2022 ANNUAL GROUNDWATER MONITORING,

CORRECTIVE ACTION REPORT,

AND

STATISTICAL EVALUATION OF DETECTION MONITORING RESULTS

General Waste & Recycling, LLC

Coal Combustion Residual Landfill

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DECEMBER 2022

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PURPOSE

The purpose of this document is to meet U.S. Code of Federal Regulation (CFR) requirements for General Waste & Recycling, LLC's (General Waste's) Keewatin, Minnesota, Coal Combustion Residual (CCR) landfill (the Facility) for preparation of an "Annual Groundwater Monitoring and Corrective Action Report" per CFR §257.90 (e).

INTRODUCTION

General Waste's Keewatin Facility consists of a composite lined industrial landfill (CCR Unit) and an unlined demolition debris disposal cell. The Facility is located on approximately 70 acres of land in: Township 57 North, Range 22 West, Section 25 of Itasca County, as shown on Figure 1, Site Vicinity Map and Figure 2, Site Location Map. The location of the active CCR Units and CCR groundwater monitoring system is shown on Figure 3, Site Detail Map.

HYDROGEOLOGIC CONCEPTUAL MODEL

Hydrogeologic conditions were investigated while conducting permitting activities for the Facility during 2013. An extensive investigation was completed at that time to refine the hydrologic model of the Facility in preparation of the installation of a groundwater monitoring system. The hydrogeologic investigation and groundwater monitoring system has been certified by a licensed professional engineer (PE) as meeting CRF 257.91 requirements and the certification has been posted on a CCR Website for the Facility per CFR 257.105(h)(3).

Geologic Units

Three (3) stratigraphic units have been identified for the hydrogeological conceptual model as follows:

1. Mine overburden stockpile unit that varies across the landfill footprint in depths ranging from 5 to 80 feet and consists of sand, silty-clayey sand, and sandy silty clay.

2. Native soil unit which consists of fine sand and silty sand near the top of the unit and generally grades to a silty medium grained sand with abundant gravel.

3. Mine tailings unit which consists of interlayered grey and black silt and fine sand sized taconite tailings. The mine tailings are approximately range from 10 to 26 feet thick and were placed in the tailings basin constructed directly to the west of the mine overburden stockpile.

The location of the mine overburden stockpile and the mine tailings (i.e., the Tailings Basin) are shown on Figure 2.

Hydrogeologic Setting

An unconfined aquifer exists below the Facility with the water table present within the mine overburden stockpile near the contact of the mine overburden stockpile unit with the native soil unit, except on the western edge of the permitted landfill boundary near MW-7 where the water table is within the tailings. Groundwater flow is generally to the east and southeast towards a ditch (Welcome Creek) located east

adjacent to the Facility. Welcome Creek is considered a groundwater divide and is a discharge point for shallow unconfined groundwater.

ENVIRONMENTAL MONITORING SYSTEM

The CCR Groundwater Monitoring System (GMS) consists of four (4) water table monitoring wells as follows:

- MW-7 is an up-gradient (with respect to general groundwater flow direction) monitoring well; and,
- MW-8, MW-9, and MW-10 (replaced MW-3R) are down-gradient (with respect to general groundwater flow direction) monitoring wells.

The groundwater monitoring system and active CCR Units (Cell A and Cell B) are shown on Figure 3. Groundwater monitoring well details are summarized in Table 1, including static water level and potentiometric surface data (i.e., groundwater elevation data). MW-3R was abandoned during landfill expansion activities during the 2019 summer. MW-10 was constructed down-gradient of the landfill to replace MW-3R in the GMS.

GROUNDWATER MONITORING SUMMARY

CCR groundwater monitoring has been conducted semi-annually during the Spring and Fall of each year (i.e., during April/May and October, respectively). Groundwater monitoring was performed on April 18 and October 18, 2022 for CCR Appendix III parameters (Table 2A). Static water levels were obtained and groundwater elevations calculated for both groundwater monitoring events (Table 1). CCR groundwater monitoring will continue through the active life of the CCR Unit and post closure. CCR Unit post closure monitoring will be conducted for 30 years.

Groundwater Elevations and General Groundwater Flow Direction

Groundwater elevations summarized in Table 1 were graphed (see Figure 4 Hydrograph). Potentiometric surface (groundwater elevation) contour maps were created and general groundwater flow direction evaluated (Figures 5 and 6). Groundwater elevations fluctuated similarly in the upgradient well MW-7 and the downgradient wells MW-8 and MW-10 with groundwater levels approximately 4 feet higher in the spring as compared to the fall event. Downgradient well MW-9 showed less variability indicating a decrease of 0.49 feet between the April and October events. This is typical for MW-9 which historically has shown no more than 1.00 feet change in elevation since installation in 2016.

Based on evaluation of the groundwater data, the general direction of groundwater flow is eastward (Figures 5, and 6) towards the ditch (Welcome Creek) and is consistent with historical groundwater flow. Evaluation of groundwater elevation trends will continue throughout the active life of the CCR Unit and post closure.

Quality Assurance and Data Validation

Quality control (QC) samples were included for the CCR monitoring events. QC samples include field blanks and field duplicates analyzed for the same parameters as the respective monitoring well. The QC samples are used to determine the integrity of the field sampling procedures and the validity of the analytical results.

Groundwater Monitoring Results

Groundwater monitoring results are summarized in Table 3 (CCR Lab Results Summary). Statistical analysis of the groundwater monitoring results, including determination of whether or not a Statistically Significant Increase (SSI) has been observed is presented below.

STATISTICAL ANALYSIS

Statistical Analysis was performed using the laboratory results collected during 2022 and guided by the Statistical Analysis Plan (SAP) written for the facility. No SSIs were determined to have occurred based on the statistical evaluation of 2022 groundwater monitoring results. The statistical evaluation cannot be deemed complete since the monitoring location MW-3R is unable to be monitored. Until a statistically significant dataset (8 or more samples) for MW-10 is collected, and 3 downgradient wells can be assessed, the statistical analysis that satisfy the requirements set forth in 40 CFR 257.91 cannot be completed. The statistical analyses completed for the April and October events are presented in Appendix B.

Following the SAP, the detection monitoring data collected in 2020 and 2021 was assessed and incorporated into the background dataset. After assessing the detection monitoring data, it was determined that intrawell assessment for MW-8 and MW-9 is more appropriate and will provide a higher statistical power than an interwell analysis (comparing upgradient well MW-7 parameters to downgradient wells MW-8 and MW-9 data). The groundwater monitored in MW-7 is very distinct from the groundwater monitored in MW-8 and MW-9, with much higher concentrations of Calcium, Chloride, Sulfate, and Total Dissolved Solids (TDS) observed in the upgradient well MW-7.

The rationale and workflow utilized to update the background dataset and adjust Upper Prediction Limits (UPLs) for 2020 and 2021 monitoring can be found in Appendix C. The updated Upper Prediction Limits (UPLs) can be seen in Table 4.

CONCLUSIONS AND RECOMMENDATIONS

Review of the collected data indicates that a SSI of CCR Appendix III parameter concentrations has not occurred in the downgradient monitoring wells MW-08 and MW-09 (see Appendix B). Detection monitoring should continue as described in the Statistical Analysis Plan. MW-10 should be monitored a minimum of 8 events before completing statistical analysis and establishing trigger values for determining if a SSI has occurred. The Groundwater Monitoring System will be considered incomplete as determined by CRF 257.91 which requires a minimum of 3 down-gradient wells until MW-10 is able to be fully evaluated. SSI evaluations will continue but will be flagged as only including 2 downgradient locations until MW-10 can be included in the analysis.

FIGURES

N

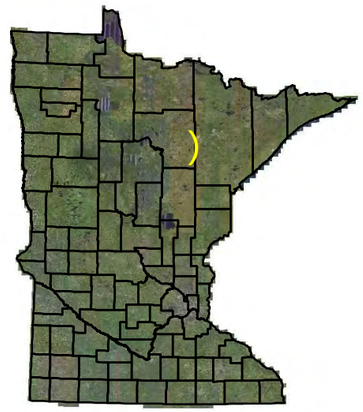
0 3,000 6,000 12,000

Feet

1 Inch = 6,000 Feet

Legend

Project Location



Notes:
Background imagery provded by MnGeo WMS.

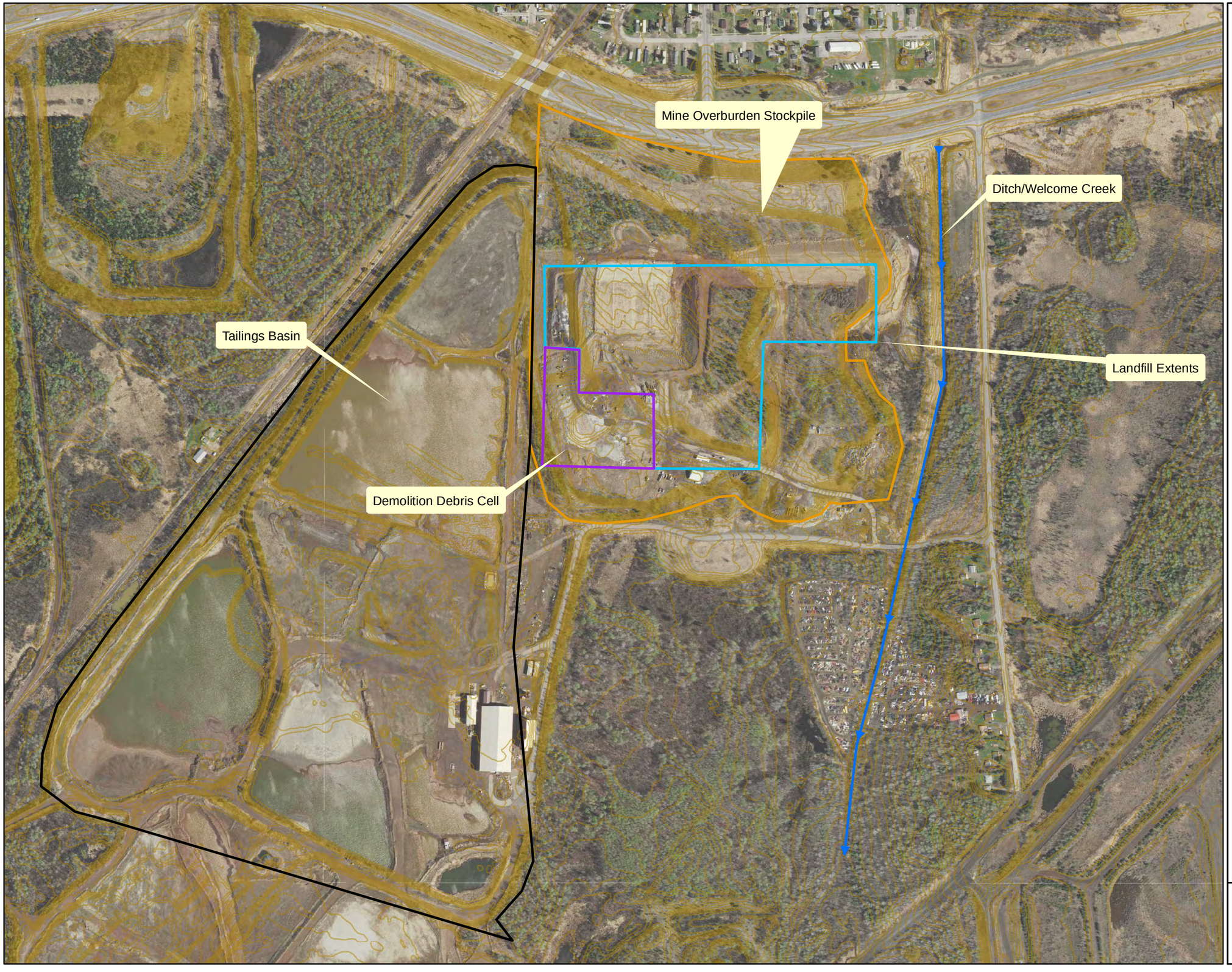
Figure 1
Site Vicinity Map

General Waste & Recycling, LLC
CCR Landfill
Keewatin, Minnesota (Itasca County)

Environmental Science & Engineering
www.netechnical.com

Date Drawn :	27 January 2021
Drawn By :	C. Hafdahl
NTS Project #:	6385CC

1



N

0 250 500 1,000

Feet

1 Inch = 500 Feet

Legend

- Demolition Debris Cell
- CCR Landfill Footprint
- Tailings Basin
- Mine Overburden Stockpile
- Ditch/Welcome Creek
- Contours

Notes:
-Background image provided by MnGeo WMS 2018.

Figure 2
Site Location Map

General Waste & Recycling, LLC
CCR Landfill
Keewatin, Minnesota (Itasca County)

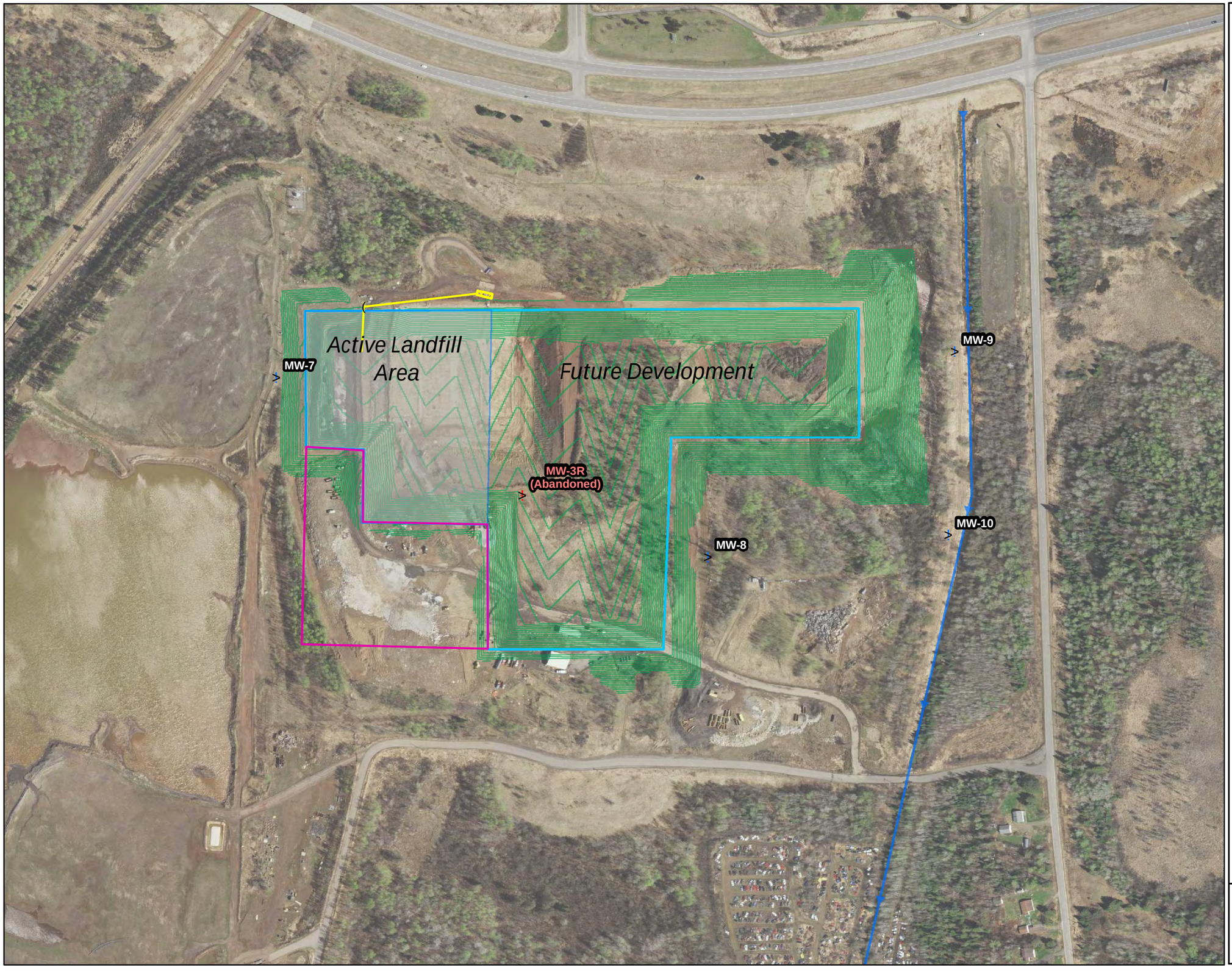
Environmental Science & Engineering
www.netechnical.com

Date Drawn :
25 January 2022

Drawn By :
E. Johnson

NTS Project #:
6385CC

2



N

0 150 300 600

Feet

1 Inch = 300 Feet

Legend

- Demolition Debris Cell
- Landfill Footprint
- Leachate Collection Pad
- Leachate Collection Pipe
- Landfill Base Grade Contours
- Ditch
- Groundwater Monitoring Well
- Abandonend Monitoring Well
- Leachate Pump Access Vault

Notes:
-Background image provided by MnGeo Itasca 2018.

Figure 3
Site Detail Map

General Waste Industrial Landfill
CCR Groundwater Monitoring System
Keewatin, Minnesota (Itasca County)

NTS Environmental Science & Engineering
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Drawn By :	E. Johnson
NTS Project #:	6385CC

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FIGURE 4
HYDROGRAPH

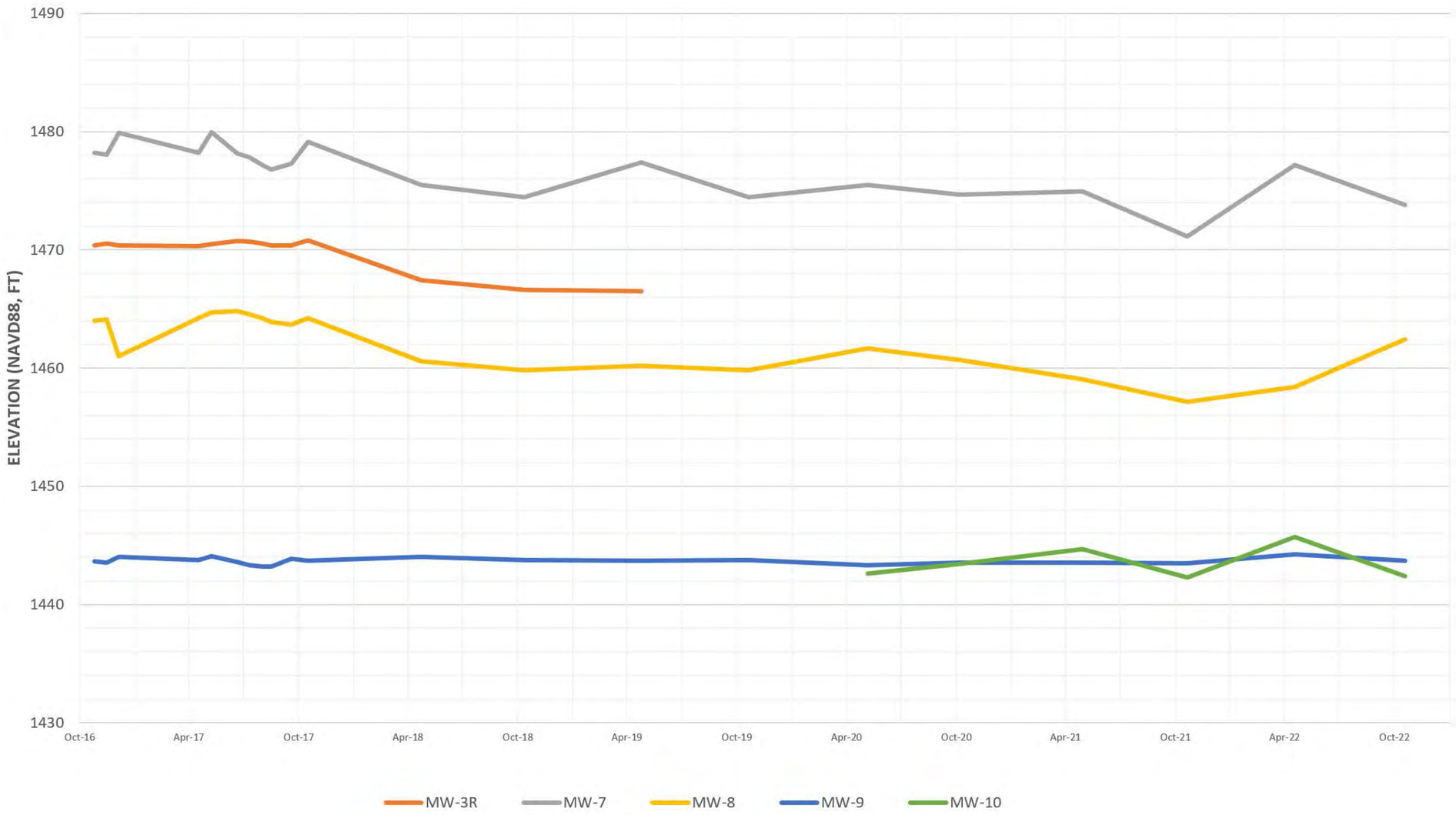

Figure 4
Groundwater Hydrograph

General Waste Industrial Landfill
CCR Groundwater Monitoring System
2022 Annual Monitoring Report
Keewatin, Minnesota (Itasca County)

Environmental Science & Engineering
www.netechnical.com

Date Drawn : December 1, 2022
Drawn By : E. Johnson
NTS Project #: 6385CC

4

N

0 100 200 400

Feet

1 Inch = 200 Feet

Legend

- April 2022 Groundwater Contour
- Landfill Footprint
- Demolition Debris Cell
- Landfill Base Grade Contours
- Ditch
- Groundwater Monitoring Well

Notes:
-Background image has been provided by MnGeo, Itasca 2018.
- Groundwater contours were updated by E. Johnson in January 2023.

Figure 5
Groundwater Contour Map
April, 2022

General Waste Industrial Landfill
CCR Groundwater Monitoring System
2022 Annual Monitoring Report
Keewatin, Minnesota (Itasca County)

NTS Environmental Science & Engineering
www.netechnical.com

Date Drawn :	03 January 2022
Drawn By :	E. Johnson
NTS Project #:	6385CC

5

N

0 100 200 400

Feet

1 Inch = 200 Feet

Legend

- October 2022 Groundwater Contour
- Landfill Footprint
- Demolition Debris Cell
- Landfill Base Grade Contours
- Ditch
- Groundwater Monitoring Well

Notes:
-Background image has been provided by MnGeo, Itasca 2018.
- Groundwater contours were updated by E. Johnson in January 2023.

Figure 6
Groundwater Contour Map
October, 2022

General Waste Industrial Landfill
CCR Groundwater Monitoring System
2022 Annual Monitoring Report
Keewatin, Minnesota (Itasca County)

Environmental Science & Engineering
www.netechnical.com

Date Drawn :	03 January 2022
Drawn By :	E. Johnson
NTS Project #:	6385CC

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TABLES

TABLE 1
GROUNDWATER MONITORING WELL DETAILS
GENERAL WASTE AND RECYCLING CCR LANDFILL

	MW-3R		MW-7		MW-8		MW-9		MW-10	
MDH Unique Well #	797239		817979		817978		817980		847087	
Northing (UTM NAD83)	5248332.87		5248449.356		5248271.719		5248474.904		5248293.27	
Easting (Zone 15 Meters)	494267.27		494024.588		494451.676		494695.922		494689.54	
Installation Date	7/9/15		9/30/2016		9/29/2016		9/30/2016		May-20	
Ground Elev. (ft)	1530.10		1493.62		1491.63		1452.93		1449.8	
Riser Top Elev. (ft)	1532.29		1496.13		1494.41		1454.72		1452.6	
Total Depth (ft)	75.0		26.6		41.3		18.9		18.2	
Screened Interval (ft)	65 - 75		16.6 - 26.6		31.3 - 41.3		8.9 - 18.9		8.2-18.2	
Screened Elevation	1465.10 - 1455.10		1477.02 - 1467.02		1460.33 - 1450.33		1444.03 - 1434.03		1444-40 - 1454.40	
Date of Measurement	**Static Level**	**GW Elev.**	**Static Level**	**GW Elev.**	**Static Level**	**GW Elev.**	**Static Level**	**GW Elev.**	**Static Level**	**GW Elev.**
25-Oct-16	61.90	1470.39	17.92	1478.21	30.42	1463.99	11.07	1443.65		
15-Nov-16	61.75	1470.54	18.11	1478.02	30.31	1464.10	11.16	1443.56		
5-Dec-16	61.90	1470.39	16.22	1479.91	33.40	1461.01	10.69	1444.03		
17-Apr-17	61.95	1470.34	17.93	1478.20	30.18	1464.23	10.98	1443.74		
8-May-17	61.82	1470.47	16.16	1479.97	29.72	1464.69	10.62	1444.10		
20-Jun-17	61.56	1470.73	17.97	1478.16	29.60	1464.81	11.11	1443.61		
11-Jul-17	61.57	1470.72	18.32	1477.81	29.84	1464.57	11.40	1443.32		
1-Aug-17	61.74	1470.55	18.95	1477.18	30.21	1464.20	11.50	1443.22		
16-Aug-17	61.90	1470.39	19.34	1476.79	30.53	1463.88	11.53	1443.19		
18-Sep-17	61.89	1470.40	18.85	1477.28	30.74	1463.67	10.84	1443.88		
16-Oct-17	61.47	1470.82	16.97	1479.16	30.18	1464.23	11.00	1443.72		
23-Apr-18	64.84	1467.45	20.64	1475.49	33.81	1460.60	10.71	1444.01		
11-Oct-18	65.65	1466.64	21.65	1474.48	34.57	1459.84	10.97	1443.75		
25-Apr-19	65.79	1466.50	18.76	1477.37	34.23	1460.18	10.99	1443.73		
21-Oct-19			21.65	1474.48	34.57	1459.84	10.97	1443.75		
6-May-20			20.65	1475.48	32.76	1461.65	11.39	1443.33	9.99	1442.61
6-Oct-20			21.46	1474.67	33.72	1460.69	11.2	1443.52	9.17	1443.43
29-Apr-21			21.18	1474.95	35.37	1459.04	11.19	1443.53	7.91	1444.69
21-Oct-21			24.98	1471.15	37.24	1457.17	11.22	1443.50	10.30	1442.3
18-Apr-22			18.95	1477.18	36.03	1458.38	10.5	1444.22	6.87	1445.73
18-Oct-22			22.35	1473.78	31.99	1462.42	10.99	1443.73	10.21	1442.39

Note: MW-3R was abandoned during landfill expansion prior to the October 2019 monitoring event.

TABLE 2A Appendix III Parameters	
Parameter	**MCL**
Boron	NA
Calcium	NA
Chloride	NA
Fluoride	4.0 mg/L
pH	NA
Sulfate	NA
Total Dissolved Solids (TDS)	NA

TABLE 2B Appendix IV Parameters	
Parameter	**MCL**
Antimony	0.006 mg/L
Arsenic	0.01 mg/L
Barium	2.0 mg/L
Beryllium	0.004 mg/L
Cadmium	0.10 mg/L
Chromium	0.10 mg/L
Cobalt	NA
Fluoride	4.0 mg/L
Lead	0.015 mg/L
Lithium	NA
Mercury	0.002 mg/L
Molybdenum	NA
Selenium	0.05 mg/L
Thallium	0.002 mg/L
Radium 226 and 228 combined	5 pCi/L

TABLE 3A
GENERAL PARAMETERS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Chloride	**mg/L**	25-Oct-16	1.1	109	1	606		606	<1.0
		15-Nov-16	2.2	105	1.2	4.1		4.3	<1.0
		5-Dec-16	1.6	102	1.2	5.8		5.8	<1.0
		17-Apr-17	1.1	63.8	1.1	6.6		7.6	<1.0
		8-May-17	1.1	52.2	<1.0	14.9		13.9	<1.0
		20-Jun-17	1.1	52.5	1	8.9		9	<1.0
		11-Jul-17	1.1	55.6	1	17.6		17.5	<1.0
		1-Aug-17	1.2	61.0	1.3	20.8		20.3	<1.0
		16-Aug-17	1.2	67.5	1.2	19		19.8	<1.0
		18-Sep-17	1.2	82.4	1	10.4		10.7	<1.0
		16-Oct-17	1.1	52.0	1.2	8.7		8.8	<1.0
		4/23/2018	1.5	124	<1.2	2.8			
		10/11/2018	2	91.4	1.4	8.4		8.4	<1.0
		4/25/2019	2.8	61.4	1.3	2.9		2.8	<1.0
		10/21/2019		37.4	1.4	6		5.9	<1.0
		6-May-20			<1.0	2.1		2.1	<1.0
		29-May-20		15.8			1.4	15.8	<1.0
		5-Oct-20		19.4	<1.0	1.5	1.6	1.6	<1.0
		29-Apr-21		11.5	1.5	4	1.5	3.9	<1.0
		25-Oct-21		(dry)	2	6.4	1.3	7.1	<1.0
		18-Apr-22		3	1.3	8.1	1.2	1.2	<1.2
		18-Oct-22		2.9	1.4	5	<1	5.2	<1
Fluoride	**mg/L**	25-Oct-16	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		15-Nov-16	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		5-Dec-16	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		17-Apr-17	0.11	0.11	<0.10	<0.10		<0.10	<0.10
		8-May-17	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		20-Jun-17	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		11-Jul-17	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		1-Aug-17	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		16-Aug-17	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		18-Sep-17	0.1	<0.10	<0.10	<0.10		<0.10	<0.10
		16-Oct-17	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10
		4/23/2018	0.086	0.08	0.053	0.075			
		10/11/2018	<0.1	<0.1	<0.1	<0.1		<0.10	<0.10
		4/25/2019	<0.1	<0.1	<0.1	<0.1		<0.10	<0.10
		10/21/2019		<0.1	<0.1	<0.1		<0.10	<0.10
		6-May-20			<0.1	<0.1		<0.10	<0.10
		5-Oct-20			<0.1	<0.1	0.14	0.14	<0.10
		29-Apr-21		<0.05	<0.05	0.079	0.12	0.076	<0.05
		25-Oct-21		(dry)	0.06	0.084	0.17	0.084	<0.05
		18-Apr-22		0.067	0.058	0.086	0.14	0.14	<0.05
		18-Oct-22		<0.05	<0.05	0.092	0.14	0.061	<0.05
Sulfate	**mg/L**	25-Oct-16	1980	937	823	462		458	<2.0
		15-Nov-16	1820	929	764	475		470	<2.0

TABLE 3A
GENERAL PARAMETERS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Sulfate	**mg/L**	5-Dec-16	1840	903	778	460		460	<2.0
		17-Apr-17	1710	551	780	454		441	<2.0
		8-May-17	1760	712	731	438		433	<2.0
		11-Jul-17	1870	548	707	406		412	<2.0
		1-Aug-17	1830	511	700	339		342	<2.0
		16-Aug-17	1840	447	703	354		348	<2.0
		18-Sep-17	1890	441	719	432		436	<2.0
		16-Oct-17	1840	675	1010	443		432	<2.0
		10/11/2018	1550	695	589	460		461	<2.0
		4/25/2019	1300	988	562	423		441	<2.0
		10/21/2019		1120	630	437		434	<2.0
		6-May-20			547	425		346	<2.0
		29-May-20		1420			360	1420	<2.0
		5-Oct-20		1140	594	467	180	180	<2.0
		29-Apr-21		1500	673	487	238	396	<1.0
		25-Oct-21		(dry)	692	431	389	435	<1.0
		18-Apr-22		1560	864	372	208	209	<1
		18-Oct-22		1390	794	450	269	457	<1
Total Dissolved Solids	**mg/L**	25-Oct-16	3300	2070	1740	1070		1090	<10.0
		15-Nov-16	3130	2090	1710	1190		1140	<10.0
		5-Dec-16	3110	1940	1710	1100		1110	<10.0
		17-Apr-17	3160	1500	1760	1180		1120	<10.0
		8-May-17	3010	1610	1630	1050		1040	<10.0
		20-Jun-17	3190	1700	1510	1090		1120	<10.0
		11-Jul-17	3040	1380	1550	1010		1020	<10.0
		1-Aug-17	3290	1300	1560	864		888	12
		16-Aug-17	3360	1300	1610	979		957	32
		18-Sep-17	2580	1310	1580	1100		1000	<10.0
		16-Oct-17	3110	1380	1800	993		1010	<10.0
		4/23/2018	2870	1420	1400	1080			
		10/11/2018	2850	1600	1350	1100		1120	<10.0
		4/25/2019	2560	1970	1380	1020		1050	<10.0
		10/21/2019		2250	1490	1100		1090	<10.0
		6-May-20		2590	1460	1100			
		29-May-20					806		
		5-Oct-20		2370	1500	1200	556		
		29-Apr-21		2810	1590	1180	587	1170	<10.0
		25-Oct-21		(dry)	1370	1060	754	1070	<10.0
		18-Apr-22		2700	1530	1020	480	362	<10
		18-Oct-22		2300	933	1140	716	1170	<10
pH, Lab	SU	15-Nov-16	7.3	7.2	7.2	7.2		7.2	6.0
		5-Dec-16	6.8	6.6	6.6	6.9		6.8	7.1
		17-Apr-17	7.3	7.4	7.3	7.3		7.3	6.1
		8-May-17	7.2	7.1	7.1	7.2		7.2	6.2
		20-Jun-17	7.1	7.1	7.2	7.2		7.2	5.9

TABLE 3A
GENERAL PARAMETERS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
pH, Lab	SU	11-Jul-17	7.1	7.1	7.1	7.2		7.2	6.0
		1-Aug-17	7.1	7.1	7.2	7.2		7.2	6.0
pH, Field	**SU**	16-Aug-17	7.1	7.2	7.2	7.2		7.2	5.8
		18-Sep-17	7.2	7.1	7.2	7.2		7.2	5.8
		16-Oct-17	7.3	7.2	7.2	7.3		7.3	6.0
		4/23/2018	6.8	7	7	6.3			
		10/11/2018	7.2	7.2	7.2	7.2		7.2	6.1
		4/25/2019	7.4	7.4	7.2	7.5		7.3	6.2
		10/21/2019		7.2	7.1	7.2		7.2	5.7
		6-May-20			7.4	7.4			
		29-May-20		7.5			7.7		
		5-Oct-20		7.1	7.2	7.2	7.4		
		25-Oct-16	6.48	6.34	6.38	6.54			
		15-Nov-16	6.89	6.46	6.62	6.81			
		5-Dec-16	6.53	6.35	6.35	6.59			
		17-Apr-17	6.79	6.52	6.49	6.34			
		8-May-17	6.76	6.67	6.73	6.97			
		20-Jun-17	6.78	6.66	6.74	6.96			
		11-Jul-17	4.57	4.63	5.03	5.34			
		1-Aug-17	6.52	6.63	6.71	6.89			
		16-Aug-17	6.63	6.58	6.68	6.92			
		18-Sep-17	6.47	6.31	6.37	6.59			
		16-Oct-17	6.74	6.48	6.48	6.71			
		4/23/2018	6.45	6.34	6.40	6.60			
		10/11/2018	6.27	6.29	6.34	6.52			
		10/21/2019		6.25	6.28	6.53			
		6-May-20			6.36	6.53			
		29-May-20		6.27			6.91		
		5-Oct-20		6.21	6.29	6.50	6.66		
		29-Apr-21		6.10	6.27	6.49	6.85		
		25-Oct-21		(dry)	6.46	6.55	7.08		
		18-Apr-22		7.20	7.30	7.20	7.70	7.6	5.9
		18-Oct-22		7.30	7.10	7.40	7.50	7.3	6.1
Specific Conductance, Field	**µmhos/cm**	25-Oct-16	3596	2570	2146	1460			
		15-Nov-16	3359	2534	2088	1586			
		5-Dec-16	3314	2330	2106	1530			
		17-Apr-17	3351	1874	2090	1541			
		8-May-17	3366	2090	2063	1494			
		20-Jun-17	3359	1995	1898	1514			
		11-Jul-17	3464	1802	1974	1436			
		1-Aug-17	3433	1773	1961	1321			
		16-Aug-17	3430	1806	1959	1333			
		18-Sep-17	3475	1815	1978	1477			
		16-Oct-17	3422	2015	2360	1469			
		4/23/2018	3131	2008	1894	1562			

TABLE 3A
GENERAL PARAMETERS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Specific Conductance, Field	**µmhos/cm**	10/11/2018	3128	1428	1793	1526			
		4/25/2019	2983	2501	1821	1522			
		10/21/2019		2634	1917	1531			
		6-May-20		1065	1821	1486			
		5-Oct-20		2565	1869	1575	818		
		29-Apr-21		3004	1964	1601	790		
		25-Oct-21		(dry)	1749	1288	882		
		18-Apr-22		2992	2179	1377	662		
		18-Oct-22		2641	2106	1517	1000		

TABLE 3B
TOTAL METALS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Antimony	µg/L	17-Apr-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
		8-May-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
		20-Jun-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
		11-Jul-17	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50
		1-Aug-17	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50
		16-Aug-17	<1.0	<1.0	<1.0	<1.0		<1.0	<0.50
		18-Sep-17	<1.0	<1.0	<1.0	<1.0		<1.0	<0.50
		16-Oct-17	**12**	<1.0	<1.0	<1.0		<1.0	<0.50
		29-May-20					<1.0		
Arsenic	µg/L	17-Apr-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
		8-May-17	<2.0	<2.0	2.7	<2.0		<2.0	<0.50
		20-Jun-17	<2.0	**38.7**	<2.0	<2.0		<2.0	<0.50
		11-Jul-17	<0.50	**3.2**	<0.50	<0.50		<0.50	<0.50
		1-Aug-17	<0.50	**3.2**	**0.99**	<0.50		<0.50	<0.50
		16-Aug-17	<1.0	**2.7**	**2.7**	<1.0		<1.0	<0.50
		18-Sep-17	<1.0	<1.0	<1.0	<1.0		<1.0	<0.50
		16-Oct-17	<1.0	<1.0	<1.0	<1.0		<1.0	<0.50
		29-May-20					<1.0		
Barium	µg/L	17-Apr-17	<40.0	**187**	<40.0	**61.5**		**59.9**	<10.0
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<40.0	**51.5**	<40.0	**62.8**		**65.6**	<10.0
		8-May-17	**42.4**	**48.6**	**62.5**	**64.5**		**63.8**	<10.0
		20-Jun-17	**18.5**	**1740**	**40.9**	**61.3**		**59.3**	<10.0
		11-Jul-17	**18.7**	**172**	**38.8**	**58.5**		**57.2**	<10.0
		1-Aug-17	<40.0	**165**	**59.4**	**59.0**		**64.5**	<10.0
		16-Aug-17	**17.0**	**129**	**86.2**	**54.0**		**53.1**	<10.0
		18-Sep-17	**18.9**	**61.1**	**24.7**	**54.2**		**55.3**	<0.50
		16-Oct-17	**41.4**	**40.1**	**34.0**	**60.5**		**60.6**	<0.50
		29-May-20					**50.7**		
Beryllium	µg/L	17-Apr-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
		8-May-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
		20-Jun-17	<0.80	**6.9**	**0.28J**	<0.80		<0.80	<0.20
		11-Jul-17	**0.48J**	**0.72**	**0.23**	**0.125**		**0.098J**	<0.20
		1-Aug-17	<0.20	**0.43**	**0.15J**	<0.20		<0.20	<0.20
		16-Aug-17	<0.40	**0.40J**	**0.34J**	<0.40		<0.40	<0.20
		18-Sep-17	<0.40	**0.18J**	<0.40	<0.40		<0.40	<0.20
		16-Oct-17	<0.40	<0.40	**0.12J**	<0.40		<0.40	<0.20
		29-May-20					<0.30		

TABLE 3B
TOTAL METALS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Boron	µg/L	17-Apr-17	<160	<160	<160	<160		<160	<40.0
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<160	<160	<160	<160		<160	<40.0
		8-May-17	<160	<160	<160	<160		<160	<40.0
		20-Jun-17	<160	<160	<160	<160		<160	<40.0
		11-Jul-17	**124**	**76.4**	**70.7**	<40.0		<40.0	<40.0
		1-Aug-17	**123**	**75.9**	**69.5**	<40.0		<40.0	<40.0
		16-Aug-17	**114**	<80.0	<80.0	<80.0		<80.0	<40.0
		18-Sep-17	**122**	<80.0	<80.0	<80.0		<80.0	<40.0
		16-Oct-17	**126**	**87.8**	<80.0	<80.0		<80.0	<40.0
		4/23/2018	**123**	**73.8**	**79.5**	**43.3**			
		10/11/2018	**103**	**70.8**	**64.7**	<40		<40.0	<40.0
		4/25/2019	**96**	**69.7**	**75.8**	<50		<50.0	<10.0
		10/21/2019		**66.9**	**70.5**	<40		<40.0	<40.0
		6-May-20			**71.9**	<40		<40	<40
		29-May-20		**64.7**			<40	<40	<40
		5-Oct-20		**71.7**	**70.3**	**42.9**	<40	<40	<40
		29-Apr-21		**67.3**	**78.2**	**41**	**15.8**	**41.6**	<10
		25-Oct-21		**(dry)**	**57.1**	**35.5**	**18.5**	**35.4**	<10
		18-Apr-22		**55.6**	**64.2**	**32.7**	**11.8**	**11.8**	<10
		18-Oct-22		**70.9**	**71.5**	**38.8**	**37.8**	**37.5**	<10
Cadmium	µg/L	17-Apr-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
Dissolved (ONE EVENT ONLY)		17-Apr-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
		8-May-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
		20-Jun-17	<0.80	**1.3**	<0.80	<0.80		<0.80	<0.20
		11-Jul-17	<0.20	**0.15J**	<0.20	<0.20		<0.20	<0.20
		1-Aug-17	<0.20	**0.13J**	<0.20	<0.20		<0.20	<0.20
		16-Oct-17	**2.0**	<0.40	<0.40	<0.40		<0.40	<0.20
		29-May-20					<0.2		
Calcium	mg/L	17-Apr-17	**563**	**350**	**384**	**197**		**192**	<0.50
Dissolved (ONE EVENT ONLY)		17-Apr-17	**617**	**347**	**412**	**208**		**216**	<0.50
		8-May-17	**588**	**404**	**402**	**203**		**209**	<1.0
		20-Jun-17	**607**	**524**	**373**	**211**		**207**	<0.50
		11-Jul-17	**628**	**355**	**387**	**199**		**199**	<0.50
		1-Aug-17	**650**	**375**	**415**	**189**		**185**	<0.50
		16-Aug-17	**609**	**341**	**388**	**179**		**178**	<0.50
		18-Sep-17	**538**	**316**	**369**	**192**		**191**	<100
		16-Oct-17	**585**	**357**	**448**	**197**		**197**	<100
		4/23/2018	**551**	**371**	**371**	**229**			
		10/11/2018	**532**	**400**	**331**	**193**		**192**	<0.10
		4/25/2019	**484**	**481**	**343**	**206**		**203**	<0.50
		10/21/2019		**539**	**354**	**217**		**219**	<0.50
		6-May-20			**342**	**206**		**203**	<0.50
		29-May-20		**583**			**168**	**616**	<0.50

TABLE 3B
TOTAL METALS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Calcium	mg/L	5-Oct-20		**521**	**360**	**225**	**124**	**126**	<0.50
		29-Apr-21		**664**	**402**	**221**	**123**	**224**	<0.50
		25-Oct-21		**(dry)**	**372**	**206**	**149**	**195**	<0.50
		18-Apr-22		**608**	**403**	**194**	**97.9**	**93.6**	<0.5
		18-Oct-22		**547**	**405**	**212**	**158**	**212**	<0.5
Chromium	µg/L	17-Apr-17	<4.0	<4.0	<4.0	<4.0		<4.0	<1.0
Dissolved (ONE EVENT ONLY)		8-May-17	**17.6**	<4.0	**10.7**	<4.0		<4.0	<1.0
		20-Jun-17	<4.0	**309**	**4.2**	<4.0		<4.0	<1.0
		1-Aug-17	<1.0	**20.2**	**7.7**	<1.0		1.3	<1.0
		16-Aug-17	<2.0	**18.0**	**17.7**	<2.0		<2.0	<1.0
		18-Sep-17	<2.0	**5.5**	**2.1**	<2.0		<2.0	<1.0
		16-Oct-17	**17.0**	<2.0	**4.2**	<2.0		<2.0	<1.0
		29-May-20					<1.5		
Cobalt	µg/L	17-Apr-17	**7.3**	**10.2**	**5.8**	<0.80		<0.80	<0.20
Dissolved (ONE EVENT ONLY)		17-Apr-17	**4.6**	<0.80	**4.7**	<0.80		<0.80	<0.20
		8-May-17	**9.1**	**2.5**	**8.2**	<0.80		<0.80	<0.20
		20-Jun-17	**5.3**	**97.9**	**6.3**	<0.80		<0.80	<0.20
		11-Jul-17	**4.9**	**9.4**	**6.2**	<0.20		<0.20	<0.20
		1-Aug-17	**3.7**	**7.3**	**6.1**	<0.20		**0.28**	<0.20
		16-Aug-17	**4.8**	**6.2**	**8.4**	<0.40		<0.40	<0.20
		18-Sep-17	**4.4**	**2.5**	**5.3**	<0.40		<0.40	<0.20
		16-Oct-17	**13.0**	**0.86**	**6.6**	<0.40		<0.40	<0.20
		29-May-20					**0.8**		
Lead	µg/L	17-Apr-17	<2.0	**5.6**	<2.0	<2.0		<2.0	<0.50
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<2.0	<2.0	<2.0	<2.0		<2.0	<0.50
		8-May-17	<2.0	<2.0	**2.5**	<2.0		<2.0	<0.50
		20-Jun-17	<2.0	**77.0**	<2.0	<2.0		<2.0	<0.50
		11-Jul-17	<0.50	**5.3**	**1.1**	<0.50		<0.50	<0.50
		1-Aug-17	<0.50	**4.6**	**1.9**	<0.50		**0.60**	<0.50
		16-Aug-17	<1.0	**3.8**	**3.3**	<1.0		<1.0	<0.50
		18-Sep-17	<1.0	**1.4**	<1.0	<1.0		<1.0	<0.50
		16-Oct-17	**2.2**	<1.0	<1.0	<1.0		<1.0	<0.50
		29-May-20					<0.50		
Lithium	µg/L	17-Apr-17	<20.0	**26.5**	**32.7**	<20.0		<20.0	<5.0
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<20.0	<20.0	**27.9**	<20.0		<20.0	<5.0
		8-May-17	<20.0	<20.0	**30.3**	<20.0		<20.0	<5.0
		20-Jun-17	<20.0	**150**	**26.8**	<20.0		<20.0	<5.0
		11-Jul-17	**12.5**	**25.2**	**27.7**	**11.6**		**11.0**	<5.0
		1-Aug-17	**12.6**	**22.9**	**29.6**	**10.9**		**12.2**	<5.0
		16-Aug-17	<20.0	**18.3**	**29.7**	**10.7**		**10.5**	<5.0

TABLE 3B
TOTAL METALS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Lithium	µg/L	18-Sep-17	**14.5**	**19.9**	**29.7**	**14.3**		**14.5**	<5.0
		16-Oct-17	**17.0**	**19.5**	**28.1**	**15.7**		**16.4**	<5.0
		29-May-20					<10.0		
Mercury	µg/L	17-Apr-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		8-May-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		20-Jun-17	<0.20	0.46	<0.20	<0.20		<0.20	<0.20
		11-Jul-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		1-Aug-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		16-Aug-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		18-Sep-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		16-Oct-17	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20
		29-May-20					<0.10		
Molybdenum	µg/L	17-Apr-17	**2.3**	<1.2	<1.2	<1.2		<1.2	<0.30
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<1.2	<1.2	<1.2	<1.2		<1.2	<0.30
		8-May-17	**2.9**	<1.2	<1.2	<1.2		<1.2	<0.30
		20-Jun-17	<1.2	**2.8**	<1.2	<1.2		<1.2	<0.30
		11-Jul-17	**0.43**	**0.55**	<0.30	<0.30		<0.30	<0.30
		1-Aug-17	<0.30	**0.39**	**0.33**	<0.30		<0.30	<0.30
		16-Aug-17	<0.60	<0.60	<0.60	<0.60		<0.60	<0.30
		18-Sep-17	<0.60	<0.60	<0.60	<0.60		<0.60	<0.30
		16-Oct-17	**3.1**	<0.60	<0.60	<0.60		<0.60	<0.30
		29-May-20					**0.98**		
Selenium	µg/L	17-Apr-17	<4.0	<4.0	<4.0	<4.0		<4.0	<1.0
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<4.0	<4.0	<4.0	<4.0		<4.0	<1.0
		8-May-17	<4.0	<4.0	<4.0	<4.0		<4.0	<1.0
		20-Jun-17	<4.0	<4.0	<4.0	<4.0		<4.0	<1.0
		11-Jul-17	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0
		1-Aug-17	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0
		16-Aug-17	<2.0	<2.0	<2.0	<2.0		<2.0	<1.0
		18-Sep-17	<2.0	<2.0	<2.0	<2.0		<2.0	<1.0
		16-Oct-17	<2.0	<2.0	<2.0	<2.0		<2.0	<1.0
		29-May-20					<1.0		
Thallium	µg/L	17-Apr-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
Dissolved (ONE EVENT ONLY) ->		17-Apr-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
		8-May-17	<0.80	<0.80	<0.80	<0.80		<0.80	<0.20
		20-Jun-17	<0.80	**2.3**	**0.48j**	<0.80		<0.80	<0.20
		11-Jul-17	<0.20	**0.19J**	**0.04J**	<0.20		<0.20	<0.20
		1-Aug-17	<0.20	**0.15J**	**0.053J**	**0.0035J**		**0.012J**	<0.20

TABLE 3B
TOTAL METALS LAB RESULTS SUMMARY
GENERAL WASTE AND RECYCLING, LLC

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Thallium	µg/L	16-Aug-17	<0.40	**0.14J**	**0.12J**	<0.40		<0.40	<0.20
		18-Sep-17	<0.40	**0.069J**	**0.069J**	<0.40		<0.40	<0.20
		16-Oct-17	**0.10J**	**0.052J**	**0.038J**	<0.40		<0.40	<0.20
		29-May-20					<0.02		

TABLE 3C
CCR COMBINED RADIUM 226 AND 228 SUMMARY
GENERAL WASTE AND RECYCLING, INC.

PARAMETER	UNITS	DATE	MW-3R	MW-7	MW-8	MW-9	MW-10	Field Dup	Field Blank
Combined Radium 226/228	pCi/L	17-Apr-17	1.32 ± 0.53	<0.57	0.60 ± 0.56	<0.55		0.91 ± 0.64	1.06 ± 0.52
Combined Radium 226/228	pCi/L	8-May-17	1.08 ± 0.70	1.78 ± 0.80	4.25 ± 1.07	<0.88		1.51 ± 0.66	<0.59
Combined Radium 226/228	pCi/L	20-Jun-17	2.06 ± 0.84	0.90 ± 0.93	1.22 ± 0.84	0.73 ± 0.79		<0.68	<1.0
Combined Radium 226/228	pCi/L	11-Jul-17	<0.78	1.57 ± 1.34	1.26 ± 1.23	<0.75		2.16 ± 1.23	<0.69
Combined Radium 226/228	pCi/L	1-Aug-17	1.24 ± 0.54	1.24 ± 0.68	0.85 ± 0.56	0.91 ± 0.65		1.54 ± 0.57	0.76 ± 0.48
Combined Radium 226/228	pCi/L	16-Aug-17	0.68 ± 0.515	0.90 ± 0.48	0.92 ± 0.59	1.15 ± 0.51		1.59 ± 0.73	<0.62
Combined Radium 226/228	pCi/L	18-Sep-17	0.789 ± 1.33	2.89 ± 1.73	2.43 ± 1.83	2.17 ± 1.63		1.66 ± 1.49	0.805 ± 1.27
Combined Radium 226/228	pCi/L	16-Oct-17	1.62 ± 1.23	3.40 ± 1.68	3.11 ± 1.42	1.95 ± 1.15		2.18 ± 1.33	1.10 ± 1.06

Table 4: 2022 Updated UPLs Based on Unified Guidance			
Parameter	**MW-7**	**MW-8**	**MW-9**
Boron (ug/L)	110.75	105.15	44.46
Calcium (mg/L)	659.21	434.46	234.98
Chloride (mg/L)	137.06	1.87	20.97
Fluoride (mg/L)	0.11	0.11	0.11
pH (SU)	6.02 - 6.79	6.08 - 6.83	6.22 - 7.06
Sulfate (mg/L)	1537.59	852.16	525.81
Total Dissolved Solids (mg/L)	2863.07	1829.75	1260.69

APPENDICES

APPENDIX A

ANALYTICAL LABORATORY REPORTS & FIELD REPORTS

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Cover Sheet

6385CC_2022 (Spring) 0418(CA)
Printed: 4/27/2022 10:45:21 AM

Client:
General Waste Disposal & Recovery

NTS Project:
6385CC - CCR Monitoring and Reporting

NTS Project Manager:
Scott Seeley

NTS Field Personnel:
Corey Andrews

Field Date:
4/18/2022

Summary of Services Performed:

Prepped and departed for General Waste to conduct Spring 2022 CCR well monitoring. Wells MW7, MW8, MW9, and MW10 were sampled via low flow stabilization method. Unable to meet stabilization criteria for Turb NTU at MW7 and MW8. Both wells have a history of being problematic with turbidity. At least five well volumes were removed from each well prior to sampling. Samples were ceded to PACE Analytical in Virginia, MN. For additional details see field notes and COC.

I, Corey Andrews, certify that the information in this report is true and correct to the best of my knowledge.

MW10

Sample Collected:	Yes	Time:	14:25	Associated Field QC:	Field Blank, Field Duplicate

DATA COLLECTED

SONDE PARAMETER(S)

Conductance, Specific (µS/cm)	661.8
ORP vs NHE (mV)	398
Oxygen, Dissolved (mg/L)	6.22
pH (SU)	7.19
Temperature (˚C)	3.86
Turbidity (NTU)	2.5

OTHER FIELD PARAMETER(S)

Elevation, Groundwater (ft)	1445.75
Static Water Level (ft)	6.87

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	5.61 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
13:55	7.09	6.06	705.8	8.4	381	3.95	7.65
14:01	7.13	6.04	688.5	3.7	382	3.90	7.65
14:07	7.14	6.11	669.4	3.2	388	3.88	7.65
14:13	7.16	6.18	679.1	2.9	396	3.85	7.65
14:19	7.18	6.20	662.0	2.7	390	3.87	7.65
14:25	7.19	6.22	661.8	2.5	398	3.86	7.65
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=3%, Criteria=5%	Pass Turb: MaxValue=3, Criteria=5	Pass ORP: Range=8, Criteria=20	Pass Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER

Wind Speed:	11-20 mph
Wind Direction:	NW
Precipitation:	Snow
Cloud Cover:	Overcast
Airborne Particulate:	None
Air Temperature:	21°F to 30°F

SITE INFO

Well Plug Present:	**Yes**
Well Locked:	**Yes**
Unable to Monitor (Dry, Frozen, Other):	

PURGE INFO

Color, Purge:	Rust Colored
Appearance, Purge:	Turbid
Odor Intensity, Purge:	None
Odor, Purge:	None
Purging Strategy:	Low-Flow Stabilization

SAMPLE INFO

Color, Sample:	Colorless
Appearance, Sample:	Clear
Odor Intensity, Sample:	None
Odor, Sample:	None

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW10 (cont'd)

Pump Rate(gpm):	0.33	Measured Well Depth(ft):	18.2	Water Column(ft):	11.33
Pump Start Time(HH:MM):	13:49	Static Water Level(ft):	6.87	Well Volume(gal):	1.85
Pump End Time(HH:MM):	14:30			Well Volume Interval(min):	5.61
Pump Duration(min):	41			Volume Purged(gal):	13.53

STATIC INFORMATION

SITE INFO

MDH Number:	847087
Key Number:	2121

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1452.62

MW7

Sample Collected:	Yes	Time:	10:48

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2992	Elevation, Groundwater (ft)	1477.18
ORP vs NHE (mV)	526	Static Water Level (ft)	18.95
Oxygen, Dissolved (mg/L)	0.78		
pH (SU)	6.54		
Temperature (˚C)	4.23		
Turbidity (NTU)	21.8		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	8.33 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
10:03	6.43	3.26	2557	76.5	529	5.76	20.36
10:12	6.49	3.33	2903	55.2	533	2.56	20.28
10:21	6.53	2.09	2922	37.1	533	4.33	20.63
10:30	6.50	0.96	2971	22.7	531	4.27	20.88
10:39	6.54	0.88	2969	19.6	529	4.11	20.97
10:48	6.54	0.78	2992	21.8	526	4.23	21.03
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0.2, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Fail Turb: MaxValue=23, Criteria=5 Turb: Range=14%, Criteria=10%	Pass ORP: Range=5, Criteria=20	Pass Temp: Range=0.2, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Light Brown	Color, Sample:	Colorless
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Turbid	Appearance, Sample:	Clear
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW7 (cont'd)

Pump Rate(gpm):	0.15	Measured Well Depth(ft):	26.63	Water Column(ft):	7.68
Pump Start Time(HH:MM):	09:54	Static Water Level(ft):	18.95	Well Volume(gal):	1.25
Pump End Time(HH:MM):	10:56			Well Volume Interval(min):	8.33
Pump Duration(min):	62			Volume Purged(gal):	9.3

STATIC INFORMATION

SITE INFO

MDH Number:	817979
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1496.13

MW8

Sample Collected:	Yes	Time:	11:57

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2179	Elevation, Groundwater (ft)	1458.38
ORP vs NHE (mV)	404	Static Water Level (ft)	36.03
Oxygen, Dissolved (mg/L)	0.40		
pH (SU)	6.58		
Temperature (˚C)	3.66		
Turbidity (NTU)	34.8		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	5.67 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
11:21	6.24	0.48	1146	256.7	513	4.00	37.41
11:27	6.34	0.31	2217	302.8	482	4.19	37.45
11:33	6.48	0.34	2193	110.3	446	3.92	37.51
11:39	6.51	0.39	2145	96.7	424	3.88	37.63
11:45	6.55	0.41	2197	65.3	418	3.79	37.64
11:51	6.56	0.37	2185	51.5	410	3.70	37.66
11:57	6.58	0.40	2179	34.8	404	3.66	37.63
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Fail Turb: MaxValue=65, Criteria=5 Turb: Range=60%, Criteria=10%	Pass ORP: Range=14, Criteria=20	Pass Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Light Brown	Color, Sample:	Light Brown
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Turbid	Appearance, Sample:	Turbid
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW8 (cont'd)

Pump Rate(gpm):	0.15	Measured Well Depth(ft):	41.22	Water Column(ft):	5.19
Pump Start Time(HH:MM):	11:15	Static Water Level(ft):	36.03	Well Volume(gal):	0.85
Pump End Time(HH:MM):	12:13			Well Volume Interval(min):	5.67
Pump Duration(min):	58			Volume Purged(gal):	8.7

STATIC INFORMATION

SITE INFO

MDH Number:	817978
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	41.2
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1494.41

MW9

Sample Collected:	Yes	Time:	13:28

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	1377	Elevation, Groundwater (ft)	1444.22
ORP vs NHE (mV)	143	Static Water Level (ft)	10.50
Oxygen, Dissolved (mg/L)	0.53		
pH (SU)	6.83		
Temperature (˚C)	6.62		
Turbidity (NTU)	0.3		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	4.15 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
13:03	6.75	0.52	1457	2.4	213	6.69	10.96
13:08	6.79	0.53	1411	1.7	179	6.65	10.96
13:13	6.80	0.58	1397	1.3	162	6.63	10.96
13:18	6.81	0.57	1391	0.8	153	6.64	10.96
13:23	6.83	0.52	1376	0.4	146	6.63	10.96
13:28	6.83	0.53	1377	0.3	143	6.62	10.96
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0.1, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Pass Turb: MaxValue=1, Criteria=5	Pass ORP: Range=10, Criteria=20	Pass Temp: Range=0, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Colorless	Color, Sample:	Colorless
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Clear	Appearance, Sample:	Clear
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW9 (cont'd)

Pump Rate(gpm):	0.33	Measured Well Depth(ft):	18.9	Water Column(ft):	8.4
Pump Start Time(HH:MM):	12:58	Static Water Level(ft):	10.5	Well Volume(gal):	1.37
Pump End Time(HH:MM):	13:36			Well Volume Interval(min):	4.15
Pump Duration(min):	38			Volume Purged(gal):	12.54

STATIC INFORMATION

SITE INFO

MDH Number:	817980
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	18.9
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1454.72

Calibration Log

Staff: Corey Andrews **Date:** 4/18/2022 **Status:** fail

Comments: ORP did not post check within NTS standards upon return.

Sonde:	EQ-08C	**PreCal (HH:MM):**	**PostCal (HH:MM):**	**PostEvent (HH:MM):**	
Last Temp Check:	3/9/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:35	7:35	16:35	**Specifications:**
COND-0 (Air):		0	0	0	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		0	0	0	
Temperature (°C):		18.71	18.71	15.66	
COND-1000 (2201G39):		1009	1000	1003	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		1000	1000	1000	
Temperature (°C):		21.28	21.28	20.44	
ORP-ZOB (1295-6):		443	448	480	<999 +/-20 mV
Standard (mV):		438.5	438.5	444.8	
Temperature (°C):		21.81	21.81	19.3	
DO (100% Saturation):		8.38	8.50	8.94	<8 +/-0.1 mg/L >=8 AND <20 +/-0.2 mg/L >=20 AND <60 +/-10%
100% Oxygen Saturation:		8.53	8.53	8.87	
Temperature (°C):		21.3	21.3	18.9	
Barometric Pressure (mmHg):		732	732	726	
pH-4 (2111H31-1):		4.01	4.00	4.10	<14 +/-0.2 SU
Standard (SU):		4.00	4.00	4.00	
Temperature (°C):		21.33	21.33	21.0	
pH-7 (2109M33-1):		6.99	7.03	7.11	<14 +/-0.2 SU
Standard (SU):		7.0	7.0	7.0	
Temperature (°C):		21.11	21.11	21.08	
pH-10 (2109H77-1):		10.02	10.04	10.08	<14 +/-0.2 SU
Standard (SU):		10	10	10	
Temperature (°C):		21.22	21.22	20.88	
TURB-0 (DI Water):		0.0	0.0	0.0	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		0	0	0	
Temperature (°C):		18.71	18.71	21.44	

Sonde:	EQ-08C	PreCal (HH:MM):	PostCal (HH:MM):	PostEvent (HH:MM):	
Last Temp Check:	3/9/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:35	7:35	16:35	Specifications:
TURB-100D (084-1):		101.8	100	101.2	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		100	100	100	
Temperature (°C):		22.0	22.0	19.85	

Vehicle Inspection 1

GENERAL INFO

Driver:	Vehicle:	Time(HH:MM):
Corey Andrews	VT-61 | 2013 Ford F150 Race Red	08:00

Odometer(mile):

DRIVER/PASSENGER SIDE

External Side Mirrors (right and left):	Windows (clean, free of cracks):	Tires (properly inflated, adequate tread):
☒	☒	☒

FRONT/REAR

Tail Lights:	Head Lights:	Damage to Body/Bumpers:	License Plates (tags current):	Fluid Leaks:	Turn Signals:
☒	☒	☒	☒	☒	☒

ROUTINE MAINTENANCE

Oil Change (current):	Transmission Fluid (change every 60k miles):	Air Filter (change every 30k miles):	Gauges Operational (check engine light off):	Spare Tire (present, properly inflated):
☒	☒	☒	☒	☒

INTERIOR

Cleanliness:	Check Brakes:	Check Horn:	Seat Belts (working condition):	Check Parking Brake:	Rearview Mirror:	Windshield Wipers and Fluid:
☒	☒	☒	☒	☒	☒	☒

GENERAL/SAFETY

Insurance Card:	Wheel Chocks:	First Aid Kit:	Operations Manual:	Strobe Light (if needed):	Buggy Whip (if needed):
☒	☒	☒	☒	☒	☒

DEFICIENCIES CORRECTED

No Deficiencies Noted: ☒

Comments:

Field Checkout

EQUIPMENT

Resource:	Qty:
EQ-08C - Hydrolab MS5 Sonde C	1.00
EQ-16Q - Static Water Level Q, 75 ft (Little Dipper)	1.00
EQ-17 - Submersible Pump - Generic	1.00

VEHICLE

Resource:	Qty:
VT-61 - 2013 Ford F150 Race Red	74.00

CONSUMABLES

Resource:	Qty:
CF-04 - Glove - Nitrile (ea)	6.00
CF-05 - Ice (6 lb bag)	1.00
CF-01 - Water - Distilled (gal)	2.00

6385cc Gen Waste CCR Monitoring 4/18/22
Corey Andrews
Weather: 32°F / Overcast w/ periods of snow / winds NNW 20-30 mph
Equipment: EQ-08C, EQ-16P, V#61
0715 Prep/Cal/Load
0820 Depart NTS office
0908 Arrive at Gen. Waste. Obtain gate key from office.
0926 MW7 Well locked ? in good condition. Unique well # 817979

SWL	TWD	WC	Vol (gal)	SWL (After)
18.95'	26.63'	7.68'	1.25	21.00'

0954 Begin pumping well @ 0.156PM Key #2106

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1003	6.43	3.26	2557	76.5	529	5.76	20.36
1012	6.49	3.33	2903	55.2	533	2.56	20.28
1021	6.53	2.09	2922	37.1	533	4.33	20.63
1030	6.50	0.96	2971	22.7	531	4.27	20.88
1039	6.54	0.88	2969	19.6	529	4.11	20.97
1048	6.54	0.78	2992	21.8	526	4.23	21.03

Sample obtained @ 1048
1105 MW8 Well locked ? in good condition. Unique well # 817978

SWL	TWD	WC	Vol (gal)	SWL (After)
36.03'	41.22	5.19'	0.85	36.43'

1115 Begin pumping @ 0.156PM Key # 2106

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1121	6.24	0.48	1146	256.7	513	4.00	37.41'
1127	6.34	0.31	2217	302.8	482	4.19	37.45'
1133	6.48	0.34	2193	110.3	446	3.92	37.51'
1139	6.51	0.39	2145	96.7	424	3.88	37.63'
1145	6.55	0.41	2197	65.3	418	3.79	37.64'
1151	6.56	0.37	2185	51.5	410	3.70	37.66'
1157	6.53	0.40	2179	34.8	404	3.66	37.63'

Sample obtained @ 1157. Turb not stable, but well has history of bouncing turbidity.
1235 MW9 Well locked ? in good condition. Unique well # 817980

SWL	TWD	WC	Vol (gal)	SWL After
10.50	18.90	8.4	1.37	10.50

1258 Begin pumping well @ 0.336PM. Key # 2106

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1303	6.75	0.52	1457	2.4	213	6.69	10.96
1308	6.79	0.53	1411	1.7	179	6.65	10.96
1313	6.80	0.58	1397	1.3	162	6.63	10.96
1318	6.81	0.57	1391	0.8	153	6.64	10.96

Scale: 1 square = _____
Rite in the Rain

6385CC Gen Waste CCR Monitoring 4/18/22
Corey Andrews
Weather: 32°F / Overcast w/ periods of snow / Winds NW 20-30 mph
MW9 Cont...

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1323	6.83	0.52	1376	0.4	146	6.63	10.96
1328	6.83	0.53	1377	0.3	143	6.62	10.96

Sample obtained @ 1328
1345 MW10 Well locked & in good condition. Unique well # 847087

SWL	TWO	WC	Vol(gal)	SWL After
6.87	18.20	11.33	1.85	6.87

1349 Begin pumping well @ 6.33 GPM. Key #2121

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1355 ~~1401~~	7.09	6.06	705.8	8.4	381	3.95	7.65
1401 ~~1407~~	7.13	6.04	688.5	3.7	382	3.90	7.65
1407 ~~1413~~	7.14	6.11	669.4	3.2	388	3.88	7.65
1413 ~~1419~~	7.16	6.18	679.1	2.9	396	3.85	7.65
1419 ~~1425~~	7.18	6.20	662.0	2.7	390	3.87	7.65

Sample obtained @ 1425. Dup @ 1426

1425	7.19	6.22	661.8	2.5	398	3.86	7.65

1440 Met Jukin @ MW4 & assisted w/ sampling
1535 Depart Gen. Waste.

Corey Andrews
4/18/2022

Scale: 1 square = _____

Environmental Science & Engineering

Daily Tailgate Safety

Project: 6385CC **Date:** 4/18/2

Work Site Hazard Assessment Worksheet

- ☐ PPE Required (List): _____ Level* A
- ☐ Weather Conditions (List): Snow 35° NW 0-5
- ☐ Vehicular Traffic
- ☐ Noise
- ☐ Housekeeping
- ☐ Communications
- ☐ Equipment/Tools
- ☐ Other Site Hazards**

☐I have examined the work place named and found no hazards
☐I have examined the work place named and hazards found are listed below with corrective action taken

Hazards Identified/Safety Items Discussed:

Slip Trips Falls
land fill traffic

Corrective Actions Taken:

Be aware of footing
Be aware of traffic

Participants in Safety Discussion:

	Print Name	Signature
1.	JAKIN FLYNN	
2.	Corey Andrews	
3.		
4.		
5.		

Signature of Site Supervisor/Examiner: Date: 04/18/22

*Level D, C, B or A
**Examples: Heavy Equipment, Air Quality, Flammable materials, Wildlife, Work Site Security, Confined Space

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

REQUIRED TURN-AROUND TIME: 2 Weeks from submittal date

CLIENT NAME,ADDRESS,PHONE#:
GENERAL WASTE and RECYLING LLC
DEMOLITION & INDUSTRIAL LANDFILL
ITASCA COUNTY, MINNESOTA

REPORT TO:
SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Corey Andrews

PERMIT REQ.: SW-620-002

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

Apr-22

PROJECT NUMBER: 6385CC CCR Monitoirng

SPECIAL INSTRUCTIONS:
SEE ATTACHED LIST WITH METHODS

LOG-IN #:	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	MATRIX SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)		REQUIRED ANALYSIS:
	MW7	GW WELL	4/18/22	1048	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL		1157	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL		1328	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL		1425	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL		1426	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank		1410	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: Corey Andrews DATE: 4/18/22 TIME: 1620

RECEIVED BY: DATE: 4/18/22 TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: Julie Gregerson

TEMP.AT ARRIVAL: 2.4 C

DATE: 4/18/22 TIME: 16:20

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Review Checklist

6385CC_2022 (Spring) 0418(CA)
Printed: 4/27/2022 10:47:37 AM

Environmental Science & Engineering

Report: 6385CC_2022 (Spring) 0418(CA)

Field work not completed by NTS: ☐

SAF Reviewed: ☑

Peer Reviewer:	Date:
Terri Sabetti	4/20/2022

Data Mgmt Reviewer:	Date:

Completeness Review	Included Yes:	No:
Cover Sheet:	☑	☐
Location Information		
Data Collection:	☑	☐
Observations:	☑	☐
Flow Measurements:	☐	☑
GW Stabilization:	☑	☐
Photograph(s):	☐	☑
Calibration Report(s):	☑	☐
Field Notes:	☑	☐
Safety Form(s):	☑	☐
Supplemental Form(s):	☑	☐
Equipment Documented:	☑	☐
Chain(s) of Custody:	☑	☐
Figures or Drawings:	☐	☑

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☑	
GW stabilization criteria met:	☐	☐	☑
Sonde(s) passed post-check:	☐	☐	☑
Consistent values in field notes:	☐	☑	
Consistent dates and times:	☐	☑	
Applicable SOPs followed:		☑	☐
Cover sheet provides a complete description of key activities and observations:		☑	☐

Peer Reviewer Comments:

ORP did not pass post calibration check. Data was qualified. MW-7 & MW-8 failed NTS stabilization criteria for NTU, which has occurred in past sampling events. Data was qualified.

Completeness Review	Included Yes:	No:
Cover Sheet:	☐	☐
Location Information		
Data Collection:	☐	☐
Observations:	☐	☐
Flow Measurements:	☐	☐
GW Stabilization:	☐	☐
Photograph(s):	☐	☐
Calibration Report(s):	☐	☐
Field Notes:	☐	☐
Safety Form(s):	☐	☐
Supplemental Form(s):	☐	☐
Equipment Documented:	☐	☐
Chain(s) of Custody:	☐	☐
Figures or Drawings:	☐	☐

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☐	
GW stabilization criteria met:	☐	☐	☐
Sonde(s) passed post-check:	☐	☐	☐
Consistent values in field notes:	☐	☐	
Consistent dates and times:	☐	☐	
Data qualifiers/comments added:	☐	☐	
Data under correct Event Key:	☐	☐	
All required parameters measured, calculated, and uploaded to NTS database:	☐	☐	
All associated limits met:	☐	☐	

Data Mgmt Reviewer Comments:

Definitions

GW = groundwater, SOPs = standard operating procedures

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

May 02, 2022

Scott Seeley
Northeast Technical Services
526 Chestnut Street
Virginia, MN 55792

RE: Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Dear Scott Seeley:

Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Duluth, MN
- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Jarve

Nicole Jarve
nikki.jarve@pacelabs.com
(218) 727-6380
Project Manager

Enclosures

cc: Allison Byrd, Northeast Technical Services
Sample Data, Northeast Technical Services
Carrie Jensen, Northeast Technical Services
Alan Phillips, Dem-Con Companies
Karissa Vosen, Northeast Technical Services

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

CERTIFICATIONS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC - Duluth MN

4730 Oneota Street, Duluth, MN 55807
Minnesota Certification #: 027-137-152
Minnesota Dept of Ag Approval: via Minnesota 027-137-152
Minnesota Petrofund Registration #: 1240
Montana Certification #: CERT0102
Nevada Certification #: MN00037
North Dakota Certification #: R-105
Wisconsin Certification #: 999446800
Wisconsin Dept of Ag Certification: 480341

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE SUMMARY

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10604955001	**MW7**	Water	04/18/22 10:48	04/18/22 16:20
10604955002	**MW8**	Water	04/18/22 11:57	04/18/22 16:20
10604955003	**MW9**	Water	04/18/22 13:28	04/18/22 16:20
10604955004	**MW10**	Water	04/18/22 14:25	04/18/22 16:20
10604955005	**Field Duplicate**	Water	04/18/22 14:26	04/18/22 16:20
10604955006	**Field Blank**	Water	04/18/22 14:10	04/18/22 16:20

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE ANALYTE COUNT

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10604955001	**MW7**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	WBS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955002	**MW8**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	WBS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955003	**MW9**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	WBS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955004	**MW10**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955005	**Field Duplicate**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955006	**Field Blank**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE ANALYTE COUNT

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-DU = Pace Analytical Services - Duluth, MN
PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: MW7 **Lab ID: 10604955001** Collected: 04/18/22 10:48 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**2700**	mg/L	333	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.067**	mg/L	0.050	1		04/20/22 17:10	16984-48-8	
Sulfate	**1560**	mg/L	7.0	7		04/21/22 01:14	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		04/20/22 14:03		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**608**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:38	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**55.6**	ug/L	20.0	2	04/21/22 11:40	04/27/22 16:43	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**3.0**	mg/L	1.2	1		04/27/22 01:46	16887-00-6	

Sample: MW8 **Lab ID: 10604955002** Collected: 04/18/22 11:57 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1530**	mg/L	333	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.058**	mg/L	0.050	1		04/20/22 18:19	16984-48-8	
Sulfate	**864**	mg/L	4.0	4		04/21/22 01:36	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		04/20/22 14:06		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**403**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:39	7440-70-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: MW8 **Lab ID: 10604955002** Collected: 04/18/22 11:57 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**64.2**	ug/L	20.0	2	04/21/22 11:40	04/27/22 16:16	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.3**	mg/L	1.2	1		04/27/22 04:10	16887-00-6	

Sample: MW9 **Lab ID: 10604955003** Collected: 04/18/22 13:28 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1020**	mg/L	40.0	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.086**	mg/L	0.050	1		04/20/22 18:42	16984-48-8	
Sulfate	**372**	mg/L	1.0	1		04/20/22 18:42	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		04/20/22 14:11		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**194**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:41	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**32.7**	ug/L	20.0	2	04/21/22 11:40	04/27/22 16:50	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**8.1**	mg/L	1.2	1		04/27/22 04:27	16887-00-6	

Sample: MW10 **Lab ID: 10604955004** Collected: 04/18/22 14:25 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**480**	mg/L	20.0	1		04/20/22 09:52		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: MW10 **Lab ID: 10604955004** Collected: 04/18/22 14:25 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.14**	mg/L	0.050	1		04/20/22 19:05	16984-48-8	
Sulfate	**208**	mg/L	1.0	1		04/20/22 19:05	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.7**	Std. Units	0.10	1		04/20/22 14:34		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**97.9**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:43	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**11.8**	ug/L	10.0	1	04/21/22 11:40	04/29/22 10:03	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.2**	mg/L	1.2	1		04/27/22 04:43	16887-00-6	

Sample: Field Duplicate **Lab ID: 10604955005** Collected: 04/18/22 14:26 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**362**	mg/L	20.0	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.14**	mg/L	0.050	1		04/20/22 19:28	16984-48-8	
Sulfate	**209**	mg/L	1.0	1		04/20/22 19:28	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		04/20/22 14:37		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**93.6**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:52	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**11.8**	ug/L	10.0	1	04/21/22 11:40	04/29/22 10:10	7440-42-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: Field Duplicate **Lab ID: 10604955005** Collected: 04/18/22 14:26 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.2**	mg/L	1.2	1		04/27/22 04:59	16887-00-6	

Sample: Field Blank **Lab ID: 10604955006** Collected: 04/18/22 14:10 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	ND	mg/L	10.0	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	ND	mg/L	0.050	1		04/20/22 19:51	16984-48-8	
Sulfate	ND	mg/L	1.0	1		04/20/22 19:51	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**5.9**	Std. Units	0.10	1		04/20/22 14:38		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	ND	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:54	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	ND	ug/L	10.0	1	04/21/22 11:40	04/29/22 10:16	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	ND	mg/L	1.2	1		04/27/22 05:15	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810298 — Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 — Analysis Description: 2540C TDS DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4298688 — Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	04/20/22 09:51	

METHOD BLANK: 4298692 — Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	04/20/22 09:52	

LABORATORY CONTROL SAMPLE: 4298689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	230	92	80-120	

SAMPLE DUPLICATE: 4298690

Parameter	Units	10605040003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	550	544	1	5	

SAMPLE DUPLICATE: 4298691

Parameter	Units	10605040001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	267	263	2	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810329
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4298787 Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.050	04/20/22 13:43	
Sulfate	mg/L	ND	1.0	04/20/22 13:43	

LABORATORY CONTROL SAMPLE: 4298788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	100	100	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4298789 4298790

Parameter	Units	10605061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.34	25	25	25.8	25.8	102	102	90-110	0	20	
Sulfate	mg/L	310	500	500	806	806	99	99	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4298791 4298792

Parameter	Units	10604977001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.24	5	5	5.4	5.4	103	103	90-110	0	20	
Sulfate	mg/L	54.2	100	100	155	155	100	101	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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Duluth, MN 55807
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QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810269
QC Batch Method: SM 4500-H+B-2011
Analysis Method: SM 4500-H+B-2011
Analysis Description: 4500H+B pH, WW DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

LABORATORY CONTROL SAMPLE: 4298577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 4298578

Parameter	Units	10604955002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.2	1	10	H6

SAMPLE DUPLICATE: 4298579

Parameter	Units	10604958001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810498 — Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 — Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4299804 — Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	04/22/22 12:28	

LABORATORY CONTROL SAMPLE: 4299805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	20	19.9	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4299806 4299807

Parameter	Units	10604744001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	53.2	20	20	75.5	74.2	111	105	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810501 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4299816 Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	10.0	04/27/22 16:07	

LABORATORY CONTROL SAMPLE: 4299817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	100	107	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4299818 4299819

Parameter	Units	10604955002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	64.2	100	100	176	173	111	108	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810758 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4301018 Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	04/27/22 02:34	

LABORATORY CONTROL SAMPLE: 4301019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301020 4301021

Parameter	Units	10604955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	50	50	54.8	54.6	104	103	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301022 4301023

Parameter	Units	10604946003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	34.7	50	50	84.1	83.0	99	96	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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Duluth, MN 55807
(218) 727-6380

QUALIFIERS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10604955001	**MW7**	SM 2540C-2011	810298		
10604955002	**MW8**	SM 2540C-2011	810298		
10604955003	**MW9**	SM 2540C-2011	810298		
10604955004	**MW10**	SM 2540C-2011	810298		
10604955005	**Field Duplicate**	SM 2540C-2011	810298		
10604955006	**Field Blank**	SM 2540C-2011	810298		
10604955001	**MW7**	EPA 300.0	810329		
10604955002	**MW8**	EPA 300.0	810329		
10604955003	**MW9**	EPA 300.0	810329		
10604955004	**MW10**	EPA 300.0	810329		
10604955005	**Field Duplicate**	EPA 300.0	810329		
10604955006	**Field Blank**	EPA 300.0	810329		
10604955001	**MW7**	SM 4500-H+B-2011	810269		
10604955002	**MW8**	SM 4500-H+B-2011	810269		
10604955003	**MW9**	SM 4500-H+B-2011	810269		
10604955004	**MW10**	SM 4500-H+B-2011	810269		
10604955005	**Field Duplicate**	SM 4500-H+B-2011	810269		
10604955006	**Field Blank**	SM 4500-H+B-2011	810269		
10604955001	**MW7**	EPA 200.7	810498	EPA 200.7	810825
10604955002	**MW8**	EPA 200.7	810498	EPA 200.7	810825
10604955003	**MW9**	EPA 200.7	810498	EPA 200.7	810825
10604955004	**MW10**	EPA 200.7	810498	EPA 200.7	810825
10604955005	**Field Duplicate**	EPA 200.7	810498	EPA 200.7	810825
10604955006	**Field Blank**	EPA 200.7	810498	EPA 200.7	810825
10604955001	**MW7**	EPA 200.8	810501	EPA 200.8	810786
10604955002	**MW8**	EPA 200.8	810501	EPA 200.8	810786
10604955003	**MW9**	EPA 200.8	810501	EPA 200.8	810786
10604955004	**MW10**	EPA 200.8	810501	EPA 200.8	810786
10604955005	**Field Duplicate**	EPA 200.8	810501	EPA 200.8	810786
10604955006	**Field Blank**	EPA 200.8	810501	EPA 200.8	810786
10604955001	**MW7**	EPA 300.0	810758		
10604955002	**MW8**	EPA 300.0	810758		
10604955003	**MW9**	EPA 300.0	810758		
10604955004	**MW10**	EPA 300.0	810758		
10604955005	**Field Duplicate**	EPA 300.0	810758		
10604955006	**Field Blank**	EPA 300.0	810758		

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

REQUIRED TURN-AROUND TIME: 2 Weeks from submittal date

WO#: 10604955

PM: NMJ Due Date: 05/02/22

CLIENT: DU-NTS-SCOTT

CLIENT NAME,ADDRESS,PHONE#:
GENERAL WASTE and RECYLING LLC
DEMOLITION & INDUSTRIAL LANDFILL
ITASCA COUNTY, MINNESOTA

REPORT TO:
SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Corey Andrews

PERMIT REQ.: SW-620-002
Apr-22

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

PROJECT NUMBER: 6385CC CCR Monitoirng

LOG-IN #:	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)	REQUIRED ANALYSIS:
	MW7	GW WELL	4/18/22	1048	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL		1157	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL		1328	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL		1425	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL		1426	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank		1410	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: Corey Andrews DATE: 4/18/22 TIME: 1620

RECEIVED BY: RA 4/19/22 1520 DATE: 4/18/22 TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: Julie Gregerson

TEMP.AT ARRIVAL: 2.4 C

DATE: 4/18/22 TIME: 16:20

4/19/22 1620

Accept: SVelacich/Pace 4/19/22 16:20

GENERAL WASTE CCR METHODS

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: NTS

Project #: WO#: 10604955

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Pace ☐ SpeeDee ☐ Commercial

See Exceptions ☐ ENV-FRM-MIN4-0142

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235) ☐ T7 (0042) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☐ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 2.1 °C

Correction Factor: +0.3 **Cooler Temp Corrected w/temp blank:** 2.4 °C

Average Corrected Temp (no temp blank only): ____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other:)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Date/Initials of Person Examining Contents: JH 4/18/22

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☐ Minneapolis ☑ Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☑ No	☐ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☐ Soil ☐ Oil ☐ Other-	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. **See Exception** ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☐ N/A	
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nicole Jarvie **Date:** 4/20/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e.,, out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by:

Intra-Regional Chain of Custody

WO# : 10604955

10604955

Workorder: 10604955 **Workorder Name:** 6385CC General Waste April-22 **Owner Received Date:** 4/18/2022 **Due Date:** 5/2/2022

Received at:	Send To Lab:
Pace Analytical Virginia 315 Chestnut Street Virginia, MN 55792 Phone (218) 727-6380	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700

Report To:
Nicole Jarve

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3 BP3N	Preserved Containers: Unpreserved BP3U					Requested Analysis: EPA 200.7	EPA 200.8	Miscellaneous Charges	EPA 300.0								LAB USE ONLY
1	MW7	PS	4/18/2022 10:48	10604955001	Water	1	1					X	X	X	X								001
2	MW8	PS	4/18/2022 11:57	10604955002	Water	1	1					X	X	X	X								002
3	MW9	PS	4/18/2022 13:28	10604955003	Water	1	1					X	X	X	X								003
4	MW10	PS	4/18/2022 14:25	10604955004	Water	1	1					X	X	X	X								004
5	Field Duplicate	PS	4/18/2022 14:26	10604955005	Water	1	1					X	X	X	X								005
6	Field Blank	PS	4/18/2022 14:10	10604955006	Water	1	1					X	X	X	X								006

Transfers	Released By	Date/Time	Received By	Date/Time
1	RLL 4/19/22	1420	Ruthie/Pace	4-20-22 1145
2				
3				
4				

Comments

Cooler Temperature on Receipt 0.7/1.1 °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Pace - Virginia

Project #:

WO#: 10604955

PM: NMJ **Due Date: 05/02/22**

CLIENT: DU-NTS-SCOTT

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☒Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☒Yes ☐No Seals Intact? ☒Yes ☐No Biological Tissue Frozen? ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other: _____ Temp Blank? ☒Yes ☐No

Thermometer: ☒T1(0461) ☐T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) ☐T6(0235) ☐T7 (0042) ☐01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No Were All Container Temps Taken? ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: 0.7 / 1.1 °C

Correction Factor: True Cooler Temp Corrected w/temp blank: 0.7 / 1.1 °C

Average Corrected Temp (no temp blank only): _____ °C

☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

USDA Regulated Soil: (☒N/A, water sample/Other: _____)

Date/Initials of Person Examining Contents: 4-20-22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐Duluth ☒Minneapolis ☐Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4. If Fecal: ☐<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used? -Pace Containers Used?	☒Yes ☒Yes	☐No ☐No		8.
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒Water ☐Soil ☐Oil ☐Other-	☒Yes	☐No		11. If no, write ID/ Date/Time on Container Below: ☐See Exception ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☒Yes	☐No	☐N/A	12. Sample # 001-006
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☒Yes	☐No	☐N/A	☐NaOH ☒HNO_3 ☐H_2SO_4 ☐Zinc Acetate 1/1
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☒N/A	Positive for Res. Chlorine? ☐Yes ☐No pH Paper Lot# ☐See Exception ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☒N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. ☐See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? ☐Yes ☐No

Comments/Resolution: _____

Project Manager Review: Nicole Jarve Date: 4/21/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: _____

Qualtrax ID: 52742

Page 1 of 1 VM

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Cover Sheet

6385CC_2022-10 (Oct) 1018(CA)
Printed: 10/31/2022 2:48:12 PM

Client:
General Waste Disposal & Recovery

NTS Project:
6385CC - CCR Monitoring and Reporting

NTS Project Manager:
Scott Seeley

NTS Field Personnel:
Corey Andrews

Field Date:
10/18/2022

Summary of Services Performed:

Prepped and departed for General Waste to conduct Fall 2022 CCR well monitoring event.MW-7, MW-8, MW-9 and MW-10 were sampled via the low flow stabilization method using submersible pumps. Samples were ceded to PACE Analytical in Virginia, MN. For additional details see field notes and COC.

I, Corey Andrews, certify that the information in this report is true and correct to the best of my knowledge.

Static Attribute Change Log

Location:	Attribute:	Old Value:	New Value:
MW7	Key Number	410	2106
MW8	Key Number	410	2106

MW10

Sample Collected:	Yes	Time:	14:08

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	1000	Elevation, Groundwater (ft)	1442.41
ORP vs NHE (mV)	200	Static Water Level (ft)	10.21
Oxygen, Dissolved (mg/L)	0.36		
pH (SU)	6.84		
Temperature (˚C)	11.49		
Turbidity (NTU)	3.0		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	3.94 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
13:52	6.90	0.38	1008	28.1	225	11.51	10.36
13:56	6.86	0.36	1008	10.1	210	11.54	10.36
14:00	6.86	0.35	1007	4.0	205	11.49	10.36
14:04	6.85	0.35	1002	3.1	202	11.58	10.36
14:08	6.84	0.36	1000	3.0	200	11.49	10.36
	Pass pH: Range=0, Criteria=0.2	**Pass** LDO: Range=0, Criteria=0.2	**Pass** SCond: Range=1%, Criteria=5%	**Pass** Turb: MaxValue=4, Criteria=5	**Pass** ORP: Range=5, Criteria=20	**Pass** Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	**Yes**	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	**Yes**	Color, Purge:	Colorless	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Clear	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW10 (cont'd)

Pump Rate(gpm): 0.33	Measured Well Depth(ft): 18.2	Water Column(ft): 7.99
Pump Start Time(HH:MM): 13:48	Static Water Level(ft): 10.21	Well Volume(gal): 1.3
Pump End Time(HH:MM): 14:12		Volume Purged(gal): 7.92
Pump Duration(min): 24		Well Volume Interval(min): 3.94

STATIC INFORMATION

SITE INFO

MDH Number:	847087
Key Number:	2121

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1452.62

MW7

Sample Collected:	Yes	Time:	10:35

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2641	Elevation, Groundwater (ft)	1473.78
ORP vs NHE (mV)	517	Static Water Level (ft)	22.35
Oxygen, Dissolved (mg/L)	0.44		
pH (SU)	6.18		
Temperature (˚C)	8.11		
Turbidity (NTU)	14.0		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	4.67 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
10:15	6.22	0.51	2535	142.3	514	8.39	23.50
10:20	6.18	0.48	2550	37.4	515	8.30	23.62
10:25	6.19	0.42	2611	15.4	516	8.17	23.63
10:30	6.18	0.41	2624	13.7	517	8.21	23.65
10:35	6.18	0.44	2641	14.0	517	8.11	23.65
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Pass Turb: MaxValue=15, Criteria=5 Turb: Range=9%, Criteria=10%	Pass ORP: Range=1, Criteria=20	Pass Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	Yes	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	Yes	Color, Purge:	Colorless	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Fine Particulate	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW7 (cont'd)

Pump Rate(gpm): 0.15	Measured Well Depth(ft): 26.63	Water Column(ft): 4.28
Pump Start Time(HH:MM): 10:10	Static Water Level(ft): 22.35	Well Volume(gal): 0.7
Pump End Time(HH:MM): 10:43		Volume Purged(gal): 4.95
Pump Duration(min): 33		Well Volume Interval(min): 4.67

STATIC INFORMATION

SITE INFO

MDH Number:	817979
Key Number:	2106

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1496.13

MW8

Sample Collected:	Yes	Time:	12:03

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2106	Elevation, Groundwater (ft)	1462.42
ORP vs NHE (mV)	346	Static Water Level (ft)	31.99
Oxygen, Dissolved (mg/L)	0.40		
pH (SU)	6.24		
Temperature (˚C)	6.19		
Turbidity (NTU)	25.4		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	10.07 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
11:23	6.18	0.60	2224	239.7	487	6.89	33.64
11:33	6.19	0.43	2159	63.2	443	5.92	33.15
11:43	6.19	0.44	2128	49.6	400	6.03	33.02
11:53	6.22	0.40	2114	36.1	368	6.10	32.96
12:03	6.24	0.40	2106	25.4	346	6.19	32.91
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Fail Turb: MaxValue=50, Criteria=5 Turb: Range=65%, Criteria=10%	Fail ORP: Range=54, Criteria=20	Pass Temp: Range=0.2, Criteria=0.2	

GENERAL OBSERVATIONS

5 well volumes removed prior to sampling.

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	Yes	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	Yes	Color, Purge:	Yellow	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Fine Particulate	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW8 (cont'd)

Pump Rate(gpm): 0.15	Measured Well Depth(ft): 41.22	Water Column(ft): 9.23
Pump Start Time(HH:MM): 11:13	Static Water Level(ft): 31.99	Well Volume(gal): 1.51
Pump End Time(HH:MM): 12:10		Volume Purged(gal): 8.55
Pump Duration(min): 57		Well Volume Interval(min): 10.07

STATIC INFORMATION

SITE INFO

MDH Number:	817978
Key Number:	2106

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	41.2
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1494.41

MW9

Sample Collected:	Yes	Time:	13:10	Associated Field QC:	Field Blank, Field Duplicate

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	1517	Elevation, Groundwater (ft)	1443.73
ORP vs NHE (mV)	146	Static Water Level (ft)	10.99
Oxygen, Dissolved (mg/L)	0.31		
pH (SU)	6.52		
Temperature (˚C)	8.75		
Turbidity (NTU)	3.9		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	3.91 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
12:54	6.53	0.36	1604	36.9	176	8.88	11.34
12:58	6.52	0.35	1580	15.6	160	8.77	11.34
13:02	6.52	0.31	1530	4.1	150	8.73	11.34
13:06	6.52	0.31	1525	4.0	148	8.75	11.34
13:10	6.52	0.31	1517	3.9	146	8.75	11.34
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Pass Turb: MaxValue=4, Criteria=5	Pass ORP: Range=4, Criteria=20	Pass Temp: Range=0, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	Yes	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	Yes	Color, Purge:	Colorless	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Clear	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW9 (cont'd)

Pump Rate(gpm): 0.33	Measured Well Depth(ft): 18.9	Water Column(ft): 7.91
Pump Start Time(HH:MM): 12:50	Static Water Level(ft): 10.99	Well Volume(gal): 1.29
Pump End Time(HH:MM): 13:15		Volume Purged(gal): 8.25
Pump Duration(min): 25		Well Volume Interval(min): 3.91

STATIC INFORMATION

SITE INFO

MDH Number:	817980
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	18.9
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1454.72

Calibration Log

Staff: Corey Andrews **Date:** 10/18/2022 **Status:** pass

Comments:

Sonde:	EQ-08G	**PreCal (HH:MM):**	**PostCal (HH:MM):**	**PostEvent (HH:MM):**	
Last Temp Check:	8/12/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:45	7:45	16:00	**Specifications:**
SpC-0 (Air):		0.0	0.0	0.0	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		0	0	0	
Temperature (°C):		19.87	19.87	19.88	
SpC-1000 (4206F33-1):		1000	1000	1002	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		1000	1000	1000	
Temperature (°C):		21.19	21.19	21.22	
ORP-Zobell (2189-4):		438	440	442	<999 +/-20 mV
Standard (mV):		440	440	440.2	
Temperature (°C):		21.2	21.2	21.1	
DO (100% Saturation):		8.89	8.61	8.66	<8 +/-0.1 mg/L >=8 AND <20 +/-0.2 mg/L >=20 AND <60 +/-10%
100% Oxygen Saturation:		8.67	8.67	8.64	
Temperature (°C):		20.4	20.4	20.5	
Barometric Pressure (mmHg):		731	731	730	
pH-4 (4206C33):		4.07	4.00	4.03	<14 +/-0.2 SU
Standard (SU):		4.00	4.00	4.00	
Temperature (°C):		21.29	21.29	21.31	
pH-7 (423B65-2):		7.01	7.02	7.02	<14 +/-0.2 SU
Standard (SU):		7.0	7.0	7.0	
Temperature (°C):		21.17	21.17	21.33	
pH-10 (4203D63-2):		9.98	10.03	10.04	<14 +/-0.2 SU
Standard (SU):		10	10	10.04	
Temperature (°C):		21.23	21.23	21.30	
Turb-0 (DI Water):		0.0	0.0	0.0	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		0	0	0	
Temperature (°C):		18.1	18.1	18.4	

Sonde:	EQ-08G	PreCal (HH:MM):	PostCal (HH:MM):	PostEvent (HH:MM):	
Last Temp Check:	8/12/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:45	7:45	16:00	Specifications:
Turb-100D (105-2):		125.0	100	101.8	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		100	100	100	
Temperature (°C):		21.6	21.6	21.5	

Vehicle Inspection 1

GENERAL INFO

Driver: Corey Andrews	Vehicle: VT-61 | 2013 Ford F150 Race Red	Time(HH:MM): 08:00
Odometer(mile):		

DRIVER/PASSENGER SIDE

External Side Mirrors (right and left): ☒	Windows (clean, free of cracks): ☒	Tires (properly inflated, adequate tread): ☒

FRONT/REAR

Tail Lights: ☒	Head Lights: ☒	Damage to Body/Bumpers: ☒	License Plates (tags current): ☒	Fluid Leaks: ☒
Turn Signals: ☒				

ROUTINE MAINTENANCE

Oil Change (current): ☒	Transmission Fluid (change every 60k miles): ☒	Air Filter (change every 30k miles): ☒	Gauges Operational (check engine light off): ☒
Spare Tire (present, properly inflated): ☒			

INTERIOR

Cleanliness: ☒	Check Brakes: ☒	Check Horn: ☒	Seat Belts (working condition): ☒	Check Parking Brake: ☒
Rearview Mirror: ☒	Windshield Wipers and Fluid: ☒			

GENERAL/SAFETY

Insurance Card: ☒	Wheel Chocks: ☒	First Aid Kit: ☒	Operations Manual: ☒	Strobe Light (if needed): ☒	Buggy Whip (if needed): ☒

DEFICIENCIES CORRECTED

No Deficiencies Noted: ☒
Comments:

Field Checkout

EQUIPMENT

Resource:	Qty:
EQ-08D | Hydrolab MS5 Sonde D	1.00
EQ-16S | Static Water Level S, 100 ft (Skinny Dipper)	1.00
EQ-17 | Submersible Pump - Generic	1.00

VEHICLE(S)

Resource:	Qty:
VT-61 | 2013 Ford F150 Race Red	70.00

CONSUMABLES

Resource:	Qty:
CF-04 | Glove - Nitrile (ea)	6.00
CF-05 | Ice (6 lb bag)	2.00
CF-01 | Water - Distilled (gal)	1.00

6385CC Gen Waste CCR Monitoring 10/18/22

Corey Andrews

Weather: High 33°F / Partly Cloudy / wind S 10-15 mph

Equipment: EQ-080, SWL, YSI 61, submersible pump

0715 Arrive at NTS. Prep/Cal/Load.

0900 Depart NTS office.

0955 Pick up gate keys

0957 MW 7 Well locked & in good condition. Key #2106 Unique well #817979

SWL	TWD	WC	Vol	SWL (after)
22.35'	26.63'	4.28'	0.70	23.60

1010 Begin pumping well @ 0.15 GPM

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1015	6.22	0.51	2535	142.3	514	8.39	23.50
1020	6.18	0.48	2550	37.4	515	8.30	23.62
1025	6.19	0.42	2611	15.4	516	8.17	23.63
1030	6.18	0.41	2624	13.7	517	8.21	23.65
1035	6.18	0.44	2641	14.8	517	8.11	23.65

Samples obtained @ 1035

1057 MW 8 Well locked & in good condition, Unique well #817978. Key #2106

SWL	TWD	WC	Vol	SWL After
31.99	41.22	9.23	1.50	32.06'

1113 Begin pumping well @ 0.15 GPM

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1123	6.18	0.60	2224	239.7	487	6.89	33.64
1133	6.19	0.43	2159	63.2	443	5.92	33.15
1143	6.19	0.44	2128	49.6	400	6.03	33.02
1153	6.22	0.40	2114	36.1	368	6.10	32.96
1203	6.24	0.40	2106	25.4	346	6.19	32.91

Sample @ 1203 after 5 well volumes removed.

1244 MW 9 Well locked & in good condition. Unique well #817980 Key #0440

SWL	TWD	WC	Vol	SWL After	Begin pumping @ 1250 @ 0.336 GPM
10.99	18.90	7.91	1.29	11.05	

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1254	6.53	0.36	1604	36.9	176	8.88	11.34
1258	6.52	0.35	1580	15.6	160	8.77	11.34
1302	6.52	0.31	1530	4.1	150	8.73	11.34
1306	6.52	0.31	1525	4.0	148	8.75	11.34
1310	6.52	0.31	1517	3.9	146	8.75	11.34

Samples obtained @ 1310 Dup @ 1311 FB @ 1315

Scale: 1 square = _____

6385CC Gen Waste CCR Monitoring 10/18/22
Corey Andrews
Weather High 35°F / Partly Cloudy / wind S 10-15 mph
1341 MW10 Well locked & in good condition. Unique well # 847087 Key #212

SWL	TWD	WC	Vol	SWL After
10.21	18.20	7.99	1.30	10.30

1348 Begin pumping @ 0.33 GPM.

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1352	6.90	0.38	1008	28.1	225	11.51	10.36
1356	6.86	0.36	1008	10.1	210	11.54	10.36
1400	6.86	0.35	1007	4.0	205	11.49	10.36
1404	6.85	0.35	1002	3.1	202	11.58	10.36
1408	6.84	0.34	1000	3.0	200	11.49	10.36

Sample obtained @ 1405.

1500 Depart Gen. Waste.
1540 cede samples to PACE
1545 Arrive back at NTS office. Unload / Post check / Report

Corey Andrews

10/18/2022

Scale: 1 square = _____

Rite in the Rain

Environmental Science & Engineering

Daily Tailgate Safety

Project: 63855CC **Date:** 10/18/2022

Work Site Hazard Assessment Worksheet

- ☒ PPE Required (List): Hi/Lo Viz Level*
- ☐ Weather Conditions (List): 33°F / Partly Cloudy / wind S 10-15 mph
- ☐ Vehicular Traffic
- ☐ Communications
- ☐ Noise
- ☐ Equipment/Tools
- ☐ Housekeeping
- ☐ Other Site Hazards**

☐ I have examined the work place named and found no hazards
☐ I have examined the work place named and hazards found are listed below with corrective action taken

Hazards Identified/Safety Items Discussed:

Slips, Trips, & Falls
preservatives in sample containers

Corrective Actions Taken:

walk cautiously
wear proper PPE

Participants in Safety Discussion:

	Print Name	Signature
1.	Corey Andrews	
2.		
3.		
4.		
5.		

Signature of Site Supervisor/Examiner: Date: 10/18/2022

*Level D, C, B or A
**Examples: Heavy Equipment, Air Quality, Flammable materials, Wildlife, Work Site Security, Confined Space

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

REQUIRED TURN-AROUND TIME: 2 Weeks from submittal date

CLIENT NAME,ADDRESS,PHONE#:
GENERAL WASTE and RECYLING LLC
DEMOLITION & INDUSTRIAL LANDFILL
ITASCA COUNTY, MINNESOTA

REPORT TO:
SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Carey Andrews

PERMIT REQ.: SW-620-002
~~Apr~~ Oct-22

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

PROJECT NUMBER: 6385CC CCR Monitoirng

SPECIAL INSTRUCTIONS:
SEE ATTACHED LIST WITH METHODS

LOG-IN #	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	MATRIX SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)		REQUIRED ANALYSIS:
	MW7	GW WELL	10/18/22	1035	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL	10/18/22	1203	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL	10/18/22	1310	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL	10/18/22	1408	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL	10/18/22	1311	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank	10/18/22	1315	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: Carey Andrews DATE: 10/18/22 TIME: 1540

RECEIVED BY: DATE: TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: D. Mathews PACE

TEMP.AT ARRIVAL: 2.7 C

DATE: 10/18/22 TIME: 1540

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Review Checklist

6385CC_2022-10 (Oct) 1018(CA)

Printed: 11/2/2022 7:54:51 PM

Environmental Science & Engineering

Report: 6385CC_2022-10 (Oct) 1018(CA)

Field work not completed by NTS: ☐ **SAF Reviewed:** ☑

Peer Reviewer:	Date:
Terri Sabetti	11/1/2022

Data Mgmt Reviewer:	Date:

Completeness Review	Included Yes:	No:
Cover Sheet:	☑	☐
Location Information		
Data Collection:	☑	☐
Observations:	☑	☐
Flow Measurements:	☐	☑
GW Stabilization:	☑	☐
Photograph(s):	☐	☑
Calibration Report(s):	☑	☐
Field Notes:	☑	☐
Safety Form(s):	☑	☐
Supplemental Form(s):	☑	☐
Equipment Documented:	☑	☐
Chain(s) of Custody:	☑	☐
Figures or Drawings:	☐	☑

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☑	
GW stabilization criteria met:	☐	☐	☑
Sonde(s) passed post-check:	☐	☑	☐
Consistent values in field notes:	☐	☑	
Consistent dates and times:	☐	☑	
Applicable SOPs followed:		☑	☐
Cover sheet provides a complete description of key activities and observations:		☑	☐

Peer Reviewer Comments:

Wells sampled by low flow stabilization method with submersible pumps.
MW8 NTU & ORP stabilization failed to meet NTS acceptance criteria. Data was qualified.

Completeness Review	Included Yes:	No:
Cover Sheet:	☐	☐
Location Information		
Data Collection:	☐	☐
Observations:	☐	☐
Flow Measurements:	☐	☐
GW Stabilization:	☐	☐
Photograph(s):	☐	☐
Calibration Report(s):	☐	☐
Field Notes:	☐	☐
Safety Form(s):	☐	☐
Supplemental Form(s):	☐	☐
Equipment Documented:	☐	☐
Chain(s) of Custody:	☐	☐
Figures or Drawings:	☐	☐

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☐	
GW stabilization criteria met:	☐	☐	☐
Sonde(s) passed post-check:	☐	☐	☐
Consistent values in field notes:	☐	☐	
Consistent dates and times:	☐	☐	
Data qualifiers/comments added:	☐	☐	
Data under correct Event Key:	☐	☐	
All required parameters measured, calculated, and uploaded to NTS database:	☐	☐	
All associated limits met:	☐	☐	

Data Mgmt Reviewer Comments:

Definitions

GW = groundwater, SOPs = standard operating procedures

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

November 30, 2022

Scott Seeley
Northeast Technical Services
526 Chestnut Street
Virginia, MN 55792

RE: Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Dear Scott Seeley:

Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Duluth, MN
- Pace Analytical Services - Minneapolis

This report was revised on November 30, 2022, to update total dissolved solids results for MW8.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Jarve

Nicole Jarve
nikki.jarve@pacelabs.com
(218) 727-6380
Project Manager

Enclosures

cc: Allison Byrd, Northeast Technical Services
Sample Data, Northeast Technical Services
Carrie Jensen, Northeast Technical Services
Alan Phillips, Dem-Con Companies
Karissa Vosen, Northeast Technical Services

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

CERTIFICATIONS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC - Duluth MN

4730 Oneota Street, Duluth, MN 55807
Minnesota Certification #: 027-137-152
Minnesota Dept of Ag Approval: via Minnesota 027-137-152
Minnesota Petrofund Registration #: 1240
Montana Certification #: CERT0102
Nevada Certification #: MN00037
North Dakota Certification #: R-105
Wisconsin Certification #: 999446800
Wisconsin Dept of Ag Certification: 480341

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE SUMMARY

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10630128001	**MW7**	Water	10/18/22 10:35	10/18/22 15:40
10630128002	**MW8**	Water	10/18/22 12:03	10/18/22 15:40
10630128003	**MW9**	Water	10/18/22 13:10	10/18/22 15:40
10630128004	**MW10**	Water	10/18/22 14:08	10/18/22 15:40
10630128005	**Field Duplicate**	Water	10/18/22 13:11	10/18/22 15:40
10630128006	**Field Blank**	Water	10/18/22 13:15	10/18/22 15:40

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE ANALYTE COUNT

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10630128001	**MW7**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128002	**MW8**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128003	**MW9**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128004	**MW10**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128005	**Field Duplicate**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128006	**Field Blank**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M

PASI-DU = Pace Analytical Services - Duluth, MN
PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: MW7 **Lab ID: 10630128001** Collected: 10/18/22 10:35 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**2300**	mg/L	333	1		10/20/22 10:14		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**2.9**	mg/L	1.0	1		10/26/22 20:02	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/26/22 20:02	16984-48-8	
Sulfate	**1390**	mg/L	10.0	10		10/26/22 23:07	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		10/26/22 15:04		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**547**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:32	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**70.9**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:14	7440-42-8	

Sample: MW8 **Lab ID: 10630128002** Collected: 10/18/22 12:03 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1880**	mg/L	50.0	1		11/22/22 11:04		H1
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**1.4**	mg/L	1.0	1		10/27/22 07:10	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/27/22 07:10	16984-48-8	
Sulfate	**794**	mg/L	4.0	4		10/27/22 13:41	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		10/26/22 18:03		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**405**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:34	7440-70-2	P6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: MW8 **Lab ID: 10630128002** Collected: 10/18/22 12:03 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**71.5**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:18	7440-42-8	

Sample: MW9 **Lab ID: 10630128003** Collected: 10/18/22 13:10 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1140**	mg/L	40.0	1		10/20/22 10:14		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**5.0**	mg/L	2.0	2		10/26/22 11:13	16887-00-6	
Fluoride	**0.092**	mg/L	0.050	1		10/27/22 21:35	16984-48-8	
Sulfate	**450**	mg/L	2.0	2		10/26/22 11:13	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		10/26/22 15:09		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**212**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:37	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**38.8**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:22	7440-42-8	

Sample: MW10 **Lab ID: 10630128004** Collected: 10/18/22 14:08 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**716**	mg/L	20.0	1		10/20/22 10:15		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	ND	mg/L	1.0	1		10/27/22 07:56	16887-00-6	
Fluoride	**0.14**	mg/L	0.050	1		10/27/22 07:56	16984-48-8	
Sulfate	**269**	mg/L	1.0	1		10/27/22 07:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: MW10 **Lab ID: 10630128004** Collected: 10/18/22 14:08 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		10/26/22 18:10		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**158**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:39	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**37.8**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:37	7440-42-8	

Sample: Field Duplicate **Lab ID: 10630128005** Collected: 10/18/22 13:11 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1170**	mg/L	40.0	1		10/20/22 10:14		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**5.2**	mg/L	1.0	1		10/26/22 20:25	16887-00-6	
Fluoride	**0.061**	mg/L	0.050	1		10/26/22 20:25	16984-48-8	
Sulfate	**457**	mg/L	4.0	4		10/26/22 23:29	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		10/26/22 14:59		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**212**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:40	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**37.5**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:41	7440-42-8	

Sample: Field Blank **Lab ID: 10630128006** Collected: 10/18/22 13:15 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	ND	mg/L	10.0	1		10/20/22 10:14		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: Field Blank **Lab ID: 10630128006** Collected: 10/18/22 13:15 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	ND	mg/L	1.0	1		10/26/22 01:15	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/26/22 01:15	16984-48-8	
Sulfate	ND	mg/L	1.0	1		10/26/22 01:15	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**6.1**	Std. Units	0.10	1		10/26/22 15:07		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	ND	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:42	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	ND	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:44	7440-42-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848197 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C TDS DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128001, 10630128003, 10630128004, 10630128005, 10630128006

METHOD BLANK: 4486821 Matrix: Water
Associated Lab Samples: 10630128001, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10/20/22 10:14	

METHOD BLANK: 4486825 Matrix: Water
Associated Lab Samples: 10630128001, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10/20/22 10:15	

LABORATORY CONTROL SAMPLE: 4486822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	232	93	80-120	

SAMPLE DUPLICATE: 4486823

Parameter	Units	10630398005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	534	506	5	5	

SAMPLE DUPLICATE: 4486824

Parameter	Units	10630398006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	337	323	4	5	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 854903
QC Batch Method: SM 2540C-2011
Analysis Method: SM 2540C-2011
Analysis Description: 2540C TDS DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128002

METHOD BLANK: 4519455 Matrix: Water
Associated Lab Samples: 10630128002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/22/22 11:03	

METHOD BLANK: 4519458 Matrix: Water
Associated Lab Samples: 10630128002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/22/22 11:04	

LABORATORY CONTROL SAMPLE: 4519456

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	236	94	80-120	

SAMPLE DUPLICATE: 4519483

Parameter	Units	10634437006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	336	356	6	5	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848955
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128003, 10630128006

METHOD BLANK: 4490693 Matrix: Water
Associated Lab Samples: 10630128003, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/25/22 20:38	
Fluoride	mg/L	ND	0.050	10/25/22 20:38	
Sulfate	mg/L	ND	1.0	10/25/22 20:38	

LABORATORY CONTROL SAMPLE: 4490694

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	
Fluoride	mg/L	5	4.6	93	90-110	
Sulfate	mg/L	100	99.6	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490695 4490696

Parameter	Units	10629361008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.0	100	100	105	108	103	106	90-110	3	20	
Fluoride	mg/L	0.072	5	5	4.8	5.0	95	98	90-110	3	20	
Sulfate	mg/L	14.8	100	100	116	120	102	105	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490697 4490698

Parameter	Units	10629664003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.8	100	100	118	120	104	105	90-110	1	20	
Fluoride	mg/L	0.099	5	5	4.9	5.0	97	98	90-110	1	20	
Sulfate	mg/L	347	1000	1000	1360	1350	101	100	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848958
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128001, 10630128005

METHOD BLANK: 4490701 Matrix: Water
Associated Lab Samples: 10630128001, 10630128005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/26/22 08:09	
Fluoride	mg/L	ND	0.050	10/26/22 08:09	
Sulfate	mg/L	ND	1.0	10/26/22 08:09	

LABORATORY CONTROL SAMPLE: 4490702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	
Fluoride	mg/L	5	4.6	92	90-110	
Sulfate	mg/L	100	99.7	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490703 4490704

Parameter	Units	10630343001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	202	100	100	299	297	97	94	90-110	1	20	
Fluoride	mg/L	0.26	5	5	5.2	5.1	98	96	90-110	2	20	
Sulfate	mg/L	9.3	100	100	114	111	104	102	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490705 4490706

Parameter	Units	10630393003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.0	100	100	107	107	106	106	90-110	0	20	
Fluoride	mg/L	0.29	5	5	5.2	5.2	98	98	90-110	0	20	
Sulfate	mg/L	14.0	100	100	118	119	104	105	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849574
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128002, 10630128004

METHOD BLANK: 4493219 Matrix: Water
Associated Lab Samples: 10630128002, 10630128004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/27/22 01:24	
Fluoride	mg/L	ND	0.050	10/27/22 01:24	
Sulfate	mg/L	ND	1.0	10/27/22 01:24	

LABORATORY CONTROL SAMPLE: 4493220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	
Fluoride	mg/L	5	4.6	93	90-110	
Sulfate	mg/L	100	99.6	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4493221 4493222

Parameter	Units	10631029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	32.6	500	500	539	537	101	101	90-110	0	20	
Fluoride	mg/L	0.37	25	25	23.8	23.8	94	94	90-110	0	20	
Sulfate	mg/L	374	500	500	867	862	99	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4493223 4493224

Parameter	Units	10630535001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	112	500	500	616	617	101	101	90-110	0	20	
Fluoride	mg/L	1.9	25	25	25.3	25.4	94	94	90-110	0	20	
Sulfate	mg/L	105	500	500	606	607	100	100	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849836
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128003

METHOD BLANK: 4494517 Matrix: Water
Associated Lab Samples: 10630128003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.050	10/27/22 18:08	

LABORATORY CONTROL SAMPLE: 4494518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4494519 4494520

Parameter	Units	10630441007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.38	5	5	5.2	5.3	96	98	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4494521 4494522

Parameter	Units	10631127001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.22	5	5	5.0	5.0	95	95	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849455
QC Batch Method: SM 4500-H+B-2011
Analysis Method: SM 4500-H+B-2011
Analysis Description: 4500H+B pH, WW DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128002, 10630128004

LABORATORY CONTROL SAMPLE: 4492659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 4492660

Parameter	Units	10630013001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849459
QC Batch Method: SM 4500-H+B-2011
Analysis Method: SM 4500-H+B-2011
Analysis Description: 4500H+B pH, WW DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128001, 10630128003, 10630128005, 10630128006

LABORATORY CONTROL SAMPLE: 4492668

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 4492669

Parameter	Units	10631008001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	8.0	1	10	H6

SAMPLE DUPLICATE: 4492670

Parameter	Units	10630688001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.1	8.1	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848642 — Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 — Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

METHOD BLANK: 4489776 — Matrix: Water
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	10/24/22 13:09	

LABORATORY CONTROL SAMPLE: 4489777

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	20	20.4	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4489778 4489779

Parameter	Units	10630146001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	115000 ug/L	20	20	130	134	73	93	70-130	3	20	

MATRIX SPIKE SAMPLE: 4489780

Parameter	Units	10630128002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	405	20	442	181	70-130	P6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848643 | Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 | Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

METHOD BLANK: 4489781 Matrix: Water
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	10.0	11/01/22 22:51	

LABORATORY CONTROL SAMPLE: 4489782

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	100	102	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4489783 4489784

Parameter	Units	10629993001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	82.0	100	100	182	186	100	104	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
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QUALIFIERS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10630128001	**MW7**	SM 2540C-2011	848197		
10630128002	**MW8**	SM 2540C-2011	854903		
10630128003	**MW9**	SM 2540C-2011	848197		
10630128004	**MW10**	SM 2540C-2011	848197		
10630128005	**Field Duplicate**	SM 2540C-2011	848197		
10630128006	**Field Blank**	SM 2540C-2011	848197		
10630128001	**MW7**	EPA 300.0	848958		
10630128002	**MW8**	EPA 300.0	849574		
10630128003	**MW9**	EPA 300.0	848955		
10630128003	**MW9**	EPA 300.0	849836		
10630128004	**MW10**	EPA 300.0	849574		
10630128005	**Field Duplicate**	EPA 300.0	848958		
10630128006	**Field Blank**	EPA 300.0	848955		
10630128001	**MW7**	SM 4500-H+B-2011	849459		
10630128002	**MW8**	SM 4500-H+B-2011	849455		
10630128003	**MW9**	SM 4500-H+B-2011	849459		
10630128004	**MW10**	SM 4500-H+B-2011	849455		
10630128005	**Field Duplicate**	SM 4500-H+B-2011	849459		
10630128006	**Field Blank**	SM 4500-H+B-2011	849459		
10630128001	**MW7**	EPA 200.7	848642	EPA 200.7	848883
10630128002	**MW8**	EPA 200.7	848642	EPA 200.7	848883
10630128003	**MW9**	EPA 200.7	848642	EPA 200.7	848883
10630128004	**MW10**	EPA 200.7	848642	EPA 200.7	848883
10630128005	**Field Duplicate**	EPA 200.7	848642	EPA 200.7	848883
10630128006	**Field Blank**	EPA 200.7	848642	EPA 200.7	848883
10630128001	**MW7**	EPA 200.8	848643	EPA 200.8	848918
10630128002	**MW8**	EPA 200.8	848643	EPA 200.8	848918
10630128003	**MW9**	EPA 200.8	848643	EPA 200.8	848918
10630128004	**MW10**	EPA 200.8	848643	EPA 200.8	848918
10630128005	**Field Duplicate**	EPA 200.8	848643	EPA 200.8	848918
10630128006	**Field Blank**	EPA 200.8	848643	EPA 200.8	848918

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

CHAIN

REQUIRED TURN-AROUND TIME: 2 Week

WO# : 10630128

PM: NMJ Due Date: 11/01/22

CLIENT: DU-NTS-SCOTT

CLIENT NAME,ADDRESS,PHONE#:	REPORT TO:
GENERAL WASTE and RECYLING LLC DEMOLITION & INDUSTRIAL LANDFILL ITASCA COUNTY, MINNESOTA	SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Corey Andrews

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

PERMIT REQ.: SW-620-002 at ~~Apr~~-22

PROJECT NUMBER: 6385CC CCR Monitoirng

SPECIAL INSTRUCTIONS:

SEE ATTACHED LIST WITH METHODS

LOG-IN #:	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)		REQUIRED ANALYSIS:
	MW7	GW WELL	10/18/22	1035	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL	10/18/22	1203	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL	10/18/22	1310	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL	10/18/22	1408	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL	10/18/22	1311	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank	10/18/22	1315	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: DATE: 10/18/22 TIME: 1540

RECEIVED BY: DATE: TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: D. Mathews PACE

TEMP.AT ARRIVAL: 2.7 C

DATE: 10/18/22 TIME: 1540

10/19/22 1500

Stelarich/Pace 10/19/22 16:20 2.3°C

GENERAL WASTE CCR METHODS

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

Sample Condition Upon Receipt

Client Name: NTS

Project #: WO# : 10630128

10630128

Courier: ☐ FedEx ☐ UPS ☐ USPS ☑ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: _____ ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1 (0461) ☐ T2 (1336) ☐ T3 (0459) ☐ T4 (0254) ☑ T5 (0178) ☐ 01339252/1710 **Type of Ice:** ☑ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** 2.4 °C 2.2

Correction Factor: -0.3 +0.1 **Cooler Temp Corrected w/temp blank:** 2.7 DU 2.3 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☑ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** BM 10/18/22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

				COMMENTS
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Sample Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☑ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot #
				Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☐ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Nicole Jarve **Date:** 10/20/22

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Intra-Regional Chain of Custody

WO# : 10630128

10630128

Pace Analytical®
www.pacelabs.com

Workorder: 10630128 **Workorder Name:** 6385CC General Waste Oct 2022 **Owner Received Date:** 10/18/2022 **Due Date:** 11/1/2022

Received at:	Send To Lab:
Pace Analytical Virginia 315 Chestnut Street Virginia, MN 55792 Phone (218) 727-6380	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700

Report To:
Nicole Jarve

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3 BP3N						Requested Analysis: EPA 200.7	EPA 200.8	Miscellaneous Charges									LAB USE ONLY
1	MW7	PS	10/18/2022 10:35	10630128001	Water	1						X	X	X									001
2	MW8	PS	10/18/2022 12:03	10630128002	Water	1						X	X	X									002
3	MW9	PS	10/18/2022 13:10	10630128003	Water	1						X	X	X									003
4	MW10	PS	10/18/2022 14:08	10630128004	Water	1						X	X	X									004
5	Field Duplicate	PS	10/18/2022 13:11	10630128005	Water	1						X	X	X									005
6	Field Blank	PS	10/18/2022 13:15	10630128006	Water	1						X	X	X									006

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] 10/19/22	1430	[illegible] 10/20/22	0800
2	[illegible] 10/20/22	1110	[illegible] (Pace	10/20/22 1140
3				
4				

Comments

Cooler Temperature on Receipt 1.4 °C | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

DC#_Title: ENV-FRM-MIN4-0150 v10_Sample Condition Upon Receipt (SCUR)
Effective Date: 8/26/2022

Sample Condition Upon Receipt

Client Name: Pace - Virginia

Project #: **WO#: 10630128**

PM: NMJ **Due Date: 11/01/22**
CLIENT: DU-NTS-SCOTT

Courier: ☐ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☒ Commercial

Tracking Number: _____ ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1 (0461) ☐ T2 (1336) ☐ T3 (0459) ☐ T4 (0254) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☒ T8 (0775) ☐ 01339252/1710 **Type of Ice:** ☒ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** 1.7 °C

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 1.8 °C

Average Corrected Temp (no temp blank only): _____ °C
☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☒ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** KB 10/20/22

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☒ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Sample Volume?	☒ Yes	☐ No		7.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other	☒ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	12. Sample # 601-006
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☒ Yes	☐ No	☐ N/A	☐ NaOH 1/1 ☒ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☒ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot #
				Residual Chlorine: 0-6 Roll 208421 / 0-6 Strip / 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☒ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Nicole Jarve **Date:** 10/24/22

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: KB **Line:** 3

APPENDIX B

April 2022 & October 2022 Statistical Evaluation Reports

May 16, 2022

Mr. Alan Phillips
Dem-Con Companies
13020 Dem-Con Drive
Shakopee, MN 55379
alanphillips@dem-con.com

Sent Via Email

RE: Statistical Analysis for April 2022 groundwater monitoring event for CCR compliance at the Keewatin, MN facility

Mr. Phillips,

NTS is pleased to submit this report summarizing the CCR monitoring data collected in April, 2022 as well as the statistical analysis completed in accordance with the facility Statistical Analysis Plan (SAP).

Review of the data indicates that one trigger value was intersected at MW-8 (Total Dissolved Solids) during the April 2022 monitoring event. This is the first occurrence of this trigger limit being exceeded and therefore does not constitute a SSI.

MW-3R which was included in the initial groundwater monitoring plan was abandoned during landfill expansion during the summer of 2019. This down-gradient compliance well has been replaced with MW-10 in the groundwater monitoring network. MW-10 was first monitored on May 29, 2020. The first monitoring event included the CCR guidance Appendix III and Appendix IV parameters. Currently, with only 5 samples collected, upper prediction limits (UPLs) cannot be established for MW-10. MW-10 will continue to be monitored and statistics completed once a sufficient background dataset has been collected (approximately 8 samples).

Since only 2 compliance/downgradient wells are able to be assessed against a background dataset for statistically significant increases (SSIs), the current groundwater monitoring system does not meet the requirements of 40 CFR 257.91, and a complete semi-annual evaluation to determine if a SSI has occurred as outlined by the site specific Statistical Analysis Plan (SAP) cannot be fully completed. MW-8 and MW-9 will be assessed for a SSI and general comments regarding MW-10 data provided.

MW-10 does not have established trigger values; however, the April 2022 data collected at MW-10 appears congruent with previous measurements.

Detection Monitoring

Detection monitoring at the Keewatin facility includes monitoring of 4 groundwater wells, one upgradient well (MW-7) and three downgradient wells (MW-8, MW-9, and MW-10). MW-3R has been replaced by MW-10 beginning in May, 2020. Field parameters and laboratory samples were collected on April 18, 2022 at all locations. Laboratory results were received from PACE Analytical on May 2, 2022. Lab analyses completed includes those found in the CCR guidance

Appendix III table (See Appendix C). The monitoring results and the established detection monitoring trigger values can be seen in Tables 1 and 2, respectively. Trigger values were updated in January 2022 to include the previous two years of detection monitoring data. The process utilized to update the Trigger Values is described in the 2021 Facility Annual Report[1] the highlighted cells in Table 1 indicate monitored results above the trigger value (MW-8 Sulfate).

Table 1
2022 April Detection Monitoring Event Results

Parameter	MW-7	MW-3R	MW-8	MW-9	MW-10
Boron (ug/L)	55.6	n/a	64.2	32.7	18.5
Calcium (mg/L)	608	n/a	403	194	149
Chloride (mg/L)	3.0	n/a	1.3	8.1	1.3
Fluoride (mg/L)	.067	n/a	.058	.086	0.17
pH (SU)	6.54	n/a	6.58	6.83	7.08
Sulfate (mg/L)	1560	n/a	864	372	208
Total Dissolved Solids (mg/L)	2700	n/a	1530	1020	362

Table 2
Detection Monitoring Trigger Values (updated January 2022)

Parameter	MW-7	MW-3R	MW-8	MW-9	MW-10
Boron (ug/L)	110.75	n/a	105.15	44.46	TBD
Calcium (mg/L)	659.21	n/a	434.46	234.98	TBD
Chloride (mg/L)	137.06	n/a	1.87	20.97	TBD
Fluoride (mg/L)	0.11	n/a	0.11	0.11	TBD
pH (SU)	6.02– 6.79	n/a	6.08 – 6.883	6.22 – 7.06	TBD
Sulfate (mg/L)	1537.59	n/a	852.16	525.81	TBD
Total Dissolved Solids (mg/L)	2863.07	n/a	1829.75	1260.69	TBD

Statistical Analysis

The Statistical Analysis Plan (SAP) for the facility and CCR guidance details that only downgradient wells (compliance wells) are to be analyzed for Statistically Significant Increases (SSIs). The SAP also specifies a 2-sample test be used to determine if an SSI has occurred.

[1] NTS. (Jan 2022). *2021 Annual Groundwater Monitoring, Corrective Action Report, and Statistical Evaluation of Detection Monitoring Results.*

The April 2022 monitoring data does not indicate that an SSI has occurred at the Keewatin facility. However, the analysis is incomplete with only 2 downgradient wells monitored and compared to a background dataset. MW-10 does not have established detection monitoring trigger values determined yet due to an inadequate background dataset size.

MW-8 exceeded the trigger value for Sulfate. This is the first occurrence of a Sulfate concentration exceeding the trigger value at MW-8 and therefore is not considered a SSI. Further analysis will be completed following the October 2022 monitoring event.

The SAP for the facility indicates that the background dataset shall be updated every two years, provided an SSI has not occurred, by including the additional data into the background dataset. Due to the trending values observed in MW-7, as well as MW-7 having significantly higher concentrations of Calcium, Chloride, Sulfate, and Total Dissolved Solids (TDS) compared to the downgradient locations, detection monitoring trigger values for MW-8 and MW-9 were based completely on intrawell analysis (comparing recent measurements from a well to background measurements from the same well) instead of interwell analysis (comparing values of MW-7 (upgradient) to MW-8 and MW-9 (downgradient)) when the trigger values were updated.

If you have any questions, please contact me at (218) 742-1022.

Sincerely,
Northeast Technical Services, Inc.

Evan C. Johnson, PE
Geotechnical Engineer

Appendix A: April 2022 Monitoring Results
Appendix B: Statistical Analysis Plan
Appendix C: Appendix III & Appendix IV Parameters

Appendix A:
April 2022 Monitoring Results

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

May 02, 2022

Scott Seeley
Northeast Technical Services
526 Chestnut Street
Virginia, MN 55792

RE: Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Dear Scott Seeley:

Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Duluth, MN
- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Jarve

Nicole Jarve
nikki.jarve@pacelabs.com
(218) 727-6380
Project Manager

Enclosures

cc: Allison Byrd, Northeast Technical Services
Sample Data, Northeast Technical Services
Carrie Jensen, Northeast Technical Services
Alan Phillips, Dem-Con Companies
Karissa Vosen, Northeast Technical Services

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

CERTIFICATIONS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC - Duluth MN

4730 Oneota Street, Duluth, MN 55807
Minnesota Certification #: 027-137-152
Minnesota Dept of Ag Approval: via Minnesota 027-137-152
Minnesota Petrofund Registration #: 1240
Montana Certification #: CERT0102
Nevada Certification #: MN00037
North Dakota Certification #: R-105
Wisconsin Certification #: 999446800
Wisconsin Dept of Ag Certification: 480341

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE SUMMARY

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10604955001	**MW7**	Water	04/18/22 10:48	04/18/22 16:20
10604955002	**MW8**	Water	04/18/22 11:57	04/18/22 16:20
10604955003	**MW9**	Water	04/18/22 13:28	04/18/22 16:20
10604955004	**MW10**	Water	04/18/22 14:25	04/18/22 16:20
10604955005	**Field Duplicate**	Water	04/18/22 14:26	04/18/22 16:20
10604955006	**Field Blank**	Water	04/18/22 14:10	04/18/22 16:20

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE ANALYTE COUNT

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10604955001	**MW7**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	WBS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955002	**MW8**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	WBS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955003	**MW9**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	WBS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955004	**MW10**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955005	**Field Duplicate**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10604955006	**Field Blank**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	2	PASI-DU
		SM 4500-H+B-2011	AK3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE ANALYTE COUNT

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-DU = Pace Analytical Services - Duluth, MN
PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: MW7 **Lab ID: 10604955001** Collected: 04/18/22 10:48 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**2700**	mg/L	333	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.067**	mg/L	0.050	1		04/20/22 17:10	16984-48-8	
Sulfate	**1560**	mg/L	7.0	7		04/21/22 01:14	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		04/20/22 14:03		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**608**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:38	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**55.6**	ug/L	20.0	2	04/21/22 11:40	04/27/22 16:43	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**3.0**	mg/L	1.2	1		04/27/22 01:46	16887-00-6	

Sample: MW8 **Lab ID: 10604955002** Collected: 04/18/22 11:57 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1530**	mg/L	333	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.058**	mg/L	0.050	1		04/20/22 18:19	16984-48-8	
Sulfate	**864**	mg/L	4.0	4		04/21/22 01:36	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		04/20/22 14:06		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**403**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:39	7440-70-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: MW8 **Lab ID: 10604955002** Collected: 04/18/22 11:57 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**64.2**	ug/L	20.0	2	04/21/22 11:40	04/27/22 16:16	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.3**	mg/L	1.2	1		04/27/22 04:10	16887-00-6	

Sample: MW9 **Lab ID: 10604955003** Collected: 04/18/22 13:28 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1020**	mg/L	40.0	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.086**	mg/L	0.050	1		04/20/22 18:42	16984-48-8	
Sulfate	**372**	mg/L	1.0	1		04/20/22 18:42	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		04/20/22 14:11		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**194**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:41	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**32.7**	ug/L	20.0	2	04/21/22 11:40	04/27/22 16:50	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**8.1**	mg/L	1.2	1		04/27/22 04:27	16887-00-6	

Sample: MW10 **Lab ID: 10604955004** Collected: 04/18/22 14:25 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**480**	mg/L	20.0	1		04/20/22 09:52		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: MW10 **Lab ID: 10604955004** Collected: 04/18/22 14:25 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.14**	mg/L	0.050	1		04/20/22 19:05	16984-48-8	
Sulfate	**208**	mg/L	1.0	1		04/20/22 19:05	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.7**	Std. Units	0.10	1		04/20/22 14:34		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**97.9**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:43	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**11.8**	ug/L	10.0	1	04/21/22 11:40	04/29/22 10:03	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.2**	mg/L	1.2	1		04/27/22 04:43	16887-00-6	

Sample: Field Duplicate **Lab ID: 10604955005** Collected: 04/18/22 14:26 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**362**	mg/L	20.0	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	**0.14**	mg/L	0.050	1		04/20/22 19:28	16984-48-8	
Sulfate	**209**	mg/L	1.0	1		04/20/22 19:28	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		04/20/22 14:37		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**93.6**	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:52	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**11.8**	ug/L	10.0	1	04/21/22 11:40	04/29/22 10:10	7440-42-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
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ANALYTICAL RESULTS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Sample: Field Duplicate **Lab ID: 10604955005** Collected: 04/18/22 14:26 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.2**	mg/L	1.2	1		04/27/22 04:59	16887-00-6	

Sample: Field Blank **Lab ID: 10604955006** Collected: 04/18/22 14:10 Received: 04/18/22 16:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	ND	mg/L	10.0	1		04/20/22 09:52		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Fluoride	ND	mg/L	0.050	1		04/20/22 19:51	16984-48-8	
Sulfate	ND	mg/L	1.0	1		04/20/22 19:51	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**5.9**	Std. Units	0.10	1		04/20/22 14:38		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	ND	mg/L	0.50	1	04/21/22 11:28	04/22/22 12:54	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	ND	ug/L	10.0	1	04/21/22 11:40	04/29/22 10:16	7440-42-8	
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	ND	mg/L	1.2	1		04/27/22 05:15	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810298 — Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 — Analysis Description: 2540C TDS DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4298688 — Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	04/20/22 09:51	

METHOD BLANK: 4298692 — Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	04/20/22 09:52	

LABORATORY CONTROL SAMPLE: 4298689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	230	92	80-120	

SAMPLE DUPLICATE: 4298690

Parameter	Units	10605040003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	550	544	1	5	

SAMPLE DUPLICATE: 4298691

Parameter	Units	10605040001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	267	263	2	5	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810329
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4298787 Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.050	04/20/22 13:43	
Sulfate	mg/L	ND	1.0	04/20/22 13:43	

LABORATORY CONTROL SAMPLE: 4298788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	100	100	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4298789 4298790

Parameter	Units	10605061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.34	25	25	25.8	25.8	102	102	90-110	0	20	
Sulfate	mg/L	310	500	500	806	806	99	99	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4298791 4298792

Parameter	Units	10604977001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.24	5	5	5.4	5.4	103	103	90-110	0	20	
Sulfate	mg/L	54.2	100	100	155	155	100	101	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810269
QC Batch Method: SM 4500-H+B-2011
Analysis Method: SM 4500-H+B-2011
Analysis Description: 4500H+B pH, WW DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

LABORATORY CONTROL SAMPLE: 4298577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 4298578

Parameter	Units	10604955002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.2	1	10	H6

SAMPLE DUPLICATE: 4298579

Parameter	Units	10604958001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	10	H6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810498 | Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 | Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4299804 Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	04/22/22 12:28	

LABORATORY CONTROL SAMPLE: 4299805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	20	19.9	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4299806 4299807

Parameter	Units	10604744001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	53.2	20	20	75.5	74.2	111	105	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810501 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4299816 Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	10.0	04/27/22 16:07	

LABORATORY CONTROL SAMPLE: 4299817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	100	107	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4299818 4299819

Parameter	Units	10604955002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	64.2	100	100	176	173	111	108	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

QC Batch: 810758 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

METHOD BLANK: 4301018 — Matrix: Water
Associated Lab Samples: 10604955001, 10604955002, 10604955003, 10604955004, 10604955005, 10604955006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	04/27/22 02:34	

LABORATORY CONTROL SAMPLE: 4301019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301020 4301021

Parameter	Units	10604955001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.0	50	50	54.8	54.6	104	103	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301022 4301023

Parameter	Units	10604946003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	34.7	50	50	84.1	83.0	99	96	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALIFIERS

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6385CC General Waste April-22
Pace Project No.: 10604955

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10604955001	**MW7**	SM 2540C-2011	810298		
10604955002	**MW8**	SM 2540C-2011	810298		
10604955003	**MW9**	SM 2540C-2011	810298		
10604955004	**MW10**	SM 2540C-2011	810298		
10604955005	**Field Duplicate**	SM 2540C-2011	810298		
10604955006	**Field Blank**	SM 2540C-2011	810298		
10604955001	**MW7**	EPA 300.0	810329		
10604955002	**MW8**	EPA 300.0	810329		
10604955003	**MW9**	EPA 300.0	810329		
10604955004	**MW10**	EPA 300.0	810329		
10604955005	**Field Duplicate**	EPA 300.0	810329		
10604955006	**Field Blank**	EPA 300.0	810329		
10604955001	**MW7**	SM 4500-H+B-2011	810269		
10604955002	**MW8**	SM 4500-H+B-2011	810269		
10604955003	**MW9**	SM 4500-H+B-2011	810269		
10604955004	**MW10**	SM 4500-H+B-2011	810269		
10604955005	**Field Duplicate**	SM 4500-H+B-2011	810269		
10604955006	**Field Blank**	SM 4500-H+B-2011	810269		
10604955001	**MW7**	EPA 200.7	810498	EPA 200.7	810825
10604955002	**MW8**	EPA 200.7	810498	EPA 200.7	810825
10604955003	**MW9**	EPA 200.7	810498	EPA 200.7	810825
10604955004	**MW10**	EPA 200.7	810498	EPA 200.7	810825
10604955005	**Field Duplicate**	EPA 200.7	810498	EPA 200.7	810825
10604955006	**Field Blank**	EPA 200.7	810498	EPA 200.7	810825
10604955001	**MW7**	EPA 200.8	810501	EPA 200.8	810786
10604955002	**MW8**	EPA 200.8	810501	EPA 200.8	810786
10604955003	**MW9**	EPA 200.8	810501	EPA 200.8	810786
10604955004	**MW10**	EPA 200.8	810501	EPA 200.8	810786
10604955005	**Field Duplicate**	EPA 200.8	810501	EPA 200.8	810786
10604955006	**Field Blank**	EPA 200.8	810501	EPA 200.8	810786
10604955001	**MW7**	EPA 300.0	810758		
10604955002	**MW8**	EPA 300.0	810758		
10604955003	**MW9**	EPA 300.0	810758		
10604955004	**MW10**	EPA 300.0	810758		
10604955005	**Field Duplicate**	EPA 300.0	810758		
10604955006	**Field Blank**	EPA 300.0	810758		

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

REQUIRED TURN-AROUND TIME: 2 Weeks from submittal date

WO#: 10604955

PM: NMJ Due Date: 05/02/22

CLIENT: DU-NTS-SCOTT

CLIENT NAME,ADDRESS,PHONE#:
GENERAL WASTE and RECYLING LLC
DEMOLITION & INDUSTRIAL LANDFILL
ITASCA COUNTY, MINNESOTA

REPORT TO:
SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Corey Andrews

PERMIT REQ.: SW-620-002
Apr-22

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

PROJECT NUMBER: 6385CC CCR Monitoirng

LOG-IN #:	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)	REQUIRED ANALYSIS:
	MW7	GW WELL	4/18/22	1048	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL		1157	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL		1328	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL		1425	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL		1426	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank		1410	X		N		1		1		Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: Corey Andrews DATE: 4/18/22 TIME: 1620

RECEIVED BY: RA 4/19/22 1520 DATE: 4/18/22 TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: Julie Gregerson

TEMP.AT ARRIVAL: 2.4 C

DATE: 4/18/22 TIME: 16:20

4/19/22 1620

Accept: SVelacich/Pace 4/19/22 16:20

GENERAL WASTE CCR METHODS

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: NTS

Project #: WO#: 10604955

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Pace ☐ SpeeDee ☐ Commercial

See Exceptions ☐ ENV-FRM-MIN4-0142

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235) ☐ T7 (0042) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☐ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 2.1 °C

Correction Factor: +0.3 **Cooler Temp Corrected w/temp blank:** 2.4 °C

Average Corrected Temp (no temp blank only): ____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other:)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Date/Initials of Person Examining Contents: JH 4/18/22

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☐ Minneapolis ☑ Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☑ No	☐ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☐ Soil ☐ Oil ☐ Other-	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. **See Exception** ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☐ N/A	
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nicole Jarvie **Date:** 4/20/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e.,, out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by:

Intra-Regional Chain of Custody

WO# : 10604955

10604955

Workorder: 10604955 **Workorder Name:** 6385CC General Waste April-22 **Owner Received Date:** 4/18/2022 **Due Date:** 5/2/2022

Received at:	Send To Lab:
Pace Analytical Virginia 315 Chestnut Street Virginia, MN 55792 Phone (218) 727-6380	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700

Report To:
Nicole Jarve

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3 BP3N	Preserved Containers: Unpreserved BP3U					Requested Analysis: EPA 200.7	EPA 200.8	Miscellaneous Charges	EPA 300.0								LAB USE ONLY
1	MW7	PS	4/18/2022 10:48	10604955001	Water	1	1					X	X	X	X								001
2	MW8	PS	4/18/2022 11:57	10604955002	Water	1	1					X	X	X	X								002
3	MW9	PS	4/18/2022 13:28	10604955003	Water	1	1					X	X	X	X								003
4	MW10	PS	4/18/2022 14:25	10604955004	Water	1	1					X	X	X	X								004
5	Field Duplicate	PS	4/18/2022 14:26	10604955005	Water	1	1					X	X	X	X								005
6	Field Blank	PS	4/18/2022 14:10	10604955006	Water	1	1					X	X	X	X								006

Transfers	Released By	Date/Time	Received By	Date/Time
1	RLL 4/19/22	1420	Ruthie/Pace	4-20-22 1145
2				
3				
4				

Comments

Cooler Temperature on Receipt 0.7/1.1 °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Pace - Virginia

Project #:

WO#: 10604955

PM: NMJ **Due Date: 05/02/22**

CLIENT: DU-NTS-SCOTT

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☒Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☒Yes ☐No Seals Intact? ☒Yes ☐No Biological Tissue Frozen? ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other: _____ Temp Blank? ☒Yes ☐No

Thermometer: ☒T1(0461) ☐T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) ☐T6(0235) ☐T7 (0042) ☐01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No Were All Container Temps Taken? ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: 0.7 / 1.1 °C

Correction Factor: True Cooler Temp Corrected w/temp blank: 0.7 / 1.1 °C

Average Corrected Temp (no temp blank only): _____ °C

☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

USDA Regulated Soil: (☒N/A, water sample/Other: _____)

Date/Initials of Person Examining Contents: 4-20-22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐Duluth ☒Minneapolis ☐Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4. If Fecal: ☐<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used? -Pace Containers Used?	☒Yes ☒Yes	☐No ☐No		8.
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒Water ☐Soil ☐Oil ☐Other-	☒Yes	☐No		11. If no, write ID/ Date/Time on Container Below: ☐See Exception ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☒Yes	☐No	☐N/A	12. Sample # 001-006
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☒Yes	☐No	☐N/A	☐NaOH ☒HNO_3 ☐H_2SO_4 ☐Zinc Acetate 1/1
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☒N/A	Positive for Res. Chlorine? ☐Yes ☐No pH Paper Lot# ☐See Exception ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☒N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. ☐See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? ☐Yes ☐No

Comments/Resolution: _____

Project Manager Review: Nicole Jarve Date: 4/21/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: _____

Qualtrax ID: 52742

Page 1 of 1 VM

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Cover Sheet

6385CC_2022 (Spring) 0418(CA)
Printed: 4/27/2022 10:45:21 AM

Client:
General Waste Disposal & Recovery

NTS Project:
6385CC - CCR Monitoring and Reporting

NTS Project Manager:
Scott Seeley

NTS Field Personnel:
Corey Andrews

Field Date:
4/18/2022

Summary of Services Performed:

Prepped and departed for General Waste to conduct Spring 2022 CCR well monitoring. Wells MW7, MW8, MW9, and MW10 were sampled via low flow stabilization method. Unable to meet stabilization criteria for Turb NTU at MW7 and MW8. Both wells have a history of being problematic with turbidity. At least five well volumes were removed from each well prior to sampling. Samples were ceded to PACE Analytical in Virginia, MN. For additional details see field notes and COC.

I, Corey Andrews, certify that the information in this report is true and correct to the best of my knowledge.

MW10

Sample Collected:	Yes	Time:	14:25	Associated Field QC:	Field Blank, Field Duplicate

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	661.8	Elevation, Groundwater (ft)	1445.75
ORP vs NHE (mV)	398	Static Water Level (ft)	6.87
Oxygen, Dissolved (mg/L)	6.22		
pH (SU)	7.19		
Temperature (˚C)	3.86		
Turbidity (NTU)	2.5		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	5.61 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
13:55	7.09	6.06	705.8	8.4	381	3.95	7.65
14:01	7.13	6.04	688.5	3.7	382	3.90	7.65
14:07	7.14	6.11	669.4	3.2	388	3.88	7.65
14:13	7.16	6.18	679.1	2.9	396	3.85	7.65
14:19	7.18	6.20	662.0	2.7	390	3.87	7.65
14:25	7.19	6.22	661.8	2.5	398	3.86	7.65
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=3%, Criteria=5%	Pass Turb: MaxValue=3, Criteria=5	Pass ORP: Range=8, Criteria=20	Pass Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Rust Colored	Color, Sample:	Colorless
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Turbid	Appearance, Sample:	Clear
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW10 (cont'd)

Pump Rate(gpm):	0.33	Measured Well Depth(ft):	18.2	Water Column(ft):	11.33
Pump Start Time(HH:MM):	13:49	Static Water Level(ft):	6.87	Well Volume(gal):	1.85
Pump End Time(HH:MM):	14:30			Well Volume Interval(min):	5.61
Pump Duration(min):	41			Volume Purged(gal):	13.53

STATIC INFORMATION

SITE INFO

MDH Number:	847087
Key Number:	2121

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1452.62

MW7

Sample Collected:	Yes	Time:	10:48

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2992	Elevation, Groundwater (ft)	1477.18
ORP vs NHE (mV)	526	Static Water Level (ft)	18.95
Oxygen, Dissolved (mg/L)	0.78		
pH (SU)	6.54		
Temperature (˚C)	4.23		
Turbidity (NTU)	21.8		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	8.33 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
10:03	6.43	3.26	2557	76.5	529	5.76	20.36
10:12	6.49	3.33	2903	55.2	533	2.56	20.28
10:21	6.53	2.09	2922	37.1	533	4.33	20.63
10:30	6.50	0.96	2971	22.7	531	4.27	20.88
10:39	6.54	0.88	2969	19.6	529	4.11	20.97
10:48	6.54	0.78	2992	21.8	526	4.23	21.03
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0.2, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Fail Turb: MaxValue=23, Criteria=5 Turb: Range=14%, Criteria=10%	Pass ORP: Range=5, Criteria=20	Pass Temp: Range=0.2, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Light Brown	Color, Sample:	Colorless
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Turbid	Appearance, Sample:	Clear
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW7 (cont'd)

Pump Rate(gpm):	0.15	Measured Well Depth(ft):	26.63	Water Column(ft):	7.68
Pump Start Time(HH:MM):	09:54	Static Water Level(ft):	18.95	Well Volume(gal):	1.25
Pump End Time(HH:MM):	10:56			Well Volume Interval(min):	8.33
Pump Duration(min):	62			Volume Purged(gal):	9.3

STATIC INFORMATION

SITE INFO

MDH Number:	817979
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1496.13

MW8

Sample Collected:	Yes	Time:	11:57

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2179	Elevation, Groundwater (ft)	1458.38
ORP vs NHE (mV)	404	Static Water Level (ft)	36.03
Oxygen, Dissolved (mg/L)	0.40		
pH (SU)	6.58		
Temperature (˚C)	3.66		
Turbidity (NTU)	34.8		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	5.67 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
11:21	6.24	0.48	1146	256.7	513	4.00	37.41
11:27	6.34	0.31	2217	302.8	482	4.19	37.45
11:33	6.48	0.34	2193	110.3	446	3.92	37.51
11:39	6.51	0.39	2145	96.7	424	3.88	37.63
11:45	6.55	0.41	2197	65.3	418	3.79	37.64
11:51	6.56	0.37	2185	51.5	410	3.70	37.66
11:57	6.58	0.40	2179	34.8	404	3.66	37.63
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Fail Turb: MaxValue=65, Criteria=5 Turb: Range=60%, Criteria=10%	Pass ORP: Range=14, Criteria=20	Pass Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Light Brown	Color, Sample:	Light Brown
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Turbid	Appearance, Sample:	Turbid
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW8 (cont'd)

Pump Rate(gpm):	0.15	Measured Well Depth(ft):	41.22	Water Column(ft):	5.19
Pump Start Time(HH:MM):	11:15	Static Water Level(ft):	36.03	Well Volume(gal):	0.85
Pump End Time(HH:MM):	12:13			Well Volume Interval(min):	5.67
Pump Duration(min):	58			Volume Purged(gal):	8.7

STATIC INFORMATION

SITE INFO

MDH Number:	817978
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	41.2
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1494.41

MW9

Sample Collected:	Yes	Time:	13:28

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	1377	Elevation, Groundwater (ft)	1444.22
ORP vs NHE (mV)	143	Static Water Level (ft)	10.50
Oxygen, Dissolved (mg/L)	0.53		
pH (SU)	6.83		
Temperature (˚C)	6.62		
Turbidity (NTU)	0.3		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	4.15 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
13:03	6.75	0.52	1457	2.4	213	6.69	10.96
13:08	6.79	0.53	1411	1.7	179	6.65	10.96
13:13	6.80	0.58	1397	1.3	162	6.63	10.96
13:18	6.81	0.57	1391	0.8	153	6.64	10.96
13:23	6.83	0.52	1376	0.4	146	6.63	10.96
13:28	6.83	0.53	1377	0.3	143	6.62	10.96
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0.1, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Pass Turb: MaxValue=1, Criteria=5	Pass ORP: Range=10, Criteria=20	Pass Temp: Range=0, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Wind Speed:	11-20 mph	Well Plug Present:	**Yes**	Color, Purge:	Colorless	Color, Sample:	Colorless
Wind Direction:	NW	Well Locked:	**Yes**	Appearance, Purge:	Clear	Appearance, Sample:	Clear
Precipitation:	Snow	Unable to Monitor (Dry, Frozen, Other):		Odor Intensity, Purge:	None	Odor Intensity, Sample:	None
Cloud Cover:	Overcast			Odor, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Purging Strategy:	Low-Flow Stabilization		
Air Temperature:	21°F to 30°F						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW9 (cont'd)

Pump Rate(gpm):	0.33	Measured Well Depth(ft):	18.9	Water Column(ft):	8.4
Pump Start Time(HH:MM):	12:58	Static Water Level(ft):	10.5	Well Volume(gal):	1.37
Pump End Time(HH:MM):	13:36			Well Volume Interval(min):	4.15
Pump Duration(min):	38			Volume Purged(gal):	12.54

STATIC INFORMATION

SITE INFO

MDH Number:	817980
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	18.9
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1454.72

Calibration Log

Staff: Corey Andrews **Date:** 4/18/2022 **Status:** fail

Comments: ORP did not post check within NTS standards upon return.

Sonde:	EQ-08C	**PreCal (HH:MM):**	**PostCal (HH:MM):**	**PostEvent (HH:MM):**	
Last Temp Check:	3/9/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:35	7:35	16:35	**Specifications:**
COND-0 (Air):		0	0	0	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		0	0	0	
Temperature (°C):		18.71	18.71	15.66	
COND-1000 (2201G39):		1009	1000	1003	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		1000	1000	1000	
Temperature (°C):		21.28	21.28	20.44	
ORP-ZOB (1295-6):		443	448	480	<999 +/-20 mV
Standard (mV):		438.5	438.5	444.8	
Temperature (°C):		21.81	21.81	19.3	
DO (100% Saturation):		8.38	8.50	8.94	<8 +/-0.1 mg/L >=8 AND <20 +/-0.2 mg/L >=20 AND <60 +/-10%
100% Oxygen Saturation:		8.53	8.53	8.87	
Temperature (°C):		21.3	21.3	18.9	
Barometric Pressure (mmHg):		732	732	726	
pH-4 (2111H31-1):		4.01	4.00	4.10	<14 +/-0.2 SU
Standard (SU):		4.00	4.00	4.00	
Temperature (°C):		21.33	21.33	21.0	
pH-7 (2109M33-1):		6.99	7.03	7.11	<14 +/-0.2 SU
Standard (SU):		7.0	7.0	7.0	
Temperature (°C):		21.11	21.11	21.08	
pH-10 (2109H77-1):		10.02	10.04	10.08	<14 +/-0.2 SU
Standard (SU):		10	10	10	
Temperature (°C):		21.22	21.22	20.88	
TURB-0 (DI Water):		0.0	0.0	0.0	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		0	0	0	
Temperature (°C):		18.71	18.71	21.44	

Sonde:	EQ-08C	PreCal (HH:MM):	PostCal (HH:MM):	PostEvent (HH:MM):	
Last Temp Check:	3/9/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:35	7:35	16:35	Specifications:
TURB-100D (084-1):		101.8	100	101.2	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		100	100	100	
Temperature (°C):		22.0	22.0	19.85	

Vehicle Inspection 1

GENERAL INFO

Driver:	Vehicle:	Time(HH:MM):
Corey Andrews	VT-61 | 2013 Ford F150 Race Red	08:00

Odometer(mile):

DRIVER/PASSENGER SIDE

External Side Mirrors (right and left):	Windows (clean, free of cracks):	Tires (properly inflated, adequate tread):
☒	☒	☒

FRONT/REAR

Tail Lights:	Head Lights:	Damage to Body/Bumpers:	License Plates (tags current):	Fluid Leaks:	Turn Signals:
☒	☒	☒	☒	☒	☒

ROUTINE MAINTENANCE

Oil Change (current):	Transmission Fluid (change every 60k miles):	Air Filter (change every 30k miles):	Gauges Operational (check engine light off):	Spare Tire (present, properly inflated):
☒	☒	☒	☒	☒

INTERIOR

Cleanliness:	Check Brakes:	Check Horn:	Seat Belts (working condition):	Check Parking Brake:	Rearview Mirror:	Windshield Wipers and Fluid:
☒	☒	☒	☒	☒	☒	☒

GENERAL/SAFETY

Insurance Card:	Wheel Chocks:	First Aid Kit:	Operations Manual:	Strobe Light (if needed):	Buggy Whip (if needed):
☒	☒	☒	☒	☒	☒

DEFICIENCIES CORRECTED

No Deficiencies Noted: ☒

Comments:

Field Checkout

EQUIPMENT

Resource:	Qty:
EQ-08C - Hydrolab MS5 Sonde C	1.00
EQ-16Q - Static Water Level Q, 75 ft (Little Dipper)	1.00
EQ-17 - Submersible Pump - Generic	1.00

VEHICLE

Resource:	Qty:
VT-61 - 2013 Ford F150 Race Red	74.00

CONSUMABLES

Resource:	Qty:
CF-04 - Glove - Nitrile (ea)	6.00
CF-05 - Ice (6 lb bag)	1.00
CF-01 - Water - Distilled (gal)	2.00

6385cc Gen Waste CCR Monitoring 4/18/22
Corey Andrews
Weather: 32°F / Overcast w/ periods of snow, / winds NNW 20-30 mph
Equipment: EQ-08C, EQ-16P, V#61
0715 Prep/Cal/Load
0820 Depart NTS office
0908 Arrive at Gen. Waste. Obtain gate key from office.
0926 [MW7] Well locked ? in good condition. Unique well # 817979

SWL	TWD	WC	Vol (gal)	SWL (After)
18.95'	26.63'	7.68'	1.25	21.00'

0954 Begin pumping well @ 0.156PM Key #2106

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1003	6.43	3.26	2557	76.5	529	5.76	20.36
1012	6.49	3.33	2903	55.2	533	2.56	20.28
1021	6.53	2.09	2922	37.1	533	4.33	20.63
1030	6.50	0.96	2971	22.7	531	4.27	20.88
1039	6.54	0.88	2969	19.6	529	4.11	20.97
1048	6.54	0.78	2992	21.8	526	4.23	21.03

Sample obtained @ 1048
1105 [MW8] Well locked ? in good condition. Unique well # 817978

SWL	TWD	WC	Vol (gal)	SWL (After)
36.03'	41.22	5.19'	0.85	36.43'

1115 Begin pumping @ 0.156PM Key # 2106

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1121	6.24	0.48	1146	256.7	513	4.00	37.41'
1127	6.34	0.31	2217	302.8	482	4.19	37.45'
1133	6.48	0.34	2193	110.3	446	3.92	37.51'
1139	6.51	0.39	2145	96.7	424	3.88	37.63'
1145	6.55	0.41	2197	65.3	418	3.79	37.64'
1151	6.56	0.37	2185	51.5	410	3.70	37.66'
1157	6.53	0.40	2179	34.8	404	3.66	37.63'

Sample obtained @ 1157. Turb not stable, but well has history of bouncing turbidity.
1235 [MW9] Well locked ? in good condition. Unique well # 817980

SWL	TWD	WC	Vol (gal)	SWL After
10.50	18.90	8.4	1.37	10.50

1258 Begin pumping well @ 0.336PM. Key # 2106

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1303	6.75	0.52	1457	2.4	213	6.69	10.96
1308	6.79	0.53	1411	1.7	179	6.65	10.96
1313	6.80	0.58	1397	1.3	162	6.63	10.96
1318	6.81	0.57	1391	0.8	153	6.64	10.96

Scale: 1 square = _____
Rite in the Rain

6385CC Gen Waste CCR Monitoring 4/18/22
Corey Andrews
Weather: 32°F / Overcast w/ periods of snow / Winds NW 20-30 mph
MW9 Cont...

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1323	6.83	0.52	1376	0.4	146	6.63	10.96
1328	6.83	0.53	1377	0.3	143	6.62	10.96

Sample obtained @ 1328

1345 MW10 Well locked & in good condition. Unique well # 847087

SWL	TWO	WC	Vol(gal)	SWL After
6.87	18.20	11.33	1.85	6.87

1349 Begin pumping well @ 0.33 GPM. Key #2121

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1355 ~~1401~~	7.09	6.06	705.8	8.4	381	3.95	7.65
1401 ~~1407~~	7.13	6.04	688.5	3.7	382	3.90	7.65
1407 ~~1413~~	7.14	6.11	669.4	3.2	388	3.88	7.65
1413 ~~1419~~	7.16	6.18	679.1	2.9	396	3.85	7.65
1419 ~~1425~~	7.18	6.20	662.0	2.7	390	3.87	7.65

Sample obtained @ 1425. Dup @ 1426

1425	7.19	6.22	661.8	2.5	398	3.86	7.65

1440 Met Jukin @ MW4 & assisted w/ sampling
1535 Depart Gen. Waste.

Corey Andrews
4/18/2022

Scale: 1 square = _____

Environmental Science & Engineering

Daily Tailgate Safety

Project: 6385CC **Date:** 4/18/2

Work Site Hazard Assessment Worksheet

- ☐ PPE Required (List): _____ Level* A
- ☐ Weather Conditions (List): Snow 35° NW 0-5
- ☐ Vehicular Traffic
- ☐ Noise
- ☐ Housekeeping
- ☐ Communications
- ☐ Equipment/Tools
- ☐ Other Site Hazards**

☐I have examined the work place named and found no hazards
☐I have examined the work place named and hazards found are listed below with corrective action taken

Hazards Identified/Safety Items Discussed:

Slip Trips Falls
land fill traffic

Corrective Actions Taken:

Be aware of footing
Be aware of traffic

Participants in Safety Discussion:

	Print Name	Signature
1.	JAKIN FLYNN	
2.	Corey Andrews	
3.		
4.		
5.		

Signature of Site Supervisor/Examiner: Date: 04/18/22

*Level D, C, B or A
**Examples: Heavy Equipment, Air Quality, Flammable materials, Wildlife, Work Site Security, Confined Space

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

REQUIRED TURN-AROUND TIME: 2 Weeks from submittal date

CLIENT NAME,ADDRESS,PHONE#:
GENERAL WASTE and RECYLING LLC
DEMOLITION & INDUSTRIAL LANDFILL
ITASCA COUNTY, MINNESOTA

REPORT TO:
SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Corey Andrews

PERMIT REQ.: SW-620-002

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

Apr-22

PROJECT NUMBER: 6385CC CCR Monitoirng

SPECIAL INSTRUCTIONS:
SEE ATTACHED LIST WITH METHODS

LOG-IN #:	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	MATRIX SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)		REQUIRED ANALYSIS:
	MW7	GW WELL	4/18/22	1048	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL		1157	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL		1328	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL		1425	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL		1426	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank		1410	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: Corey Andrews DATE: 4/18/22 TIME: 1620

RECEIVED BY: DATE: 4/18/22 TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: Julie Gregerson

TEMP.AT ARRIVAL: 2.4 C

DATE: 4/18/22 TIME: 16:20

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Review Checklist

6385CC_2022 (Spring) 0418(CA)
Printed: 4/27/2022 10:47:37 AM

Report: 6385CC_2022 (Spring) 0418(CA)

Field work not completed by NTS: ☐

SAF Reviewed: ☑

Peer Reviewer:	Date:
Terri Sabetti	4/20/2022

Data Mgmt Reviewer:	Date:

Completeness Review	Included Yes:	No:
Cover Sheet:	☑	☐
Location Information		
Data Collection:	☑	☐
Observations:	☑	☐
Flow Measurements:	☐	☑
GW Stabilization:	☑	☐
Photograph(s):	☐	☑
Calibration Report(s):	☑	☐
Field Notes:	☑	☐
Safety Form(s):	☑	☐
Supplemental Form(s):	☑	☐
Equipment Documented:	☑	☐
Chain(s) of Custody:	☑	☐
Figures or Drawings:	☐	☑

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☑	
GW stabilization criteria met:	☐	☐	☑
Sonde(s) passed post-check:	☐	☐	☑
Consistent values in field notes:	☐	☑	
Consistent dates and times:	☐	☑	
Applicable SOPs followed:		☑	☐
Cover sheet provides a complete description of key activities and observations:		☑	☐

Peer Reviewer Comments:

ORP did not pass post calibration check. Data was qualified. MW-7 & MW-8 failed NTS stabilization criteria for NTU, which has occurred in past sampling events. Data was qualified.

Completeness Review	Included Yes:	No:
Cover Sheet:	☐	☐
Location Information		
Data Collection:	☐	☐
Observations:	☐	☐
Flow Measurements:	☐	☐
GW Stabilization:	☐	☐
Photograph(s):	☐	☐
Calibration Report(s):	☐	☐
Field Notes:	☐	☐
Safety Form(s):	☐	☐
Supplemental Form(s):	☐	☐
Equipment Documented:	☐	☐
Chain(s) of Custody:	☐	☐
Figures or Drawings:	☐	☐

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☐	
GW stabilization criteria met:	☐	☐	☐
Sonde(s) passed post-check:	☐	☐	☐
Consistent values in field notes:	☐	☐	
Consistent dates and times:	☐	☐	
Data qualifiers/comments added:	☐	☐	
Data under correct Event Key:	☐	☐	
All required parameters measured, calculated, and uploaded to NTS database:	☐	☐	
All associated limits met:	☐	☐	

Data Mgmt Reviewer Comments:

Definitions

GW = groundwater, SOPs = standard operating procedures

Appendix B
Sampling and Analysis Plan

GENERAL WASTE & RECYCLING, LLC SW-620
INDUSTRIAL WASTE LANDFILL

Statistical Analysis Plan for Groundwater Monitoring Data

Prepared For:

GENERAL WASTE & RECYCLING, LLC

Prepared by:

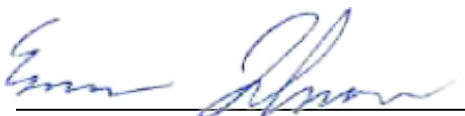
Northeast Technical Services, Inc.
526 Chestnut Street
Virginia, Minnesota 55792

(218) 741-4290

October 6, 2017

Project Number: 6385CC

"I certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete." I certify that this groundwater stasistical analysis plan for the General Waste Industrial Waste Landfill described in this report meets all requirements put forth by 40 CFR §257.93 'Groundwater Sampling and Analysis Requirements.'



10-13-17

Evan Johnson, P.E. Date
Geotechnical Engineer
Minnesota License No. 53648

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Figure 1: Project Location Map

1.0 Purpose

Per 40 CFR 257.93 'Groundwater Sampling and Analysis Requirements' (the rule), a statistical procedure for assessing collected groundwater data as to whether or not a release has occurred must implemented at all CCR units. The rule outlines five (5) statistical methods that may be utilized for analyzing collected data. The statistical procedure utilized should account for spatial variance, temporal trends, and address the handling of non-detect data. This Statistical Analysis Plan has been prepared to meet the requirements of the rule and provide the framework for analyzing the collected groundwater data at the General Waste & Recycling, LLC facility (the facility) in Keewatin, Minnesota.

2.0 Initial Background Monitoring

2.1 Background Monitoring Parameters

The rule requires background monitoring of all CCR monitoring wells and eight (8) groundwater monitoring events must be completed prior to October 17, 2017. For this Statistical Analysis Plan, background monitoring includes monitoring for all parameters listed in Appendix III and Appendix IV of 40 CFR 257.93 (see Table 1 and Table 2, respectively).

2.2 Background Data Analysis

Per the rule, within 90 days of collecting the final background dataset, statistical analysis of the data is to be completed. Statistical analysis can be any of those allowed by the rule and should establish a means of determining if a Statistically Significant Inscrease (SSI) of a monitored parameter occurs during operation of the CCR unit to help determine if a leak or release has occurred from the CCR unit.

2.3 Establishing Background Dataset

2.3.1 Summary Statistics and Distribution

Once the final background dataset has been collected, summary statistics should be computed, including mean and variance. An analysis of the data set be conducted to see if data is parametric (normally distributed). A Shapiro-Wilk analysis should be completed to make this determination. This should be completed for each parameter at each well installation. If the data is skewed and does not pass the normality test, the data may be able to be transformed to a normal distribution via lognormal plotting.

If a normal distribution cannot be achieved naturally or by transformation, non-paremetric statistics may be utilized.

2.3.2 Interwell and Intrawell Analysis

It is recommended that the primary method of determining if a SSI has occurred at the site utilize an interwell analysis. This analysis will look at the dataset of the upgradient well (background well) to determine the Upper Prediction Limit (UPL), for the downgradient well concentrations. However, if spatial variation is present in the monitoring system, it may be necessary to assess data from an intrawell analysis. This analysis looks at the background dataset for a specific parameter in the same well to determine if a SSI has occurred. Both methods are viable and can be used for specific parameters. It is not necessary to have a single analysis type for all wells for all parameters at the facility.

Care should be taken when conducting an interwell analysis when the background dataset for downgradient wells may be affected by pre-existing CCR impacts. Given the timeframe of placed CCR materials at the facility, the estimated groundwater velocity, and the monitoring well locations, none of the existing monitoring wells would be expected to exhibit any signs of CCR impact. However, analysis should be completed for any future wells installed.

2.3.3 Upper Prediction Limit

Per the recommendation from the USEPA "Statistical Analysis of Groundwater Monitoring Data At RCRA Facilities Unified Guidance (2009)" (Unified Guidance) document, Upper Prediction Limits (UPL) will be utilized to assess for a SSI in the downgradient wells the facility. The UPL is calculated as follows:

$$UPL = x + ks$$

Where:
x = mean parameter concentration of background dataset
s = standard deviation of background dataset
k = site specific multiplier provided by the Unified Guidance Tables 19, depends on number of wells, number of parameters to be analyzed, size of background dataset

The UPL statistical method allows for both interwell and intrawell comparison.

2.4 Analyzing for Trends

Trends in data may occur due to natural temporal factors, but are not expected to be seen in the initial background dataset. Trend analysis should be completed for the background datasets. If a trend does exist, this should trigger an analysis to assess the potential cause of the trend (especially upward trends of monitored concentrations) and determination of the method to correct for the trend in the statistical approach.

Trend analysis to determine if a statistically significant trend exists can be completed by utilizing the Theil-Sen slope analysis with Mann-Kendall trend test ($\alpha = 0.05$) (non-parametric, more suitable for datasets with >20% non-detect results) or a Ordinary Least Squares (OLS) linear regression with Student's t-test ($\alpha = 0.01$) (parametric dataset, <20% non-detect results).

2.5 Non-Detect Data

Datasets that have less than 20% non-detect data may substitute the reporting limit divided by 2 (RL/2 method) for non-detect results for statistical analysis.

Datasets that contain 20-50% non-detect data must utilize the Kaplan-Meier method to compute summary statistics for the dataset.

Datasets that contain more than 50% non-detect data will not be able to compute summary statistics data reliably. It is recommended that the UPL be set to the highest or second highest observed value.

If all background data are non-detect, than the UPL shall be set to the highest Reporting Limit (RL) (assuming a reasonable RL have been reported that are below MCL concentrations).

2.6 Outliers

The dataset should be analyzed for outlier datapoints. This can be done visually by examining a time series plot of the data or by a box-and-whisker plot. If a datapoint appears to be an outlier, field notes, lab reports, and analysis programs should be checked for indications of erroneous data or transcription erros.

Numerical methods of determining an outlier may include a 3-sigma analaysis for parametric data (data point outside of 3 standard deviations) or the following for non-parametric data if the data point x is:

$$x > x'_{.75} + 3 * IQR$$

Where:

X = individual data point
$x'_{.75}$ = Third Quartile
$IQR = x'_{.75} - x'_{.25}$ (InterQuartile Range)

Datapoints determined to be outliers due to erroneous data collection may be removed from the dataset. Datapoints that appear to be representative data but are extreme may be excluded from the statistical analysis, but should remain in the data for future evaluation if the data set significantly changes.

2.7 Duplicate Samples

Duplicate samples collected for quality control means should not be included in the statistically analyzed dataset as they are not physically independent and will inappropriately skew the data.

3.0 Detection Monitoring

Following the completion of the background monitoring, detection monitoring will be initiated at the facility. Detection monitoring is to be conducted semiannually (preferably in the spring and

fall) and analyzed for Appendix III parameters only. Statisitcal analysis of the data must be completed within 90 days of receiving laboratory data.

3.1 Stastically Significant Increase

3.1.1 Two Sample Test

Two sample testing indicates that if a UPL (either interwell or intrawell) is exceeded for a parameter, then a second sample should be collected and analyzed. If analysis of the second sample indicates a concentration below the UPL, then a SSI has not occurred. If the second sample indicates a value above the UPL, then a SSI has occurred.

Three Sample Testing which would require 3 consecutive samples to indicate concentrations above the UPL for a SSI to be indicated may be appropriate for specific situations. One situation would be if False Positive readings (Type II error) appears to be exceeding 10% of the total dataset.

3.1.2 Pracitical monitoring Practice

Downgradient constituents should be compared to the established UPL determined from the upgradient well data (for interwell comparisons) or compared to the UPL determined from the segregated background dataset for the individual well (intrawell comparison). If a parameter exceeds a UPL, a second sample should be collected from the well and analyzed. If the second sample indicates a value above the UPL, then it can be determined that a SSI has occurred and Assessment monitoring should be initiated.

3.1.3 Responding to an SSI

If the statistical evaluation indicates a SSI has occurred, the data should be further evaluated to determine if the the SSI is likely caused by a CCR unit release and assessment monitoring should be initiated or if other factors of influence can be demonstrated to be taking effect. This demonstration must be certified by a qualified professional engineer within 90 days of completing the statistical evaluation (in addition to the 90 day requirement for conducting the statistical analysis).

4.0 Assessment Monitoring

Assessment monitoring occurs once evaluation of Detection Monitoring parameters (Appendix III) indicates a SSI and there is reason to believe that the SSI could indicate a release from a CCR unit. Assessment monitoring must begin within 90 days of determining that a SSI related to a potential release of the CCR unit has occurred.

4.1 Monitoring Parameters

The initial assessment monitoring event must include all parameters listed in Appendix III and Appendix IV of 40 CFR 257.93 at all monitoring well locations. Subsequent monitoring events may include Appendix III parameters and only the Appendix IV parameters that were detected in the initial monitoring event. Assessment monitoring will also be conducted on a semi-annual basis (e.g., spring and fall monitoring events).

4.2 Groundwater Protection Standard

A Groundwater Protection Standard (GWPS) must be established for each Appendix IV parameter. For parameters for which the USEPA has established a Maximum Contaminant Level (MCL), the MCL (shown on Tables 1 and 2) shall be used for the GWPS. For the parameters for which a MCL has not been established, then the Upper Tolerance Limit (UTL) ($\alpha = 0.05$, 95% coverage) of the parameter utilizing the upgradient (background) well(s) shall be utilized to establish a GWPS for the specific parameter. This determined UTL concentration shall be applied site-wide for all downgradient wells.

4.3 Move to Corrective Action

The UPL and UTL are useful to assess for a SSI or measurable increase above background. However, in order to assess if a dataset has stastically exceeded a set value (the GWPS), Confidence Limits would be the most appropriate. If the Lower Confidence Limit (LCL) of the Assessment Monitoring dataset exceeds the GWPS, then movement into Corrective Action is warranted.

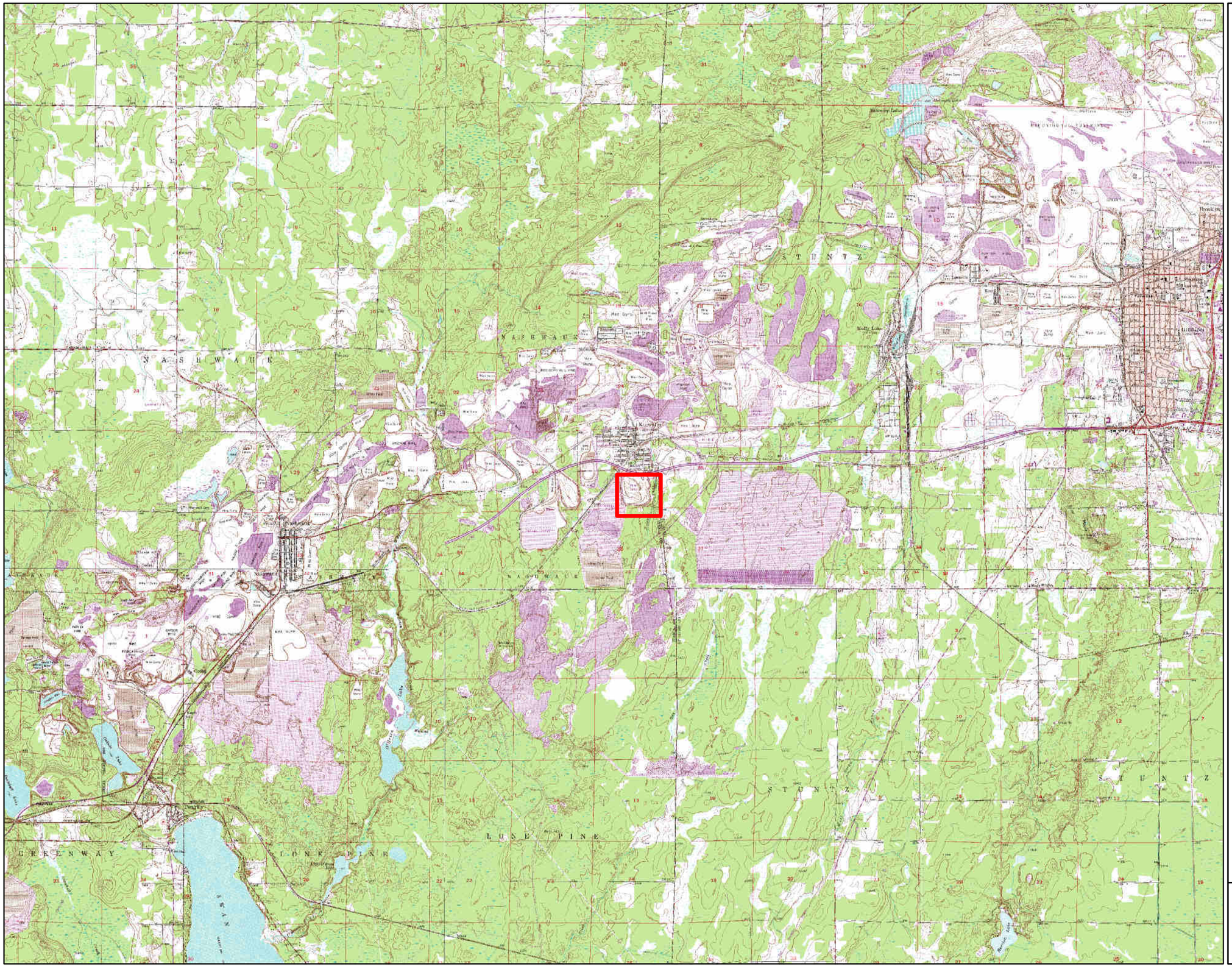
This Statistical Analysis Plan does not address Corrective Action methods of monitoring. Corrective Action methods will be developed if required per the rule..

4.4 Return to Detection Monitoring

Assessment monitoring may cease and detection monitoring be re-initiated when all Appendix III and monitored Appendix IV parameters are below background (upgradient well) concentrations.

5.0 Updating Background Data

Background datasets should be updated every 2 years assuming that a SSI has not occurred. A Student t-test (α=0.01, parametric) or Mann-Whitney ($\alpha = 0.05$, non-parametric) should be utilized to assess if the existing background dataset and the dataset to be added to the background dataset are statisctically different. If the data is shown not to be significantly different, the dataset should be pooled and the background dataset updated. If analysis of the data using the t-test or Mann-Whitney test indicates a statistical difference, the data should be analyzed to determine a potential cause for the stastistically significant difference.



N

0 3,000 6,000 12,000

Feet

1 Inch = 6,000 Feet

Legend

Project Location

Notes:

-Background image has been provided by MNGEO Web Services

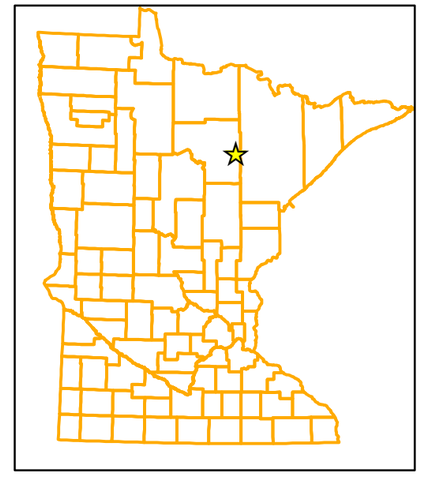


Figure 1
Site Location Map

General Waste Industrial Landfill
Statistical Analysis Plan **Certification**
Keewatin, MN (St. Louis)

Environmental Science & Engineering
www.netechnical.com

Date Drawn : October 4, 2017	
Drawn By : Evan Johnson	1
NTS Project #: 6385CC	

Appendix C
CCR Appendix III and Appendix IV Tables

TABLE 1 Appendix III Parameters	
Parameter	**MCL**
Boron	NA
Calcium	NA
Chloride	NA
Fluoride	4.0 mg/L
pH	NA
Sulfate	NA
Total Dissolved Solids (TDS)	NA

TABLE 2 Appendix IV Parameters	
Parameter	**MCL**
Antimony	0.006 mg/L
Arsenic	0.01 mg/L
Barium	2.0 mg/L
Beryllium	0.004 mg/L
Cadmium	0.10 mg/L
Chromium	0.10 mg/L
Cobalt	NA
Fluoride	4.0 mg/L
Lead	0.015 mg/L
Lithium	NA
Mercury	0.002 mg/L
Molybdenum	NA
Selenium	0.05 mg/L
Thallium	0.002 mg/L
Radium 226 and 228 combined	5 pCi/L

December 1, 2022

Mr. Alan Phillips
Dem-Con Companies
13020 Dem-Con Drive
Shakopee, MN 55379
alanphillips@dem-con.com

Sent Via Email

RE: Statistical Analysis for October 2022 groundwater monitoring event for CCR compliance at the Keewatin, MN facility

Mr. Phillips,

NTS is pleased to submit this report summarizing the CCR monitoring data collected in October, 2022 as well as the statistical analysis completed in accordance with the facility Statistical Analysis Plan (SAP).

MW-3R which was included in the initial groundwater monitoring plan was abandoned during landfill expansion during the summer of 2019. This down-gradient compliance well has been replaced with MW-10 in the groundwater monitoring network. MW-10 was first monitored on May 29, 2020. The first monitoring event included the CCR guidance Appendix III and Appendix IV parameters. Currently, with only 6 samples collected, upper prediction limits (UPLs) cannot be established for MW-10. MW-10 will continue to be monitored and statistics completed once a sufficient background dataset has been collected (approximately 8 samples).

Since only 2 compliance/downgradient wells are able to be assessed against a background dataset for statistically significant increases (SSIs), the current groundwater monitoring system does not meet the requirements of 40 CFR 257.91, and a complete semi-annual evaluation to determine if a SSI has occurred as outlined by the site specific Statistical Analysis Plan (SAP) cannot be fully completed. MW-8 and MW-9 will be assessed for a SSI and general comments regarding MW-10 data provided.

Review of the data indicates that one trigger value was intersected at MW-8 (Total Dissolved Solids) during the October 2022 monitoring event. This is the first consecutive occurrence of this trigger limit being exceeded and therefore does not constitute a SSI. Parameters measured at MW-10 appear congruent with previous measurements.

Detection Monitoring

Detection monitoring at the Keewatin facility includes monitoring of 4 groundwater wells, one upgradient well (MW-7) and three downgradient wells (MW-8, MW-9, and MW-10). MW-3R has been replaced by MW-10 beginning in May, 2020. Field parameters and laboratory samples were collected on October 18, 2022 at all monitoring locations. Laboratory results were received from PACE Analytical on November 30, 2022. Lab analyses completed includes those found in the CCR guidance Appendix III table (See Appendix C). The monitoring results and the established

detection monitoring trigger values can be seen in Tables 1 and 2, respectively. The highlighted cells in Table 1 indicate monitored results above the trigger value (MW-8 Total Dissolved Solids).

Table 1
2022 April Detection Monitoring Event Results

Parameter	MW-7	MW-8	MW-9	MW-10
Boron (ug/L)	70.9	71.5	38.8	37.8
Calcium (mg/L)	405	405	212	158
Chloride (mg/L)	2.9	1.4	5.0	<1.0
Fluoride (mg/L)	<0.05	<0.05	.092	0.14
pH (SU)	6.18	6.24	6.52	6.84
Sulfate (mg/L)	1390	794	450	269
Total Dissolved Solids (mg/L)	2300	1880	1140	716

Table 2
Detection Monitoring Trigger Values (updated January 2020)

Parameter	MW-7	MW-8	MW-9	MW-10
Boron (ug/L)	110.75	105.15	44.46	TBD
Calcium (mg/L)	659.21	434.46	234.98	TBD
Chloride (mg/L)	137.06	1.87	20.97	TBD
Fluoride (mg/L)	0.11	0.11	0.11	TBD
pH (SU)	6.02 - 6.79	6.08 - 6.83	6.22 - 7.06	TBD
Sulfate (mg/L)	1537.59	852.16	525.81	TBD
Total Dissolved Solids (mg/L)	2863.07	1829.75	1260.69	TBD

Statistical Analysis

The Statistical Analysis Plan (SAP) for the facility and CCR guidance details that only downgradient wells (compliance wells) are to be analyzed for Statistically Significant Increases (SSIs). The SAP also specifies a 2-sample test be used to determine if an SSI has occurred.

The October 2022 monitoring data does not indicate that an SSI has occurred at the Keewatin facility. However, the analysis is incomplete with only 2 downgradient wells monitored and

compared to a background dataset. MW-10 does not have established detection monitoring trigger values determined yet due to an inadequate background dataset size.

MW-8 exceeded the trigger value for Total Dissolved Solids (TDS). This is the first consecutive occurrence of a TDS concentration exceeding the trigger value at MW-8 and therefore is not considered a SSI.

The SAP for the facility indicates that the background dataset shall be updated every two years, provided an SSI has not occurred, by including the additional data into the background dataset. The background dataset was updated in the 2021 annual report with the data collected during 2020 and 2021. The updated trigger values are reflected in Table 2. Due to the trending values observed in MW-7, as well as MW-7 having significantly higher concentrations of Calcium, Chloride, Sulfate, and Total Dissolved Solids (TDS) compared to the downgradient locations, detection monitoring trigger values for MW-8 and MW-9 were based completely on intrawell analysis (comparing recent measurements from a well to background measurements from the same well) instead of interwell analysis (comparing values of MW-7 (upgradient) to MW-8 and MW-9 (downgradient)).

If you have any questions, please contact me at (218) 742-1022.

Sincerely,
Northeast Technical Services, Inc.

Evan C. Johnson, PE
Geotechnical Engineer

Appendix A: October 2022 Monitoring Results
Appendix B: Statistical Analysis Plan
Appendix C: Appendix III & Appendix IV Parameters

Appendix A:
October 2022 Monitoring Results

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

November 30, 2022

Scott Seeley
Northeast Technical Services
526 Chestnut Street
Virginia, MN 55792

RE: Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Dear Scott Seeley:

Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Duluth, MN
- Pace Analytical Services - Minneapolis

This report was revised on November 30, 2022, to update total dissolved solids results for MW8.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Jarve

Nicole Jarve
nikki.jarve@pacelabs.com
(218) 727-6380
Project Manager

Enclosures

cc: Allison Byrd, Northeast Technical Services
Sample Data, Northeast Technical Services
Carrie Jensen, Northeast Technical Services
Alan Phillips, Dem-Con Companies
Karissa Vosen, Northeast Technical Services

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

CERTIFICATIONS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC - Duluth MN

4730 Oneota Street, Duluth, MN 55807
Minnesota Certification #: 027-137-152
Minnesota Dept of Ag Approval: via Minnesota 027-137-152
Minnesota Petrofund Registration #: 1240
Montana Certification #: CERT0102
Nevada Certification #: MN00037
North Dakota Certification #: R-105
Wisconsin Certification #: 999446800
Wisconsin Dept of Ag Certification: 480341

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE SUMMARY

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10630128001	**MW7**	Water	10/18/22 10:35	10/18/22 15:40
10630128002	**MW8**	Water	10/18/22 12:03	10/18/22 15:40
10630128003	**MW9**	Water	10/18/22 13:10	10/18/22 15:40
10630128004	**MW10**	Water	10/18/22 14:08	10/18/22 15:40
10630128005	**Field Duplicate**	Water	10/18/22 13:11	10/18/22 15:40
10630128006	**Field Blank**	Water	10/18/22 13:15	10/18/22 15:40

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

SAMPLE ANALYTE COUNT

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10630128001	**MW7**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128002	**MW8**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128003	**MW9**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128004	**MW10**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128005	**Field Duplicate**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M
10630128006	**Field Blank**	SM 2540C-2011	RL1	1	PASI-DU
		EPA 300.0	CH	3	PASI-DU
		SM 4500-H+B-2011	CD3	1	PASI-DU
		EPA 200.7	DM	1	PASI-M
		EPA 200.8	RJS	1	PASI-M

PASI-DU = Pace Analytical Services - Duluth, MN
PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: MW7 **Lab ID: 10630128001** Collected: 10/18/22 10:35 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**2300**	mg/L	333	1		10/20/22 10:14		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**2.9**	mg/L	1.0	1		10/26/22 20:02	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/26/22 20:02	16984-48-8	
Sulfate	**1390**	mg/L	10.0	10		10/26/22 23:07	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		10/26/22 15:04		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**547**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:32	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**70.9**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:14	7440-42-8	

Sample: MW8 **Lab ID: 10630128002** Collected: 10/18/22 12:03 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1880**	mg/L	50.0	1		11/22/22 11:04		H1
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**1.4**	mg/L	1.0	1		10/27/22 07:10	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/27/22 07:10	16984-48-8	
Sulfate	**794**	mg/L	4.0	4		10/27/22 13:41	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		10/26/22 18:03		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**405**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:34	7440-70-2	P6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: MW8 **Lab ID: 10630128002** Collected: 10/18/22 12:03 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**71.5**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:18	7440-42-8	

Sample: MW9 **Lab ID: 10630128003** Collected: 10/18/22 13:10 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1140**	mg/L	40.0	1		10/20/22 10:14		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**5.0**	mg/L	2.0	2		10/26/22 11:13	16887-00-6	
Fluoride	**0.092**	mg/L	0.050	1		10/27/22 21:35	16984-48-8	
Sulfate	**450**	mg/L	2.0	2		10/26/22 11:13	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		10/26/22 15:09		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**212**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:37	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**38.8**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:22	7440-42-8	

Sample: MW10 **Lab ID: 10630128004** Collected: 10/18/22 14:08 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**716**	mg/L	20.0	1		10/20/22 10:15		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	ND	mg/L	1.0	1		10/27/22 07:56	16887-00-6	
Fluoride	**0.14**	mg/L	0.050	1		10/27/22 07:56	16984-48-8	
Sulfate	**269**	mg/L	1.0	1		10/27/22 07:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: MW10 **Lab ID: 10630128004** Collected: 10/18/22 14:08 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		10/26/22 18:10		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**158**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:39	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**37.8**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:37	7440-42-8	

Sample: Field Duplicate **Lab ID: 10630128005** Collected: 10/18/22 13:11 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	**1170**	mg/L	40.0	1		10/20/22 10:14		
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	**5.2**	mg/L	1.0	1		10/26/22 20:25	16887-00-6	
Fluoride	**0.061**	mg/L	0.050	1		10/26/22 20:25	16984-48-8	
Sulfate	**457**	mg/L	4.0	4		10/26/22 23:29	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		10/26/22 14:59		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	**212**	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:40	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	**37.5**	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:41	7440-42-8	

Sample: Field Blank **Lab ID: 10630128006** Collected: 10/18/22 13:15 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C TDS DU	Analytical Method: SM 2540C-2011 Pace Analytical Services - Duluth, MN							
Total Dissolved Solids	ND	mg/L	10.0	1		10/20/22 10:14		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

ANALYTICAL RESULTS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Sample: Field Blank **Lab ID: 10630128006** Collected: 10/18/22 13:15 Received: 10/18/22 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions WW 28 Day DU	Analytical Method: EPA 300.0 Pace Analytical Services - Duluth, MN							
Chloride	ND	mg/L	1.0	1		10/26/22 01:15	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/26/22 01:15	16984-48-8	
Sulfate	ND	mg/L	1.0	1		10/26/22 01:15	14808-79-8	
4500H+B pH, WW DU	Analytical Method: SM 4500-H+B-2011 Pace Analytical Services - Duluth, MN							
pH at 25 Degrees C	**6.1**	Std. Units	0.10	1		10/26/22 15:07		H6
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Minneapolis							
Calcium	ND	mg/L	0.50	1	10/24/22 05:43	10/24/22 13:42	7440-70-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Boron	ND	ug/L	10.0	1	10/24/22 05:53	11/01/22 23:44	7440-42-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848197 — Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 — Analysis Description: 2540C TDS DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128001, 10630128003, 10630128004, 10630128005, 10630128006

METHOD BLANK: 4486821 — Matrix: Water
Associated Lab Samples: 10630128001, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10/20/22 10:14	

METHOD BLANK: 4486825 — Matrix: Water
Associated Lab Samples: 10630128001, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10/20/22 10:15	

LABORATORY CONTROL SAMPLE: 4486822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	232	93	80-120	

SAMPLE DUPLICATE: 4486823

Parameter	Units	10630398005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	534	506	5	5	

SAMPLE DUPLICATE: 4486824

Parameter	Units	10630398006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	337	323	4	5	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 854903
QC Batch Method: SM 2540C-2011
Analysis Method: SM 2540C-2011
Analysis Description: 2540C TDS DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128002

METHOD BLANK: 4519455 Matrix: Water
Associated Lab Samples: 10630128002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/22/22 11:03	

METHOD BLANK: 4519458 Matrix: Water
Associated Lab Samples: 10630128002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/22/22 11:04	

LABORATORY CONTROL SAMPLE: 4519456

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	236	94	80-120	

SAMPLE DUPLICATE: 4519483

Parameter	Units	10634437006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	336	356	6	5	D6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848955
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128003, 10630128006

METHOD BLANK: 4490693 Matrix: Water
Associated Lab Samples: 10630128003, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/25/22 20:38	
Fluoride	mg/L	ND	0.050	10/25/22 20:38	
Sulfate	mg/L	ND	1.0	10/25/22 20:38	

LABORATORY CONTROL SAMPLE: 4490694

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	
Fluoride	mg/L	5	4.6	93	90-110	
Sulfate	mg/L	100	99.6	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490695 4490696

Parameter	Units	10629361008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.0	100	100	105	108	103	106	90-110	3	20	
Fluoride	mg/L	0.072	5	5	4.8	5.0	95	98	90-110	3	20	
Sulfate	mg/L	14.8	100	100	116	120	102	105	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490697 4490698

Parameter	Units	10629664003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.8	100	100	118	120	104	105	90-110	1	20	
Fluoride	mg/L	0.099	5	5	4.9	5.0	97	98	90-110	1	20	
Sulfate	mg/L	347	1000	1000	1360	1350	101	100	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848958
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128001, 10630128005

METHOD BLANK: 4490701 Matrix: Water
Associated Lab Samples: 10630128001, 10630128005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/26/22 08:09	
Fluoride	mg/L	ND	0.050	10/26/22 08:09	
Sulfate	mg/L	ND	1.0	10/26/22 08:09	

LABORATORY CONTROL SAMPLE: 4490702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	
Fluoride	mg/L	5	4.6	92	90-110	
Sulfate	mg/L	100	99.7	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490703 4490704

Parameter	Units	10630343001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	202	100	100	299	297	97	94	90-110	1	20	
Fluoride	mg/L	0.26	5	5	5.2	5.1	98	96	90-110	2	20	
Sulfate	mg/L	9.3	100	100	114	111	104	102	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4490705 4490706

Parameter	Units	10630393003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.0	100	100	107	107	106	106	90-110	0	20	
Fluoride	mg/L	0.29	5	5	5.2	5.2	98	98	90-110	0	20	
Sulfate	mg/L	14.0	100	100	118	119	104	105	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849574
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128002, 10630128004

METHOD BLANK: 4493219 Matrix: Water
Associated Lab Samples: 10630128002, 10630128004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/27/22 01:24	
Fluoride	mg/L	ND	0.050	10/27/22 01:24	
Sulfate	mg/L	ND	1.0	10/27/22 01:24	

LABORATORY CONTROL SAMPLE: 4493220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	100	101	101	90-110	
Fluoride	mg/L	5	4.6	93	90-110	
Sulfate	mg/L	100	99.6	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4493221 4493222

Parameter	Units	10631029001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	32.6	500	500	539	537	101	101	90-110	0	20	
Fluoride	mg/L	0.37	25	25	23.8	23.8	94	94	90-110	0	20	
Sulfate	mg/L	374	500	500	867	862	99	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4493223 4493224

Parameter	Units	10630535001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	112	500	500	616	617	101	101	90-110	0	20	
Fluoride	mg/L	1.9	25	25	25.3	25.4	94	94	90-110	0	20	
Sulfate	mg/L	105	500	500	606	607	100	100	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849836
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions WW 28 Day DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128003

METHOD BLANK: 4494517 Matrix: Water
Associated Lab Samples: 10630128003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.050	10/27/22 18:08	

LABORATORY CONTROL SAMPLE: 4494518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4494519 4494520

Parameter	Units	10630441007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.38	5	5	5.2	5.3	96	98	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4494521 4494522

Parameter	Units	10631127001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.22	5	5	5.0	5.0	95	95	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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4730 Oneota St.
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849455
QC Batch Method: SM 4500-H+B-2011
Analysis Method: SM 4500-H+B-2011
Analysis Description: 4500H+B pH, WW DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128002, 10630128004

LABORATORY CONTROL SAMPLE: 4492659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 4492660

Parameter	Units	10630013001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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4730 Oneota St.
Duluth, MN 55807
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 849459
QC Batch Method: SM 4500-H+B-2011
Analysis Method: SM 4500-H+B-2011
Analysis Description: 4500H+B pH, WW DU
Laboratory: Pace Analytical Services - Duluth, MN
Associated Lab Samples: 10630128001, 10630128003, 10630128005, 10630128006

LABORATORY CONTROL SAMPLE: 4492668

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 4492669

Parameter	Units	10631008001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	8.0	1	10	H6

SAMPLE DUPLICATE: 4492670

Parameter	Units	10630688001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.1	8.1	0	10	H6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848642 — Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 — Analysis Description: 200.7 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

METHOD BLANK: 4489776 — Matrix: Water
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	10/24/22 13:09	

LABORATORY CONTROL SAMPLE: 4489777

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	20	20.4	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4489778 4489779

Parameter	Units	10630146001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	115000 ug/L	20	20	130	134	73	93	70-130	3	20	

MATRIX SPIKE SAMPLE: 4489780

Parameter	Units	10630128002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	405	20	442	181	70-130	P6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

QC Batch: 848643 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

METHOD BLANK: 4489781 Matrix: Water
Associated Lab Samples: 10630128001, 10630128002, 10630128003, 10630128004, 10630128005, 10630128006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	10.0	11/01/22 22:51	

LABORATORY CONTROL SAMPLE: 4489782

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	100	102	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4489783 4489784

Parameter	Units	10629993001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	82.0	100	100	182	186	100	104	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4730 Oneota St.
Duluth, MN 55807
(218) 727-6380

QUALIFIERS

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6385CC General Waste Oct-22-Revised Report
Pace Project No.: 10630128

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10630128001	**MW7**	SM 2540C-2011	848197		
10630128002	**MW8**	SM 2540C-2011	854903		
10630128003	**MW9**	SM 2540C-2011	848197		
10630128004	**MW10**	SM 2540C-2011	848197		
10630128005	**Field Duplicate**	SM 2540C-2011	848197		
10630128006	**Field Blank**	SM 2540C-2011	848197		
10630128001	**MW7**	EPA 300.0	848958		
10630128002	**MW8**	EPA 300.0	849574		
10630128003	**MW9**	EPA 300.0	848955		
10630128003	**MW9**	EPA 300.0	849836		
10630128004	**MW10**	EPA 300.0	849574		
10630128005	**Field Duplicate**	EPA 300.0	848958		
10630128006	**Field Blank**	EPA 300.0	848955		
10630128001	**MW7**	SM 4500-H+B-2011	849459		
10630128002	**MW8**	SM 4500-H+B-2011	849455		
10630128003	**MW9**	SM 4500-H+B-2011	849459		
10630128004	**MW10**	SM 4500-H+B-2011	849455		
10630128005	**Field Duplicate**	SM 4500-H+B-2011	849459		
10630128006	**Field Blank**	SM 4500-H+B-2011	849459		
10630128001	**MW7**	EPA 200.7	848642	EPA 200.7	848883
10630128002	**MW8**	EPA 200.7	848642	EPA 200.7	848883
10630128003	**MW9**	EPA 200.7	848642	EPA 200.7	848883
10630128004	**MW10**	EPA 200.7	848642	EPA 200.7	848883
10630128005	**Field Duplicate**	EPA 200.7	848642	EPA 200.7	848883
10630128006	**Field Blank**	EPA 200.7	848642	EPA 200.7	848883
10630128001	**MW7**	EPA 200.8	848643	EPA 200.8	848918
10630128002	**MW8**	EPA 200.8	848643	EPA 200.8	848918
10630128003	**MW9**	EPA 200.8	848643	EPA 200.8	848918
10630128004	**MW10**	EPA 200.8	848643	EPA 200.8	848918
10630128005	**Field Duplicate**	EPA 200.8	848643	EPA 200.8	848918
10630128006	**Field Blank**	EPA 200.8	848643	EPA 200.8	848918

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

CHAIN

REQUIRED TURN-AROUND TIME: 2 Week

WO# : 10630128

PM: NMJ Due Date: 11/01/22

CLIENT: DU-NTS-SCOTT

CLIENT NAME,ADDRESS,PHONE#:	REPORT TO:
GENERAL WASTE and RECYLING LLC DEMOLITION & INDUSTRIAL LANDFILL ITASCA COUNTY, MINNESOTA	SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Corey Andrews

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

PERMIT REQ.: SW-620-002 at ~~Apr~~-22

PROJECT NUMBER: 6385CC CCR Monitoirng

SPECIAL INSTRUCTIONS:

SEE ATTACHED LIST WITH METHODS

LOG-IN #:	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)		REQUIRED ANALYSIS:
	MW7	GW WELL	10/18/22	1035	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL	10/18/22	1203	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL	10/18/22	1310	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL	10/18/22	1408	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL	10/18/22	1311	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank	10/18/22	1315	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: DATE: 10/18/22 TIME: 1540

RECEIVED BY: DATE: TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: D. Mathews PACE

TEMP.AT ARRIVAL: 2.7 C

DATE: 10/18/22 TIME: 1540

10/19/22 1500

Stelarich/Pace 10/19/22 16:20 2.3°C

GENERAL WASTE CCR METHODS

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

Sample Condition Upon Receipt

Client Name: NTS

Project #: WO# : 10630128

10630128

Courier: ☐ FedEx ☐ UPS ☐ USPS ☑ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: _____ ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1 (0461) ☐ T2 (1336) ☐ T3 (0459) ☐ T4 (0254) ☑ T5 (0178) ☐ 01339252/1710 **Type of Ice:** ☑ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** 2.4 °C 2.2

Correction Factor: -0.3 +0.1 **Cooler Temp Corrected w/temp blank:** 2.7 DU 2.3 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☑ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** BM 10/18/22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

				COMMENTS
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Sample Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☑ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot #
				Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☐ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Nicole Jarve **Date:** 10/20/22

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Intra-Regional Chain of Custody

WO# : 10630128

10630128

Pace Analytical®
www.pacelabs.com

Workorder: 10630128 **Workorder Name:** 6385CC General Waste Oct 2022 **Owner Received Date:** 10/18/2022 **Due Date:** 11/1/2022

Received at:	Send To Lab:
Pace Analytical Virginia 315 Chestnut Street Virginia, MN 55792 Phone (218) 727-6380	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700

Report To:
Nicole Jarve

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3 BP3N						Requested Analysis: EPA 200.7	EPA 200.8	Miscellaneous Charges									LAB USE ONLY
1	MW7	PS	10/18/2022 10:35	10630128001	Water	1						X	X	X									001
2	MW8	PS	10/18/2022 12:03	10630128002	Water	1						X	X	X									002
3	MW9	PS	10/18/2022 13:10	10630128003	Water	1						X	X	X									003
4	MW10	PS	10/18/2022 14:08	10630128004	Water	1						X	X	X									004
5	Field Duplicate	PS	10/18/2022 13:11	10630128005	Water	1						X	X	X									005
6	Field Blank	PS	10/18/2022 13:15	10630128006	Water	1						X	X	X									006

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] 10/19/22	1430	[illegible] 10/20/22	0800
2	[illegible] 10/20/22	1110	[illegible] (Pace	10/20/22 1140
3				
4				

Comments

Cooler Temperature on Receipt 1.4 °C | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

DC#_Title: ENV-FRM-MIN4-0150 v10_Sample Condition Upon Receipt (SCUR)
Effective Date: 8/26/2022

Sample Condition Upon Receipt

Client Name: Pace - Virginia

Project #: **WO#: 10630128**

PM: NMJ **Due Date: 11/01/22**
CLIENT: DU-NTS-SCOTT

Courier: ☐ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☒ Commercial

Tracking Number: _____ ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1 (0461) ☐ T2 (1336) ☐ T3 (0459) ☐ T4 (0254) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☒ T8 (0775) ☐ 01339252/1710 **Type of Ice:** ☒ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** 1.7 °C

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 1.8 °C

Average Corrected Temp (no temp blank only): _____ °C
☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☒ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** KB 10/20/22

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☒ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Sample Volume?	☒ Yes	☐ No		7.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other	☒ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	12. Sample # 601-006
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☒ Yes	☐ No	☐ N/A	☐ NaOH 1/1 ☒ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☒ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot #
				Residual Chlorine: 0-6 Roll 208421 / 0-6 Strip / 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☒ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Nicole Jarve **Date:** 10/24/22

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: KB **Line:** 3

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Cover Sheet

6385CC_2022-10 (Oct) 1018(CA)
Printed: 10/31/2022 2:48:12 PM

Client:
General Waste Disposal & Recovery

NTS Project:
6385CC - CCR Monitoring and Reporting

NTS Project Manager:
Scott Seeley

NTS Field Personnel:
Corey Andrews

Field Date:
10/18/2022

Summary of Services Performed:

Prepped and departed for General Waste to conduct Fall 2022 CCR well monitoring event.MW-7, MW-8, MW-9 and MW-10 were sampled via the low flow stabilization method using submersible pumps. Samples were ceded to PACE Analytical in Virginia, MN. For additional details see field notes and COC.

I, Corey Andrews, certify that the information in this report is true and correct to the best of my knowledge.

Static Attribute Change Log

Location:	Attribute:	Old Value:	New Value:
MW7	Key Number	410	2106
MW8	Key Number	410	2106

MW10

Sample Collected:	Yes	Time:	14:08

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	1000	Elevation, Groundwater (ft)	1442.41
ORP vs NHE (mV)	200	Static Water Level (ft)	10.21
Oxygen, Dissolved (mg/L)	0.36		
pH (SU)	6.84		
Temperature (˚C)	11.49		
Turbidity (NTU)	3.0		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	3.94 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
13:52	6.90	0.38	1008	28.1	225	11.51	10.36
13:56	6.86	0.36	1008	10.1	210	11.54	10.36
14:00	6.86	0.35	1007	4.0	205	11.49	10.36
14:04	6.85	0.35	1002	3.1	202	11.58	10.36
14:08	6.84	0.36	1000	3.0	200	11.49	10.36
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Pass Turb: MaxValue=4, Criteria=5	Pass ORP: Range=5, Criteria=20	Pass Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	Yes	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	Yes	Color, Purge:	Colorless	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Clear	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW10 (cont'd)

Pump Rate(gpm): 0.33	Measured Well Depth(ft): 18.2	Water Column(ft): 7.99
Pump Start Time(HH:MM): 13:48	Static Water Level(ft): 10.21	Well Volume(gal): 1.3
Pump End Time(HH:MM): 14:12		Volume Purged(gal): 7.92
Pump Duration(min): 24		Well Volume Interval(min): 3.94

STATIC INFORMATION

SITE INFO

MDH Number:	847087
Key Number:	2121

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1452.62

MW7

Sample Collected:	Yes	Time:	10:35

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2641	Elevation, Groundwater (ft)	1473.78
ORP vs NHE (mV)	517	Static Water Level (ft)	22.35
Oxygen, Dissolved (mg/L)	0.44		
pH (SU)	6.18		
Temperature (˚C)	8.11		
Turbidity (NTU)	14.0		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	4.67 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
10:15	6.22	0.51	2535	142.3	514	8.39	23.50
10:20	6.18	0.48	2550	37.4	515	8.30	23.62
10:25	6.19	0.42	2611	15.4	516	8.17	23.63
10:30	6.18	0.41	2624	13.7	517	8.21	23.65
10:35	6.18	0.44	2641	14.0	517	8.11	23.65
	Pass pH: Range=0, Criteria=0.2	**Pass** LDO: Range=0, Criteria=0.2	**Pass** SCond: Range=1%, Criteria=5%	**Pass** Turb: MaxValue=15, Criteria=5 Turb: Range=9%, Criteria=10%	**Pass** ORP: Range=1, Criteria=20	**Pass** Temp: Range=0.1, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	**Yes**	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	**Yes**	Color, Purge:	Colorless	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Fine Particulate	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW7 (cont'd)

Pump Rate(gpm): 0.15	Measured Well Depth(ft): 26.63	Water Column(ft): 4.28
Pump Start Time(HH:MM): 10:10	Static Water Level(ft): 22.35	Well Volume(gal): 0.7
Pump End Time(HH:MM): 10:43		Volume Purged(gal): 4.95
Pump Duration(min): 33		Well Volume Interval(min): 4.67

STATIC INFORMATION

SITE INFO

MDH Number:	817979
Key Number:	2106

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1496.13

MW8

Sample Collected:	Yes	Time:	12:03

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	2106	Elevation, Groundwater (ft)	1462.42
ORP vs NHE (mV)	346	Static Water Level (ft)	31.99
Oxygen, Dissolved (mg/L)	0.40		
pH (SU)	6.24		
Temperature (˚C)	6.19		
Turbidity (NTU)	25.4		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.15 gpm	Interval:	10.07 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
11:23	6.18	0.60	2224	239.7	487	6.89	33.64
11:33	6.19	0.43	2159	63.2	443	5.92	33.15
11:43	6.19	0.44	2128	49.6	400	6.03	33.02
11:53	6.22	0.40	2114	36.1	368	6.10	32.96
12:03	6.24	0.40	2106	25.4	346	6.19	32.91
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Fail Turb: MaxValue=50, Criteria=5 Turb: Range=65%, Criteria=10%	Fail ORP: Range=54, Criteria=20	Pass Temp: Range=0.2, Criteria=0.2	

GENERAL OBSERVATIONS

5 well volumes removed prior to sampling.

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	Yes	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	Yes	Color, Purge:	Yellow	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Fine Particulate	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW8 (cont'd)

Pump Rate(gpm): 0.15	Measured Well Depth(ft): 41.22	Water Column(ft): 9.23
Pump Start Time(HH:MM): 11:13	Static Water Level(ft): 31.99	Well Volume(gal): 1.51
Pump End Time(HH:MM): 12:10		Volume Purged(gal): 8.55
Pump Duration(min): 57		Well Volume Interval(min): 10.07

STATIC INFORMATION

SITE INFO

MDH Number:	817978
Key Number:	2106

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	41.2
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1494.41

MW9

Sample Collected:	Yes	Time:	13:10	Associated Field QC:	Field Blank, Field Duplicate

DATA COLLECTED

SONDE PARAMETER(S)		OTHER FIELD PARAMETER(S)	
Conductance, Specific (µS/cm)	1517	Elevation, Groundwater (ft)	1443.73
ORP vs NHE (mV)	146	Static Water Level (ft)	10.99
Oxygen, Dissolved (mg/L)	0.31		
pH (SU)	6.52		
Temperature (˚C)	8.75		
Turbidity (NTU)	3.9		

STABILIZATION OR PURGE DATA

Purging Strategy:	Low-Flow Stabilization	Pump Rate:	0.33 gpm	Interval:	3.91 min

Time (HH:MM):	pH (SU):	DO (mg/L):	SpecCond (µS/cm):	Turbidity (NTU):	ORP (mV):	Temp (°C):	SWL (ft):
12:54	6.53	0.36	1604	36.9	176	8.88	11.34
12:58	6.52	0.35	1580	15.6	160	8.77	11.34
13:02	6.52	0.31	1530	4.1	150	8.73	11.34
13:06	6.52	0.31	1525	4.0	148	8.75	11.34
13:10	6.52	0.31	1517	3.9	146	8.75	11.34
	Pass pH: Range=0, Criteria=0.2	Pass LDO: Range=0, Criteria=0.2	Pass SCond: Range=1%, Criteria=5%	Pass Turb: MaxValue=4, Criteria=5	Pass ORP: Range=4, Criteria=20	Pass Temp: Range=0, Criteria=0.2	

ROUTINE OBSERVATION(S)

WEATHER		SITE INFO		PURGE INFO		SAMPLE INFO	
Air Temperature:	31°F to 40°F	Well Plug Present:	Yes	Purging Strategy:	Low-Flow Stabilization	Color, Sample:	Colorless
Wind Speed:	11-20 mph	Well Locked:	Yes	Color, Purge:	Colorless	Appearance, Sample:	Clear
Wind Direction:	S			Appearance, Purge:	Clear	Odor Intensity, Sample:	None
Cloud Cover:	Partly Cloudy			Odor Intensity, Purge:	None	Odor, Sample:	None
Airborne Particulate:	None			Odor, Purge:	None	Sampling Equipment:	Submersible Pump
Precipitation:	None						

ROUTINE MEASUREMENT(S)

PURGE INFO	MEASURED VALUE	CALCULATED VALUE

MW9 (cont'd)

Pump Rate(gpm): 0.33	Measured Well Depth(ft): 18.9	Water Column(ft): 7.91
Pump Start Time(HH:MM): 12:50	Static Water Level(ft): 10.99	Well Volume(gal): 1.29
Pump End Time(HH:MM): 13:15		Volume Purged(gal): 8.25
Pump Duration(min): 25		Well Volume Interval(min): 3.91

STATIC INFORMATION

SITE INFO

MDH Number:	817980
Key Number:	0410

STATIC MEASUREMENT(S)

SITE INFO

Drilled Well Depth(ft):	18.9
Well Casing Diameter(in):	2
Top of Casing Elevation(ft):	1454.72

Calibration Log

Staff: Corey Andrews **Date:** 10/18/2022 **Status:** pass

Comments:

Sonde:	EQ-08G	**PreCal (HH:MM):**	**PostCal (HH:MM):**	**PostEvent (HH:MM):**	
Last Temp Check:	8/12/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:45	7:45	16:00	**Specifications:**
SpC-0 (Air):		0.0	0.0	0.0	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		0	0	0	
Temperature (°C):		19.87	19.87	19.88	
SpC-1000 (4206F33-1):		1000	1000	1002	Sum of <100000 +/-1 µS/cm AND +/-0.5%
Standard (µS/cm):		1000	1000	1000	
Temperature (°C):		21.19	21.19	21.22	
ORP-Zobell (2189-4):		438	440	442	<999 +/-20 mV
Standard (mV):		440	440	440.2	
Temperature (°C):		21.2	21.2	21.1	
DO (100% Saturation):		8.89	8.61	8.66	<8 +/-0.1 mg/L >=8 AND <20 +/-0.2 mg/L >=20 AND <60 +/-10%
100% Oxygen Saturation:		8.67	8.67	8.64	
Temperature (°C):		20.4	20.4	20.5	
Barometric Pressure (mmHg):		731	731	730	
pH-4 (4206C33):		4.07	4.00	4.03	<14 +/-0.2 SU
Standard (SU):		4.00	4.00	4.00	
Temperature (°C):		21.29	21.29	21.31	
pH-7 (423B65-2):		7.01	7.02	7.02	<14 +/-0.2 SU
Standard (SU):		7.0	7.0	7.0	
Temperature (°C):		21.17	21.17	21.33	
pH-10 (4203D63-2):		9.98	10.03	10.04	<14 +/-0.2 SU
Standard (SU):		10	10	10.04	
Temperature (°C):		21.23	21.23	21.30	
Turb-0 (DI Water):		0.0	0.0	0.0	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		0	0	0	
Temperature (°C):		18.1	18.1	18.4	

Sonde:	EQ-08G	PreCal (HH:MM):	PostCal (HH:MM):	PostEvent (HH:MM):	
Last Temp Check:	8/12/2022				
Temp Spec.:	<50 +/-0.1 ˚C	7:45	7:45	16:00	Specifications:
Turb-100D (105-2):		125.0	100	101.8	<100 +/-1 NTU >=100 AND <400 +/-12 NTU >=400 AND <3000 +/-150 NTU
Standard (NTU):		100	100	100	
Temperature (°C):		21.6	21.6	21.5	

Vehicle Inspection 1

GENERAL INFO

Driver: Corey Andrews	Vehicle: VT-61 | 2013 Ford F150 Race Red	Time(HH:MM): 08:00
Odometer(mile):		

DRIVER/PASSENGER SIDE

External Side Mirrors (right and left): ☒	Windows (clean, free of cracks): ☒	Tires (properly inflated, adequate tread): ☒

FRONT/REAR

Tail Lights: ☒	Head Lights: ☒	Damage to Body/Bumpers: ☒	License Plates (tags current): ☒	Fluid Leaks: ☒
Turn Signals: ☒				

ROUTINE MAINTENANCE

Oil Change (current): ☒	Transmission Fluid (change every 60k miles): ☒	Air Filter (change every 30k miles): ☒	Gauges Operational (check engine light off): ☒
Spare Tire (present, properly inflated): ☒			

INTERIOR

Cleanliness: ☒	Check Brakes: ☒	Check Horn: ☒	Seat Belts (working condition): ☒	Check Parking Brake: ☒
Rearview Mirror: ☒	Windshield Wipers and Fluid: ☒			

GENERAL/SAFETY

Insurance Card: ☒	Wheel Chocks: ☒	First Aid Kit: ☒	Operations Manual: ☒	Strobe Light (if needed): ☒	Buggy Whip (if needed): ☒

DEFICIENCIES CORRECTED

No Deficiencies Noted: ☒
Comments:

Field Checkout

EQUIPMENT

Resource:	Qty:
EQ-08D | Hydrolab MS5 Sonde D	1.00
EQ-16S | Static Water Level S, 100 ft (Skinny Dipper)	1.00
EQ-17 | Submersible Pump - Generic	1.00

VEHICLE(S)

Resource:	Qty:
VT-61 | 2013 Ford F150 Race Red	70.00

CONSUMABLES

Resource:	Qty:
CF-04 | Glove - Nitrile (ea)	6.00
CF-05 | Ice (6 lb bag)	2.00
CF-01 | Water - Distilled (gal)	1.00

6385CC Gen Waste CCR Monitoring 10/18/22

Corey Andrews

Weather: High 33°F / Partly Cloudy / wind S 10-15 mph

Equipment: EQ-080, SWL, YSI 61, submersible pump

0715 Arrive at NTS. Prep/Cal/Load.

0900 Depart NTS office.

0955 Pick up gate keys

0957 MW 7 Well locked & in good condition. Key #2106 Unique well #817979

SWL	TWD	WC	Vol	SWL (after)
22.35'	26.63'	4.28'	0.70	23.60

1010 Begin pumping well @ 0.15 GPM

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1015	6.22	0.51	2535	142.3	514	8.39	23.50
1020	6.18	0.48	2550	37.4	515	8.30	23.62
1025	6.19	0.42	2611	15.4	516	8.17	23.63
1030	6.18	0.41	2624	13.7	517	8.21	23.65
1035	6.18	0.44	2641	14.8	517	8.11	23.65

Samples obtained @ 1035

1057 MW 8 Well locked & in good condition, Unique well #817978. Key #2106

SWL	TWD	WC	Vol	SWL After
31.99	41.22	9.23	1.50	32.06'

1113 Begin pumping well @ 0.15 GPM

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1123	6.18	0.60	2224	239.7	487	6.89	33.64
1133	6.19	0.43	2159	63.2	443	5.92	33.15
1143	6.19	0.44	2128	49.6	400	6.03	33.02
1153	6.22	0.40	2114	36.1	368	6.10	32.96
1203	6.24	0.40	2106	25.4	346	6.19	32.91

Sample @ 1203 after 5 well volumes removed.

1244 MW 9 Well locked & in good condition. Unique well #817980 Key #0440

SWL	TWD	WC	Vol	SWL After	Begin pumping @ 1250 @ 0.336 GPM
10.99	18.90	7.91	1.29	11.05	

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1254	6.53	0.36	1604	36.9	176	8.88	11.34
1258	6.52	0.35	1580	15.6	160	8.77	11.34
1302	6.52	0.31	1530	4.1	150	8.73	11.34
1306	6.52	0.31	1525	4.0	148	8.75	11.34
1310	6.52	0.31	1517	3.9	146	8.75	11.34

Samples obtained @ 1310 Dup @ 1311 FB @ 1315

Scale: 1 square = _____

6385CC Gen Waste CCR Monitoring 10/18/22
Corey Andrews
Weather High 35°F / Partly Cloudy / wind S 10-15 mph
1341 MW10 Well locked & in good condition. Unique well # 847087 Key #212

SWL	TWD	WC	Vol	SWL After
10.21	18.20	7.99	1.30	10.30

1348 Begin pumping @ 0.33 GPM.

Time	pH	DO	SpC	Turb	ORP	Temp	SWL
1352	6.90	0.38	1008	28.1	225	11.51	10.36
1356	6.86	0.36	1008	10.1	210	11.54	10.36
1400	6.86	0.35	1007	4.0	205	11.49	10.36
1404	6.85	0.35	1002	3.1	202	11.58	10.36
1408	6.84	0.34	1000	3.0	200	11.49	10.36

Sample obtained @ 1405.

1500 Depart Gen. Waste.
1540 cede samples to PACE
1545 Arrive back at NTS office. Unload / Post check / Report

Corey Andrews

10/18/2022

Scale: 1 square = _____

Rite in the Rain

Environmental Science & Engineering

Daily Tailgate Safety

Project: 63855CC **Date:** 10/18/2022

Work Site Hazard Assessment Worksheet

- ☒ PPE Required (List): Hi/Lo Viz Level*
- ☐ Weather Conditions (List): 33°F / Partly Cloudy / wind S 10-15 mph
- ☐ Vehicular Traffic
- ☐ Communications
- ☐ Noise
- ☐ Equipment/Tools
- ☐ Housekeeping
- ☐ Other Site Hazards**

☐ I have examined the work place named and found no hazards
☐ I have examined the work place named and hazards found are listed below with corrective action taken

Hazards Identified/Safety Items Discussed:

Slips, Trips, & Falls
preservatives in sample containers

Corrective Actions Taken:

walk cautiously
wear proper PPE

Participants in Safety Discussion:

	Print Name	Signature
1.	Corey Andrews	
2.		
3.		
4.		
5.		

Signature of Site Supervisor/Examiner: Date: 10/18/2022

*Level D, C, B or A
**Examples: Heavy Equipment, Air Quality, Flammable materials, Wildlife, Work Site Security, Confined Space

NTS
526 CHESTNUT STREET
VIRGINIA, MN 55792
(218) 741-4290 Fax: (218) 741-4291

Environmental Science & Engineering

PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

REQUIRED TURN-AROUND TIME: 2 Weeks from submittal date

CLIENT NAME,ADDRESS,PHONE#:
GENERAL WASTE and RECYLING LLC
DEMOLITION & INDUSTRIAL LANDFILL
ITASCA COUNTY, MINNESOTA

REPORT TO:
SCOTT SEELEY & KARISSA VOSEN

SAMPLER: Carey Andrews

PERMIT REQ.: SW-620-002
~~Apr~~ Oct-22

PROJECT: GENERAL WASTE DISPOSAL and RECYCLING, LLC.

PROJECT NUMBER: 6385CC CCR Monitoirng

SPECIAL INSTRUCTIONS:
SEE ATTACHED LIST WITH METHODS

LOG-IN #	SAMPLE #	DESCRIPTION:	COLLECTION: DATE:	TIME:	MATRIX LIQ.	MATRIX SOL.	filtered	TYPE & # CONTAINERS: VOC M. 8260 (HCL)	GENERAL CHEMISTRY (NO PRES)	GENERAL CHEMISTRY (H2SO4)	TOTAL METALS (HN03)	DISSOLVED METALS (HN03)		REQUIRED ANALYSIS:
	MW7	GW WELL	10/18/22	1035	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW8	GW WELL	10/18/22	1203	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW9	GW WELL	10/18/22	1310	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	MW10	GW WELL	10/18/22	1408	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Duplicate	GW WELL	10/18/22	1311	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS
	Field Blank	Field Blank	10/18/22	1315	X		N		1		1			Boron, Calcium, Chloride, Flouride, pH, Sulfate & TDS

RELINQUISHED BY: Carey Andrews DATE: 10/18/22 TIME: 1540

RECEIVED BY: DATE: TIME:

RELINQUISHED TO NTS SAMPLE LOCK-UP BY: DATE: TIME:

RECEIVED FROM NTS SAMPLE LOCKUP BY: DATE: TIME:

RECEIVED FOR LAB BY: D. Mathews PACE

TEMP.AT ARRIVAL: 2.7 C

DATE: 10/18/22 TIME: 1540

PARAMETER	SYMBOL	EPA Method
Boron	B	200.8
Calcium	Ca	200.7
Chloride	Chloride	300.0
Fluoride	Flouride	300.0
pH	pH	SM 4500 H+B
Sulfate	SO_4	300.0
TDS	TDS	SM 2540C

NTS
526 Chestnut Street
Virginia, MN 55792
Phone: (218) 741-4290

Field Report Review Checklist

6385CC_2022-10 (Oct) 1018(CA)

Printed: 11/2/2022 7:54:51 PM

Environmental Science & Engineering

Report: 6385CC_2022-10 (Oct) 1018(CA)

Field work not completed by NTS: ☐ **SAF Reviewed:** ☑

Peer Reviewer:	Date:
Terri Sabetti	11/1/2022

Data Mgmt Reviewer:	Date:

Completeness Review	Included Yes:	Included No:
Cover Sheet:	☑	☐
Location Information		
Data Collection:	☑	☐
Observations:	☑	☐
Flow Measurements:	☐	☑
GW Stabilization:	☑	☐
Photograph(s):	☐	☑
Calibration Report(s):	☑	☐
Field Notes:	☑	☐
Safety Form(s):	☑	☐
Supplemental Form(s):	☑	☐
Equipment Documented:	☑	☐
Chain(s) of Custody:	☑	☐
Figures or Drawings:	☐	☑

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☑	
GW stabilization criteria met:	☐	☐	☑
Sonde(s) passed post-check:	☐	☑	☐
Consistent values in field notes:	☐	☑	
Consistent dates and times:	☐	☑	
Applicable SOPs followed:		☑	☐
Cover sheet provides a complete description of key activities and observations:		☑	☐

Peer Reviewer Comments:

Wells sampled by low flow stabilization method with submersible pumps.
MW8 NTU & ORP stabilization failed to meet NTS acceptance criteria. Data was qualified.

Completeness Review	Included Yes:	Included No:
Cover Sheet:	☐	☐
Location Information		
Data Collection:	☐	☐
Observations:	☐	☐
Flow Measurements:	☐	☐
GW Stabilization:	☐	☐
Photograph(s):	☐	☐
Calibration Report(s):	☐	☐
Field Notes:	☐	☐
Safety Form(s):	☐	☐
Supplemental Form(s):	☐	☐
Equipment Documented:	☐	☐
Chain(s) of Custody:	☐	☐
Figures or Drawings:	☐	☐

Accuracy Review	N/A:	Yes:	No:
Field calculations accurate:	☐	☐	
GW stabilization criteria met:	☐	☐	☐
Sonde(s) passed post-check:	☐	☐	☐
Consistent values in field notes:	☐	☐	
Consistent dates and times:	☐	☐	
Data qualifiers/comments added:	☐	☐	
Data under correct Event Key:	☐	☐	
All required parameters measured, calculated, and uploaded to NTS database:	☐	☐	
All associated limits met:	☐	☐	

Data Mgmt Reviewer Comments:

Definitions

GW = groundwater, SOPs = standard operating procedures

Appendix B
Sampling and Analysis Plan

GENERAL WASTE & RECYCLING, LLC SW-620
INDUSTRIAL WASTE LANDFILL

Statistical Analysis Plan for Groundwater Monitoring Data

Prepared For:

GENERAL WASTE & RECYCLING, LLC

Prepared by:

Northeast Technical Services, Inc.
526 Chestnut Street
Virginia, Minnesota 55792

(218) 741-4290

October 6, 2017

Project Number: 6385CC

"I certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete." I certify that this groundwater stasistical analysis plan for the General Waste Industrial Waste Landfill described in this report meets all requirements put forth by 40 CFR §257.93 'Groundwater Sampling and Analysis Requirements.'

10-13-17

Evan Johnson, P.E. Date
Geotechnical Engineer
Minnesota License No. 53648

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Figure 1: Project Location Map

1.0 Purpose

Per 40 CFR 257.93 'Groundwater Sampling and Analysis Requirements' (the rule), a statistical procedure for assessing collected groundwater data as to whether or not a release has occurred must implemented at all CCR units. The rule outlines five (5) statistical methods that may be utilized for analyzing collected data. The statistical procedure utilized should account for spatial variance, temporal trends, and address the handling of non-detect data. This Statistical Analysis Plan has been prepared to meet the requirements of the rule and provide the framework for analyzing the collected groundwater data at the General Waste & Recycling, LLC facility (the facility) in Keewatin, Minnesota.

2.0 Initial Background Monitoring

2.1 Background Monitoring Parameters

The rule requires background monitoring of all CCR monitoring wells and eight (8) groundwater monitoring events must be completed prior to October 17, 2017. For this Statistical Analysis Plan, background monitoring includes monitoring for all parameters listed in Appendix III and Appendix IV of 40 CFR 257.93 (see Table 1 and Table 2, respectively).

2.2 Background Data Analysis

Per the rule, within 90 days of collecting the final background dataset, statistical analysis of the data is to be completed. Statistical analysis can be any of those allowed by the rule and should establish a means of determining if a Statistically Significant Inscrease (SSI) of a monitored parameter occurs during operation of the CCR unit to help determine if a leak or release has occurred from the CCR unit.

2.3 Establishing Background Dataset

2.3.1 Summary Statistics and Distribution

Once the final background dataset has been collected, summary statistics should be computed, including mean and variance. An analysis of the data set be conducted to see if data is parametric (normally distributed). A Shapiro-Wilk analysis should be completed to make this determination. This should be completed for each parameter at each well installation. If the data is skewed and does not pass the normality test, the data may be able to be transformed to a normal distribution via lognormal plotting.

If a normal distribution cannot be achieved naturally or by transformation, non-paremetric statistics may be utilized.

2.3.2 Interwell and Intrawell Analysis

It is recommended that the primary method of determining if a SSI has occurred at the site utilize an interwell analysis. This analysis will look at the dataset of the upgradient well (background well) to determine the Upper Prediction Limit (UPL), for the downgradient well concentrations. However, if spatial variation is present in the monitoring system, it may be necessary to assess data from an intrawell analysis. This analysis looks at the background dataset for a specific parameter in the same well to determine if a SSI has occurred. Both methods are viable and can be used for specific parameters. It is not necessary to have a single analysis type for all wells for all parameters at the facility.

Care should be taken when conducting an interwell analysis when the background dataset for downgradient wells may be affected by pre-existing CCR impacts. Given the timeframe of placed CCR materials at the facility, the estimated groundwater velocity, and the monitoring well locations, none of the existing monitoring wells would be expected to exhibit any signs of CCR impact. However, analysis should be completed for any future wells installed.

2.3.3 Upper Prediction Limit

Per the recommendation from the USEPA "Statistical Analysis of Groundwater Monitoring Data At RCRA Facilities Unified Guidance (2009)" (Unified Guidance) document, Upper Prediction Limits (UPL) will be utilized to assess for a SSI in the downgradient wells the facility. The UPL is calculated as follows:

$$UPL = x + ks$$

Where:
x = mean parameter concentration of background dataset
s = standard deviation of background dataset
k = site specific multiplier provided by the Unified Guidance Tables 19, depends on number of wells, number of parameters to be analyzed, size of background dataset

The UPL statistical method allows for both interwell and intrawell comparison.

2.4 Analyzing for Trends

Trends in data may occur due to natural temporal factors, but are not expected to be seen in the initial background dataset. Trend analysis should be completed for the background datasets. If a trend does exist, this should trigger an analysis to assess the potential cause of the trend (especially upward trends of monitored concentrations) and determination of the method to correct for the trend in the statistical approach.

Trend analysis to determine if a statistically significant trend exists can be completed by utilizing the Theil-Sen slope analysis with Mann-Kendall trend test ($\alpha = 0.05$) (non-parametric, more suitable for datasets with >20% non-detect results) or a Ordinary Least Squares (OLS) linear regression with Student's t-test ($\alpha = 0.01$) (parametric dataset, <20% non-detect results).

2.5 Non-Detect Data

Datasets that have less than 20% non-detect data may substitute the reporting limit divided by 2 (RL/2 method) for non-detect results for statistical analysis.

Datasets that contain 20-50% non-detect data must utilize the Kaplan-Meier method to compute summary statistics for the dataset.

Datasets that contain more than 50% non-detect data will not be able to compute summary statistics data reliably. It is recommended that the UPL be set to the highest or second highest observed value.

If all background data are non-detect, than the UPL shall be set to the highest Reporting Limit (RL) (assuming a reasonable RL have been reported that are below MCL concentrations).

2.6 Outliers

The dataset should be analyzed for outlier datapoints. This can be done visually by examining a time series plot of the data or by a box-and-whisker plot. If a datapoint appears to be an outlier, field notes, lab reports, and analysis programs should be checked for indications of erroneous data or transcription erros.

Numerical methods of determining an outlier may include a 3-sigma analaysis for parametric data (data point outside of 3 standard deviations) or the following for non-parametric data if the data point x is:

$$x > x'_{.75} + 3 * IQR$$

Where:

X = individual data point
$x'_{.75}$ = Third Quartile
$IQR = x'_{.75} - x'_{.25}$ (InterQuartile Range)

Datapoints determined to be outliers due to erroneous data collection may be removed from the dataset. Datapoints that appear to be representative data but are extreme may be excluded from the statistical analysis, but should remain in the data for future evaluation if the data set significantly changes.

2.7 Duplicate Samples

Duplicate samples collected for quality control means should not be included in the statistically analyzed dataset as they are not physically independent and will inappropriately skew the data.

3.0 Detection Monitoring

Following the completion of the background monitoring, detection monitoring will be initiated at the facility. Detection monitoring is to be conducted semiannually (preferably in the spring and

fall) and analyzed for Appendix III parameters only. Statisitcal analysis of the data must be completed within 90 days of receiving laboratory data.

3.1 Stastically Significant Increase

3.1.1 Two Sample Test

Two sample testing indicates that if a UPL (either interwell or intrawell) is exceeded for a parameter, then a second sample should be collected and analyzed. If analysis of the second sample indicates a concentration below the UPL, then a SSI has not occurred. If the second sample indicates a value above the UPL, then a SSI has occurred.

Three Sample Testing which would require 3 consecutive samples to indicate concentrations above the UPL for a SSI to be indicated may be appropriate for specific situations. One situation would be if False Positive readings (Type II error) appears to be exceeding 10% of the total dataset.

3.1.2 Pracitical monitoring Practice

Downgradient constituents should be compared to the established UPL determined from the upgradient well data (for interwell comparisons) or compared to the UPL determined from the segregated background dataset for the individual well (intrawell comparison). If a parameter exceeds a UPL, a second sample should be collected from the well and analyzed. If the second sample indicates a value above the UPL, then it can be determined that a SSI has occurred and Assessment monitoring should be initiated.

3.1.3 Responding to an SSI

If the statistical evaluation indicates a SSI has occurred, the data should be further evaluated to determine if the the SSI is likely caused by a CCR unit release and assessment monitoring should be initiated or if other factors of influence can be demonstrated to be taking effect. This demonstration must be certified by a qualified professional engineer within 90 days of completing the statistical evaluation (in addition to the 90 day requirement for conducting the statistical analysis).

4.0 Assessment Monitoring

Assessment monitoring occurs once evaluation of Detection Monitoring parameters (Appendix III) indicates a SSI and there is reason to believe that the SSI could indicate a release from a CCR unit. Assessment monitoring must begin within 90 days of determining that a SSI related to a potential release of the CCR unit has occurred.

4.1 Monitoring Parameters

The initial assessment monitoring event must include all parameters listed in Appendix III and Appendix IV of 40 CFR 257.93 at all monitoring well locations. Subsequent monitoring events may include Appendix III parameters and only the Appendix IV parameters that were detected in the initial monitoring event. Assessment monitoring will also be conducted on a semi-annual basis (e.g., spring and fall monitoring events).

4.2 Groundwater Protection Standard

A Groundwater Protection Standard (GWPS) must be established for each Appendix IV parameter. For parameters for which the USEPA has established a Maximum Contaminant Level (MCL), the MCL (shown on Tables 1 and 2) shall be used for the GWPS. For the parameters for which a MCL has not been established, then the Upper Tolerance Limit (UTL) ($\alpha = 0.05$, 95% coverage) of the parameter utilizing the upgradient (background) well(s) shall be utilized to establish a GWPS for the specific parameter. This determined UTL concentration shall be applied site-wide for all downgradient wells.

4.3 Move to Corrective Action

The UPL and UTL are useful to assess for a SSI or measurable increase above background. However, in order to assess if a dataset has stastically exceeded a set value (the GWPS), Confidence Limits would be the most appropriate. If the Lower Confidence Limit (LCL) of the Assessment Monitoring dataset exceeds the GWPS, then movement into Corrective Action is warranted.

This Statistical Analysis Plan does not address Corrective Action methods of monitoring. Corrective Action methods will be developed if required per the rule..

4.4 Return to Detection Monitoring

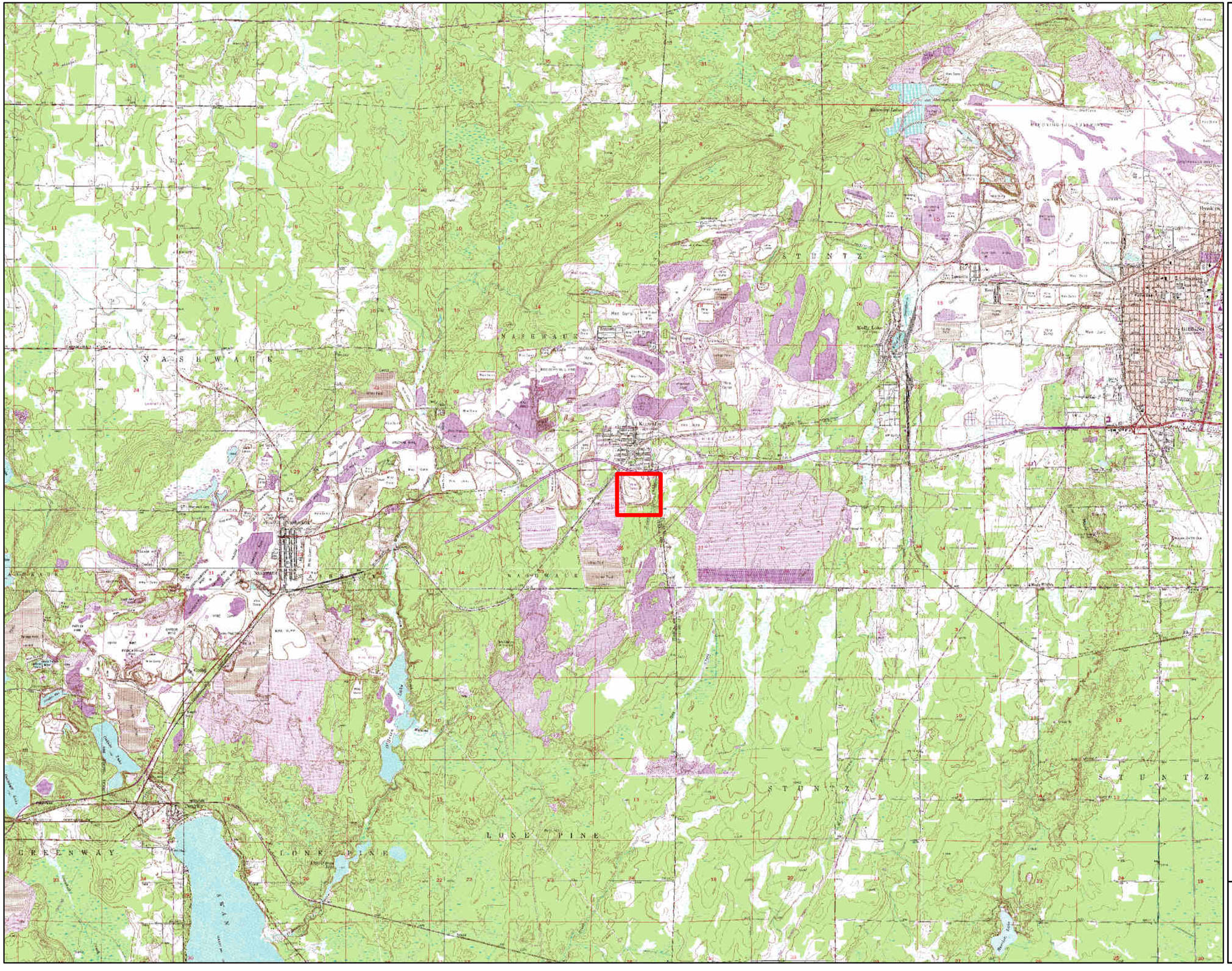
Assessment monitoring may cease and detection monitoring be re-initiated when all Appendix III and monitored Appendix IV parameters are below background (upgradient well) concentrations.

5.0 Updating Background Data

Background datasets should be updated every 2 years assuming that a SSI has not occurred. A Student t-test (α=0.01, parametric) or Mann-Whitney ($\alpha = 0.05$, non-parametric) should be utilized to assess if the existing background dataset and the dataset to be added to the background dataset are statisctically different. If the data is shown not to be significantly different, the dataset should be pooled and the background dataset updated. If analysis of the data using the t-test or Mann-Whitney test indicates a statistical difference, the data should be analyzed to determine a potential cause for the stastistically significant difference.

TABLE 1 Appendix III Parameters	
Parameter	**MCL**
Boron	NA
Calcium	NA
Chloride	NA
Fluoride	4.0 mg/L
pH	NA
Sulfate	NA
Total Dissolved Solids (TDS)	NA

TABLE 2 Appendix IV Parameters	
Parameter	**MCL**
Antimony	0.006 mg/L
Arsenic	0.01 mg/L
Barium	2.0 mg/L
Beryllium	0.004 mg/L
Cadmium	0.10 mg/L
Chromium	0.10 mg/L
Cobalt	NA
Fluoride	4.0 mg/L
Lead	0.015 mg/L
Lithium	NA
Mercury	0.002 mg/L
Molybdenum	NA
Selenium	0.05 mg/L
Thallium	0.002 mg/L
Radium 226 and 228 combined	5 pCi/L



N

0 3,000 6,000 12,000

Feet

1 Inch = 6,000 Feet

Legend

Project Location

Notes:

-Background image has been provided by MNGEO Web Services

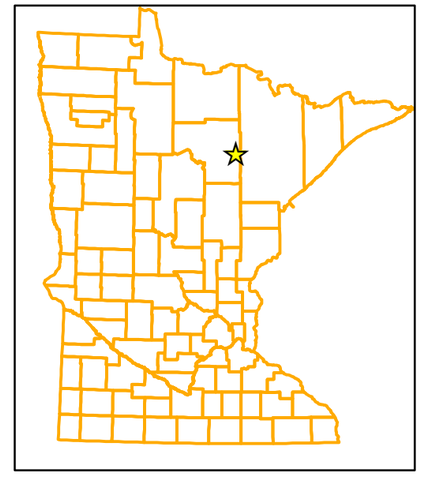


Figure 1
Site Location Map

General Waste Industrial Landfill
Statistical Analysis Plan **Certification**
Keewatin, MN (St. Louis)

Environmental Science & Engineering
www.netechnical.com

Date Drawn : October 4, 2017
Drawn By : Evan Johnson
NTS Project #: 6385CC

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Appendix C
CCR Appendix III and Appendix IV Tables

TABLE 1 Appendix III Parameters	
Parameter	**MCL**
Boron	NA
Calcium	NA
Chloride	NA
Fluoride	4.0 mg/L
pH	NA
Sulfate	NA
Total Dissolved Solids (TDS)	NA

TABLE 2 Appendix IV Parameters	
Parameter	**MCL**
Antimony	0.006 mg/L
Arsenic	0.01 mg/L
Barium	2.0 mg/L
Beryllium	0.004 mg/L
Cadmium	0.10 mg/L
Chromium	0.10 mg/L
Cobalt	NA
Fluoride	4.0 mg/L
Lead	0.015 mg/L
Lithium	NA
Mercury	0.002 mg/L
Molybdenum	NA
Selenium	0.05 mg/L
Thallium	0.002 mg/L
Radium 226 and 228 combined	5 pCi/L

APPENDIX C

2022 UPDATE OF BACKGROUND

DATASET RATIONALE/WORKFLOW

A two year period of detection monitoring was completed at General Waste CCR Facility. The Statistical Analysis Plan (SAP) indicates the background dataset should be assessed following a two year period and detection monitoring added to the background dataset if not statistically different and if no Statistically Significant Increase (SSI) has occurred. The following outlines the process followed to assess the detection/background monitoring results for the Appendix III parameters (Boron, Calcium, Chloride, Fluoride, Sulfate, TDS, pH).

1.) Complete time series Plots for 3 CCR wells (did not include MW-10, insufficient data) at the facility to allow for visual assessment of Detection monitoring as it relates to background monitoring data.
    a. MW-7 indicates large trends in Chloride, TDS, and Sulfate, with Chloride decreasing, and TDS & Sulfate increasing
    b. MW-8 and MW-9 Detection datasets appear generally consistent with background datasets
2.) A Students T-Test (STT) was conducted (α=.01)(no Non-detects) or Tarone-Ware (TW) (α=.01)(with Non-detects) to assess if the background dataset and detection monitoring dataset were statistically different or not. If the p-value is not less than 0.01, the background and detection monitoring datasets are not statistically different.
    a. MW-7
        i. Boron (TW): p=.001<.01, statistically different, due to large non-detects in background dataset
        ii. Calcium (STT): p=.07
        iii. Chloride (STT): p=.20
        iv. Fluoride (n/a): Nearly all non-detect, cannot conduct statistics, but no change
        v. Sulfate (STT): p=.02
        vi. TDS (STT): p=.03
        vii. pH (STT): p=.76
    b. MW-8
        i. Boron (TW): p=.39
        ii. Calcium (STT): p=.42
        iii. Chloride (STT): p=.19
        iv. Fluoride (n/a): Nearly all non-detect, cannot conduct statistics, but no change
        v. Sulfate (STT): p=.14
        vi. TDS (STT): p=.25
        vii. pH (STT): p=.86
    c. MW-9
        i. Boron (n/a): Nearly all non-detect, cannot conduct statistics, but no obvious change
        ii. Calcium (STT): p=.20
        iii. Chloride (STT): p=.08
        iv. Fluoride (n/a): Nearly all non-detect, cannot conduct statistics, but no obvious change
        v. Sulfate (STT): p=.46
        vi. TDS (STT): p=.15
        vii. pH (STT): p=.16

3.) Added Detection Monitoring results to 'background' dataset, despite statistical difference. Reasons discussed at each bullet point above.
4.) Due to the stark difference in behavior of MW-7 (upgradient) well with all downgradient wells (MW-3R, MW-8, MW-9), interwell analysis will no longer be performed between the upgradient and downgradient wells. Intrawell analyses will be conducted for MW-8 and MW-9. MW-3R will no longer be updated since it is abandoned. Additionally, intrawell analysis will be completed for MW-7 to assess for changes in the upgradient watershed, even though the upgradient well is not assessed for Statistically Significant Increases (SSIs).
5.) Check all updated 'background' datasets for normality utilizing Robust Regression on order Statistics (ROS) to analyze datasets
    a. Removed high non-detects from MW-7 Boron results, then dataset is normal.
    b. Removed high non-detects from MW-8 Boron results, then dataset is normal.
    c. Remove pH reading from 7/11/17 for all datasets, suspect pH, faulty equipment, bad reading. Without outlier, all pH datasets are normal.
6.) Determine Upper Prediction Limits (UPLs) for each parameter at each well using 2-sample, UPL at p=95 with ProUCL. See Table 2
    a. Utilize ROS Normal distribution for data with non-detects

Table 1: Previous UPLs

Parameter	**MW-7**	**MW-3R**	**MW-8**	**MW-9**
Boron (ug/L)	110.01	n/a	119.29	50.00
Calcium (mg/L)	579.98	n/a	438.40	233.23
Chloride (mg/L)	132.82	n/a	1.52	22.65
Fluoride (mg/L)	0.11	n/a	0.10	0.10
pH (SU)	6.12 - 6.79	n/a	6.23-7.13	6.23-7.13
Sulfate (mg/L)	1197.73	n/a	865.08	527.68
Total Dissolved Solids (mg/L)	2391.34	n/a	1863.13	1243.10

Table 2: Updated UPLs Based on ProUCL only

Parameter	**MW-7**	**MW-3R**	**MW-8**	**MW-9**
Boron (ug/L)	113.5	n/a	110.9	88.8
Calcium (mg/L)	666.5	n/a	436.1	235.8
Chloride (mg/L)	139.7	n/a	1.77	21.34
Fluoride (mg/L)	0.11	n/a	0.11	0.11
pH (SU)	6.00-6.80	n/a	6.08 – 6.85	6.21 – 7.08
Sulfate (mg/L)	1562	n/a	857.2	528.3
Total Dissolved Solids (mg/L)	2899	n/a	1838	1266

Table 3: Updated UPLs Based on Unified Guidance				
Parameter	**MW-7**	**MW-3R**	**MW-8**	**MW-9**
Boron (ug/L)	110.75		105.15	44.46
Calcium (mg/L)	659.21		434.46	234.98
Chloride (mg/L)	137.06		1.87	20.97
Fluoride (mg/L)	0.11		0.11	0.11
pH (SU)	6.02 - 6.79		6.08 - 6.83	6.22 - 7.06
Sulfate (mg/L)	1537.59		852.16	525.81
Total Dissolved Solids (mg/L)	2863.07		1829.75	1260.69

7.) Determine UPL for each parameter at each well using Table 19 of the unified guidance with 1 of 2 sample, 3 wells, 16 background samples, 7 COCs, semi-annual assessment. See Table 3.

8.) The 2 methodologies utilized to calculate UPLs exhibit similar results. The UPLs determined by the Unified Guidance will be utilized as the monitoring limits for the next 2 years. This methodology is specifically laid out in the Unified Guidance Rule and is therefore more defensible.