May 4, 2026

Mr. Brad Davison
Environmental Specialist
Iowa Department of Natural Resources
6200 Park Avenue, Suite 200
Des Moines, Iowa 50321

HLW Engineering Group
Engineering Management

RE: Reduction-Termination Plan
Grundy County Sanitary Landfill
IDNR Permit No. 38-SDP-01-75C

Dear Mr. Davison:

This Reduction-Termination Plan (RTP) is submitted in response to the IDNR letter dated November 24, 2025 (Doc #114844). Justification for submittal of the RTP is based on the findings of the April 2026 chlorobenzene analysis at MW-14.

Historic Summary of Requests to End Regulatory Oversight of Post-Closure Care and Maintenance

The Owner desires to end regulatory oversight of the post-closure monitoring. The Owner desires to adopt an Environmental Covenant (EC) for the facility and have the Closure Permit rescinded. The Owner requests that the IDNR visit the site in the Summer of 2026 to initiate the proposed pursuit of an Environmental Covenant (EC).

The request for an EC first occurred in the 2023 Annual Water Quality Report (AWQR) dated February 23, 2024 (Doc #109353). The IDNR responded on July 11, 2024 (Doc #110446) requesting a trend analysis on the wells and compounds that exceeded the prediction limit. The trend analysis was provided to IDNR on December 23, 2024 (Doc #110532). The 2024 AWQR was also filed about the same time (December 19, 2024 – Doc #111520). The 2024 AWQR and the 2024 trend analysis again included requests to pursue an Environmental Covenant for the facility.

On February 19, 2025, the IDNR responded to the 2024 AWQR and the 2024 trend analysis in Doc #112348 denying the EC without clear explanation. Further the February 19, 2025, IDNR requested supplemental follow-up sampling for bis(2-ethylhexyl)phthalate.

On April 23, 2025 HLW presented the results of the bis(2-ethylhexyl)phthalate testing (Doc #112923). The document demonstrates that the bis(2-ethylhexyl)phthalate is of no consequence at the site. Further, the April 23, 2025 HLW Letter (Doc #112923) requested an IDNR update on pursuit of an EC. Supplemental information was also provided to give some historical perspective related to the rule in effect at the time of closure (2007) and the trend analysis. Response to the April 23, 2025 HLW Letter Report was received November 24, 2025 (Doc #114844). The request for an EC is still suspended until chlorobenzene at MW-14 is more fully addressed and a Reduction-Termination Plan is submitted that satisfies requirements. The IDNR Letter dated November 24, 2025 (Doc #114844) also reduced site work to annual chlorobenzene sampling at MW-14, annual gas monitoring, and an annual engineering inspection.

Water quality findings in 2025 were determined to be in conformance with applicable rule (Iowa Administrative Code (IAC) 567-113). Water quality is highly similar to the findings from previous years (2021 - 2024). Water quality findings validate that the water quality is static over time and that there are no Statistically Significant Levels (SSL) that require the consideration of corrective measures.

To date, the requests in 2024, and 2025 for IDNR to complete a site visit have not been fulfilled, even though the February 19, 2025 IDNR Response Letter (Doc #112348) indicated that a Spring 2025 Site visit would be scheduled.

2026 Chlorobenzene Assessment at MW-14

On April 9, 2026, a sample was collected from MW-14 and was analyzed for Appendix I Volatile Organic Compounds (VOC). The results of analyses (Attachment A) indicate that there were no VOC detected and the VOC compounds were reported as less than the Method Reporting Limit (MRL).

A summary of Chlorobenzene results at MW-14 over time is presented in Attachment B. The results range from non-detected to 10.9 ug/l. It is noted that the groundwater protection standard (GWPS) for chlorobenzene is 100 ug/L. The GWPS is health-based and equivalent to both the Iowa Administrative Code (IAC) 567, Chapter 137 Statewide Standard for Protected Groundwater and the EPA Drinking Water Standards.

IDNR letter dated November 24, 2025 (Doc #114844) also requires evaluation of the significant increasing trend reported for chlorobenzene. An evaluation of the confidence Interval (95% lower confidence limit (95% LCL) to the 95% upper confidence limit (95% UCL)) is presented in Attachment C.

Review of the confidence interval table in Attachment C (page 1) indicates that the confidence interval (band) ranges from 0.0 ug/L to 9.217 ug/L. An increasing trend is still determined.

Graphs of the concentration over time including the confidence interval are also presented in Attachment C (page 2). Review of the graphs indicate that a visual increasing trend in concentration (red squares, solid when detected and open when non-detected) is obvious on the graph for chlorobenzene. What is more interesting to note is that the 95% LCL (based on the most recent 4 results) is plotted as a heavy blue line segment on the graph. The 95% LCL is zero and plots on the lower axis over the four most recent result dates (2024 and 2026). The GWPS plots as a straight line at concentration 100 ug/L across the top of the graph. All chlorobenzene concentrations at MW-14 plot below the GWPS. The 95% UCL (9.217 ug/L) is not plotted but would parallel the blue segment plotted as the 95% LCL.

Note that all concentrations (<1 ug/L to 10.9 ug/L) and the entire confidence band (0.0 ug/L to 9.217 ug/L) plot in the bottom 10%-11% of the graph area.

The conclusion is made that although an increasing trend may exist, the trend is not significant when the upper end of the range is 10 times lower than the GWPS. This is true of both the concentration range and the confidence interval range.

Further, the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance by EPA dictates that groundwater remedies are complete when the 95% UCL for impacted water is below the GWPS. In this instance the 95% UCL for chlorobenzene has never exceeded the GWPS and clearly satisfies this condition.

Reduction-Termination Plan (RTP)

The Grundy County Landfill Commission (GCLC) is requesting the termination of the Closure Permit for the Grundy County Sanitary Landfill (38-SDP-01-75C) issued August 27, 2008, and the end of regulation of the facility under Iowa Administrative Code (IAC) 567, Chapter 113 (and 1998 Chapter 103).

This Post-Closure Care Reduction-Termination Plan (RTP) is offered to satisfy the request made in the IDNR letter dated November 24, 2025 (Doc #114844). Figure 1, Site Plan, is attached illustrating the site features, monitoring wells, and gas probes.

In lieu of regulation under IAC 567, Chapter 113, the GCLC proposes that the limited on-going maintenance items warranted at the facility can be appropriately supervised and managed by the GCLC. The GCLC understands that certain legal instruments will be required to facilitate the end of IDNR regulation of the facility.

The basis of this proposal is rooted in the observed condition of the facility and the lack of perceived risk-based concerns associated with the facility as it exists in its current condition.

CURRENT CONDITIONS

Leachate Management

As per Special Provision X.11 of the Closure Permit, revised September 28, 2023 (Doc #107802), the site is conditionally exempt from providing leachate control beyond the bentonite slurry wall constructed in 1975 and the operating a leachate collection system constructed in 1995 as described in in Special Provision X.12 of the Closure Permit (See Maps in Attachment D).

As reported in past semi-annual Engineer's inspection reports, persistent leachate seeps have not been noted at the landfill.

The GCLC is both willing to and capable of effectively performing continued cap maintenance tasks related to infiltration and erosion control and thereby controlling leachate generation and potential seeps.

The GCLC desires to continue the operation of the leachate/groundwater collection system existing along the north, south, and east sides of the site as a condition of the EC.

Gas Control

Landfill gas was historically monitored in the breathing zone at the site perimeter. Between 2014 and the present, subsurface landfill gas has been monitored in the headspace of monitoring wells MW-13, MW-14, MW-16, MW-17, MW-18, and MW-19 (beginning 2014) and in dedicated gas monitoring probes GP-1, and GP-2 (beginning in 2017).

Since subsurface monitoring began in 2014 explosive gas (as percent lower explosive limit (LEL)) has not been detected in any subsurface monitoring point and is reported as 0% LEL .

Gas generation curves typically illustrate gas generation peaking in the second or third decade of waste burial (e.g. EPA LMOP studies), it is anticipated that landfill gas generation will decrease with time.

On March 9, 2026, MW-14 was sampled and the water was analyzed for dissolved methane (Attachment E). Methane was not detected at MW-14 (<5 ug/L).

Ground Water Quality

Groundwater has been monitored at perimeter monitoring wells at the site since at least the early 1990's. Over time, water quality results and statistical evaluation of the water quality data has resulted

in the discovery of no compounds that warrant remedial actions. Currently, the only water quality sampling performed at the site includes the chlorobenzene testing at MW-14.

The 2025 Annual Water Quality Report (AWQR), which was submitted to IDNR on January 30, 2026 (Doc #115959) is cited in support of the interpretation of the water quality. The April 2026 chlorobenzene data evaluation presented above also supports this interpretation that there are no water quality findings that deserve response or action.

Storm Water Quality

The site closure (completed 2008) has well established vegetation, well maintained erosion controls, and maintained diversion structures in place. No leachate seeps are documented. Stormwater impacts would be minimal, and stormwater sampling does not occur at the site.

Final Cover Condition (settlement/ponding/slope stability) and Maintenance

The final cover and site closure were completed in 2008 in accordance with the approved plans. Landfill Inspections have been performed semi-annually since the closure permit was issued. Settlement over the past 20 years has not resulted in undue ponding, terrace flow line failures, or diversion let-down failures. Diversion and drainage systems are in good shape with no evidence of erosion.

Vegetation

The landfill vegetation is in good condition and is mowed periodically to control the growth of undesirable vegetation and saplings. Some bare spots and thin vegetation are noted in the inspections. The cause of the bare and thinly vegetated areas is anticipated to be gas related. Additional study is planned in 2026 related to gas impacts in the cap. *Additional study of passive gas release is warranted in the cap of the landfill as part of the RTP.*

POST-CLOSURE CARE REDUCTION-TERMINATION PLAN (RTP)

Leachate Management

No actions are required as part of the RTP. The GCLC desires to continue the operation of the leachate/groundwater collection system existing along the north, south, and east sides of the site as a condition of the EC.

Gas Control

Landfill gas has **not** been detected in landfill structures or subsurface monitoring points and is considered to be sufficiently controlled.

Passive venting of landfill gas may be the cause of the bare vegetation areas observed on the closure cap. Additional study in the bare portions of the closure cap is warranted to detect the potential passive gas leakage through the cap. Based on the outcome of the 2026 gas investigation(s), a source control for gas can be planned and implemented (as warranted) in pursuit of an environmental covenant. Further, amendment of the soil or placement of additional soils may be incorporated in the effort to mitigate areas where soil is bare.

The passive gas venting investigations are planned for 2026, with conclusions and recommendations being completed prior to December 31, 2026.

Ground Water Quality

Groundwater at this site is documented to be in compliance with rules. The evaluation of chlorobenzene is considered complete as reported in this document.

No actions are required as part of the RTP.

Storm Water Quality

No actions are required as part of the RTP.

Final Cover Condition (settlement/ponding/slope stability) and Maintenance

No actions are required as part of the RTP.

Vegetation

As discussed above in the Gas Control Section, the concentration of passive gas immediately below the closure cap will be further evaluated. Areas with poor vegetation and elevated gas migration will be identified. Responses (as appropriate) aimed at improving the climax vegetation at the site will be planned and implemented in pursuit of an environmental covenant.

ENVIRONMENTAL COVENANT DEVELOPMENT

Based on observations recorded during the recent inspections, the facility is in general conformance with the expectations of the Closure Permit and conditions at the site continue to improve. The integrity of the final cover is being maintained; however, it appears improvements in vegetation (in areas) should be completed. Water quality is being maintained. Gas control in infrastructure, structures, and the subsurface is being maintained.

The passive movement of landfill gas may need to have controls implemented to facilitate the upward and outward release of landfill gas, removing the impetus for landfill gas to impact vegetation. A method of passive long term source control for landfill gas will add to stable water quality, maintaining climax vegetation, and mitigating any potential future gas migration issues.

Leachate will continue to be maintained through continued operation of the leachate/groundwater collection system. The GCLC understands that on-going operation of the leachate/groundwater collection system under the EC will be required.

Based on the evaluations discussed in the RTP an EC should be pursued. The installation of permanent landfill gas source controls to passively vent through the closure cap (if warranted) will be placed as part of the completion of the Environmental Covenant.

The GCLC understands that on-going inspection and maintenance of the cap, the diversion systems, the drainage systems, and the vegetation is necessary moving forward. These tasks are merely maintenance items necessary for the perpetuation of the well-established and enduring cap/cover features. Now established, these features do not warrant on-going regulation by the State, rather warrant management by the GCLC. The GCLC is both willing to and capable of effectively performing the required leachate collection and maintenance tasks moving forward.

Conclusions

The GCLC seeks a pathway to end regulation of the facility under IAC 567, Chapter 113, while providing the IDNR the appropriate assurances that the facility maintenance tasks will be on-going, as appropriate, to maintain the facility in conformance with the risk-based decision to end IDNR oversight.

The GCLC appreciates your consideration of the RTP, and we look forward to your reply. Please consider whether you believe the proposed RTP is sufficient and whether completion of the RTP will make GCLC a candidate to successfully file an Environmental Covenant in coordination with IDNR's participation.

Please contact the HLW Engineering Group office at (515) 733-4144 with any questions you may have or to schedule and coordinate a site visit with GCLC and HLW staff.

Sincerely,
HLW Engineering Group

Todd D. Whipple, CPG.
Project Manager

cc: Karl Strohbehn, Chair, Grundy County Landfill Commission
Kevin Nederhoff, Secretary, Grundy County Landfill Commission
Jeff Pabst, Grundy County Board of Supervisors
Chad Brown, Manager, Grundy County Landfill

▲ A-1 = AMBIENT AIR GAS MONITORING POINT

● GP-1 = SUBSURFACE GAS PROBE

0 100 200 400

SURVEY DATE: AUG 27, 2008

N

PROPERTY BOUNDRY

MW-19=GP-8

MW-18 =GP-7

MW-9

MW-10

MW-11

A-1

MW-4

A-2

PZ-5

WASTE BOUNDRY

MW-13 =GP-5

MW-17 =GP-6

PZ-8

A-3

MW-15

MW-15A

GP-1

PZ-2

A-7

MW-12

A-4

PZ-1

SEDIMENT POND

PZ-6

MW-14 =GP-4

A-5

MW-16 =GP-3

MW-3

A-6

MW-5 GP-2

980

990

1000

1010

1020

1030

970

HLW

HLW Engineering Group

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 WITH GAS MONITORING LOCATIONS

GRUNDY COUNTY SANITARY LANDFILL
GRUNDY CENTER, IOWA

FIGURE: 1

REVISION	NO.	DATE
DRAWN DRA	PROJECT NO. 6033	DATE 12-6-25

Attachment A

Analytical Report – VOC at MW-14, April 9, 2026

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JD1325

Project Description

6033

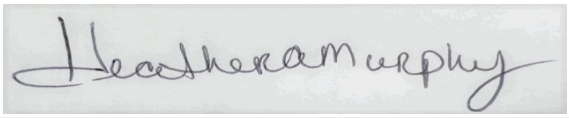
For:

Todd Whipple

HLW Engineering

204 West Broad St

Story City, IA 50248



Heather Murphy

Customer Relationship Specialist

Tuesday, April 21, 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.

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Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JD1325

HLW Engineering

Todd Whipple
204 West Broad St
Story City, IA 50248

Project Name: 6033

Project / PO Number: N/A
Received: 04/10/2026
Reported: 04/21/2026

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
MW-14	1JD1325-01	Aqueous	GRAB		04/09/26 09:26	04/10/26 10:45

CERTIFICATE OF ANALYSIS

1JD1325

Analytical Testing Parameters

Client Sample ID:	MW-14		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1JD1325-01	**Collection Date:**	04/09/2026 9:26

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260D							
Chloromethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Vinyl Chloride	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Bromomethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Chloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Trichlorofluoromethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,1-Dichloroethylene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Acetone	<10.0	10.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Methyl Iodide	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Carbon Disulfide	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Methylene Chloride	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Acrylonitrile	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,1-Dichloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Vinyl Acetate	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
2-Butanone (MEK)	<10.0	10.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Bromochloromethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Chloroform	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,1,1-Trichloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Carbon Tetrachloride	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Benzene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,2-Dichloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Trichloroethylene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,2-Dichloropropane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Dibromomethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Bromodichloromethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
cis-1,3-Dichloropropene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Toluene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
trans-1,3-Dichloropropene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,1,2-Trichloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Tetrachloroethylene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
2-Hexanone (MBK)	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Dibromochloromethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,2-Dibromoethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Chlorobenzene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Ethylbenzene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Xylenes, total	<2.0	2.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Styrene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF

CERTIFICATE OF ANALYSIS

1JD1325

Client Sample ID:	MW-14		
Sample Matrix:	Aqueous	**Collected By:**	Whipple, Todd
Lab Sample ID:	1JD1325-01	**Collection Date:**	04/09/2026 9:26

Determination of Volatile Organic Compounds	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Bromoform	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,2,3-Trichloropropane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,4-Dichlorobenzene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,2-Dichlorobenzene	<1.0	1.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L		04/15/26 0000	04/15/26 1300	RAF
Surrogate: Dibromofluoromethane	99.9	Limit: 57-128	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: Dibromofluoromethane	99.9	Limit: 75-136	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: 1,2-Dichloroethane-d4	101	Limit: 61-142	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: 1,2-Dichloroethane-d4	101	Limit: 49-135	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: Toluene-d8	99.1	Limit: 82-116	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: Toluene-d8	99.1	Limit: 82-121	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: 4-Bromofluorobenzene	95.2	Limit: 80-116	% Rec		04/15/26 0000	04/15/26 1300	RAF
Surrogate: 4-Bromofluorobenzene	95.2	Limit: 77-114	% Rec		04/15/26 0000	04/15/26 1300	RAF

CERTIFICATE OF ANALYSIS

1JD1325

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260D	1JD0926	1JD0926-BS1	
		1JD0926-BSD1	
		1JD0926-BLK1	
		1JD1325-01	MW-14
		1JD0926-MS1	1JD1484-01
		1JD0926-MSD1	1JD1484-01

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

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
Blank (1JD0926-BLK1)				Prepared: 04/15/26 00:00 Analyzed: 04/15/26 12:14						
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	<10.0	10.0	ug/L							
Methyl Iodide	<1.0	1.0	ug/L							
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	<1.0	1.0	ug/L							
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							

CERTIFICATE OF ANALYSIS

1JD1325

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
Blank (1JD0926-BLK1)				Prepared: 04/15/26 00:00 Analyzed: 04/15/26 12:14						
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							
Surrogate: Dibromofluoromethane	*49.7*		ug/L	*50.2*		*98.9*	*57-128*			
Surrogate: Dibromofluoromethane	*49.7*		ug/L	*50.2*		*98.9*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*49.5*		ug/L	*50.4*		*98.3*	*49-135*			
Surrogate: 1,2-Dichloroethane-d4	*49.5*		ug/L	*50.4*		*98.3*	*61-142*			
Surrogate: Toluene-d8	*49.6*		ug/L	*50.5*		*98.3*	*82-116*			
Surrogate: Toluene-d8	*49.6*		ug/L	*50.5*		*98.3*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*48.5*		ug/L	*50.2*		*96.7*	*77-114*			
Surrogate: 4-Bromofluorobenzene	*48.5*		ug/L	*50.2*		*96.7*	*80-116*			
LCS (1JD0926-BS1)				Prepared: 04/15/26 00:00 Analyzed: 04/15/26 11:05						
Chloromethane	30.50	1.0	ug/L	30.3		101	63-155			
Vinyl Chloride	29.25	1.0	ug/L	30.2		96.7	70-154			
Bromomethane	28.58	1.0	ug/L	30.1		94.9	52-176			
Chloroethane	31.51	1.0	ug/L	30.3		104	72-148			
Trichlorofluoromethane	32.63	1.0	ug/L	30.3		108	70-152			
1,1-Dichloroethylene	52.99	1.0	ug/L	50.1		106	70-148			
Acetone	120.5	10.0	ug/L	100		120	43-172			
Methyl Iodide	130.0	1.0	ug/L	100		130	69-170			
Carbon Disulfide	105.1	1.0	ug/L	100		105	72-162			
Methylene Chloride	48.54	5.0	ug/L	50.1		96.9	68-142			
Acrylonitrile	54.05	5.0	ug/L	50.4		107	33-163			
trans-1,2-Dichloroethylene	53.30	1.0	ug/L	50.1		106	66-148			
1,1-Dichloroethane	53.58	1.0	ug/L	50.1		107	66-143			
Vinyl Acetate	170.5	5.0	ug/L	131		130	43-153			
cis-1,2-Dichloroethylene	51.89	1.0	ug/L	50.4		103	71-149			
2-Butanone (MEK)	114.8	10.0	ug/L	100		115	52-159			
Bromochloromethane	55.95	1.0	ug/L	50.4		111	69-143			
Chloroform	51.30	1.0	ug/L	50.1		102	69-144			
1,1,1-Trichloroethane	52.65	1.0	ug/L	50.1		105	62-129			

CERTIFICATE OF ANALYSIS

1JD1325

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
LCS (1JD0926-BS1)	Prepared: 04/15/26 00:00 Analyzed: 04/15/26 11:05									
Carbon Tetrachloride	52.80	1.0	ug/L	50.1		105	63-141			
Benzene	52.47	1.0	ug/L	50.4		104	71-134			
1,2-Dichloroethane	52.02	1.0	ug/L	50.1		104	72-132			
Trichloroethylene	50.98	1.0	ug/L	50.1		102	71-135			
1,2-Dichloropropane	52.89	1.0	ug/L	50.1		106	69-136			
Dibromomethane	53.07	1.0	ug/L	50.4		105	73-147			
Bromodichloromethane	55.20	1.0	ug/L	50.1		110	68-129			
cis-1,3-Dichloropropene	53.72	1.0	ug/L	50.1		107	65-134			
4-Methyl-2-pentanone (MIBK)	116.3	5.0	ug/L	100		116	58-147			
Toluene	53.44	1.0	ug/L	50.5		106	72-133			
trans-1,3-Dichloropropene	54.32	1.0	ug/L	50.1		108	67-130			
1,1,2-Trichloroethane	54.21	1.0	ug/L	50.1		108	69-135			
Tetrachloroethylene	53.44	1.0	ug/L	50.1		107	69-130			
2-Hexanone (MBK)	123.0	5.0	ug/L	100		123	55-144			
Dibromochloromethane	53.82	1.0	ug/L	50.1		107	73-127			
1,2-Dibromoethane	54.17	1.0	ug/L	50.2		108	67-132			
Chlorobenzene	52.64	1.0	ug/L	50.1		105	72-123			
1,1,1,2-Tetrachloroethane	54.81	1.0	ug/L	50.3		109	73-127			
Ethylbenzene	53.48	1.0	ug/L	50.2		107	71-127			
Xylenes, total	160.8	2.0	ug/L	151		106	74-127			
Styrene	55.92	1.0	ug/L	50.4		111	66-126			
Bromoform	56.44	1.0	ug/L	50.1		113	68-130			
1,2,3-Trichloropropane	55.52	1.0	ug/L	50.3		110	63-136			
trans-1,4-Dichloro-2-butene	118.5	5.0	ug/L	100		119	54-134			
1,1,2,2-Tetrachloroethane	53.08	1.0	ug/L	50.1		106	61-131			
1,4-Dichlorobenzene	50.98	1.0	ug/L	50.1		102	70-129			
1,2-Dichlorobenzene	53.09	1.0	ug/L	50.1		106	69-126			
1,2-Dibromo-3-chloropropane	58.18	5.0	ug/L	50.1		116	50-143			
Surrogate: Dibromofluoromethane	*50.1*		ug/L	*50.2*		*99.8*	*57-128*			
Surrogate: Dibromofluoromethane	*50.1*		ug/L	*50.2*		*99.8*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*50.0*		ug/L	*50.4*		*99.4*	*49-135*			
Surrogate: 1,2-Dichloroethane-d4	*50.0*		ug/L	*50.4*		*99.4*	*61-142*			
Surrogate: Toluene-d8	*50.2*		ug/L	*50.5*		*99.5*	*82-116*			
Surrogate: Toluene-d8	*50.2*		ug/L	*50.5*		*99.5*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*50.5*		ug/L	*50.2*		*101*	*77-114*			
Surrogate: 4-Bromofluorobenzene	*50.5*		ug/L	*50.2*		*101*	*80-116*			
LCS Dup (1JD0926-BSD1)	Prepared: 04/15/26 00:00 Analyzed: 04/15/26 11:28									
Chloromethane	26.79	1.0	ug/L	30.3		88.4	63-155	13.0	24	
Vinyl Chloride	25.84	1.0	ug/L	30.2		85.4	70-154	12.4	25	
Bromomethane	25.57	1.0	ug/L	30.1		84.9	52-176	11.1	27	
Chloroethane	28.24	1.0	ug/L	30.3		93.1	72-148	10.9	25	
Trichlorofluoromethane	28.61	1.0	ug/L	30.3		94.4	70-152	13.1	26	
1,1-Dichloroethylene	46.72	1.0	ug/L	50.1		93.2	70-148	12.6	24	

CERTIFICATE OF ANALYSIS

1JD1325

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
LCS Dup (1JD0926-BSD1)			Prepared: 04/15/26 00:00 Analyzed: 04/15/26 11:28							
Acetone	107.0	10.0	ug/L	100		107	43-172	11.9	30	
Methyl Iodide	116.1	1.0	ug/L	100		116	69-170	11.3	30	
Carbon Disulfide	92.17	1.0	ug/L	100		92.2	72-162	13.1	24	
Methylene Chloride	43.45	5.0	ug/L	50.1		86.7	68-142	11.1	21	
Acrylonitrile	47.82	5.0	ug/L	50.4		95.0	33-163	12.2	28	
trans-1,2-Dichloroethylene	47.36	1.0	ug/L	50.1		94.6	66-148	11.8	27	
1,1-Dichloroethane	47.65	1.0	ug/L	50.1		95.1	66-143	11.7	24	
Vinyl Acetate	146.4	5.0	ug/L	131		112	43-153	15.2	30	
cis-1,2-Dichloroethylene	47.08	1.0	ug/L	50.4		93.5	71-149	9.72	26	
2-Butanone (MEK)	101.7	10.0	ug/L	100		102	52-159	12.1	27	
Bromochloromethane	50.27	1.0	ug/L	50.4		99.7	69-143	10.7	23	
Chloroform	45.87	1.0	ug/L	50.1		91.6	69-144	11.2	23	
1,1,1-Trichloroethane	46.61	1.0	ug/L	50.1		93.0	62-129	12.2	24	
Carbon Tetrachloride	46.73	1.0	ug/L	50.1		93.3	63-141	12.2	25	
Benzene	47.34	1.0	ug/L	50.4		93.9	71-134	10.3	24	
1,2-Dichloroethane	47.37	1.0	ug/L	50.1		94.6	72-132	9.36	24	
Trichloroethylene	45.94	1.0	ug/L	50.1		91.7	71-135	10.4	24	
1,2-Dichloropropane	47.43	1.0	ug/L	50.1		94.7	69-136	10.9	24	
Dibromomethane	47.98	1.0	ug/L	50.4		95.3	73-147	10.1	25	
Bromodichloromethane	49.82	1.0	ug/L	50.1		99.5	68-129	10.2	22	
cis-1,3-Dichloropropene	48.51	1.0	ug/L	50.1		96.9	65-134	10.2	23	
4-Methyl-2-pentanone (MIBK)	105.0	5.0	ug/L	100		105	58-147	10.1	27	
Toluene	48.10	1.0	ug/L	50.5		95.3	72-133	10.5	24	
trans-1,3-Dichloropropene	49.10	1.0	ug/L	50.1		98.1	67-130	10.1	24	
1,1,2-Trichloroethane	48.52	1.0	ug/L	50.1		96.9	69-135	11.1	23	
Tetrachloroethylene	46.71	1.0	ug/L	50.1		93.2	69-130	13.4	25	
2-Hexanone (MBK)	109.0	5.0	ug/L	100		109	55-144	12.1	25	
Dibromochloromethane	47.44	1.0	ug/L	50.1		94.7	73-127	12.6	22	
1,2-Dibromoethane	47.67	1.0	ug/L	50.2		94.9	67-132	12.8	24	
Chlorobenzene	46.91	1.0	ug/L	50.1		93.7	72-123	11.5	23	
1,1,1,2-Tetrachloroethane	49.18	1.0	ug/L	50.3		97.7	73-127	10.8	24	
Ethylbenzene	46.80	1.0	ug/L	50.2		93.3	71-127	13.3	26	
Xylenes, total	141.5	2.0	ug/L	151		93.6	74-127	12.8	25	
Styrene	49.49	1.0	ug/L	50.4		98.3	66-126	12.2	23	
Bromoform	49.88	1.0	ug/L	50.1		99.5	68-130	12.3	23	
1,2,3-Trichloropropane	49.11	1.0	ug/L	50.3		97.5	63-136	12.3	24	
trans-1,4-Dichloro-2-butene	102.2	5.0	ug/L	100		102	54-134	14.8	27	
1,1,2,2-Tetrachloroethane	48.74	1.0	ug/L	50.1		97.3	61-131	8.52	29	
1,4-Dichlorobenzene	46.63	1.0	ug/L	50.1		93.0	70-129	8.91	24	
1,2-Dichlorobenzene	48.65	1.0	ug/L	50.1		97.1	69-126	8.73	26	
1,2-Dibromo-3-chloropropane	53.30	5.0	ug/L	50.1		106	50-143	8.75	30	
Surrogate: Dibromofluoromethane	*49.9*		ug/L	*50.2*		*99.4*	*57-128*			

CERTIFICATE OF ANALYSIS

1JD1325

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
LCS Dup (1JD0926-BSD1)				Prepared: 04/15/26 00:00 Analyzed: 04/15/26 11:28						
Surrogate: Dibromofluoromethane	*49.9*		ug/L	*50.2*		*99.4*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*49.1*		ug/L	*50.4*		*97.6*	*49-135*			
Surrogate: 1,2-Dichloroethane-d4	*49.1*		ug/L	*50.4*		*97.6*	*61-142*			
Surrogate: Toluene-d8	*50.2*		ug/L	*50.5*		*99.4*	*82-116*			
Surrogate: Toluene-d8	*50.2*		ug/L	*50.5*		*99.4*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*49.2*		ug/L	*50.2*		*98.1*	*77-114*			
Surrogate: 4-Bromofluorobenzene	*49.2*		ug/L	*50.2*		*98.1*	*80-116*			
Matrix Spike (1JD0926-MS1)		**Source: 1JD1484-01**		Prepared: 04/15/26 00:00 Analyzed: 04/15/26 20:14						
Chloromethane	296.4	10.0	ug/L	303	ND	97.8	61-152			
Vinyl Chloride	279.8	10.0	ug/L	302	ND	92.5	66-149			
Bromomethane	264.3	10.0	ug/L	301	ND	87.7	43-171			
Chloroethane	297.4	10.0	ug/L	303	ND	98.1	69-148			
Trichlorofluoromethane	319.8	10.0	ug/L	303	ND	106	62-163			
1,1-Dichloroethylene	516.2	10.0	ug/L	501	ND	103	70-148			
Acetone	1280	100	ug/L	1000	ND	128	45-173			
Methyl Iodide	1123	10.0	ug/L	1000	ND	112	62-167			
Carbon Disulfide	988.2	10.0	ug/L	1000	ND	98.8	71-163			
Methylene Chloride	452.0	50.0	ug/L	501	ND	90.2	69-140			
Acrylonitrile	492.7	50.0	ug/L	504	ND	97.9	32-159			
trans-1,2-Dichloroethylene	506.6	10.0	ug/L	501	ND	101	69-144			
1,1-Dichloroethane	508.5	10.0	ug/L	501	ND	101	70-138			
Vinyl Acetate	1456	50.0	ug/L	1310	ND	111	58-142			
cis-1,2-Dichloroethylene	492.6	10.0	ug/L	504	ND	97.8	68-151			
2-Butanone (MEK)	1136	100	ug/L	1000	ND	114	50-160			
Bromochloromethane	528.1	10.0	ug/L	504	ND	105	65-143			
Chloroform	479.6	10.0	ug/L	501	ND	95.8	71-143			
1,1,1-Trichloroethane	508.9	10.0	ug/L	501	ND	102	63-133			
Carbon Tetrachloride	492.5	10.0	ug/L	501	ND	98.3	63-142			
Benzene	502.5	10.0	ug/L	504	ND	99.6	69-133			
1,2-Dichloroethane	495.8	10.0	ug/L	501	ND	99.0	63-138			
Trichloroethylene	494.0	10.0	ug/L	501	ND	98.6	71-133			
1,2-Dichloropropane	501.1	10.0	ug/L	501	ND	100	69-132			
Dibromomethane	494.0	10.0	ug/L	504	ND	98.1	70-147			
Bromodichloromethane	514.0	10.0	ug/L	501	ND	103	67-130			
cis-1,3-Dichloropropene	493.7	10.0	ug/L	501	ND	98.6	61-126			
4-Methyl-2-pentanone (MIBK)	1082	50.0	ug/L	1000	ND	108	55-147			
Toluene	511.9	10.0	ug/L	505	ND	101	71-133			
trans-1,3-Dichloropropene	494.7	10.0	ug/L	501	ND	98.8	63-124			
1,1,2-Trichloroethane	508.1	10.0	ug/L	501	ND	101	69-133			
Tetrachloroethylene	511.5	10.0	ug/L	501	ND	102	70-124			
2-Hexanone (MBK)	1141	50.0	ug/L	1000	ND	114	53-141			
Dibromochloromethane	489.3	10.0	ug/L	501	ND	97.7	74-122			
1,2-Dibromoethane	497.0	10.0	ug/L	502	ND	99.0	66-127			

CERTIFICATE OF ANALYSIS

1JD1325

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
Matrix Spike (1JD0926-MS1)	**Source: 1JD1484-01**	Prepared: 04/15/26 00:00 Analyzed: 04/15/26 20:14								
Chlorobenzene	493.1	10.0	ug/L	501	ND	98.5	76-116			
1,1,1,2-Tetrachloroethane	509.0	10.0	ug/L	503	ND	101	77-121			
Ethylbenzene	504.0	10.0	ug/L	502	ND	100	73-124			
Xylenes, total	1511	20.0	ug/L	1510	ND	100	75-123			
Styrene	516.1	10.0	ug/L	504	ND	102	70-120			
Bromoform	514.8	10.0	ug/L	501	ND	103	70-124			
1,2,3-Trichloropropane	509.0	10.0	ug/L	503	ND	101	62-135			
trans-1,4-Dichloro-2-butene	1020	50.0	ug/L	1000	ND	102	50-120			
1,1,2,2-Tetrachloroethane	500.6	10.0	ug/L	501	ND	99.9	63-126			
1,4-Dichlorobenzene	489.6	10.0	ug/L	501	ND	97.7	72-119			
1,2-Dichlorobenzene	503.3	10.0	ug/L	501	ND	100	71-117			
1,2-Dibromo-3-chloropropane	522.3	50.0	ug/L	501	ND	104	49-134			
Surrogate: Dibromofluoromethane	*494*		ug/L	*502*		*98.5*	*57-128*			
Surrogate: Dibromofluoromethane	*494*		ug/L	*502*		*98.5*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*496*		ug/L	*504*		*98.4*	*49-135*			
Surrogate: 1,2-Dichloroethane-d4	*496*		ug/L	*504*		*98.4*	*61-142*			
Surrogate: Toluene-d8	*508*		ug/L	*505*		*101*	*82-116*			
Surrogate: Toluene-d8	*508*		ug/L	*505*		*101*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*500*		ug/L	*502*		*99.7*	*77-114*			
Surrogate: 4-Bromofluorobenzene	*500*		ug/L	*502*		*99.7*	*80-116*			
Matrix Spike Dup (1JD0926-MSD1)	**Source: 1JD1484-01**	Prepared: 04/15/26 00:00 Analyzed: 04/15/26 20:37								
Chloromethane	285.8	10.0	ug/L	303	ND	94.3	61-152	3.64	26	
Vinyl Chloride	278.7	10.0	ug/L	302	ND	92.1	66-149	0.394	23	
Bromomethane	263.9	10.0	ug/L	301	ND	87.6	43-171	0.151	29	
Chloroethane	296.6	10.0	ug/L	303	ND	97.8	69-148	0.269	25	
Trichlorofluoromethane	318.2	10.0	ug/L	303	ND	105	62-163	0.502	25	
1,1-Dichloroethylene	509.2	10.0	ug/L	501	ND	102	70-148	1.37	22	
Acetone	1330	100	ug/L	1000	ND	133	45-173	3.87	30	
Methyl Iodide	1191	10.0	ug/L	1000	ND	119	62-167	5.93	24	
Carbon Disulfide	990.5	10.0	ug/L	1000	ND	99.0	71-163	0.232	22	
Methylene Chloride	462.1	50.0	ug/L	501	ND	92.2	69-140	2.21	19	
Acrylonitrile	500.4	50.0	ug/L	504	ND	99.4	32-159	1.55	30	
trans-1,2-Dichloroethylene	503.2	10.0	ug/L	501	ND	100	69-144	0.673	22	
1,1-Dichloroethane	504.5	10.0	ug/L	501	ND	101	70-138	0.790	20	
Vinyl Acetate	1542	50.0	ug/L	1310	ND	117	58-142	5.69	24	
cis-1,2-Dichloroethylene	493.0	10.0	ug/L	504	ND	97.9	68-151	0.0812	22	
2-Butanone (MEK)	1141	100	ug/L	1000	ND	114	50-160	0.422	23	
Bromochloromethane	527.8	10.0	ug/L	504	ND	105	65-143	0.0568	22	
Chloroform	479.6	10.0	ug/L	501	ND	95.8	71-143	0.00	21	
1,1,1-Trichloroethane	506.2	10.0	ug/L	501	ND	101	63-133	0.532	23	
Carbon Tetrachloride	503.3	10.0	ug/L	501	ND	100	63-142	2.17	22	
Benzene	493.5	10.0	ug/L	504	ND	97.8	69-133	1.81	18	
1,2-Dichloroethane	491.6	10.0	ug/L	501	ND	98.2	63-138	0.851	20	

CERTIFICATE OF ANALYSIS

1JD1325

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1JD0926 - EPA 5030B - EPA 8260D										
Matrix Spike Dup (1JD0926-MSD1)	**Source: 1JD1484-01**	Prepared: 04/15/26 00:00 Analyzed: 04/15/26 20:37								
Trichloroethylene	475.4	10.0	ug/L	501	ND	94.9	71-133	3.84	23	
1,2-Dichloropropane	503.6	10.0	ug/L	501	ND	101	69-132	0.498	20	
Dibromomethane	507.2	10.0	ug/L	504	ND	101	70-147	2.64	22	
Bromodichloromethane	516.3	10.0	ug/L	501	ND	103	67-130	0.446	21	
cis-1,3-Dichloropropene	500.9	10.0	ug/L	501	ND	100	61-126	1.45	21	
4-Methyl-2-pentanone (MIBK)	1084	50.0	ug/L	1000	ND	108	55-147	0.249	23	
Toluene	501.2	10.0	ug/L	505	ND	99.3	71-133	2.11	19	
trans-1,3-Dichloropropene	508.2	10.0	ug/L	501	ND	101	63-124	2.69	21	
1,1,2-Trichloroethane	513.6	10.0	ug/L	501	ND	103	69-133	1.08	19	
Tetrachloroethylene	501.1	10.0	ug/L	501	ND	100	70-124	2.05	24	
2-Hexanone (MBK)	1156	50.0	ug/L	1000	ND	116	53-141	1.32	24	
Dibromochloromethane	497.7	10.0	ug/L	501	ND	99.4	74-122	1.70	21	
1,2-Dibromoethane	506.1	10.0	ug/L	502	ND	101	66-127	1.81	23	
Chlorobenzene	491.2	10.0	ug/L	501	ND	98.1	76-116	0.386	21	
1,1,1,2-Tetrachloroethane	513.8	10.0	ug/L	503	ND	102	77-121	0.939	25	
Ethylbenzene	492.1	10.0	ug/L	502	ND	98.1	73-124	2.39	20	
Xylenes, total	1482	20.0	ug/L	1510	ND	98.1	75-123	1.93	20	
Styrene	514.9	10.0	ug/L	504	ND	102	70-120	0.233	23	
Bromoform	518.5	10.0	ug/L	501	ND	103	70-124	0.716	22	
1,2,3-Trichloropropane	511.1	10.0	ug/L	503	ND	102	62-135	0.412	28	
trans-1,4-Dichloro-2-butene	1036	50.0	ug/L	1000	ND	104	50-120	1.56	26	
1,1,2,2-Tetrachloroethane	485.4	10.0	ug/L	501	ND	96.9	63-126	3.08	24	
1,4-Dichlorobenzene	470.4	10.0	ug/L	501	ND	93.8	72-119	4.00	24	
1,2-Dichlorobenzene	496.8	10.0	ug/L	501	ND	99.2	71-117	1.30	24	
1,2-Dibromo-3-chloropropane	538.6	50.0	ug/L	501	ND	107	49-134	3.07	28	
Surrogate: Dibromofluoromethane	*506*		ug/L	*502*		*101*	*57-128*			
Surrogate: Dibromofluoromethane	*506*		ug/L	*502*		*101*	*75-136*			
Surrogate: 1,2-Dichloroethane-d4	*504*		ug/L	*504*		*100*	*49-135*			
Surrogate: 1,2-Dichloroethane-d4	*504*		ug/L	*504*		*100*	*61-142*			
Surrogate: Toluene-d8	*502*		ug/L	*505*		*99.6*	*82-116*			
Surrogate: Toluene-d8	*502*		ug/L	*505*		*99.6*	*82-121*			
Surrogate: 4-Bromofluorobenzene	*496*		ug/L	*502*		*98.8*	*77-114*			
Surrogate: 4-Bromofluorobenzene	*496*		ug/L	*502*		*98.8*	*80-116*			

Definitions

RL: Reporting Limit
RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 2.2ºC

CERTIFICATE OF ANALYSIS

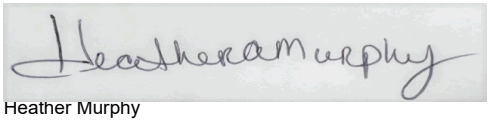
1JD1325

Cooler Inspection Checklist

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

Report Comments

Reviewed and Approved By:



Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
04/21/26 14:28

CHAIN OF CUSTODY RECORD

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

Printed: 3/24/2026 4:10:16PM

SITE INFORMATION

Sampler: TODD WHIPPLE

Project: **Grundy Co. Landfill - New Regs**
6033

REPORT TO

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

INVOICE TO

Environmental Manager
Grundy County Landfill
20434 220th Street
Grundy Center, IA 50638

SPECIAL INSTRUCTIONS

None

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

LAB USE ONLY

1JD1325
HLW Engineering
PM: Heather Murphy

Temperature: 2.2 oC

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	# Containers	Analyses	Lab Sample Number
05-001	**MW-14**	Aqueous	GRAB	4-9-26	9:24	6	Indfill-app1-voc-group ~~(as many as possible)~~	01

TODD WHIPPLE 4/10/26
Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

DAVID ZEBOLSKE 4/10/26 10:45
Received for Lab By Date/Time

Remarks:

Attachment B

Summary of Chlorobenzene Results at MW-14 (2014 to 2026)

Graph with No GWPS (0-12 ug/L Vertical Scale)

Graph with GWPS (0 to 120 ug/L Vertical Scale)

Chlorobenzene Summary Over Time

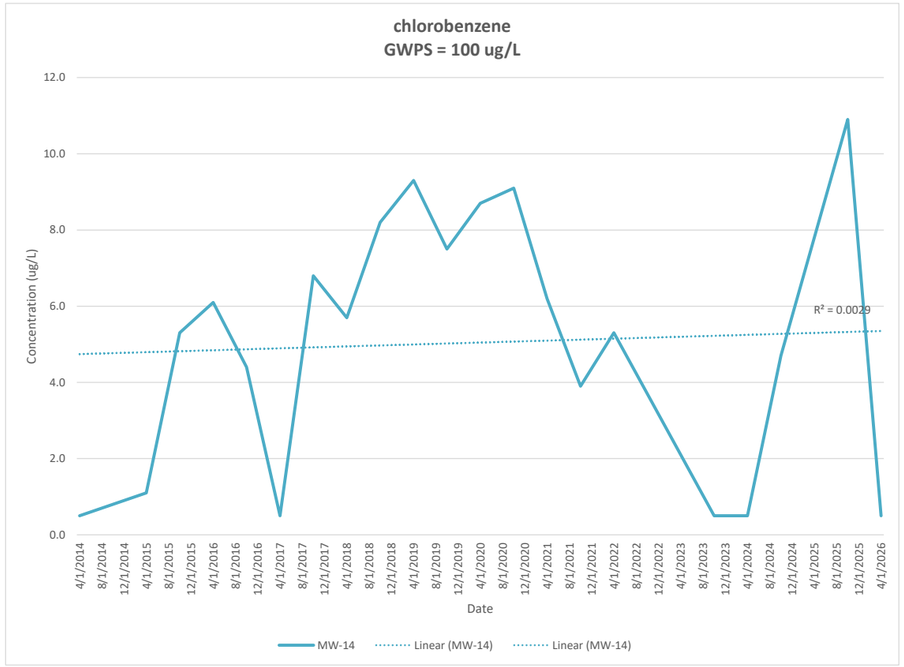
MW-14

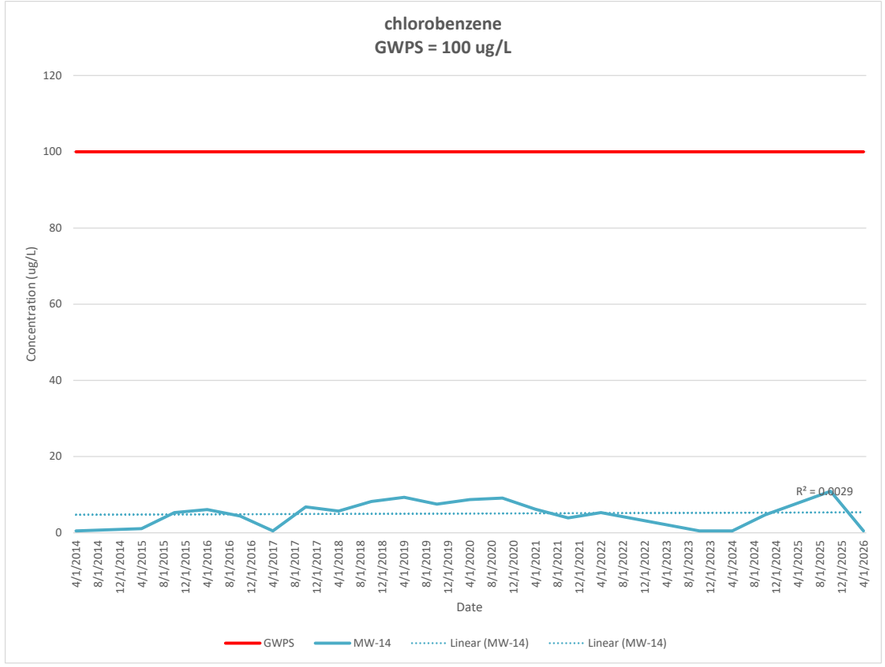
Grundy County Sanitary Landfill - Closed 2008

Date	Compound (ug/L)	GWPS	MW-14
4/24/2014	chlorobenzene	100	0.5
10/15/2024	chlorobenzene	100	4.7
4/1/2015	chlorobenzene	100	1.1
10/2/2015	chlorobenzene	100	5.3
4/19/2016	chlorobenzene	100	6.1
10/10/2016	chlorobenzene	100	4.4
4/4/2017	chlorobenzene	100	0.5
10/18/2017	chlorobenzene	100	6.8
4/12/2018	chlorobenzene	100	5.7
10/23/2018	chlorobenzene	100	8.2
4/8/2019	chlorobenzene	100	9.3
10/4/2019	chlorobenzene	100	7.5
4/9/2020	chlorobenzene	100	8.7
10/1/2020	chlorobenzene	100	9.1
4/1/2021	chlorobenzene	100	6.2
10/4/2021	chlorobenzene	100	3.9
4/6/2022	chlorobenzene	100	5.3
10/4/2023	chlorobenzene	100	0.5
4/17/2024	chlorobenzene	100	0.5
10/9/2025	chlorobenzene	100	10.9
4/9/2026	chlorobenzene	100	0.5

Sample size = 8		8
Mean value		4.61
standard deviation		3.77
95% Confidence Z(0.95)		1.895
Standard Error (ST Dev/√8)		1.334101
Margin of Error		2.528121
95% UCL (mean + Margin of Error)		**7.14**
95% LCL (mean - Margin of Error)		**2.08**
GWPS (ug/L)		**100**
Does 95% LCL V	If so, then SSL	**No**

0.5 = Non-detected at 1.0 ug/L, a value of 1/2 the MRL is reported.





Attachment C

Confidence Limit Evaluation (95% LCL & 95% UCL)

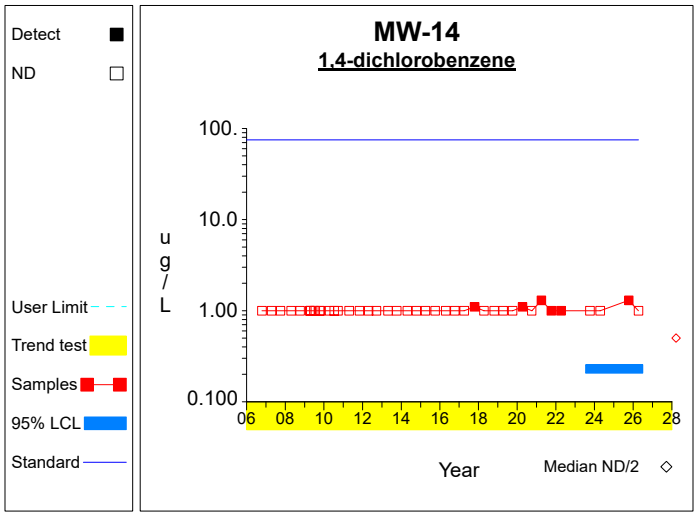
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

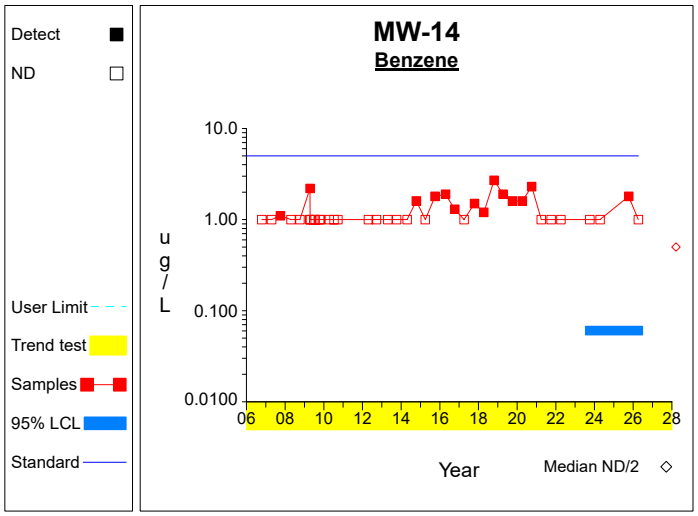
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
1,4-dichlorobenzene	ug/L	MW-14	4	0.700	0.400	1.176	0.229	1.171	75.000	
Benzene	ug/L	MW-14	4	0.825	0.650	1.176	0.060	1.590	5.000	
Bis(2-ethylhexyl) phthalate	ug/L	MW-14	4	21.000	34.000	1.176	0.000	60.994	6.000	
Chlorobenzene	ug/L	MW-14	4	3.100	5.200	1.176	0.000	9.217	100.000	inc
Chloroethane	ug/L	MW-14	4	0.500	0.000	1.176	0.500	0.500	2800.000	

* - Insufficient Data
** - Significant Exceedance
LCL = Lower Confidence Limit
UCL = Upper Confidence Limit

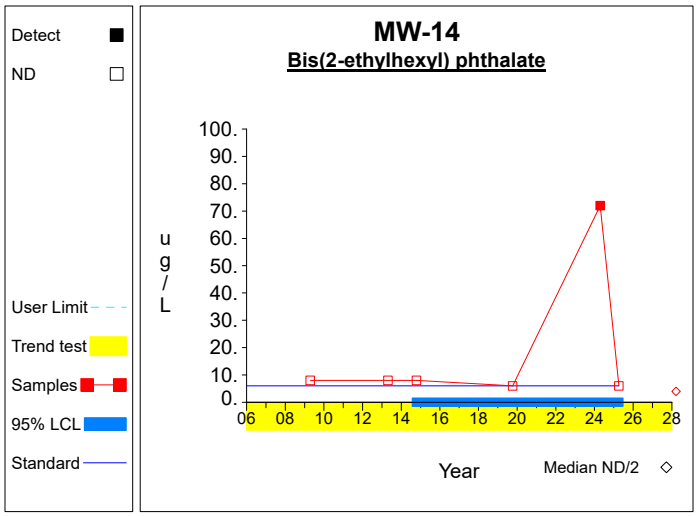
Confidence Limits (Assessment)



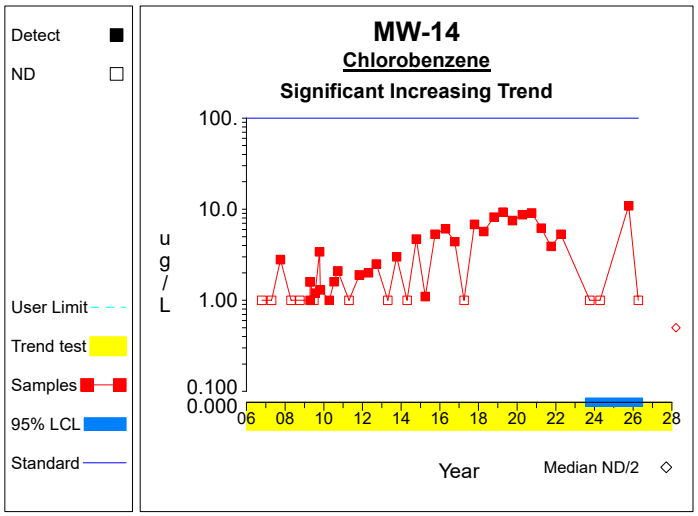
Graph 1



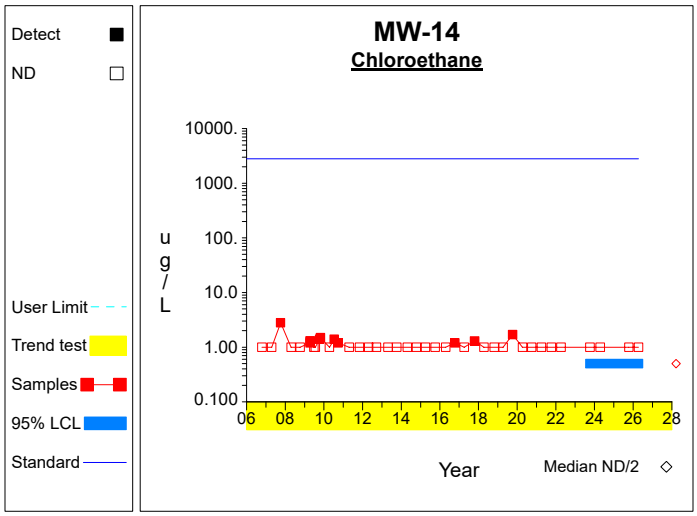
Graph 2



Graph 3



Graph 4



Graph 5

Prepared by: Otter Creek Environmental

Worksheet 6 - Assessment Monitoring
1,4-dichlorobenzene (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.8** / **4** = **0.7**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**2.44** - **7.84**/**4**) / (**4**-1))^{½} = **0.4**	Compute sd of the last 4 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.7** - **2.353** * **0.4**/**4**^{½} = **0.229**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.7** + **2.353** * **0.4**/**4**^{½} = **1.171**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **42** * (**42**-1) / 2 = **861**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **3121.333**	Variance estimate for slope.
8	M(S) = (**N**' ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**861** ± **2.576** * **3121.333**^{½}) / 2 = [**358.541**, **502.459**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Benzene (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **3.3** / **4** = **0.825**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**3.99** - **10.89**/**4**) / (**4**-1))^{½} = **0.65**	Compute sd of the last 4 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **0.825** - **2.353** * **0.65**/**4**^{½} = **0.06**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **0.825** + **2.353** * **0.65**/**4**^{½} = **1.59**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **40** * (**40**-1) / 2 = **780**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **5302.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**780** ± **2.576** * **5302.667**^{½}) / 2 = [**296.209**, **483.791**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.007**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Bis(2-ethylhexyl) phthalate (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **84.0** / **4** = **21.0**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**5232.0** - **7056.0**/**4**) / (**4**-1))^{½} = **34.0**	Compute sd of the last 4 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **21.0** - **2.353** * **34.0**/**4**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **21.0** + **2.353** * **34.0**/**4**^{½} = **60.994**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **6** * (**6**-1) / 2 = **15**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **11.667**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**15** ± **2.576** * **11.667**^{½}) / 2 = [**3.101**, **11.899**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **4.077**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Worksheet 6 - Assessment Monitoring
Chlorobenzene (ug/L) at MW-14

Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **12.4** / **4** = **3.1**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))^{½} = ((**119.56** - **153.76**/**4**) / (**4**-1))^{½} = **5.2**	Compute sd of the last 4 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**^{½} = **3.1** - **2.353** * **5.2**/**4**^{½} = **0.0**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**^{½} = **3.1** + **2.353** * **5.2**/**4**^{½} = **9.217**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **42** * (**42**-1) / 2 = **861**	Number of sample pairs during trend detection period.
6	S = **0.405**	Sen's estimator of trend.
7	var(S) = **8296.0**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**^{½}) / 2 = (**861** ± **2.576** * **8296.0**^{½}) / 2 = [**313.186**, **547.814**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.118**, **0.585**]	Two-sided confidence interval for slope.
10	LCL(S) > 0	**Significant increasing trend.**

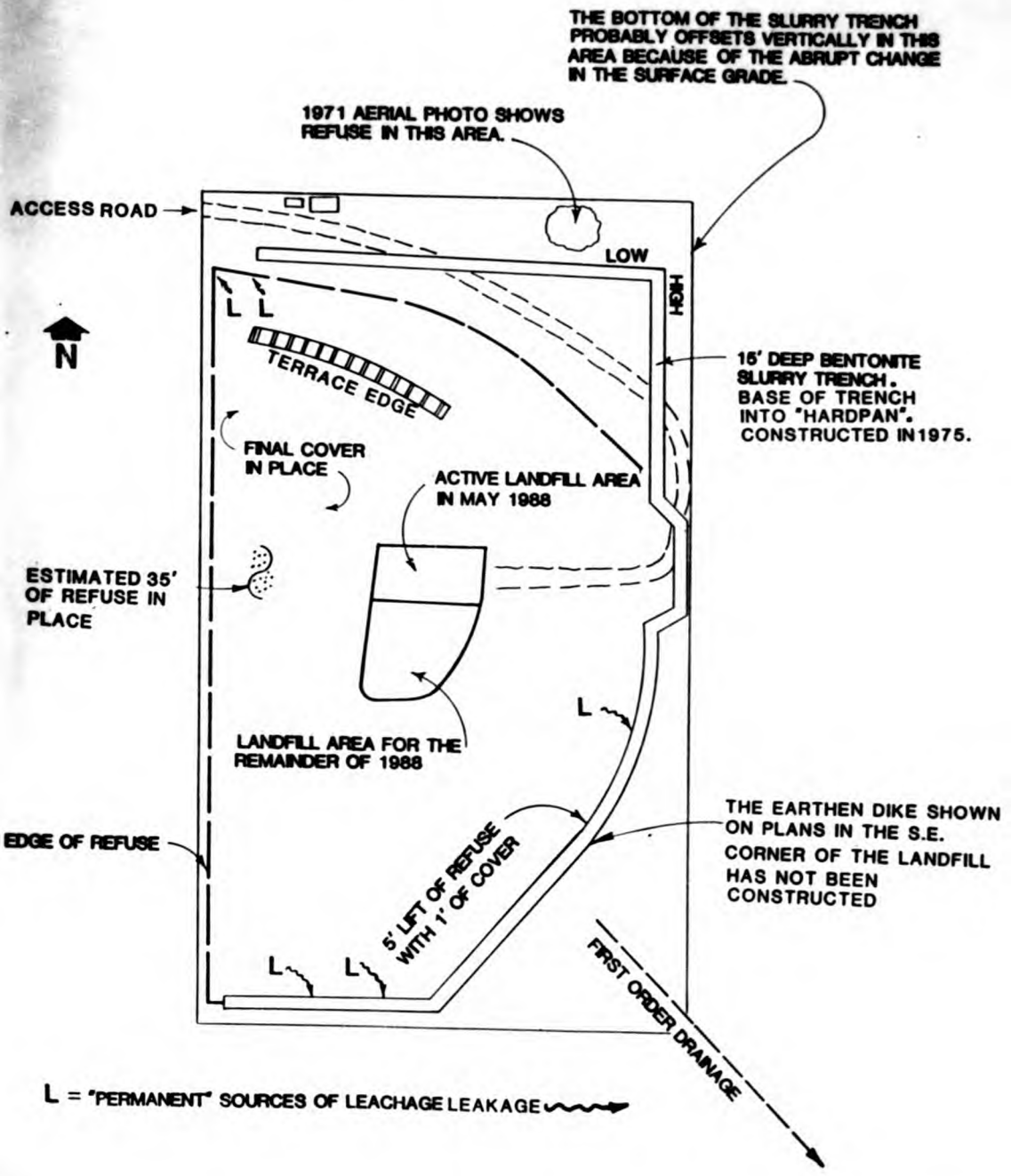
Worksheet 6 - Assessment Monitoring
Chloroethane (ug/L) at MW-14

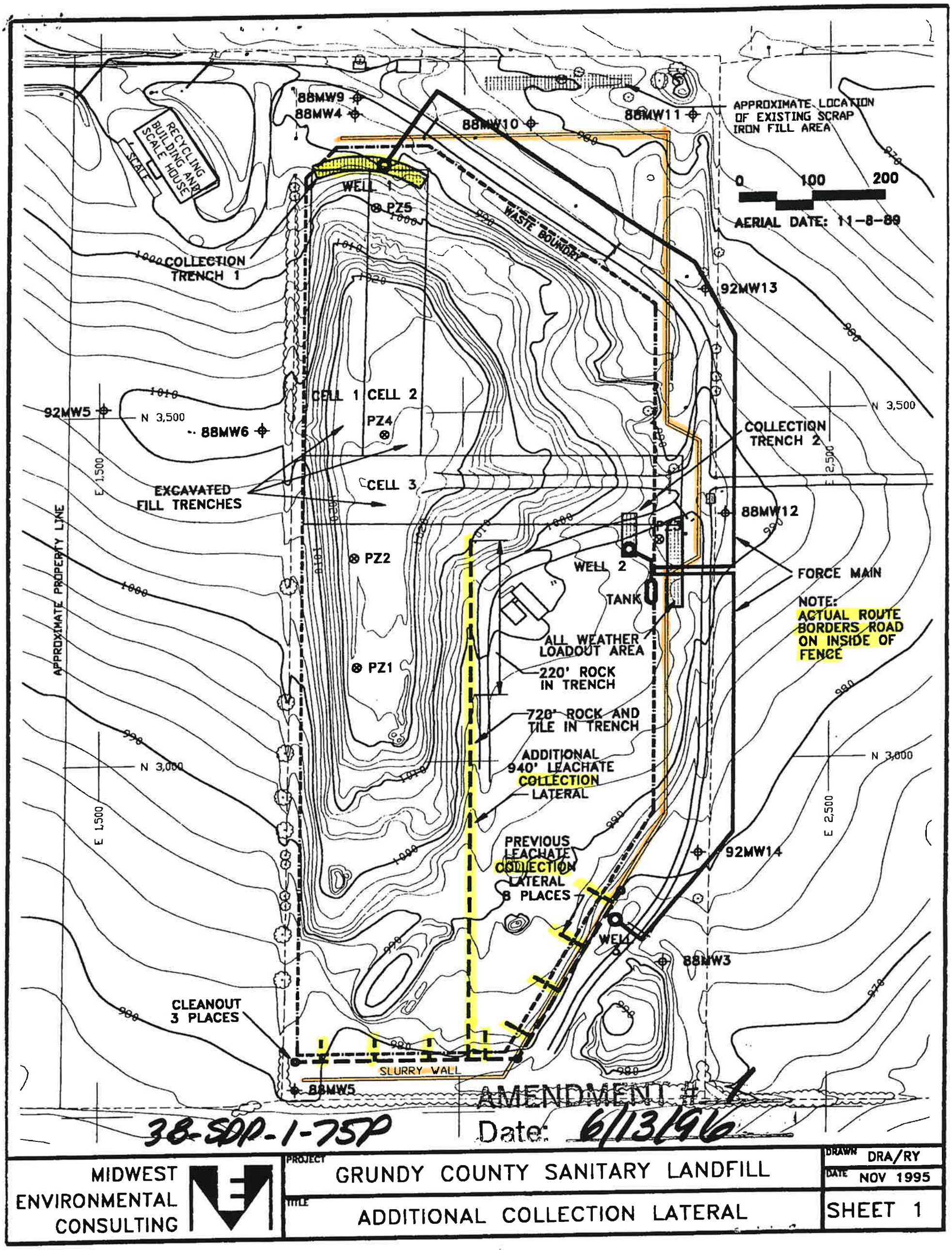
Step	Equation	Description
1	$\overline{X}$ = **sum[X]** / **N** = **2.0** / **4** = **0.5**	Compute the mean of the last 4 measurements.
2	S = ((**sum[X^2]** - **sum[X]**^{2}/**N**) / (**N**-1))$^{1/2}$ = ((**1.0** - **4.0**/**4**) / (**4**-1))$^{1/2}$ = **0.0**	Compute sd of the last 4 measurements.
3	LCL = $\overline{\mathbf{X}}$ - **tS**/**N**$^{1/2}$ = **0.5** - **2.353** * **0.0**/**4**$^{1/2}$ = **0.5**	Compute lower confidence limit for the mean of the last 4 measurements.
4	UCL = $\overline{\mathbf{X}}$ + **tS**/**N**$^{1/2}$ = **0.5** + **2.353** * **0.0**/**4**$^{1/2}$ = **0.5**	Compute upper confidence limit for the mean of the last 4 measurements.
5	N' = **N** * (**N**-1) / 2 = **42** * (**42**-1) / 2 = **861**	Number of sample pairs during trend detection period.
6	S = **0.0**	Sen's estimator of trend.
7	var(S) = **5044.333**	Variance estimate for slope.
8	M(S) = (**N'** ± **Z**$_{.995}$ * **var(S)**$^{1/2}$) / 2 = (**861** ± **2.576** * **5044.333**$^{1/2}$) / 2 = [**339.022**, **521.978**]	Ordinal positions for two-sided lower confidence limits for slope. The LCL and UCL are the Mth largest slope estimates for the values shown. When the values are not integers, interpolation is used.
9	CL(S) = [**0.0**, **0.0**]	Two-sided confidence interval for slope.
10	the interval includes 0	There is no significant trend.

Attachment D

Historic Maps – 1975 Slurry Wall & 1995 Leachate/Groundwater Collection

FIGURE 14
FIELD MAP OF SITE
MAY 1988





MIDWEST ENVIRONMENTAL CONSULTING	PROJECT: GRUNDY COUNTY SANITARY LANDFILL	DRAWN: DRA/RY DATE: NOV 1995
	TITLE: ADDITIONAL COLLECTION LATERAL	SHEET 1

Attachment E

Analytical Report – Dissolved Methane, Ethane, Ethene at MW-14, April 9, 2026

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JD1383

Project Description

6033

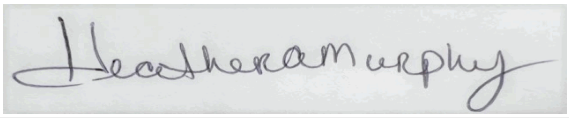
For:

Todd Whipple

HLW Engineering

204 West Broad St

Story City, IA 50248



Heather Murphy

Customer Relationship Specialist

Friday, April 17, 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®

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1JD1383

HLW Engineering

Todd Whipple
204 West Broad St
Story City, IA 50248

Project Name: 6033

Project / PO Number: N/A
Received: 04/10/2026
Reported: 04/17/2026

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
MW-14	1JD1383-01	Aqueous	GRAB		04/09/26 09:26	04/10/26 10:45

CERTIFICATE OF ANALYSIS

1JD1383

Analytical Testing Parameters

Client Sample ID:	MW-14		
Sample Matrix:	Aqueous	**Collected By:**	Todd Whipple
Lab Sample ID:	1JD1383-01	**Collection Date:**	04/09/2026 9:26

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		04/15/26 1004	04/15/26 1416	KJB
Ethene	<5.00	5.00	ug/L		04/15/26 1004	04/15/26 1416	KJB
Ethane	<5.00	5.00	ug/L		04/15/26 1004	04/15/26 1416	KJB

CERTIFICATE OF ANALYSIS

1JD1383

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA RSK-175	B6D0769	B6D0769-BLK1	
		1JD1383-01	MW-14
		B6D0769-BS1	
		B6D0769-BSD1	

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

Volatile Organic Compounds by GCMS	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6D0769 - 5021 - EPA RSK-175										
Blank (B6D0769-BLK1)			Prepared: 04/15/26 10:04 Analyzed: 04/15/26 11:23							
Methane	<5.00	5.00	ug/L							
Ethene	<5.00	5.00	ug/L							
Ethane	<5.00	5.00	ug/L							
LCS (B6D0769-BS1)			Prepared: 04/15/26 10:04 Analyzed: 04/15/26 14:45							
Methane	52.2	5.00	ug/L	57.0942		91.5	85-115			
Ethene	98.7	5.00	ug/L	99.84367		98.8	85-115			
Ethane	106	5.00	ug/L	106.9982		99.1	85-115			
LCS Dup (B6D0769-BSD1)			Prepared: 04/15/26 10:04 Analyzed: 04/15/26 15:38							
Methane	57.3	5.00	ug/L	57.0942		100	85-115	9.29	40	
Ethene	108	5.00	ug/L	99.84367		109	85-115	9.46	40	
Ethane	116	5.00	ug/L	106.9982		108	85-115	8.63	40	

Definitions

RL: Reporting Limit
RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 2.2°C

Cooler Inspection Checklist

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

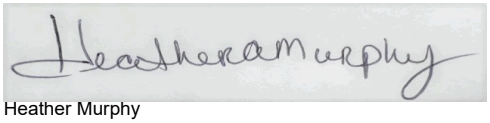
CERTIFICATE OF ANALYSIS

1JD1383

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
04/17/26 15:07

CHAIN OF CUSTODY RE

Keystone LABORATORIES, INC.

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

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480

☐ [illegible] Buren St
[illegible], IA 52544
[illegible]-437-7023
[illegible]-437-7040

1 J D 1 3 8 3

HLW Engineering
PM: Heather Murphy

1 OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER:
SITE NAME: Grundy Co SLF
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:
FAX:

BILL TO:

NAME: Kevin Nederhoff
COMPANY NAME: Grundy County Landfill Comm.
ADDRESS: 20434 220th Street
CITY/ST/ZIP: P.O Box 336
PHONE: Grundy Center, IA 50638

Keystone Quote No: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: Ethane	Ethene	Methane						LAB USE ONLY: LABORATORY SAMPLE NUMBER
MW-14	4-9-26	9:26	MW-14	3	W	G	x	x	x						01

LABORATORY WORK ORDER NO.

SAMPLE TEMPERATURE UPON RECEIPT: 2.2 °C

SAMPLE CONDITION/COMMENTS

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around: ☐ Standard ☐ Rush (Contact Lab Prior to Submission)
[signature]				
Relinquished by: (Signature)	Date / Time	Received for Lab by: (Signature)	Date: 4/10/26 Time: 10:45	Remarks:

Original - Lab Copy • Yellow - Sampler Copy

FORM: CCR 7-97