11228 Aurora Avenue
Des Moines, Iowa 50322-7905
United States
ghd.com

Our ref: 12576482-LTR-6

January 30, 2026

Mr. Brian Rath
Environmental Engineer Senior
Land Quality Bureau
Iowa Department of Natural Resources
6200 Park Avenue, Suite 200
Des Moines, Iowa 50321

2025 Annual Leachate Report
Neal North Energy Center Coal Combustion Residue Monofill
Sergeant Bluff, Iowa
Permit No. 97-SDP-12-95

Dear Mr. Rath:

On behalf of MidAmerican Energy Company (MidAmerican), GHD Services Inc. (GHD) prepared this *Leachate Report* to document leachate management activities for the Neal North Energy Center Coal Combustion Residue (CCR) Monofill (Neal North Monofill). The Neal North Monofill leachate management is conducted under the May 26, 2021 *Leachate Control Plan* which was incorporated into the Operating Permit by special provision X.6.

1. Current Operation

Cell 1 and Cell 2 are equipped with leachate collection and transfer systems. Leachate is pumped from Cell 1 and Cell 2 through buried pipe and a conveyance manhole to the Leachate Pond. In November 2019, a rain cover was deployed over the majority of Cell 2 in an effort to reduce leachate generation. The scrim-reinforced plastic was anchored with Wind Defender®. The effectiveness of the rain cover in reducing leachate generation is discussed in Section 1.2. Filling operations will continue in the Cell 1 area until the Cell 2 rain cover is removed.

1.1 Leachate Head

In accordance with the Operating Permit, MidAmerican is to maintain less than 12 inches of leachate on the liner system. MidAmerican monitors the depth by obtaining monthly leachate head measurements at the Cell 1 and Cell 2 leachate sump locations. Table 1 presents monthly leachate head measurements for the Cell 1 and Cell 2 sumps for the reporting months of January 2025 to December 2025.

In Cell 1, leachate head was maintained at less than 12 inches above the liner throughout the reporting period. In Cell 2, leachate head was maintained at less than 12 inches above the liner for the majority of 2025. In January and February 2025, leachate head was greater than 12 inches above the liner in Cell 2. At the start of 2025, a new transfer pump was installed but not operational due to low temperatures and ice in the pipes. At the end of February 2025, the new transfer pump was turned on and operational. After this, leachate head in

Cell 2 returned to less than 12 inches above the liner. MidAmerican utilized water trucks during the time the pump was not operational to transfer leachate from the transfer manhole to the leachate pond.

1.2 Leachate Volume

Between startup in September 2009 and March 13, 2018, the leachate transfer manhole totalizer recorded the removal of 24,032,618 gallons of leachate; with the reconfiguration of the leachate management system, a new totalizer was installed in 2018. The new totalizer recorded 15,374,044 gallons through December 29, 2025. During this reporting period (readings collected December 31, 2024 through December 29,2025), a total of 918,889 gallons of leachate removal was recorded at the leachate totalizer. The totalizer was out of service in January 2025. The leachate totalizer volumes since 2019 are summarized in Inset 1. The reduction in leachate volume is attributed to both the installation of the rain cover over Cell 2 in November 2019, less precipitation in recent years, and maintenance of the totalizer during 2024 and the beginning of 2025.

Inset 1 Annual Leachate Totalizer Volumes

Reporting Period	Annual Leachate Volume (gallons)
2019	4,570,213
2020	2,465,745
2021	1,634,504
2022	722,251
2023	893,346
2024	176,642
2025	918,889

Note: The leachate totalizer was out of service for approximately four months during 2024 and in January 2025.

1.3 Leachate Sampling

Table 2 provides analytical results for the leachate samples collected from 2016 through 2025. The laboratory analytical report for the 2025 sample is provided in Attachment A. The leachate analyte list was modified in 2016 to align the monitoring with Federal CCR rule groundwater monitoring constituents.

1.4 Overall Operation

Leachate is pumped from the Neal North Monofill to the Leachate Pond in accordance with the Operating Permit. Evaporators were previously deployed in the leachate pond. In June 2020 use of the evaporators was discontinued due to concerns about long-term management of drift. The mechanical evaporators are no longer in use.

The leachate system continues to prevent the migration of leachate to groundwater. The pumps and transducers have been replaced following maintenance of the system and are now functioning properly.

2. Closing

If you have any questions, please contact Josh Love of MidAmerican at (712) 277-6367 or Michael Alowitz.

Regards,

Michael Alowitz
Senior Engineer

+1 515 414-3934
michael.alowitz@ghd.com

Kevin G. Armstrong, C.P.G., P.M.P.
Project Director

+1 515 414-3935
kevin.armstrong@ghd.com

KA/lg/LTR-6/S4

Encl.: Table 1 – Sump Leachate Head Measurements
Table 2 – Leachate Analytical Results
Attachment A – Laboratory Analytical Report

Copy to: Kenna Anderson, MidAmerican
Josh Love, MidAmerican

Table 1

Sump Leachate Head Measurements
MidAmerican Energy Company
Neal North CCR Monofill - Sergeant Bluff, Iowa

Date	Cell 1 Leachate Head (inches above liner)	Cell 2 Leachate Head (inches above liner)
1/29/2025	3.8	31.0
2/26/2025	2.2	32.2
3/27/2025	1.2	8.2
4/30/2025	2.5	10.1
5/28/2025	2.1	11.2
6/26/2025	1.9	9.9
7/30/2025	1.9	10.1
8/27/2025	4.2	8.8
9/24/2025	4.2	8.0
10/29/2025	4.2	10.5
11/26/2025	4.4	9.9
12/29/2025	4.0	9.5

Table 2

Leachate Analytical Results
MidAmerican Energy Company
Neal North CCR Monofill - Sergeant Bluff, Iowa

Analyte	Units	Leachate-1116 11/8/2016	Leachate-0917 09/12/2017	Leachate-0818 08/28/2018	Leachate-0919 09/19/2019	Leachate-0920 09/23/2020	Leachate-0721 07/15/2021	Leachate-0922 09/15/2022	Leachate-0923 09/14/2023	Leachate-0924 09/12/2024	Leachate-0925 9/17/2025
Appendix III											
Boron	mg/L	5.35	3.49	6.60	5.85	4.69	2.04	2.09	1.86	3.27	5.72
Calcium	mg/L	113	191	254	95.9	164	321	295	321	264	255
Chloride	mg/L	149	271	476	84.9	379	283	407	255	722	192
Fluoride	mg/L	0.558	0.500 U	0.500 U	0.619	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	1.00 U
pH, lab	s.u.	11.1	9.8	11.1	11.3	8.8	8.3	8.3	8.1	8.6	9.1 J
Sulfate	mg/L	1410	1570	1530	1240	1720	774	856	735	1190	1900
Total dissolved solids (TDS)	mg/L	3080	2670	3850	2460	3570	1940	2420	1990	3420	3500
Appendix IV											
Antimony	mg/L	0.00152	0.00100 U	0.00300 U	0.00100 U	0.00100 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U
Arsenic	mg/L	0.0151	0.0193	0.0178	0.0124	0.0140	0.00448	0.00517	0.00405	0.00549	0.00683
Barium	mg/L	0.0775	0.157	0.111	0.0901	0.0914	0.0715	0.0806	0.0836	0.0779	0.0815
Beryllium	mg/L	0.00100 U	0.00100 U	0.00300 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Cadmium	mg/L	0.000500 U	0.000500 U	0.00150 U	0.000469	0.000548	0.000100 U	0.000100 U	0.000200 U	0.000200 U	0.000361
Chromium	mg/L	0.131	0.485	0.792	0.456	0.373	0.0515	0.0611	0.0384	0.0444	0.354
Cobalt	mg/L	0.00266	0.00330	0.00213	0.00481	0.00528	0.00116	0.00116	0.000593	0.00185	0.00380
Lead	mg/L	0.000500 U	0.00290	0.00150 U	0.000500 U	0.000500 U	0.000500 U	0.000500 U	0.000500 U	0.000500 U	0.000500 U
Lithium	mg/L	0.100 U	0.0120	0.0300 U	0.0100 U	0.0111	0.0100 U	0.0100 U	0.0108	0.0100 U	0.0135
Mercury	mg/L	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U
Molybdenum	mg/L	0.682	0.626	1.53	1.03	1.52	0.127	0.149	0.0927	0.345	0.978
Radium-226 & 228	pCi/L	1.80	1.05	0.314	0.101	0.974 U	0.793	1.11	1.62	1.16	0.885
Selenium	mg/L	0.172	0.208	0.435	0.299	0.425	0.0249	0.0455	0.0465	0.0783	0.351
Thallium	mg/L	0.00100 U	0.00100 U	0.00300 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration. mg/L - Milligrams per liter.
s.u. - Standard Units. pCi/L - Picocuries per liter.

Attachment A

Laboratory Analytical Report

eurofins | Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 10/17/2025 3:59:22 PM

JOB DESCRIPTION

MEC Neal North Energy Center CCR - Leachate
Neal North Closed Monofill - Leachate

JOB NUMBER

310-316113-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

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

Authorization

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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

Table of Contents

Job ID: 310-316113-1 Eurofins Cedar Falls

Job Narrative
310-316113-1

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

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

Receipt
The sample was received on 9/19/2025 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following sample was diluted due to the nature of the sample matrix: Leachate-0925 (310-316113-1). Elevated reporting limits (RLs) are provided.

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

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

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

Job ID: 310-316113-2 Eurofins Cedar Falls

Job Narrative
310-316113-2

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

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

Receipt
The sample was received on 9/19/2025 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C.

Gas Flow Proportional Counter
Method 9320_Ra228: Radium 228 Batch 737257

The method blank (MB) exhibits activity above the requested limit (RL) for Radium-228. Associated sample(s) have activity below the RL. The data for the following samples have been reported with this narrative: Leachate-0925 (310-316113-1)

Method 9320_Ra228: Radium 228 Batch 737257

The detection goal was not met for the following sample due to a reduced sample volume used in prep attributed to the presence of matrix interferences. Leachate-0925 (310-316113-1)

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

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

Sample Summary

Client: GHD Services Inc.
Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-316113-1	Leachate-0925	Water	09/17/25 16:15	09/19/25 10:00	Iowa

Client Sample ID: Leachate-0925 — Lab Sample ID: 310-316113-1

Date Collected: 09/17/25 16:15 — **Matrix: Water**
Date Received: 09/19/25 10:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**192**		5.00		mg/L			09/27/25 10:19	5
Fluoride	<1.00		1.00		mg/L			09/27/25 10:19	5
Sulfate	**1900**		50.0		mg/L			09/27/25 10:30	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/24/25 08:45	10/02/25 15:58	1
Arsenic	**0.00683**		0.00200		mg/L		09/24/25 08:45	10/02/25 15:58	1
Barium	**0.0815**		0.00200		mg/L		09/24/25 08:45	10/02/25 15:58	1
Beryllium	<0.00100		0.00100		mg/L		09/24/25 08:45	10/02/25 15:58	1
Boron	**5.72**		0.400		mg/L		09/24/25 08:45	10/03/25 13:23	4
Cadmium	**0.000361**		0.000200		mg/L		09/24/25 08:45	10/02/25 15:58	1
Calcium	**255**		0.500		mg/L		09/24/25 08:45	10/02/25 15:58	1
Chromium	**0.354**		0.00500		mg/L		09/24/25 08:45	10/02/25 15:58	1
Cobalt	**0.00380**		0.000500		mg/L		09/24/25 08:45	10/02/25 15:58	1
Lithium	**0.0135**		0.0100		mg/L		09/24/25 08:45	10/03/25 13:20	1
Lead	<0.000500		0.000500		mg/L		09/24/25 08:45	10/02/25 15:58	1
Molybdenum	**0.978**		0.00200		mg/L		09/24/25 08:45	10/02/25 15:58	1
Selenium	**0.351**		0.00500		mg/L		09/24/25 08:45	10/02/25 15:58	1
Thallium	<0.00100		0.00100		mg/L		09/24/25 08:45	10/02/25 15:58	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/29/25 12:45	09/30/25 15:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3500**		250		mg/L			09/23/25 13:51	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**9.1**	**HF**	1.0		SU			09/19/25 10:49	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.632	U	0.359	0.359	1.00	0.632	pCi/L	09/23/25 08:11	10/16/25 21:34	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.8*		*30 - 110*	*09/23/25 08:11*	*10/16/25 21:34*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<1.19	U G	0.734	0.737	1.00	1.19	pCi/L	09/23/25 08:16	10/16/25 11:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.8*		*30 - 110*	*09/23/25 08:16*	*10/16/25 11:56*	*1*
Y Carrier	*76.3*		*30 - 110*	*09/23/25 08:16*	*10/16/25 11:56*	*1*

Client: GHD Services Inc.
Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Client Sample ID: Leachate-0925
Lab Sample ID: 310-316113-1
Date Collected: 09/17/25 16:15
Matrix: Water
Date Received: 09/19/25 10:00

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	<1.19	U	0.817	0.820	5.00	1.19	pCi/L		10/17/25 15:42	1

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Qualifiers

General Chemistry

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

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-468218/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 468218

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			09/27/25 09:24	1
Fluoride	<0.200		0.200		mg/L			09/27/25 09:24	1
Sulfate	<1.00		1.00		mg/L			09/27/25 09:24	1

Lab Sample ID: LCS 310-468218/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 468218

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.411		mg/L		94	90 - 110
Fluoride	2.00	2.040		mg/L		102	90 - 110
Sulfate	10.0	10.06		mg/L		101	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-467674/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 468761 — **Prep Batch: 467674**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/24/25 08:45	10/02/25 14:48	1
Arsenic	<0.00200		0.00200		mg/L		09/24/25 08:45	10/02/25 14:48	1
Barium	<0.00200		0.00200		mg/L		09/24/25 08:45	10/02/25 14:48	1
Beryllium	<0.00100		0.00100		mg/L		09/24/25 08:45	10/02/25 14:48	1
Boron	<0.100		0.100		mg/L		09/24/25 08:45	10/02/25 14:48	1
Cadmium	<0.000200		0.000200		mg/L		09/24/25 08:45	10/02/25 14:48	1
Calcium	<0.500		0.500		mg/L		09/24/25 08:45	10/02/25 14:48	1
Chromium	<0.00500		0.00500		mg/L		09/24/25 08:45	10/02/25 14:48	1
Cobalt	<0.000500		0.000500		mg/L		09/24/25 08:45	10/02/25 14:48	1
Lithium	<0.0100		0.0100		mg/L		09/24/25 08:45	10/02/25 14:48	1
Lead	<0.000500		0.000500		mg/L		09/24/25 08:45	10/02/25 14:48	1
Molybdenum	<0.00200		0.00200		mg/L		09/24/25 08:45	10/02/25 14:48	1
Selenium	<0.00500		0.00500		mg/L		09/24/25 08:45	10/02/25 14:48	1
Thallium	<0.00100		0.00100		mg/L		09/24/25 08:45	10/02/25 14:48	1

Lab Sample ID: LCS 310-467674/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 468761 — **Prep Batch: 467674**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2019		mg/L		101	80 - 120
Arsenic	0.200	0.1888		mg/L		94	80 - 120
Barium	0.100	0.09717		mg/L		97	80 - 120
Beryllium	0.100	0.1058		mg/L		106	80 - 120
Boron	0.200	0.2040		mg/L		102	80 - 120
Cadmium	0.100	0.09846		mg/L		98	80 - 120
Calcium	2.00	2.159		mg/L		108	80 - 120
Chromium	0.100	0.09726		mg/L		97	80 - 120
Cobalt	0.100	0.1066		mg/L		107	80 - 120

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

Lab Sample ID: LCS 310-467674/2-A
Matrix: Water
Analysis Batch: 468761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467674

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	0.200	0.2164		mg/L		108	80 - 120
Lead	0.200	0.1958		mg/L		98	80 - 120
Molybdenum	0.200	0.2123		mg/L		106	80 - 120
Selenium	0.400	0.3860		mg/L		97	80 - 120
Thallium	0.100	0.09857		mg/L		99	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-468229/1-A
Matrix: Water
Analysis Batch: 468446

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/29/25 12:45	09/30/25 14:50	1

Lab Sample ID: LCS 310-468229/2-A
Matrix: Water
Analysis Batch: 468446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001615		mg/L		97	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-467653/1
Matrix: Water
Analysis Batch: 467653

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			09/23/25 13:51	1

Lab Sample ID: LCS 310-467653/2
Matrix: Water
Analysis Batch: 467653

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	946.0		mg/L		95	89 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-467225/22
Matrix: Water
Analysis Batch: 467225

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	98 - 102

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-737256/1-A
Matrix: Water
Analysis Batch: 740951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 737256

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.295	U	0.171	0.171	1.00	0.295	pCi/L	09/23/25 08:11	10/16/25 21:25	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*85.0*		*30 - 110*	*09/23/25 08:11*	*10/16/25 21:25*	*1*

Lab Sample ID: LCS 160-737256/2-A
Matrix: Water
Analysis Batch: 740951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 737256

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.57	9.021		1.22	1.00	0.313	pCi/L	94	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*83.0*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-737257/1-A
Matrix: Water
Analysis Batch: 740954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 737257

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.302		0.480	0.494	1.00	0.608	pCi/L	09/23/25 08:16	10/16/25 12:02	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*85.0*		*30 - 110*	*09/23/25 08:16*	*10/16/25 12:02*	*1*
Y Carrier	*81.9*		*30 - 110*	*09/23/25 08:16*	*10/16/25 12:02*	*1*

Lab Sample ID: LCS 160-737257/2-A
Matrix: Water
Analysis Batch: 740954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 737257

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.01	9.853		1.36	1.00	0.536	pCi/L	123	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*83.0*		*30 - 110*
Y Carrier	*83.7*		*30 - 110*

QC Association Summary

Client: GHD Services Inc.
Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

HPLC/IC

Analysis Batch: 468218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	9056A	
310-316113-1	Leachate-0925	Total/NA	Water	9056A	
MB 310-468218/3	Method Blank	Total/NA	Water	9056A	
LCS 310-468218/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 467674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	3005A	
MB 310-467674/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-467674/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 468229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	7470A	
MB 310-468229/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-468229/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 468446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	7470A	468229
MB 310-468229/1-A	Method Blank	Total/NA	Water	7470A	468229
LCS 310-468229/2-A	Lab Control Sample	Total/NA	Water	7470A	468229

Analysis Batch: 468761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	6020B	467674
MB 310-467674/1-A	Method Blank	Total/NA	Water	6020B	467674
LCS 310-467674/2-A	Lab Control Sample	Total/NA	Water	6020B	467674

Analysis Batch: 468892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	6020B	467674
310-316113-1	Leachate-0925	Total/NA	Water	6020B	467674

General Chemistry

Analysis Batch: 467225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	SM 4500 H+ B	
LCS 310-467225/22	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 467653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	SM 2540C	
MB 310-467653/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-467653/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: GHD Services Inc.
Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Rad

Prep Batch: 737256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	PrecSep-21	
MB 160-737256/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-737256/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 737257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-316113-1	Leachate-0925	Total/NA	Water	PrecSep_0	
MB 160-737257/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-737257/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Client Sample ID: Leachate-0925 Lab Sample ID: 310-316113-1

Date Collected: 09/17/25 16:15 **Matrix: Water**
Date Received: 09/19/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	468218	QTZ5	EET CF	09/27/25 10:19
Total/NA	Analysis	9056A		50	468218	QTZ5	EET CF	09/27/25 10:30
Total/NA	Prep	3005A			467674	QTZ5	EET CF	09/24/25 08:45
Total/NA	Analysis	6020B		1	468761	NFT2	EET CF	10/02/25 15:58
Total/NA	Prep	3005A			467674	QTZ5	EET CF	09/24/25 08:45
Total/NA	Analysis	6020B		1	468892	NFT2	EET CF	10/03/25 13:20
Total/NA	Prep	3005A			467674	QTZ5	EET CF	09/24/25 08:45
Total/NA	Analysis	6020B		4	468892	NFT2	EET CF	10/03/25 13:23
Total/NA	Prep	7470A			468229	RLT9	EET CF	09/29/25 12:45
Total/NA	Analysis	7470A		1	468446	RLT9	EET CF	09/30/25 15:29
Total/NA	Analysis	SM 2540C		1	467653	TGN5	EET CF	09/23/25 13:51
Total/NA	Analysis	SM 4500 H+ B		1	467225	W9YR	EET CF	09/19/25 10:49
Total/NA	Prep	PrecSep-21			737256	JTR	EET SL	09/23/25 08:11
Total/NA	Analysis	9315		1	740955	FLC	EET SL	10/16/25 21:34
Total/NA	Prep	PrecSep_0			737257	JTR	EET SL	09/23/25 08:16
Total/NA	Analysis	9320		1	740955	FLC	EET SL	10/16/25 11:56
Total/NA	Analysis	Ra226_Ra228		1	740621	CAH	EET SL	10/17/25 15:42

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Laboratory: Eurofins Cedar Falls

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-26

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

Analysis Method	Prep Method	Matrix	Analyte
9315	PrecSep-21	Water	Radium-226
9320	PrecSep_0	Water	Radium-228
Ra226_Ra228		Water	Combined Radium 226 + 228

Method Summary

Client: GHD Services Inc.
Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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310-316113 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client	GHD		
City/State	CITY	STATE TA	Project
Receipt Information			
Date/Time Received	DATE 09/19/25	TIME 1000	Received By ES

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

Condition of Cooler/Containers

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

Temperature Record

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

Thermometer ID AA	Correction Factor (°C) 0

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

Uncorrected Temp (°C) 2.1	Corrected Temp (°C) 2.1

• **Sample Container Temperature**

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

Exceptions Noted

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

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

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

Additional Comments

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

Chain of Custody Record

DSM214

eurofins | Environment Testing

Client Information	Sampler: Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s):	COC No:
Client Contact: Kevin Armstrong	Phone: 712-898-9631	E-Mail: zach.bindert@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: GHD Services Inc.	PWSID:			Job #:

Address: 11228 Aurora Avenue	Due Date Requested:	
City: Des Moines	TAT Requested (days): Standard	
State, Zip: IA, 50322-7905	Compliance Project: Δ Yes Δ No	
Phone: 515-414-3935	PO #: 340-017045	
Email: Kevin.Armstrong@ghd.com	WO #: 12576482-004 01	
Project Name: Neal North Closed CCR Monofill (IDNR)	Project #: 31017263	
Site: Neal North Closed CCR Monofill	SSOW#: 12576482-002	

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9316_Ra226 - Standard Target List	9320_Ra228 - Standard Target List	9056A_ORGFM_28D - Chloride, Fluoride & Sulfate	6020B, 7470A - Appendix III and IV Metals	2540C_Calcd, SM4500_H+	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	D	N		
Leachate-0925	9/17/25	1615	G	Leachate	N	N	X	X	X	X	X	5	

PF PF

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ■ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: Database Facility Code 11114642-GD-MidAmeri

Empty Kit Relinquished by	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Paige Richards	9/18/25 1515	GHD			
2						
3					9/19/25 1000	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-316113-1

Login Number: 316113
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Tracer/Carrier Summary

Client: GHD Services Inc.
Job ID: 310-316113-1
Project/Site: MEC Neal North Energy Center CCR - Leachate

Method: 9315 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-316113-1	Leachate-0925	89.8
LCS 160-737256/2-A	Lab Control Sample	83.0
MB 160-737256/1-A	Method Blank	85.0

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
310-316113-1	Leachate-0925	89.8	76.3
LCS 160-737257/2-A	Lab Control Sample	83.0	83.7
MB 160-737257/1-A	Method Blank	85.0	81.9

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier