727	10
MW-8	Arsenic	9/26/2023	Dry	4.00	14.173	15.727	10
MW-8	Arsenic	3/1/2024	15.40	4.00	14.728	15.772	10
MW-8	Arsenic	6/13/2024	4.90	4.00	14.728	15.772	10
MW-8	Arsenic	9/11/2024	<4.0	4.00	2.633	27.092	10
MW-8	Arsenic	3/17/2025	16.00	4.00	2.970	27.455	10
MW-8	Arsenic	7/14/2025	12.20	4.00	2.970	27.455	10
MW-8	Arsenic	9/17/2025	13.80	4.00	3.708	18.292	10

Table 10
Historic SSI & SSL
Annual Water Quality Report
Delaware County Sanitary Landfill
Permit No. 28-SDP-01-74C

KEY: SSI

SSL LCL>GWPS SSL UCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)
MW-8	Cobalt	9/6/2016	25.10	2.20	---	---	2.8
MW-8	Cobalt	3/6/2017	15.30	2.20	4.585	27.815	2.8
MW-8	Cobalt	9/5/2017	13.20	2.20	3.268	24.882	2.8
MW-8	Cobalt	3/2/2018	15.00	2.20	10.821	23.479	2.2
MW-8	Cobalt	9/4/2018	1.60	2.20	3.61	18.940	2.2
MW-8	Cobalt	3/27/2019	1.80	2.20	0.000	16.366	2.2
MW-8	Cobalt	9/7/2019	9.60	2.20	0.000	14.652	2.2
MW-8	Cobalt	3/30/2020	3.60	2.20	0.000	8.553	2.2
MW-8	Cobalt	9/1/2020	13.10	2.20	0.854	13.196	2.2
MW-8	Cobalt	3/3/2021	22.10	2.20	3.001	21.199	2.2
MW-8	Cobalt	9/10/2021	10.40	2.20	3.291	21.309	2.2
MW-8	Cobalt	3/4/2022	11.70	2.20	8.092	20.558	2.2
MW-8	Cobalt	9/2/2022	8.20	2.20	5.841	20.359	2.2
MW-8	Cobalt	3/21/2023	11.30	2.20	8.560	12.240	2.2
MW-8	Cobalt	9/26/2023	Dry	2.20	8.560	12.240	2.2
MW-8	Cobalt	3/1/2024	6.90	2.20	6.764	12.286	2.2
MW-8	Cobalt	6/13/2024	12.40	2.20	6.764	12.286	2.2
MW-8	Cobalt	9/11/2024	3.60	2.20	3.840	12.910	2.2
MW-8	Cobalt	3/17/2025	9.20	2.20	3.797	11.903	2.2
MW-8	Cobalt	7/14/2025	9.30	2.20	3.797	11.903	2.2
MW-8	Cobalt	9/17/2025	8.00	2.20	4.370	10.680	2.2

Table 10
Historic SSI & SSL
Annual Water Quality Report
Delaware County Sanitary Landfill
Permit No. 28-SDP-01-74C

KEY: SSI

SSL LCL>GWPS SSL UCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)
MW-8	Nickel	9/6/2016	49.80	17.40	---	---	100
MW-8	Nickel	3/6/2017	34.50	17.40	---	---	100
MW-8	Nickel	9/5/2017	38.90	17.40	20.452	50.598	100
MW-8	Nickel	3/2/2018	45.40	17.40	34.167	50.133	100
MW-8	Nickel	9/4/2018	26.10	17.40	26.697	45.753	100
MW-8	Nickel	3/27/2019	25.90	17.40	22.671	45.479	100
MW-8	Nickel	9/7/2019	53.10	17.40	21.408	53.842	100
MW-8	Nickel	3/30/2020	32.70	17.40	19.360	49.540	100
MW-8	Nickel	9/1/2020	95.10	17.40	15.051	88.349	100
MW-8	Nickel	3/3/2021	152.00	17.40	21.237	145.213	100
MW-8	Nickel	9/10/2021	177.00	17.40	38.637	189.763	100
MW-8	Nickel	3/4/2022	213.00	17.40	100.965	217.585	100
MW-8	Nickel	9/2/2022	203.00	17.40	154.002	218.498	100
MW-8	Nickel	3/21/2023	200.00	17.40	180.349	216.151	100
MW-8	Nickel	9/26/2023	Dry	10.50	180.349	216.151	100
MW-8	Nickel	3/1/2024	126.00	10.50	138.385	232.615	100
MW-8	Nickel	6/13/2024	160.00	10.50	138.385	232.615	100
MW-8	Nickel	9/11/2024	5.00	10.50	23.677	221.073	100
MW-8	Nickel	3/17/2025	134.00	10.50	25.115	186.635	100
MW-8	Nickel	7/14/2025	160.00	10.50	25.115	186.635	100
MW-8	Nickel	9/17/2025	133.00	10.50	25.901	190.099	100

APPENDIX G

Gas Vent Logs and Vent Construction Diagrams



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Contractor: Sands Excavating Vent No. 2 HLW Observer TDW

HLW Project No. 6039-25A.200

Date Drilled 10/08/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1067.7 FT 28-SDP-01-74C
 Depth Drilled 9.0 FT SOUTH SIDE PASSIVE VENTS
 Method EXCAVATION
 Depth to Water Dry ft @ completion (▽), _____ ft @ _____ hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0	1071.19							
0 - 1	Clay Backfill			Brown	Moist	Stiff		Fill: Silty Clay Cap
1 - 2				Gray			2	
2 - 4	Bentonite Chips							
4 - 9	4" Washed River Rock			Black			4	Municipal Solid Waste and Soil
Depth 9.0 FT								



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Contractor: Sands Excavating Vent No: 3 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/08/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1066.5 FT 28-SDP-01-74C
 Depth Drilled 9.7 FT SOUTH SIDE PASSIVE VENTS
 Method EXCAVATION
 Depth to Water Dry ft @ completion (▽), _____ ft @ _____ hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0								
0.5				Brown	Moist	Stiff		Fill: Silty Clay Cap
1	Clay Backfill							
2				Gray			2	
3								
4	4" Bentonite Chips						4	
4.5	Washed River Rock			Black				
5								Municipal Solid Waste and Soil
6								
7								
8								
9								
9.7								
Depth 9.7 FT								



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Contractor: Sands Excavating Vent No. 4 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/08/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1058.1 FT 28-SDP-01-74C
 Depth Drilled 9.7 FT SOUTH SIDE PASSIVE VENTS
 Method EXCAVATION
 Depth to Water 9.0 ft @ completion (▽), ft @ hrs.(▼), ft @ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0	1060.29							
0	Clay Backfill			Brown	Moist	Stiff		Fill: Silty Clay Cap
2				Gray			2	
4	4" Bentonite Chips						4	
4	Washed River Rock			Black				Municipal Solid Waste and Soil
10	Depth 9.7 FT							



HLW Engineering Group
 204 West Broad Street, P.O. Box 314
 Story City, Iowa 50248

Telephone: (515) 733-4144
 Fax: (515) 733-4146

HLW Engineering Group

LOG OF TEST BORING

Contactor: Sands Excavating Vent No. 7 HLW Observer TDW
 HLW Project No. 6039-25A.200

Date Drilled 10/08/25 DELAWARE COUNTY SANITARY LANDFILL
 Surface Elevation 1048.7 FT 28-SDP-01-74C
 Depth Drilled 9.5 FT SOUTH SIDE PASSIVE VENTS
 Method EXCAVATION
 Depth to Water Dry ft @ completion (▽), _____ ft @ _____ hrs.(▼), _____ ft @ _____ hrs.

DEPTH FT	WELL DETAIL	SAMPLE		COLOR	MC %	CONSISTENCY	ELEV	SOIL DESCRIPTION
		NO.	TYPE					
0	1050.62							
0	Clay Backfill			Brown	Moist	Stiff		Fill: Silty Clay Cap
2				Gray			2	
4	4" Bentonite Chips						4	Fill: Silty Clay (Slope Fill)
5	Washed River Rock			Black			5	Municipal Solid Waste and Soil
Depth 9.5 FT								