Blind River

Town of Blind River Municipal Landfill Site

ANNUAL MONITORING AND OPERATIONS REPORT – 2024

July 2025
KEC Ref: 2421

Prepared by:

KRESIN Engineering Corporation

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1.0 INTRODUCTION

The purpose of this Annual Monitoring and Operations Report for the Town of Blind River Municipal landfill site (Site) is to meet the annual reporting requirements identified in the Site Operations and Maintenance Plan (O&M Plan). The O&M Plan indicates that the Annual Operations Report should comply with the requirements of the Environmental Protection Act as legislated under Regulation 232/98. It is noted, however, that the Site and its operation are subject to Regulation 347. Copies of the Environmental Compliance Approval (ECA), formerly C of A, and subsequent amendments are included in Appendix A. A copy of the stormwater management ECA for the waste disposal site (ECA No. A-500-7134513066, issued October 26, 2022) is also provided in Appendix A.

This document reports on monitoring and operations at the Site for the 2024 operating year and was prepared with reference to the MECP's *"Technical Guidance Document, Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface Water (Nov. 2010)".* This document also addresses Annual Reporting requirements identified in the O&M Plan.

1.1 Location

The Site is located approximately 2 kilometers east of the built-up section of the Town of Blind River on the north side of Highway 17 (shown on Drawing B1). The Site is legally described as the south ½ of Lot 7, Concession 1 of Striker Township in the District of Algoma.

The coordinates of the Site, acquired through the use of a GPS surveying system (NAD83) with a horizontal accuracy of less than 5 centimeters (cm), are as follows:

UTM Coordinates	
Northing	5116641.907m
Easting	354605.951m
Zone	17T
Latitude (decimal degrees)	46.187825
Longitude (decimal degrees)	-82.884092

1.2 Waste Accepted

Under the current ECA, the Site is approved to receive domestic, commercial, non-hazardous solid industrial waste, scrap wood and brush, and iron sludge waste generated from the potable water treatment facility located at Cameco Corporation in Blind River.

Household hazardous wastes are not accepted at the Site but are collected during Household Hazardous Waste days that are held on a regular basis, historically once every 2 years. A Household Hazardous Waste Day took place in July of 2024.

The Site services a population of approximately 3,450 people along with the area industrial, commercial and institutional (ICI) Sectors. A curb side waste collection program is in place in the Town of Blind River, providing weekly refuse pick-up. The collection programs are run by a private company under contract with the Town. Waste is deposited at the Site by the contractor who collects municipal waste by residential/commercial direct-haul.

1.3 Ownership and Key Personnel

The Town of Blind River owns the Site. Key personnel and their respective contact details are included in Table 1.

TABLE 1:
LANDFILL SITE KEY PERSONNEL

Contact	Contact Details
Town of Blind River - Primary Contact	Chris Zagar Town of Blind River, Director of Public Works 11 Hudson Street, P.O. Box 640 Blind River, ON P0R 1B0 Phone: 705-356-2601 Fax: 705-356-7343 Email: Chris.Zagar@blindriver.ca
Town of Blind River - Secondary Contact	Kathryn Scott Town of Blind River, COA/Clerk 11 Hudson Street, P.O. Box 640 Blind River, ON P0R 1B0 Phone: 705-356-2251 Fax: 705-356-7343 Email: Katie.Scott@blindriver.ca
Blind River Landfill Site Operator	GFL Environmental Inc. 9 Industrial Park Road East Blind River, ON P0R 1B0 Phone: 705-356-4118
Competent Environmental Practitioner	Chris Kresin, M. Sc. (Eng.), P.Eng Kresin Engineering Corporation 536 Fourth Line East Sault Ste. Marie, ON P6A 6J8 Phone: 705-949-4900 Fax: 705-949-9965 Email: info@kresinengineering.ca

1.4 Description and Development of the Waste Disposal Site

Information obtained from Town sources (both written records and verbal accounts) indicates that the landfill site, which services the urban and rural areas of the Town of Blind River, has been receiving municipal wastes since about 1970.

The Site operates under authority of the original ECA No. A7138701 dated November 1980. It stipulates the following conditions:

1. Total site area is 2 ha (further defined by an attached sketch);
2. Site to accept domestic, commercial and “other” (limited to wood scrap and brush) wastes; and
3. C of A to be registered on title.

The original C of A was amended on two (2) occasions;

1. April 1994: added “non-hazardous solid industrial wastes and iron sludge” as allowable wastes for disposal at the Site; and
2. January 2000: added “the use of sawdust as interim cover” for a two (2) year period.

The Site is operated by the Contractor named above, who also provides waste collection services under one contract with the Town. Duties of the landfill site operator include:

1. Collect and dispose of residential municipal waste from curb side;
2. Collect and dispose of commercial and institutional municipal waste as well as waste from municipal parks;
3. Collect and dispose of municipal waste from several 4 and 6 cubic yard tip dumpsters located throughout the Town;
4. Bulldoze waste and apply cover as required by the Town and the Ministry of the Environment, Conservation and Parks;
5. Coordinate the establishment of marshalling areas, designated waste and disposal areas and recycling areas with the site attendant;
6. Designating, signing and maintaining all waste areas in coordination with the site attendant; and
7. Provide monthly reports of volumes of waste collected.

Placement of landfill cover material generally occurs following each day that the Site is operational. The landfill site operator employs a large sheepsfoot landfill compactor to compact waste in-situ, to apply cover material and to shape the Site topography as required.

A landfill attendant is on Site at all times during operating hours in order to observe the work on behalf of the Contractor for the purpose of ensuring the Contractor’s compliance with the Contract. Attendant duties also include:

1. Stop and check all vehicles entering the Site to determine amounts and types of material to be deposited and ensure that waste is deposited in designated areas;
2. Ensure that only waste collected in the Town of Blind River is deposited in the landfill site;
3. Enforce, collect and complete waybills for all applicable landfill tipping fees;
4. Collect data on a daily basis of all volumes and types of material deposited and record same on forms provided by the Town;
5. Ensure that all waste disposed of meets criteria and regulations of the Ministry of the Environment, Conservation and Parks and all other applicable government regulations;
6. Ensure proper backfill procedures are used;
7. Monitor and supervise pest control services; and
8. Perform other duties of a minor nature that may be required from time to time.

Entry to the Site is from the south and fill activities in 2024 occurred in the raised section of the landfill site as well as various piles around the perimeter of the raised section as shown on Drawing B2. An attendant’s shelter and areas to dispose of materials to be diverted are situated at the termination of the main access road, just outside of the approved fill area.

The Site operates as a natural attenuation site, relying on naturally occurring physical, chemical and biological processes to reduce concentrations of contaminants below Ministry of the Environment, Conservation and Parks (MECP) limits prior to reaching the property boundaries of the Site. The Town has used the area fill method of landfilling at the Site, gradually increasing the height of the Site

throughout its operating life. The area of fill ranges in elevation from a high of approximately 213 meters above sea level, at the center of the active fill area, to a low of approximately 200 meters above sea level at the toe of the fill area. The approximate elevation found on the north side of Highway 17 at a grouping of monitoring wells is 191 meters above sea level.

In July 2004 an O&M Plan for the Site was developed. The Plan described the approach to operating the Site such as landfill capacity and waste characterization, surface and groundwater management, landfill development and operations, control and maintenance, monitoring and reporting, contingency plans as well as a closure plan.

A Hydrogeological/Engineering report for the Site was completed in September of 2002 and included in the appendices of the O&M Plan discussed above. The report was completed to address MECP's requirement outlined in a 2002 order issued to the Town that a hydrogeological study be completed. The hydrogeological investigation included monitoring well installation and groundwater sampling in order to determine source leachate strength, leachate transport through the Site and impact of leachate at the property boundary.

Figure 1 presents a conceptual site model of the Site. As stated in the MECP Technical Guidance document, "*A conceptual site model is a three-dimensional picture of site conditions that conveys what is known or suspected about the sources, releases and release mechanisms, contaminant fate and transport, exposure pathways, potential receptors, and risks. The conceptual site model is based on the information available at any given point in time and will evolve as more information becomes available*".

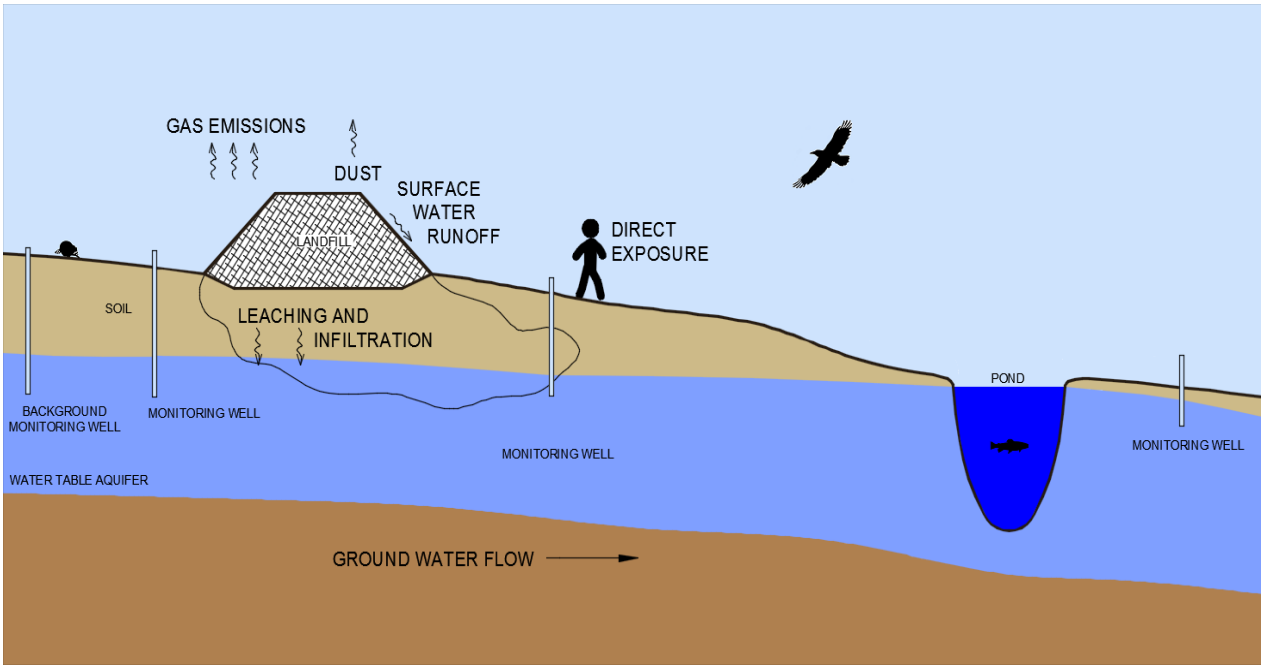


Figure 1 – Conceptual Site Model

1.5 Monitoring and Reporting Program Objectives and Requirements

As stated in the O&M Plan, this report should comply with requirements of Regulation 232/98. Regulation 232/98 "Landfilling Sites" made under the EPA outlines the requirements for Annual Operations Reports for landfill sites in Ontario. The regulation requires that:

> *The owner and the operator of a landfilling site shall ensure that,*
>
> *(a) within three months after each anniversary of the date on which waste was first accepted at the site, an annual report is prepared respecting the operation of the landfilling site, including a summary of results from monitoring programs; and*
> *(b) all of the reports are retained until at least two years after the site is closed.*

Further to the regulation, the MECP Landfill Standard Guideline states that an Annual Operations Report should include the following information:

a. The results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs.
b. An assessment of the operation and performance of all engineered facilities, the need to amend the design or operation of the site, and the adequacy of and need to implement the contingency plans.
c. Site plans showing the existing contours of the site; areas of landfilling operation during the reporting period; areas of intended operation during the next reporting period; areas of excavation during the reporting period; the progress of final cover, vegetative cover, and any intermediate cover application; previously existing site facilities; facilities installed during the reporting period; and site preparations and facilities planned for installation during the next reporting period.
d. Calculations of the volume of waste, daily and intermediate cover, and final cover deposited or placed at the site during the reporting period and a calculation of the total volume of site capacity used during the reporting period.
e. A calculation of the remaining capacity of the site and an estimate of the remaining site life.
f. A summary of the quantity of any leachate removed, or treated and discharged, from the site during each operating week, for sites with leachate collection.
g. A summary of the weekly, maximum daily and total annual quantity (by weight where weigh scales are provided at the site, otherwise by estimated volume as received) of waste received at the site.
h. A summary of any public complaints received by the owner and the responses made.
i. A discussion of any operational problems encountered at the site and corrective action taken; and
j. An update of the cost estimate for financial assurance and the amount which has been provided to the Director, in the case of a privately-owned site.

1.6 Assumptions and Limitations

The conclusions and recommendations presented in this report were based on the conditions observed on the specific dates and at the locations described.

While the findings, conclusions and recommendations documented in this report have been prepared in a manner consistent with the level of care and skill normally exercised by the members of the environmental science and engineering profession, this report is neither intended nor is it able to provide a totally comprehensive review of the past or present environmental conditions at the subject property.

2.0 PHYSICAL SETTING

2.1 Geology and Hydrogeology

From the 2002 Hydrogeological Investigation report:

> *"The 8.68 hectare (21.4 acre) landfill is located in a former gravel pit in the Precambrian Shield on the north shore of Lake Huron (north channel). The site is characterized by undulating terrain with relatively thin overburden and occasional rock outcrops. Lakes and poorly drained wetlands are common. Leachate is observed to collect in shallow topographic depressions on the south and east sides of the site."*

Also:

> *"According to the Northern Ontario Engineering Geology Terrain Study (VanDine 1979; Blind River Sheet NTS 41J/SE), local terrain conditions are described as till with ground moraine as the dominant landform (outwash plain is the subordinate landform). Bedrock underlies a drift veneer, local relief is moderate, and terrain is undulating to rolling."*

The area is suspected to have a high water table and the overburden in the area of the Site can be, but is typically not a local source of drinking water. The coarse-grained (sand and gravel) overburden enables the downward flow of water and contaminants and consequently provides limited protection to the overburden aquifer from surface sources of contamination.

The Site is situated in an area of relatively flat topography sloping gradually to the south toward Lake Huron. The terrain to the east and northeast of the landfill site is of higher elevations with the groundwater interpreted as flowing to the northwest, west and south, eventually discharging into Lake Huron.

2.2 Surface Water Features

The fill area is located near a topographic divide from which surface water flows in a southwesterly direction toward Highway 17 and, ultimately, Lake Huron.

Several surface water features are located in the vicinity of the site, including an area approximately 180m southwest of the fill area where surface water pools and has historically been shown to be

leachate impacted expressed groundwater. Additional features at greater distance southwest from the fill area include an excavated pit that likely intercepted the water table and marsh areas adjacent to Highway 17 (north and south of the highway). These features, and others, are included in the monitoring program described in Section 3.0.

3.0 DESCRIPTION OF MONITORING PROGRAM

The Site O&M Plan outlines the monitoring program requirements, as described in the following subsections.

3.1 Monitoring Locations

Groundwater

A groundwater monitoring network consisting of fourteen (14) monitoring wells is currently in-place at the landfill site. Monitoring wells MW1-02, MW2-02, MW3-02, MW4-02, MW5-02 and MW6-02 were installed in May 2002 while MW1-03, MW2-03 and MW3-03 were installed in October 2003. In December of 2015, MW2-03 and MW3-03 were both decommissioned and replaced with two (2) wells, MW2-15 and MW3-15, installed a short distance away from the original locations. MW1-15 and MW4-15 were also installed in 2015, just north of the fill area. MW1-17 and MW2-17 were installed close to King's Highway 17 in July 2017 south of the fill area. MW1-20 was installed in September of 2020 on the south side of King's Highway 17, approximately 370m west of the landfill access road.

Monitoring well locations are shown on Drawing B3 of Appendix B and UTM coordinates for each monitoring well are located in Table 2. Reference elevations for each location are included in Table 3. Copies of borehole logs and a photo inventory of the monitoring wells are included in Appendix C.

TABLE 2: MONITORING WELL LOCATIONS			
Monitoring Well ID	**Zone**	**Northing**	**Easting**
MW1-02	17T	5116863 m	354710 m
MW2-02	17T	5116559 m	354549 m
MW3-02	17T	5116320 m	354311 m
MW4-02	17T	5116302 m	354373 m
MW5-02	17T	5116688 m	354428 m
MW6-02	17T	5116313 m	354304 m
MW1-03	17T	5116320 m	354227 m
MW2-03	17T	5116416 m	354507 m
MW3-03	17T	5116243 m	354657 m
MW1-15	17T	5116691 m	354544 m
MW2-15	17T	5116420 m	354504 m
MW3-15	17T	5116239 m	354656 m
MW4-15	17T	5116709 m	354648 m
MW1-17	17T	5116259 m	354764 m
MW2-17	17T	5116276 m	354482 m
MW1-20	17T	5116246 m	354326 m

Monitoring well conditions and monitoring well construction details are also included in Table 3.

TABLE 3: BLIND RIVER LANDFILL – MONITORING WELL DETAILS								
Monitoring Well ID	**Top of Casing Elevation (m)**	**Well Stick-Up (m)**	**Ground Elevation (m)**	**Total Depth & Elevation (m)**	**Screened Interval & Elevation (m)**	**Well Position**	**Well Condition**	**Hydro-stratigraphic Unit Screened**
MW1-02	199.622	0.913	198.709	5.206 (194.416)	2.158-5.206 (197.472-194.424)	Up-gradient (Background)	Good	Compact silty sand & gravel/Very dense till
MW2-02	200.878	0.710	200.168	6.403 (194.475)	3.355-6.403 (197.523-194.475)	Downgradient (Source)	Good	Soft alluvium/Soft organics

TABLE 3:
BLIND RIVER LANDFILL – MONITORING WELL DETAILS

Monitoring Well ID	Top of Casing Elevation (m)	Well Stick-Up (m)	Ground Elevation (m)	Total Depth & Elevation (m)	Screened Interval & Elevation (m)	Well Position	Well Condition	Hydro-stratigraphic Unit Screened
MW3-02	191.488	0.905	190.583	1.739 (186.313)	1.222-4.27 (189.361-186.313)	Downgradient	Good	Loose to compact sand/Sand & gravel
MW4-02	192.234	0.808	191.426	4.967 (187.267)	1.919 - 4.967 (190.315 - 187.267)	Downgradient	Good	Loose sand/Compact sand & gravel
MW5-02	198.201	0.825	197.376	4.624 (193.577)	3.100-4.624 (195.101-193.577)	Downgradient	Good	Dense sand & gravel
MW6-02	192.008	0.800	191.208	7.429 (184.579)	5.905-7.429 (186.103-184.579)	Downgradient	Good	Compact sand & gravel
MW1-03	191.623	1.040	190.583	3.491 (188.132)	1.967-3.491 (189.650-188.126	Downgradient	Lid of steel casing is broken; well cap is cracked	Loose sand/Compact sand
MW2-03	Decommissioned							
MW3-03	Decommissioned							
MW1-15	200.589	0.864	199.725	6.698 (193.891)	3.650-6.698 (196.939-193.891)	Cross-gradient	Good	Clay/Silty sand/Coarse sand
MW2-15	198.792	1.073	197.719	3.011 (195.781)	1.484-3.008 (197.305-195.781)	Downgradient	Good; steel casing loose in ground	Medium-grained sand/Silty sand/Medium to coarse sand
MW3-15	199.296	0.749	198.547	5.245	2.197-5.245 (197.084-194.036)	Cross-gradient	Good	Silty sand/ Fine to medium sand/Boulders/Silty sand/Fine to medium sand

TABLE 3:
BLIND RIVER LANDFILL – MONITORING WELL DETAILS

Monitoring Well ID	Top of Casing Elevation (m)	Well Stick-Up (m)	Ground Elevation (m)	Total Depth & Elevation (m)	Screened Interval & Elevation (m)	Well Position	Well Condition	Hydro-stratigraphic Unit Screened
MW4-15	204.422	0.842	203.580	4.902 (199.520)	2.416-4.902 (201.984-199.520)	Cross-gradient	Good	Medium to coarse sand/Silty sand/Fine to medium sand
MW1-17	199.841	0.807	199.034	3.056 (196.785)	1.532-3.056 (198.309-196.785)	Cross-gradient	Good	Cobbles/Gravel/ Fine dry to wet sand
MW2-17	194.786	0.752	194.034	5.141 (189.645)	2.092-5.141 (192.693-189.645)	Downgradient	Good	Medium wet sand
MW1-20	194.919	0.885	194.034	8.253 (186.666)	5.205-8.253 (189.714-186.666)	Downgradient	Good	Silty sand/Wet

- Screened interval lengths and hydrostratigraphic information were taken directly from borehole logs.
- Screened interval depths were calculated using 2015, 2017 and 2020 ground elevations. All remaining information was collected from the 2024 monitoring field logs.
- Total depth (from top of casing) elevations and screened elevations are shown in brackets. Depths are in meters below ground surface.
- Total depth and screened elevations for MW3-02 were taken from the borehole log. Based on current measurements, it is assumed that this well contains a significant amount of material.

Surface Water

In order to assess for potential impacts on surface water in the vicinity of the Site, a surface water sample is collected from water that pools near the southwest limit of fill (SW1). In 2018, two (2) additional pooling water locations were identified using aerial photography. Both locations are similarly southwest of the fill, directly south (SW2) and west (SW3) of the solar panel field adjacent to the west of the Site. During the 2022 reporting period, areas of surface water ponding located south of the fill area (SW4 and SW5), a background surface water sampling location (SW6) and a downgradient surface water sampling location (SW7) were included as part of the Site's monitoring program.

The surface water locations are shown on Drawing B3 of Appendix B and characteristics of the locations are described in Table 4.

TABLE 4:
SURFACE WATER LOCATIONS

ID	Zone	Northing	Easting	Location Type	Sample Type
SW1	17T	5116445m	354503m	Permanent/Lentic	Downstream
SW2	17T	5116391m	354259m	Permanent/Lentic	Downstream
SW3	17T	5116483m	354146m	Permanent/Lentic	Downstream
SW4	17T	5116466m	354708m	Permanent/Lentic	Downstream
SW5	17T	5116464m	354559m	Permanent/Lentic	Downstream
SW6	17T	5116918m	354748m	Permanent/Lentic	Upstream
SW7	17T	5116288m	353683m	Permanent/Lentic	Downstream

3.2 Monitoring Frequency

Groundwater sampling events have generally occurred twice annually since 2002, the year that the groundwater monitoring network was established, and surface water sampling began in 2004.

3.3 Field and Laboratory Parameters and Analysis

Groundwater

Groundwater samples are collected and analyzed for parameters listed in Column 1 (comprehensive list) and Column 2 (indicator list) of Schedule 5 of the MECP Landfill Standards. Samples collected from MW1-03 (beginning in the fall of 2023) and MW1-20 were also analyzed for parameters listed under Column 3 of Schedule 5 (surface water comprehensive list) of the MECP landfill standards. In addition to parameters listed in the referenced Schedules, groundwater samples are also analyzed for total cyanide, fluoride, organic nitrogen and hardness.

Pesticides listed under Schedule 24 of Ontario Regulation 170/03 have also been analyzed for periodically during sampling events.

Following their collection, water samples are packaged and shipped for analysis in accordance with instructions from the laboratory.

Field measurements include pH, temperature, dissolved oxygen and conductivity.

Surface Water

Surface water samples are collected and analyzed for parameters listed in Column 3 of Schedule 5 (comprehensive list) of the MECP Landfill Standards. In addition to the parameters listed in the referenced Schedule, surface water samples are also analyzed for dissolved manganese, dissolved zinc, hardness and DOC during the 2024 reporting period.

Field measurements include pH, temperature, dissolved oxygen and conductivity.

3.4 Certificate of Approval Requirements

The current C of A No. A7138701 for the Site does not stipulate monitoring program requirements; therefore, reference is made to ECA No. A-500-7134513066, Regulation 232/98 and the MECP Landfill Standard Guideline document in this regard.

3.5 Monitoring Procedures and Methods

Sample collection is conducted by KEC staff in accordance with KEC's "Groundwater Monitoring and Sampling Protocol", and "Surface Water Monitoring and Sampling Protocol", both attached in Appendix D of this report.

3.6 Standard Operating Procedures

Standard operating procedures followed during the 2024 spring and fall sampling events is attached in Appendix D of this report.

3.7 Record Keeping and Field Notes

All relevant information collected in support of this monitoring report is maintained and kept at the KEC office located in Sault Ste. Marie, ON. Copies of the monitoring well record sheets from the 2024 spring and fall sampling event are included in Appendix E of this report.

3.8 Sampling Methods

Groundwater

Prior to purging, static water levels are measured using a water level tape at each monitoring well location and recorded on a monitoring well record sheet. Water levels and well depth measurements are taken from the top of the PVC casing of each monitoring well. Water levels are recorded prior to removing the dedicated sampling equipment.

Prior to collecting groundwater samples, each monitoring well is purged to remove the stagnant water within the well to allow the sampling of fresh groundwater to occur. Three (3) well casing volumes are removed (or purged dry for slow inflow monitors) using a dedicated inertial lift D-25 foot valve and polyethylene tubing.

Groundwater samples are collected using disposable sampling gloves, dedicated sampling equipment and suitable sample bottles provided by the analyzing laboratory. Depending on the parameter to be analyzed, the appropriate preservative is placed in the bottle by the laboratory prior to shipping. Groundwater samples to be analyzed for metals are field filtered using a 0.45 μm groundwater filter.

Following collection, groundwater samples are placed into coolers with ice, sample identification and chain of custody forms and shipped via local ground transportation services to ALS Environmental located in Thunder Bay, ON for analysis.

Surface Water

Surface water samples are collected using disposable sampling gloves and suitable sample bottles provided by the analyzing laboratory. Similarly to the groundwater samples, depending on the parameters to be analyzed for, the appropriate preservative is placed in the bottles by the accredited laboratory prior to shipping. Samples are collected using a sample bottle (rinsed three times per location) to transfer surface water to laboratory sampling containers. Surface water samples to be analyzed for dissolved metals are field filtered using a 0.45 μm filter

Following collection, surface water samples are placed into coolers with ice, sample identification and chain of custody forms and shipped via local ground transportation services to ALS Environmental located in Thunder Bay, ON for analysis.

3.9 Quality assurance for Sampling and Analysis

The quality assurance and quality control (QA/QC) program includes field duplicates, laboratory prepared trip blanks and field-prepared blanks. In addition, the testing laboratory also implements a QA/QC program that involves spiking blank samples and introducing surrogate compounds at known concentrations for analysis.

A groundwater duplicate sample and field-prepared blank were collected during the May and October 2024 sampling events. A laboratory-prepared trip blank and volatile organic compound (VOC) matrix spike were also included during each sampling event. Blank and duplicate samples are analyzed for parameters listed under Column 1 (spring) and Column 2 (fall) of Schedule 5 or the MECP Landfill Standards.

Ion Balance

Table 5 and 6 present a summary of ion balance calculations completed by the testing laboratory for each monitoring well during the sampling events. Ion balance calculations may be used to evaluate the accuracy of the laboratory's analysis of chemically stable waters by assessing the cation/anion balance within the sample. In the case of landfill leachate, ions do not necessarily balance due to the possible presence of leached metals that may become dissolved in the water samples.

The laboratory uses a series of criteria to assess the accuracy of the analysis, the first being the assessment of the anion sum. Should the anion sum for a sample be less than 3.0 meq/L and the cation sum minus the anion sum is within +/- 0.2 meq/L, the ion balance is considered acceptable. The second criterion involves the assessment of anion sums greater than or equal to 3.0 meq/L. If the anion sum for a sample is greater than or equal to 3.0 meq/L, and the cation sum - anion balance is less than 10%, the ion balance is considered acceptable in stable waters.

TABLE 5: ION BALANCE SUMMARY MAY 2024					
Sample Location	**Anion Sum <3 meq**	**Anion Sum ≥3 meq**	**Cation Sum (meq)**	**Assessment Criteria**	
				Cation-Anion Sum (for Anions <3 meq)	**Ion Balance (%)**
MW1-02	0.87		0.87	0	
MW2-02		40.2	44.4		4.96
MW3-02		6.45	6.12		-2.62
MW4-02		12.1	10.8		-5.68
MW5-02	1.25		1.14	-0.11	
MW6-02		6.15	6.82		5.16
MW1-03		24.2	27.3		6.02
MW1-15		18.6	22.3		9.05
MW2-15	0.24		0.26	0.02	
MW3-15	0.68		1.55	**0.87**	
MW4-15	0.85		0.82	-0.03	
MW1-17	1.51		1.55	0.04	
MW2-17	1.68		1.61	-0.07	
MW2-17 (Duplicate)	1.76		1.64	-0.12	
MW1-20		27.4	27.9		3.91
SW1		12.3	13.3		3.91
SW2	2.57		2.52	-0.05	
SW3	1.26		1.39	0.13	
SW4		8.00	10		**11.1**
SW5			DRY		
SW6	0.88		0.96	0.08	
SW7		8.18	7.32		-5.55

Bold and shaded values exceed laboratory criteria for ion balance acceptability.

TABLE 6: ION BALANCE SUMMARY OCTOBER 2024					
Sample Location	**Anion Sum <3 meq**	**Anion Sum ≥3 meq**	**Cation Sum (meq)**	**Assessment Criteria**	
				Cation-Anion Sum (for Anions <3 meq)	**Ion Balance (%)**
MW1-02	1.50		1.46	-0.04	
MW2-02		41.7	45.7		4.58
MW3-02		10.6	10.1		-2.58
MW4-02		16.5	17.0		1.49
MW5-02	1.19		1.19	0	
MW6-02		6.47	6.66		1.45
MW1-03		22.6	22.1		-1.12
MW1-15		19.2	19.8		1.54
MW2-15			DRY		
MW3-15	0.57		0.57	0	
MW4-15	1.29		1.65	**0.36**	
MW1-17	2.42		3.13	**0.71**	

TABLE 6: ION BALANCE SUMMARY OCTOBER 2024					
Sample Location	**Anion Sum <3 meq**	**Anion Sum ≥3 meq**	**Cation Sum (meq)**	**Assessment Criteria**	
				Cation-Anion Sum (for Anions <3 meq)	**Ion Balance (%)**
MW2-17	1.76		1.75	-0.01	
MW2-17 (Duplicate)	1.79		1.78	-0.01	
MW1-20		27.2	27.2		0
SW1		15.3	15.9		1.92
SW2		6.02	5.96		-0.50
SW3				DRY	
SW4				DRY	
SW5				DRY	
SW6		3.08	3.00		2.10
SW7		14.0	14.6		2.10

Bold and shaded values exceed laboratory criteria for ion balance acceptability.

Interference or presence of a non-measured component was noted by the laboratory as potentially causing ion balances to exceed acceptable criteria. It has been noted by the laboratory that significant concentrations of ions (not considered as part of the ion balance calculation) will cause an apparent imbalance within a sample.

3.10 Supplemental Monitoring: Sediment, Benthic and/or Toxicity Monitoring

No supplemental monitoring is conducted at the Site.

3.11 Operational Monitoring

There is currently no operational monitoring (e.g. monitoring of engineered controls) performed at the site.

4.0 OVERVIEW – MONITORING RESULTS

During the 2015 spring sampling event, KEC staff reported that both MW2-03 and MW3-03 were in poor condition and should be decommissioned and replaced with new monitoring wells being installed in the same general locations. Accordingly, two new wells (MW2-15 and MW3-15) were installed in December 2015 along with MW1-15 and MW4-15. Sampling commenced at these locations during the spring 2016 event.

On January 31, 2016 the MECP (Sault Ste. Marie office) forwarded a Technical Support Section Memo produced by an MECP hydrogeologist which contained comments and recommendations based on the review of the 2015 annual monitoring report and 2016 water quality result for the Site. The recommendations included the installation of monitoring wells at a depth that shall intercept the leachate groundwater plume at three (3) locations by March 31, 2018. Accordingly, two new wells were installed on July 12, 2017 onsite south of the historical fill area (MW1-17) and onsite between MW4-02 and MW3-03 (MW2-17). In September of 2020, a monitoring well was installed offsite (across King's Highway 17) south of MW4-02 and MW6-02.

4.1 Historical Data

A summary of historical ranges of selected parameter concentrations for all groundwater and surface water monitoring locations are shown in Table 7.

TABLE 7:
HISTORICAL RANGES OF SELECTED PARAMETERS

Parameter (mg/L)	Iron	Manganese	Alkalinity	Chloride	DOC	pH	TDS
ODWS	**0.3**	**0.05**	**500**	**250**	**5**	**6.5-8.5**	**500**
MW1-02	ND-46	0.003-7.09	1-170	0.61-729	ND-16	6.45-7.75	89-2260
MW2-02	ND-198	0.322-3.37	800-1700	65-305	19-732	6.42-7.67	1000-2580
MW3-02	ND-7.5	0.0155-0.706	188-379	31.9-236	10.3-24.8	7.38-8.49	282-722
MW4-02	ND-165	0.241-1.85	87.6-263	21.8-518	4.3-614	6.68-8.17	184-1030
MW5-02	ND-1.2	ND-0.880	38.7-242	0.131-73.2	1.1-33	6.59-7.90	59-385
MW6-02	ND-52	0.0208-1.33	100-270	43.1-69	7-20	6.47-8.07	285-440
MW1-03	1.43-31	0.0266-0.885	12.6-257	0.087-741	2.8-39.1	3.10-7.99	140-1530
MW2-03	0.306-120	0.019-1.6	9-147	0.63-1.7	2-27	5.92-6.51	50-385
MW3-03	0.019-0.81	0.0028-0.0417	2.9-180	4.38-23.7	1.7-13	5.38-6.30	32-240
MW1-15	0.697-12.5	2.83-4.68	794-893	66.9-88.7	10.3-34.3	6.65-7.45	878-1200
MW2-15	0.018-0.134	0.00184-0.0377	7.6-25.1	ND-1.73	2.06-10.7	5.69-6.76	28-172
MW3-15	0.191-8.23	0.0285-1.37	9.3-70.8	4.95-12.7	2.13-22.9	6.12-7.06	75-685
MW4-15	0.291-9.83	0.135-1.97	33-66	0.84-2.32	1.6-7.5	6.11-7.44	68-340
MW1-17	0.246-15.3	0.00765-1.04	44.7-134	8.9-27.7	12.2-30.9	6.41-7.21	151-2340
MW2-17	ND-0.156	ND-0.0076	38.2-73.4	2.48-100	1.37-8.7	6.54-7.68	121-448
MW1-20	0.061-26.2	0.0163-6.73	68.4-83.2	0.77-925	2.63-14.4	6.64-7.49	162-2260
SW1	0.18-26.4	0.082-0.768	198-678	29.6-238	16-36.7	7.08-8.48	282-1050
SW2	0.308-2.8	0.0115-0.0586	112-263	9.14-36.3	16.6-23.5	7.61-8.47	135-358
SW3	1.36-21.4	NT	18 – 34.2	7.34-31	ND – 0.03	6.35-7.11	80-108
SW4	14.6-139	0.00408-0.191	164-358	12.1-50.6	23.6-70.6	7.56-8.3	252-447
SW5	11.1-16	0.544	168-376	16.4-52.3	NT	7.98-8.34	213-434
SW6	0.246-2.63	0.0126-1.43	31-106	ND-2.02	17-28.4	7.49-7.7	54-205
SW7	3.76-89.1	0.295-1.32	65-167	178-566	8.74-37.2	6.76-8.01	524-1220

ODWS – Ontario Drinking Water Standards
ND – Not Detected; NT – Not Tested DOC – Dissolved Organic Carbon; TDS – Total Dissolved Solids

4.2 Data Quality Evaluation

The groundwater and surface water analyses were completed by ALS Environmental in Thunder Bay, Ontario. The laboratory is accredited to ISO/IEC 17025:2005 (E). Certificates of analysis from the accredited laboratory are included in Appendix F for the current reporting period.

QA/QC data was assessed by calculating the relative percent difference (RPD) for field duplicate samples. A field duplicate was collected at MW2-17 during the spring and fall sampling events. Parameter concentrations for the duplicates were found to be similar to the original, with the exception of those summarized in Table 8 below. Parameter concentrations greater than or equal to 5 times the laboratory method detection limit (MDL) with a RPD of less than or equal to 20 percent (between original and

duplicate sample) were deemed acceptable. Parameter concentrations less than or equal to 5 times the MDL with a concentration difference less than or equal to the MDL were deemed acceptable.

TABLE 8:
QUALITY ASSURANCE/QUALITY CONTROL EVALUATION

Monitoring Location	Sampling Event	Parameter	QA/QC Evaluation	
			Parameter Concentration ≥5x MDL and RPD > 20%	Parameter Concentration <5x MDL and Difference >MDL
MW2-17	Spring 2024	TDS	✘	
		Chloride	✘	
		Dissolved Manganese	✘	
MW2-17	Fall 2024	Fluoride	✘	
		DOC	✘	
		COD	✘	

TDS – Total Dissolved Solids; DOC – Dissolved Organic Carbon; COD – Chemical Oxygen Demand

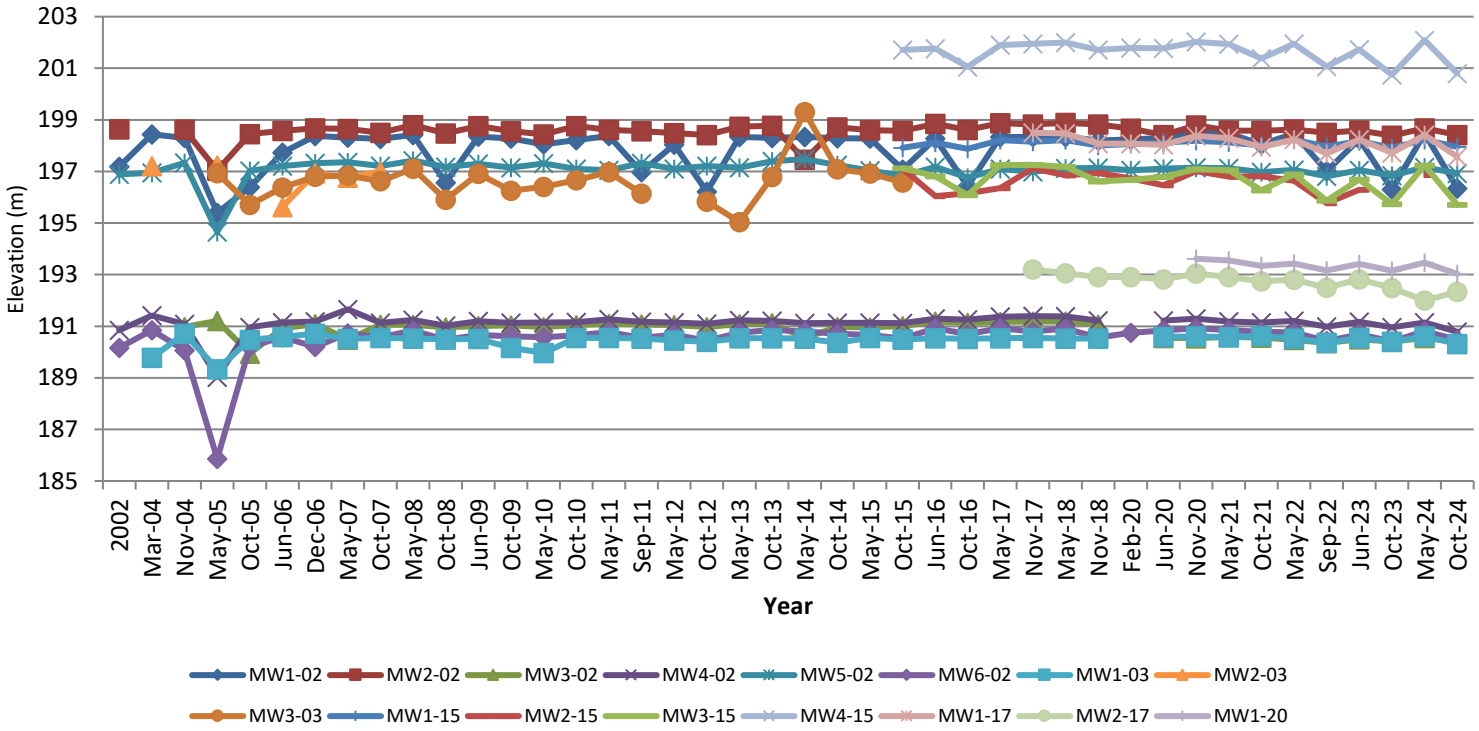
Results not satisfying the requirements of the QA/QC evaluation should be interpreted with caution. Regarding the evaluation results shown in Table 8, it is generally understood and accepted that the variability of field sample duplicates is significantly more than what is observed with Laboratory Sample Duplicates.

4.3 Groundwater Flow Monitoring

Water levels appear to be relatively stable historically. In cases it appears that groundwater levels determined during different seasons (spring/fall) show the effects of drought/wet conditions at or prior to the time of the sampling events. Water levels are presented graphically in Chart 1 and in Table G.24 attached in Appendix G of this report.

Drawings B4, B5 and B6 of Appendix B presents the water table profiles developed as well as interpreted groundwater contours based on water tables elevations established during the 2024 spring and fall sampling events. Groundwater contours, interpreted for both 2024 sampling events suggest that flow is to the northwest, west and southwest.

Chart 1
Town of Blind River Landfill Site
Groundwater Elevations



4.4 Groundwater Quality Monitoring

A review of the groundwater quality data summarized in Table G.1 through G.16 (Appendix G) reveals that Ontario Drinking Water Quality Standards (ODWS) are commonly exceeded for iron, manganese and DOC in most wells including MW1-02 (background well).

1. Samples from MW2-02 (source well) have historically contained volatile organic compounds (VOCs) including: benzene, toluene (2002 and June 2006), 1,4-dichlorobenzene and chlorobenzene. During the 2021 spring and fall sampling events, benzene was detected above ODWS and 1,4-dichlorobenzene was detected below ODWS. Pesticides (carbaryl and benzo(a)pyrene) have been detected historically at this location but at levels below ODWS.

2. The pesticide carbaryl was detected at boundary well MW4-02 in October 2005.

3. Benzo(a)pyrene was detected at boundary well MW6-02 in October 2005 along with benzene at MW1-03 during the same sampling event.
4. Pesticides did not exceed ODWS during any sampling event from 2006-2008 and 2012, therefore analysis for these parameters has not been carried out since.

Parameters exceeding ODWS during the 2024 reporting period are presented in Table 9.

Table 9: Summary of Review of 2024 Analytical Data		
Location	**Parameters Exceeding ODWS**	
	Spring	**Fall**
MW1-02	DOC	None
MW2-02	Alkalinity, Chloride, Iron, Manganese, Sodium, TDS, DOC, Benzene	Alkalinity, Chloride, Iron, Manganese, Sodium, TDS, DOC
MW3-02	Manganese, DOC	Iron, Manganese, TDS, DOC
MW4-02	Chloride, Iron, Manganese, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC
MW5-02	None	None
MW6-02	Iron, Manganese, DOC	Iron, Manganese, DOC
MW1-03	Chloride, Iron, Manganese, Sodium, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC
MW1-15	Alkalinity, Iron, Manganese, TDS, DOC	Alkalinity, Iron, Manganese, TDS, DOC
MW2-15	None	Dry
MW3-15	Iron, Manganese	pH
MW4-15	Iron, Manganese	Iron, Manganese, pH
MW1-17	Iron, Manganese, DOC	Iron, Manganese, DOC
MW2-17	None	None
MW1-20	Chloride, Iron, Manganese, Sodium, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC

4.4.1. Reasonable Use Assessment

MECP's Reasonable Use policy applies to groundwater at property boundaries and typically to parameters with aesthetic and health-related concentrations in the ODWS. The calculation of Reasonable Use (RU) concentrations is developed based on the relationship:

$$C_m = C_b + x(C_r - C_b)$$

where: C_m is the maximum allowable concentration at the property boundary;
C_b is the background concentration;
C_r is the ODWS concentration; and,
x is a factor - 0.5 for aesthetic parameters, and 0.25 for health-related parameters.

The RU concentrations are developed to assess the potential impact to groundwater beneath adjacent properties. As such, monitoring wells are typically located downgradient from and near property boundaries.

RU concentrations were developed using MW1-02 as the background well, for parameters for which ODWS have been established and that are identified in Schedule 5 (Column 1 – comprehensive list) of the MECP's Landfill Standards. The Standards state that the background concentration of a contaminant in groundwater is the median value of a minimum of 5 samples collected from a location not impacted by human activity. The RU concentrations were developed using the sampling results from 21 sampling

events (spring), 20 sampling events (fall) and 1 sampling event (winter) at the background monitor (MW1-02).

A summary of parameters exceeding RU concentrations during the 2024 spring and fall sampling events is presented in Table 10.A. Groundwater RU exceedances for the 2024 sampling events are tabulated graphically on Drawing B7 of Appendix B.

TABLE 10.A:
PARAMETERS EXCEEDING RU CRITERIA IN 2024

Monitoring Location	May 2024	October 2024
MW1-02 – Background	DOC	None
MW2-02 – Source	Alkalinity, Barium, Boron, Chloride, Iron, Manganese, Sodium, TDS, Benzene, DOC	Alkalinity, Barium, Boron, Chloride, Iron, Manganese, Sodium, TDS, DOC
MW3-02 – Boundary	Iron, Manganese, pH, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC
MW4-02 – Boundary	Chloride, Iron, Manganese, Sodium, TDS, DOC, pH	Chloride, Iron, Manganese, Sodium, TDS, DOC
MW5-02 – Intermediate	pH	None
MW6-02 – Boundary	Iron, Manganese, pH, TDS, DOC	Iron, Manganese, DOC
MW1-03 – Boundary	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC
MW1-15 – Intermediate	Alkalinity, Arsenic, Boron, Iron, Manganese, TDS, Benzene, DOC	Alkalinity, Boron, Iron, Manganese, pH, TDS, DOC
MW2-15 – Intermediate	pH	NA
MW3-15 – Boundary	Iron, Lead, Manganese, DOC	Iron, pH
MW4-15 – Intermediate	Iron, Manganese	Iron, Manganese, pH
MW1-17 – Boundary	Iron, Manganese, DOC	Iron, Manganese, DOC
MW2-17 – Boundary	None	None
MW1-20 - Boundary	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC

NA – Not Available (dry conditions)

Health-related parameters that were identified as having exceeded the RU Criteria during the spring and fall sampling events were barium, boron and benzene at MW2-02 (source well) and barium at MW1-03 and MW1-20. MW1-15 also exceeded RU Criteria for arsenic, boron and benzene during the spring sampling event and for boron during the fall sampling event.

Table 10.B presents a summary of RU concentrations and analytical results for the parameters identified in Schedule 5 (Column 1 – comprehensive list) of the MECP's Landfill Standards for the spring 2024 sampling event.

Table10.C presents a summary of RU concentrations and analytical results for the parameters identified in Schedule 5 (Column 2 – indicator list) of the MECP's Landfill Standards for the fall 2024 sampling event.

Groundwater quality trending charts are included in Appendix H. Concentrations of critical contaminants such as vinyl chloride and toluene, were only analyzed for at the source well and were found at levels that are orders of magnitude less than the RU Criteria established using historical data. Chloride which is considered a critical contaminant exceeded RU Criteria at the source well during the 2024 spring and fall sampling events.

With respect to the parameters identified in Tables 9.A as exceeding RU criteria:

1. With reference to the analytical results summarized in Tables G.1 to G.16, alkalinity is found to generally vary linearly (increase) with bicarbonate and calcium levels. Leachate related process that may increase alkalinity include the dissolution of calcium carbonate and the introduction of carbon dioxide through the decomposition process. Alkalinity may be a reliable leachate indicator parameter in this case.

2. Barium and boron can be found in groundwater and/or surface water due to leaching and erosion of sedimentary rocks if present beneath the sampled area. Both barium and boron are health-related parameters and in some cases can be reliable indicators of leachate-related impacts from landfill activities in sampled groundwater and/or surface water. Barium and boron appear to be elevated at MW2-02 (source well) during the spring and fall sampling events but not at MW1-02 (background monitor), therefore these parameters may be reliable indicators in this case.

3. Arsenic is released naturally from bedrock and soil with the process being enhanced by human activity, such as landfilling. Arsenic is a health-related parameter and in some cases can be a reliable indicator of leachate-related impacts from landfill activities in sampled groundwater and/or surface water. Arsenic appears to be elevated at MW1-15 during the spring sampling event but not at the background well MW1-02 or the source well MW2-02. Accordingly, arsenic may not be a reliable indicator in this case.

4. Chloride is considered a critical contaminant and can be used as a reliable indicator of leachate impact on groundwater and/or surface water. In this case, chloride may be a reliable indicator, however, as exceedances shown in boundary monitors MW4-02, MW1-03 and MW1-20 located adjacent to the Highway are higher than those observed at the source monitor, impacts may also be related to winter highway salting activities.

5. Iron and manganese are usually present in landfill leachate, either waste derived or dissolved from soil particles, and are often mobile under anaerobic conditions, such as those typically present near landfills. Where natural background levels are elevated (in comparison to ODWS), these parameters are not reliable indicators. Data from the background monitor (MW1-02) reveals that iron and manganese have historically exceeded ODWS, however, these parameters did not exceed ODWS during the 2024 sampling events.

6. Sodium is often found naturally in groundwater. Elevated levels may be natural or caused by the infiltration of surface water contaminated by road salt or landfill leachate. Sodium does not appear to be naturally elevated in water samples collected from the background monitoring well, therefore, it may be a reliable indicator in this case.

7. Total Dissolved Solids is a measure of the quantity of dissolved material in water and can provide an indication of general impact. Review of the analytical results reveals that chemical constituents are generally present at higher levels in down gradient wells with higher TDS than in MW1-02.

8. Benzene is a volatile hydrocarbon that can generally be found in petroleum products such as gasoline. When benzene is identified in landfill leachate, it is usually waste derived. Historical data from the background monitor (MW1-02) reveals non-detectable concentrations.

9. DOC is an indicator of the presence of organic matter/chemicals in leachate. DOC appears to be naturally elevated in historical water samples collected from the background monitoring well. Accordingly, DOC may not be a reliable indicator in this case.

Table 10.B presents a summary of RU concentrations and analytical results for the parameters identified in Schedule 5 of the MECP's Landfill Standards for the 2024 spring sampling event.

TABLE 10.B: SUMMARY OF RU CRITERIA AND ANALYTICAL RESULTS – MAY 2024

Parameter	Guideline/Monitoring Well (mg/L)															
	ODWS (Cr)	MW1 -02 (Cb)	R.U. Criteria (Cm)	MW1-02 (BG)	MW2-02 (source)	MW3-02	MW4-02	MW5-02	MW6-02	MW1-03	MW1-15	MW2-15	MW3-15	MW4-15	MW1-17	MW2-17	MW1-20
VOCs																	
1,4 Dichlorobenzene - H	0.005	0.0005	0.001625	ND	0.00123	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene - H	0.001	0.0005	0.000625	ND	**0.00281**	ND	ND	ND	ND	ND	**0.00066**	ND	ND	ND	ND	ND	ND
Dichloromethane – H	0.05	0.0005	0.012875	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene – A	0.024	0.0005	0.01220	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride – H	0.002	0.0005	0.000875	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dissolved Metals																	
Arsenic – H	0.01	0.001	0.007	0.00036	ND	0.00027	0.00012	0.00023	0.00079	ND	**0.0132**	0.00011	0.00229	0.0007	0.00054	0.00042	0.0025
Barium – H	1	0.0111	0.258625	0.00537	**0.42**	0.0143	0.11	0.00702	0.217	**0.489**	0.19	0.00304	0.0831	0.00641	0.0129	0.0129	**0.348**
Boron – H	5	0.02	1.266	ND	**1.97**	0.496	0.057	ND	0.129	0.255	**1.41**	ND	ND	ND	0.015	ND	0.014
Cadmium – H	0.005	0.0001	0.0001	0.0000052	ND	0.0000052	ND	0.0000114	ND	ND	ND	ND	ND	0.0000052	0.0000117	0.0000106	ND
Chromium – H	0.05	0.000715	0.01303625	0.00061	ND	0.00072	ND	0.00436	0.00051	ND	ND	ND	ND	ND	0.00114	0.00082	ND
Copper – A	1	0.00197	0.500985	0.00194	ND	0.00372	0.00033	0.00159	0.00024	0.00119	ND	0.00215	0.0365	0.00159	0.00303	0.00144	0.0009
Iron – A	0.3	0.05	0.175	0.04	**55.2**	**0.207**	**6.59**	ND	**16.8**	**18.3**	**11.6**	0.042	**8.23**	**0.635**	**2.23**	0.035	**24**
Lead – H	0.01	0.001	0.00325	ND	ND	ND	ND	ND	ND	ND	ND	0.000063	**0.00446**	ND	0.000266	ND	ND
Mercury – H	0.001	0.0001	0.000325	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0000437	ND	ND	ND	ND
Magnesium	-	5.67	-	2.76	81.4	13.8	13.1	3.8	17.3	26.1	90.6	0.363	1.88	2.86	4.06	5.42	49
Manganese – A	0.05	0.0392	0.04778	0.00902	**0.45**	**0.0827**	**0.482**	0.001	**1.05**	**0.596**	**4.45**	0.00255	**0.861**	**0.256**	**0.34**	0.00092	**6.39**
Nickel	-	-	-														
Potassium	-	1.55	-	0.564	173	24.9	9.41	1.15	6.3	40.4	4.51	0.237	ND	0.522	0.621	0.696	2.13
Sodium – A	20	6.01	103.03	3.18	**249**	39.9	**163**	3.55	32	**445**	72.3	2.17	9.69	3.58	13.4	7.58	**318**
Zinc - A	5	0.008	2.504	ND	ND	0.003	ND	0.011	0.0011	ND	ND	0.0012	ND	0.0042	0.0093	0.0022	0.002
General Chemistry																	
Alkalinity – OG	500	71.1	286.275	38.3	**1660**	237	92.3	48.8	224	168	**818**	8.5	14.5	33	46.7	62.3	68.4
Ammonia	-	0.024	-	ND	144	0.0977	0.367	0.0074	1.87	1.22	0.625	ND	ND	0.17	0.317	0.0118	1.21
BOD_5	-	2	-	ND	14.5	28.3	ND	ND	3.7	ND	5.4	ND	ND	ND	ND	ND	ND
Chloride – A	250	0.86	125.43	0.61	**251**	52.8	**357**	1.87	59.1	**741**	77.9	ND	9.1	1.01	12.8	6.8	**925**
COD	-	10	-	26	252	50	34	14	55	88	115	22	47	16	39	72	51
Cond. (us/cm)	-	169	-	81	3570	603	1350	118	580	2670	1530	27	71.8	79.4	154	161	3020
DOC – A	5	3.11	4.055	**6.55**	**72.1**	**15.6**	**5.28**	2.94	**11.4**	**13.4**	**18.9**	2.06	**4.61**	2.61	**12.6**	3.82	**8.67**
Nitrate – H	10	0.142	2.611	0.027	ND	0.04	ND	0.147	0.045	ND	ND	ND	0.066	0.17	0.116	0.073	ND
Nitrite – H	1	0.02	0.265	ND	ND	0.013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sulphate – A	500	11.55	256	4.21	ND	10.8	8.03	10.1	ND	ND	2	3.55	6.39	7.18	9.84	11.4	ND
TDS – A	500	167	333.75	89	**1800**	**364**	**768**	92	**370**	**1530**	**979**	31	114	78	312	131	**2100**
TKN	-	0.3	-	0.197	148	0.799	0.589	0.862	2.13	1.62	1.52	ND	ND	ND	ND	ND	2.48
pH	6.5-8.5	7.03	6.768-7.768	7.37	7.13	**8.25**	**7.77**	**7.82**	**7.98**	7.41	7.08	**6.76**	7.06	7.44	6.92	7.67	7.44
Total Phosphorus	-	0.32	-	0.0886	0.341	0.0336	0.111	0.0684	0.123	0.21	0.694	0.161	0.276	0.368	0.933	0.52	4.04

Notes: *A – Aesthetic, H –Health Related, OG – Operational Guideline, Cb – median value of all previous sampling events; ND – Not Detected, NT-Not Tested; Bold/shaded values exceed RU criteria.*

Table 10.C presents a summary of RU concentrations and analytical results for the parameters identified in Schedule 5 of the MECP's Landfill Standards for the 2024 fall sampling event.

TABLE 10.C: SUMMARY OF RU CRITERIA AND ANALYTICAL RESULTS – OCTOBER 2024

Parameter	Guideline/Monitoring Well (mg/L)																
	ODWS (Cr)	MW1 -02 (Cb)	R.U. Criteria (Cm)	MW1-02 (BG)	MW2-02 (source)	MW3-02	MW4-02	MW5-02	MW6-02	MW1-03	MW1-15	MW2-15	MW3-15	MW4-15	MW1-17	MW2-17	M1-20
VOCs																	
1,4 Dichlorobenzene - H	0.005	0.0005	0.001625	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Benzene - H	0.001	0.0005	0.000625	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Dichloromethane – H	0.05	0.0005	0.012875	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Toluene – A	0.024	0.0005	0.01220	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Vinyl Chloride – H	0.002	0.0005	0.000875	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Dissolved Metals																	
Arsenic – H	0.01	0.001	0.007	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Barium – H	1	0.0111	0.258325	0.00925	**0.414**	0.0197	0.148	0.00876	0.203	**0.382**	0.182		0.00472	0.0105	0.0299	0.0109	**0.322**
Boron – H	5	0.02	1.265	0.012	**2.01**	0.328	0.053	ND	0.14	0.241	**1.32**		0.052	0.01	0.022	ND	ND
Cadmium – H	0.005	0.0001	0.0001	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Chromium – H	0.05	0.000715	0.01303625	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Copper – A	1	0.00197	0.500985	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Iron – A	0.3	0.05	0.175	0.033	**55.7**	**0.508**	**8.2**	ND	**19.4**	**11.6**	**12.1**		**0.191**	**9.25**	**15.1**	0.015	**23.8**
Lead – H	0.01	0.001	0.00325	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Mercury – H	0.001	0.0001	0.000325	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Magnesium	-	5.67	-	4.65	84.3	15.8	15.3	4.06	17	19.1	81.1		1.06	5.41	10.4	6.45	47.8
Manganese – A	0.05	0.0392	0.0446	0.00733	**0.322**	**0.258**	**0.632**	0.00124	**1**	**0.449**	**3.84**	DRY WELL	0.0285	**1.38**	**0.907**	0.00056	**6.41**
Nickel	-	-	-	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Potassium	-	1.55	-	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Sodium – A	20	6.01	103.005	5.35	**286**	**116**	**289**	3.62	34.5	**361**	63.3		6.99	4.22	10.2	4.56	**318**
Zinc - A	5	0.008	2.504	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
				NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
General Chemistry				NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Alkalinity – OG	500	71.1	285.55	63.9	**1700**	193	88.5	47.3	242	201	**855**		9.3	54.4	89.7	71.7	72.8
Ammonia	-	0.024		0.0269	148	0.263	0.926	0.0638	ND	1.14	1.22		0.0599	0.586	0.827	0.0281	2.48
BOD_5	-	2		ND	12.1	ND	ND	ND	ND	ND	ND		ND	ND	7.5	ND	ND
Chloride – A	250	0.86	125.43	0.7	**275**	**236**	**518**	1.08	57.8	**658**	74.8		9.94	2.01	21.2	2.48	**914**
COD	-	10	-	ND	312	46	24	ND	36	51	113		37	433	120	90	67
Cond. (us/cm)	-	169	-	145	3870	1100	1840	118	584	2370	1630		66.3	126	241	170	2930
DOC – A	5	3.11	4.055	2.78	**85**	**16**	**6.85**	1.85	**12.9**	**17.7**	**23.4**		2.13	3.45	**23.9**	2.06	**9.35**
Nitrate – H	10	0.142	2.6065	0.093	ND	ND	ND	0.149	0.049	ND	ND		0.082	0.031	0.185	0.078	ND
Nitrite – H	1	0.02	0.265	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Sulphate – A	500	11.55	256.05	9.38	ND	6	5.09	9.8	ND	ND	ND		4.81	6.75	0.62	12	ND
TDS – A	500	167	333.5	136	**1710**	**598**	**1030**	79	322	**1300**	**978**		94	88	162	137	**1890**
TKN	-	0.3	-	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
pH	6.5-8.5	7.03	6.765-7.765	6.91	6.86	7.74	7.33	7.65	7.09	7.13	**6.76**		**6.22**	**6.29**	6.81	7.11	7.16
Total Phosphorus	-	0.32	-	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT

Notes: *A – Aesthetic, H –Health Related, OG – Operational Guideline, Cb – median value of all previous sampling events; ND – Not Detected, NT-Not Tested; Bold/shaded values exceed RU criteria.*

4.4.2. Geochemical Facies

Median concentrations of major ions were calculated using historical data for each groundwater monitoring location. A Piper diagram (Figure 2) was developed in order to identify waters which are geochemically similar in composition and thus may be identified as being from the same source or as being impacted by the same anthropogenic activity (e.g. landfilling). The ions used to develop the Piper diagram are: chloride, magnesium, sodium, potassium, calcium, sulphate, carbonate and bicarbonate. Data is available for each ion at each monitoring well.

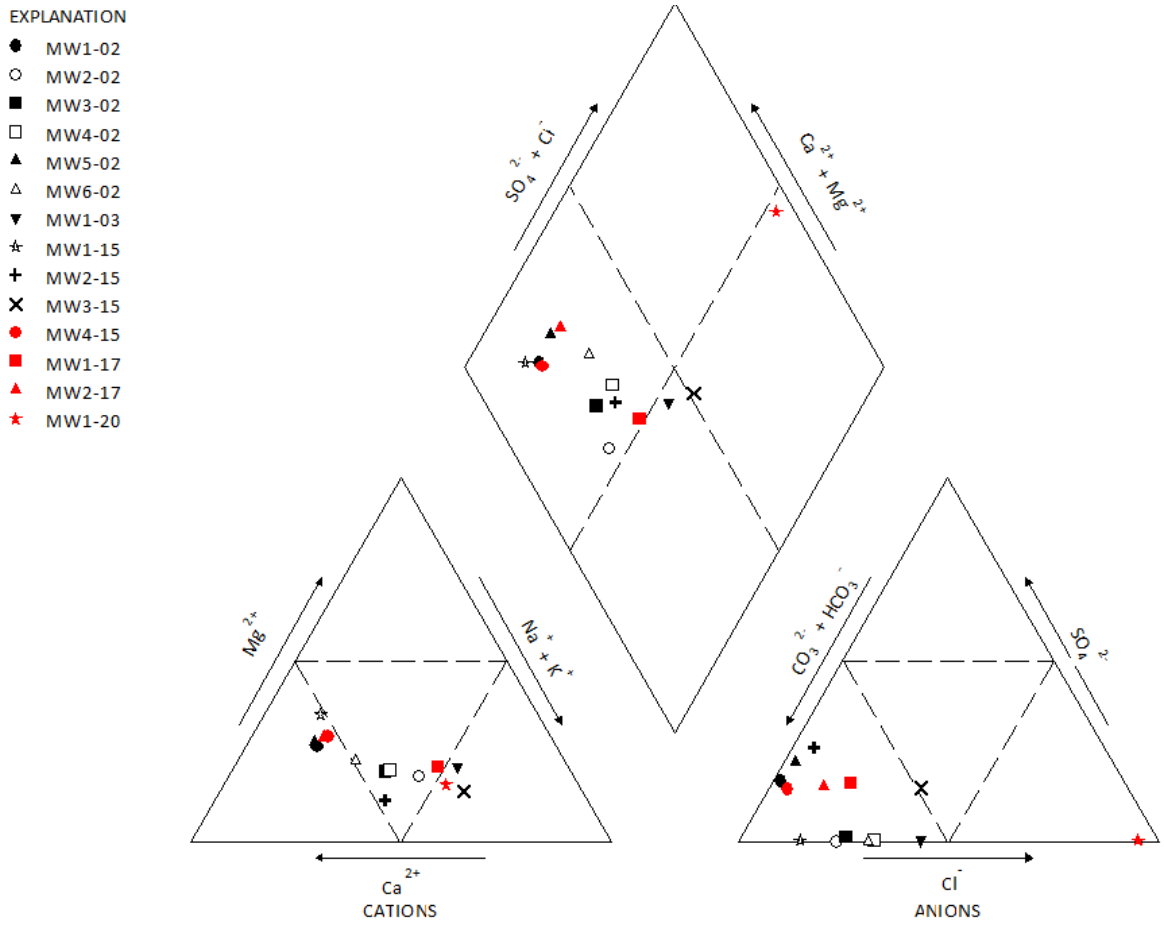


Figure 2: Monitoring Well Piper Diagram

The Piper diagram shows grouping similarly to previous years, with the central diamond revealing a calcium-bicarbonate type grouping of wells similar to the source monitor (MW2-02) and a grouping similar to the background well (MW1-02). Three wells display either mixed water types, with one (MW1-20) clearly chloride type.

Similarly to historical reports, the clustering and relative positions of the data points shown on the Piper diagram suggests that the leachate impacted groundwater progressing in a southwesterly direction may

be constrained between MW1-03 and MW3-15. The possible impact of highway salting on wells adjacent to the highway (especially MW1-20) is also revealed.

4.4.3. Leachate Characterization

Landfill leachates are typically strong, having TDS levels in the thousands of mg/L and complex mixtures of numerous contaminants that may have either leached from waste material or formed as a result of related reactions/processes. TDS levels at the Site have historically been shown to range from a low of 28mg/L at MW2-15 to a high of 2,580mg/L and MW2-02 (source well).

Representative ranges of typical contaminants found in landfill leachate are presented in Table 11.A, along with median values encountered at each of the monitoring well locations. The representative ranges in the table are associated with mature landfill sites (greater than 10 years old).

TABLE 11.A: COMPARISON OF MEDIAN MW CONCENTRATIONS TO RANGES OF TYPICAL LEACHATE PARAMETERS

Parameter	Monitoring Well (mg/L)														
	MW1-02 Background	MW 2-02 Source	MW 3-02	MW 4-02	MW 5-02	MW 6-02	MW 1-03	MW 1-15	MW 2-15	MW 3-15	MW 4-15	MW 1-17	MW 2-17	MW 1-20	Representative Range in Leachate
Potassium	1.55	**159**	28.7	10.8	1.34	4.39	29.6	4.005	0.281	0.417	0.66	1.16	0.844	1.965	50-400
Sodium	6.01	**181**	41.35	28.65	3.645	32.85	56.95	58.55	2.445	9.11	3.4	29.25	6.405	**303**	100-200
Calcium	20.1	**192**	60.35	31.45	13.8	54.45	32.2	**198.5**	2.66	3.92	9.49	16.65	18.65	**158**	100-400
Magnesium	5.67	**56.8**	16.15	9.555	4.05	14.75	15.1	**81.85**	0.385	1.18	3.16	6.78	5.995	47.6	50-200
Chloride	0.86	**230**	56.3	39.7	1	54.5	86.1	82.95	0.535	8.05	1.24	15.4	6.885	**863**	100-400
Sulphate	11.55	2.1	3.72	1	11.45	0.3	1.405	2.11	3.365	4.48	5.58	18.1	10.95	6	20-50
Alkalinity	71.1	**1310**	**285**	142.5	49.6	**207.5**	193	**842**	11.5	18.9	40.4	93.4	65.9	74.6	200-1,000
Iron	0.05	**69.6**	0.207	4.02	0.019	18.05	7.2	8.825	0.072	1.4	1.09	3.75	0.01	**21.3**	20-200
Nitrate	0.142	0.1	0.104	0.03	0.109	0.086	0.03	0.04	0.0905	0.048	0.133	0.076	0.0725	0.2	5-10
Ammonia-N	0.024	**86.2**	0.275	0.8605	0.02	1.35	1.31	0.383	0.02	0.05	0.442	0.7615	0.02855	2	20-40
COD	10	**232.5**	58.5	27	10	42	85.3	**107.5**	50	60	33	**116.5**	73	67	100-500
Conductivity	0.205	2960	718	414	124	555.5	676	1620	35.8	75.9	96	262	168	2760	NP
TDS	167	1460	457	291	95	346	403.5	988.5	36.5	155	81	283	150.5	1700	5,000-40,000

Notes:
1. *Representative Ranges from "Integrated Solid Waste Management, Tchobangolous,1993".*
2. *Representative Range for TDS from "The Fate of Landfill Leachate in Waste Water Treatment Plants and in Groundwater at Attenuation Landfills, MOEE, 1994".*
3. *Bolded and shaded values fall within or above the representative range.*
4. *NP – Not Provided*

The representative ranges of typical contaminants found in landfill leachate are presented in Table 11.B and Table 11.C, along with the concentrations encountered at each of the monitoring well locations during the 2024 spring and fall sampling events. The representative ranges in the tables are associated with mature landfill sites (greater than 10 years old).

TABLE 11.B: SUMMARY OF TYPICAL LEACHATE PARAMETERS – MAY 2024

Parameter	Monitoring Well (mg/L)															
	ODWS	MW 1-02 (BG)	MW 2-02 (Source)	MW 3-02	MW 4-02	MW 5-02	MW 6-02	MW 1-03	MW 1-15	MW 2-15	MW 3-15	MW 4-15	MW 1-17	MW 2-17	MW 1-20	Representative Range in Leachate
Potassium		0.564	**173**	24.9	9.41	1.15	6.3	40.4	4.51	0.237	ND	0.522	0.621	0.696	2.13	50-400
Sodium	200	3.18	**249**	39.9	**163**	3.55	32	**445**	72.3	2.17	9.69	3.58	13.4	7.58	**318**	100-200
Calcium		9.46	**204**	**51.9**	42.6	12.8	**61.6**	**80.2**	**219**	2.37	4.09	7.42	9.8	16.2	**176**	100-400
Magnesium		2.76	81.4	13.8	13.1	3.8	17.3	26.1	90.6	0.363	1.88	2.86	4.06	5.42	49	50-200
Chloride	250	4.21	ND	10.8	8.03	10.1	ND	ND	2	3.55	6.39	7.18	9.84	11.4	ND	100-400
Sulphate	500	38.3	**1660**	**237**	92.3	48.8	**224**	168	**818**	8.5	14.5	33	46.7	62.3	68.4	20-50
Alkalinity	500	0.04	**55.2**	0.207	6.59	ND	16.8	18.3	11.6	0.042	8.23	0.635	2.23	0.035	**24**	200-1,000
Iron	0.3	0.027	ND	0.04	ND	0.147	0.045	ND	ND	ND	0.066	0.17	0.116	0.073	ND	20-200
Nitrate	10	ND	**144**	0.0977	0.367	0.0074	1.87	1.22	0.625	ND	ND	0.17	0.317	0.0118	1.21	5-10
Ammonia-N		26	**252**	50	34	14	55	88	**115**	22	47	16	39	72	51	20-40
COD		81	3570	603	1350	118	580	2670	1530	27	71.8	79.4	154	161	3020	100-500
Conductivity		89	1800	364	768	92	370	1530	979	31	114	78	312	131	2100	NP
TDS	500	89	1800	364	768	92	370	1530	979	31	114	78	312	131	2100	5,000-40,000

Notes:
1. *Representative Ranges from "Integrated Solid Waste Management, Tchobangolous,1993".*
2. *Representative Range for TDS from "The Fate of Landfill Leachate in Waste Water Treatment Plants and in Groundwater at Attenuation Landfills, MOEE, 1994"*
3. *ND- Not Detected, NT- No Test, NP – Not Provided*
4. *Bolded and shaded values fall within or above the representative range*

TABLE 11.B: SUMMARY OF TYPICAL LEACHATE PARAMETERS – OCTOBER 2024																
Parameter	**Monitoring Well (mg/L)**															
	ODWS	**MW 1-02 (BG)**	**MW 2-02 (Source)**	**MW 3-02**	**MW 4-02**	**MW 5-02**	**MW 6-02**	**MW 1-03**	**MW 1-15**	**MW 2-15**	**MW 3-15**	**MW 4-15**	**MW 1-17**	**MW 2-17**	**MW 1-20**	**Representative Range in Leachate**
Potassium		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	50-400
Sodium	200	5.35	**286**	**116**	**289**	3.62	34.5	**361**	63.3		6.99	4.22	10.2	4.56	**318**	100-200
Calcium		16.4	**176**	**59.8**	**51.3**	13.2	**57.7**	**68.8**	**192**		3.04	11.7	23	19.9	**162**	100-400
Magnesium		4.65	84.3	15.8	15.3	4.06	17	19.1	81.1		1.06	5.41	10.4	6.45	47.8	50-200
Chloride	250	0.7	**275**	**236**	**518**	1.08	57.8	**658**	74.8		9.94	2.01	21.2	2.48	**914**	100-400
Sulphate	500	9.38	ND	6	5.09	9.8	ND	ND	ND		4.81	6.75	0.62	12	ND	20-50
Alkalinity	500	63.9	**1700**	193	88.5	47.3	**242**	**201**	**855**	DRY	9.3	54.4	89.7	71.7	72.8	200-1,000
Iron	0.3	0.033	**55.7**	0.508	8.2	ND	19.4	11.6	12.1		0.191	9.25	15.1	0.015	**23.8**	20-200
Nitrate	10	0.093	ND	ND	ND	0.149	0.049	ND	ND		0.082	0.031	0.185	0.078	ND	5-10
Ammonia-N		0.0269	**148**	0.263	0.926	0.0638	ND	1.14	1.22		0.0599	0.586	0.827	0.0281	2.48	20-40
COD		ND	**312**	46	24	ND	36	51	**113**		37	**433**	**120**	90	67	100-500
Conductivity		145	3870	1100	1840	118	584	2370	1630		66.3	126	241	170	2930	NP
TDS	500	136	1710	598	1030	79	322	1300	978		94	88	162	137	1890	5,000-40,000

Notes:
1. *Representative Ranges from "Integrated Solid Waste Management, Tchobangolous,1993".*
2. *Representative Range for TDS from "The Fate of Landfill Leachate in Waste Water Treatment Plants and in Groundwater at Attenuation Landfills, MOEE, 1994"*
3. *ND- Not Detected, NT- No Test, NP – Not Provided*
4. *Bolded and shaded values fall within or above the representative range*

Review of the data in Tables 11.A, 11.B and 11.C coupled with the observed TDS levels, suggests that the landfill is producing moderately strong leachate.

4.5 Surface Water Quantity Monitoring

Surface water flow measurements are not taken as part of the annual sampling events.

4.6 Surface Water Quality Monitoring

The surface water monitoring program evaluates the potential that landfill leachate and/or surface runoff from the Site may be impacting down gradient surface waters.

Previous assessments have concluded that:

1. Historic monitoring results for surface water samples collected southwest of the waste disposal site have demonstrated consistent water quality since 2004.

2. PWQO are commonly exceeded at SW1 (formerly SW) for boron, iron, zinc and phenols. PWQO have historically been exceeded for boron, iron and phenols at SW2 and SW4 and for iron and phenols at SW3, SW5, SW6 (background) and SW7.

Analytical results are summarized in Tables G.17 to G.23 of Appendix G and copies of laboratory certificates of analysis are presented in Appendix F. Surface water quality trends are also included in Charts H.7 – H.10 of Appendix H. The data in Table 12.A to 12.D presents a comparison of concentrations of surface water constituents to PWQO, Canadian Water Quality Guidelines (CWQG) and criteria listed under MECP's *Table A: Assessment Criteria for Waste Disposal Sites, Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface Water – Technical Guidance Document, 2010 (*AAC). The following observations are made on review of the results.

May 2024

- Phosphorus exceeded PWQO at all sampled surface water locations
- Un-ionized ammonia exceeded AAC and CWQG at SW1 and CWQG at SW4
- Boron exceeded PWQO at SW1 and SW4
- Cadmium exceeded CWQG at SW3, SW4 and SW7
- Chloride exceeded AAC and CWQG at SW7
- Copper exceeded PWQO and CWQG at SW3, SW4 and SW7
- Iron exceeded PWQO, CWQG and AAC at SW1, SW3, SW4 and SW7 and PWQO and CWQG at SW2 and SW6
- Lead exceeded PWQO and CWQG at SW3 and SW4
- Phenols exceeded PWQO, CWQG and AAC at SW4, PWQO and CWQG at SW1 and PWQO at SW2, SW3 and SW6
- Total Zinc exceeded PWQO at SW4
- Dissolved Zinc exceeded CWQG at SW4

June 2024

- Phosphorus exceeded PWQO at all sampled surface water locations
- Boron exceeded PWQO at SW1 and SW2
- Cadmium exceeded PWQO and AAC at SW7
- Chloride exceeded CWQG at SW7

- Copper exceeded PWQO, CWQO and AAC at SW7 and CWQG at SW3 and SW4
- Iron exceeded PWQO, CWQG and AAC at SW1, SW3, SW4 and SW7 and PWQO and CWQG at SW2 and SW6
- Lead exceeded PWQO. CWQG and AAC at SW7 and PWQO and CWQG at SW4
- Phenols exceeded PWQO, CWQG and AAC at SW4, PWQO and CWQG at SW1 and PWQO at SW2, SW3 and SW7
- Dissolved zinc exceeded CWQG at SW4 and SW7

August 2024

- Phosphorus exceeded PWQO at all sampled surface water locations
- Un-ionized ammonia exceeded CWQG at SW4
- Boron exceeded PWQO at SW1, SW2 and SW4
- Cadmium exceeded PWQO, CWQG and AAC at SW7 and PWQO and CWQG at SW1
- Chloride exceeded CWQG and AAC at SW7
- Copper exceeded PWQO, CWQG and AAC at SW7 and PWQO and CWQG at SW1
- Iron exceeded PWQO, CWQG and AAC at SW1, SW4, SW6 and SW7 and PWQO and CWQG at SW2
- Lead exceeded PWQO, CWQG and AAC at SW7 and PWQO and AAC at SW1 and SW4
- Nitrite exceeded CWQG at SW1
- Phenols exceeded PWQO and CWQG at SW4

October 2024

- Phosphorus exceeded PWQO at all sampled surface water locations
- Un-ionized ammonia exceeded PWQO and CWQG at SW1
- Arsenic exceeded PWQO and CWQG at SW7
- Boron exceeded PWQO at SW1 and SW2
- Cadmium exceeded PWQO, CWQG and AAC at SW7
- Chloride exceeded CWQG and AAC at SW7
- Copper exceeded PWQO, CWQG and AAC at SW7 and CWQG at SW6
- Iron exceeded PWQO, CWQG and AAC at SW2, SW6 and SW6 and PWQO and CWQG at SW2
- Lead exceeded PWQO, CWQG and AAC at SW7 and PWQO at SW6
- Phenols exceeded PWQO at SW1 and SW7

Surface water PWQO exceedances for the 2024 sampling events are tabulated graphically on Drawing B8 of Appendix B.

TABLE 12.A: SELECTED SURFACE WATER QUALITY DATA COMPARED WITH PWQO – MAY 2024

Parameter	PWQO	Alternative Assessment Criteria	Units	Sampling Location and Concentration							
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	MW1-02 (Background Median)
Chloride		180 (120)	mg/L	67.4	9.54	31	30		ND	**(185)**	0.87
Sulfate		100	mg/L	6.03	1.01	1.29	ND		1.23	38.8	12.2
Phosphorus	0.01		mg/L	**0.0377**	**0.0157**	**0.322**	**0.706**		**0.0413**	**2.08**	0.391
Un-ionized Ammonia		0.1 (0.019)	mg/L	**(0.5549)**	0.0002	0.0008	**(0.047)**		0	0.0002	0.0001
pH		6.0-9.0		8.47	8.1	6.72	7.36		7.67	6.97	7.02
Arsenic	0.005	0.15 (0.005)	mg/L	ND	0.0005	0.00135	0.00327		0.00092	0.00223	0.001
Barium		2.3	mg/L	0.116	0.0105	0.0392	0.251		0.01	0.116	0.012
Boron	0.2	3.55 (1.5)	mg/L	**0.826**	0.134	ND	**0.248**		ND	ND	0.024
Cadmium	0.0001	0.00021 (0.00005[1])	mg/L	ND	0.0000069	**(0.0000594)**	**(0.0000545)**	DRY	0.0000149	**(0.0000892)**	0.0001
Chromium		0.064	mg/L	ND	0.00064	0.00359	0.00324		0.00084	ND	0.00084
Iron	0.3	1 (0.3)	mg/L	**(4.12)***	**(0.399)**	**(21.4)***	**(139)***		**(0.602)**	**(57)***	0.05
Lead	0.001	0.002 (0.001[2])	mg/L	ND	ND	**(0.00151)**	**(0.00118)**		0.000277	0.00089	0.001
Phenols	0.001	0.04 (0.004)	mg/L	**(0.0042)**	**0.0018**	**0.0024**	**(0.505)***		**0.0022**	ND	1.85
Zinc	0.02	0.089	mg/L	ND	ND	0.0175	**(0.286)**		ND	0.0710	0.009
Zinc (Dissolved)		(0.028[3])	mg/L	ND	0.0028	0.0069	**(0.0588)**		0.002	0.0242	
Copper	0.005	0.0069 (0.002[4])	mg/L	ND	0.00057	**(0.00619)**	**(0.00501)**		0.00163	**(0.00624)**	0.003
Nitrate		(13)	mg/L	0.583	0.022	ND	ND		ND	ND	0.157
Nitrite		(0.06)	mg/L	0.051	ND	ND	ND		ND	ND	0.02

( ) Standard in bracket applies to Canadian Water Quality Guideline criteria. [1,2,3,4] - Standard dependent on lowest hardness value (26.6 mg/L at SW3) recorded for surface water during the May 2024 sampling event.

Alternative assessment criteria from "*Table A: Assessment Criteria for Waste Disposal Sites Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface water – Technical Guidance Document, MOE, 2010*"

Bold and grey shaded values exceed PWQO; Bold and bracketed values exceed Canadian Water Quality Guidelines; Grey shaded * values exceed PWQO and Table A criteria; Grey shaded and bracketed values exceed PWQO and Canadian Water Quality Guidelines; Grey shaded, bracketed * values exceed PWQO, Table A and Canadian Water Quality Guidelines; Bold yellow shaded bracket values exceed Table A and Canadian Water Quality Guidelines.

Multiple PWQO exist where interim (revised) values are available based on the Hardness as CaCO3 (mg/L) result (i.e. cadmium, copper and lead)

ND – Not Detected; NT – Not Tested

Unless otherwise noted, concentrations of metals are show as total metals.

CWQG for zinc is shown as a dissolved concentration.

TABLE 12.B: SELECTED SURFACE WATER QUALITY DATA COMPARED WITH PWQO – JUNE 2024

Parameter	PWQO	Alternative Assessment Criteria	Units	Sampling Location and Concentration							
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	MW1-02 (Background Median)
Chloride		180 (120)	mg/L	49.9	9.14	20.7	12.1		ND	**(178)**	0.87
Sulfate		100	mg/L	0.64	0.88	0.89	ND		0.97	7.48	12.2
Phosphorus	0.01		mg/L	**0.0365**	**0.0232**	**0.0423**	**0.324**		**0.036**	**0.654**	0.391
Un-ionized Ammonia		0.1 (0.019)	mg/L	0.0183	0	0.0003	0.0047		0	0.0001	0.0001
pH		6.0-9.0		8.33	8.16	7.11	7.73		7.63	7.06	7.02
Arsenic	0.005	0.15 (0.005)	mg/L	ND	0.00071	0.0005	0.00127		0.00093	0.00467	0.001
Barium		2.3	mg/L	0.109	0.0275	0.0169	0.114		0.0102	0.166	0.012
Boron	0.2	3.55 (1.5)	mg/L	**0.664**	**0.264**	ND	0.176		ND	ND	0.024
Cadmium	0.0001	0.00021 (0.00006[1])	mg/L	ND	ND	0.0000374	0.0000384	DRY	0.0000115	**0.000451***	0.0001
Chromium		0.064	mg/L	ND	0.00078	0.0016	ND		0.00063	0.00982	0.00084
Iron	0.3	1 (0.3)	mg/L	**(4.62)***	**(0.86)**	**(1.75)***	**(34.2)***		**(0.632)**	**(89.1)***	0.05
Lead	0.001	0.002 (0.001[2])	mg/L	ND	ND	0.000201	**(0.00152)**		0.000129	**(0.00548)***	0.001
Phenols	0.001	0.04 (0.004)	mg/L	**(0.0043)**	**0.0013**	**0.0029**	**(0.052)***		ND	**0.0028**	1.85
Zinc	0.02	0.089	mg/L	ND	0.0047	0.0127	0.0101		0.0047	0.0098	0.009
Zinc (Dissolved)		(0.026[3])	mg/L	ND	ND	0.0117	**(0.0531)**		0.0044	**(0.244)**	
Copper	0.005	0.0069 (0.002[4])	mg/L	ND	0.00058	**(0.0035)**	**(0.00452)**		0.00145	**(0.0259)***	0.003
Nitrate		(13)	mg/L	0.054	ND	0.02	ND		ND	ND	0.157
Nitrite		(0.06)	mg/L	0.032	ND	ND	ND		ND	ND	0.02

( ) Standard in bracket applies to Canadian Water Quality Guideline criteria. [1,2,3,4] - Standard dependent on lowest hardness value (33.2 mg/L at SW3) recorded for surface water during the June 2024 sampling event.

Alternative assessment criteria from "*Table A: Assessment Criteria for Waste Disposal Sites Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface water – Technical Guidance Document, MOE, 2010"*

Bold and grey shaded values exceed PWQO; Bold and bracketed values exceed Canadian Water Quality Guidelines; Grey shaded * values exceed PWQO and Table A criteria; Grey shaded and bracketed values exceed PWQO and Canadian Water Quality Guidelines; Grey shaded, bracketed * values exceed PWQO, Table A and Canadian Water Quality Guidelines; Bold yellow shaded bracket values exceed Table A and Canadian Water Quality Guidelines.

Multiple PWQO exist where interim (revised) values are available based on the Hardness as CaCO3 (mg/L) result (i.e. cadmium, copper and lead)

ND – Not Detected; NT – Not Tested

Unless otherwise noted, concentrations of metals are show as total metals.

CWQG for zinc is shown as a dissolved concentration.

TABLE 12.C: SELECTED SURFACE WATER QUALITY DATA COMPARED WITH PWQO – AUGUST 2024

Parameter	PWQO	Alternative Assessment Criteria	Units	Sampling Location and Concentration							
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	MW1-02 (Background Median)
Chloride		180 (120)	mg/L	48	23.5		29.7		ND	**(384)**	0.86
Sulfate		100	mg/L	41.1	ND		0.45		0.75	60.8	12.1
Phosphorus	0.01		mg/L	**0.541**	**0.0101**		**0.327**		**0.157**	**0.646**	0.39
Un-ionized Ammonia		0.1 (0.019)	mg/L	0.0014	0.0002		**(0.0304)**		0	0.0007	ND
pH		6.0-9.0		7.85	8.15		7.77		7.62	6.76	7.03
Arsenic	0.005	0.15 (0.005)	mg/L	0.00115	0.00076		0.00284		0.00144	0.00333	0.001
Barium		2.3	mg/L	0.231	0.0274		0.162		0.0273	0.238	0.0119
Boron	0.2	3.55 (1.5)	mg/L	**0.709**	**0.369**		**0.362**		ND	ND	0.022
Cadmium	0.0001	0.00021 (0.00006[1])	mg/L	**(0.00014)**	ND	DRY	0.000055	DRY	0.00003	**(0.0003)***	0.0001
Chromium		0.064	mg/L	ND	ND		ND		ND	0.0268	0.00076
Iron	0.3	1 (0.3)	mg/L	**(26.4)***	**(0.353)**		**(38.5)***		**(1.28)***	**(37.9)***	0.05
Lead	0.001	0.002 (0.00351[2])	mg/L	**0.00338***	ND		**0.00323***		0.000728	**(0.00889)***	0.001
Phenols	0.001	0.04 (0.004)	mg/L	ND	ND		**(0.0127)**		ND	ND	1.7
Zinc	0.02	0.089	mg/L	0.0413	ND		0.0927		ND/0.0023	0.188	0.0085
Zinc (Dissolved)		(0.060[3])	mg/L	ND	0.0034		0.0135		0.0023	0.0071	
Copper	0.005	0.0069 (0.00298[4])	mg/L	**(0.0069)**	ND		**(0.00482)**		ND	**(0.0288)***	0.002
Nitrate		(13)	mg/L	0.252	ND		ND		ND	ND	0.154
Nitrite		(0.06)	mg/L	**(0.143)**	ND		ND		ND	ND	0.02

( ) Standard in bracket applies to Canadian Water Quality Guideline criteria. [1,2,3,4] - Standard dependent on lowest hardness value (108 mg/L at SW6) recorded for surface water during the August 2024 sampling event.
Alternative assessment criteria from "*Table A: Assessment Criteria for Waste Disposal Sites Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface water – Technical Guidance Document, MOE, 2010*"
Bold and grey shaded values exceed PWQO; Bold and bracketed values exceed Canadian Water Quality Guidelines; Grey shaded * values exceed PWQO and Table A criteria; Grey shaded and bracketed values exceed PWQO and Canadian Water Quality Guidelines; Grey shaded, bracketed * values exceed PWQO, Table A and Canadian Water Quality Guidelines; Bold yellow shaded bracket values exceed Table A and Canadian Water Quality Guidelines.
Multiple PWQO exist where interim (revised) values are available based on the Hardness as CaCO3 (mg/L) result (i.e. cadmium, copper and lead)
ND – Not Detected; NT – Not Tested
Unless otherwise noted, concentrations of metals are show as total metals.
CWQG for zinc is shown as a dissolved concentration.

TABLE 12.D: SELECTED SURFACE WATER QUALITY DATA COMPARED WITH PWQO – OCTOBER 2024

Parameter	PWQO	Alternative Assessment Criteria	Units	Sampling Location and Concentration							
				SW1	SW2	SW3	SW4	SW5	SW6	SW7	MW1-02 (Background Median)
Chloride		180 (120)	mg/L	119	36.3				2.02	**(382)**	0.86
Sulfate		100	mg/L	ND	ND				67.9	53.5	12.1
Phosphorus	0.01		mg/L	**0.0372**	**0.0198**				**0.0891**	**3.14**	0.39
Un-ionized Ammonia		0.1 (0.019)	mg/L	**(0.1269)**	0.0016				0.0001	0.0132	ND
pH		6.0-9.0		8.11	8.23				7.66	6.76	7.03
Arsenic	0.005	0.15 (0.005)	mg/L	ND	0.00063				0.00149	**(0.00623)**	0.001
Barium		2.3	mg/L	0.0992	0.0424				0.0299	0.431	0.0119
Boron	0.2	3.55 (1.5)	mg/L	**0.687**	**0.361**				ND	ND	0.022
Cadmium	0.0001	0.00021 (0.00009[1])	mg/L	ND	ND	DRY	DRY	DRY	0.0000437	**(0.000734)***	0.0001
Chromium		0.064	mg/L	ND	0.00109				0.0021	0.0571	0.00076
Iron	0.3	1 (0.3)	mg/L	**(1.39)***	**(0.775)**				**(1.12)***	**(78.2)***	0.05
Lead	0.001	0.002 (0.00449[2])	mg/L	ND	0.000068				**0.00137**	**(0.0197)***	0.001
Phenols	0.001	0.04 (0.004)	mg/L	**0.0015**	ND				ND	**0.0034**	1.7
Zinc	0.02	0.089	mg/L	ND	0.0012				0.0035	0.0065	0.0085
Zinc (Dissolved)		(0.030[3])	mg/L	ND	ND				0.0081	**(0.351)**	
Copper	0.005	0.0069 (0.002[4])	mg/L	ND	ND				**(0.00205)**	**(0.0588)***	0.002
Nitrate		(13)	mg/L	0.586	0.239				0.044	ND	0.154
Nitrite		(0.06)	mg/L	ND	ND				ND	ND	0.02

( ) Standard in bracket applies to Canadian Water Quality Guideline criteria. [1,2,3,4] - Standard dependent on lowest hardness value (131 mg/L at SW6) recorded for surface water during the October 2024 sampling event.
Alternative assessment criteria from "*Table A: Assessment Criteria for Waste Disposal Sites Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface water – Technical Guidance Document, MOE, 2010*"
Bold and grey shaded values exceed PWQO; Bold and bracketed values exceed Canadian Water Quality Guidelines; Grey shaded * values exceed PWQO and Table A criteria; Grey shaded and bracketed values exceed PWQO and Canadian Water Quality Guidelines; Grey shaded, bracketed * values exceed PWQO, Table A and Canadian Water Quality Guidelines; Bold yellow shaded bracket values exceed Table A and Canadian Water Quality Guidelines.
Multiple PWQO exist where interim (revised) values are available based on the Hardness as CaCO3 (mg/L) result (i.e. cadmium, copper and lead)
ND – Not Detected; NT – Not Tested
Unless otherwise noted, concentrations of metals are show as total metals.
CWQG for zinc is shown as a dissolved concentration.

4.7 Gas Pressures and Composition

Gas pressures and composition data is not currently collected at the Site.

4.8 Supplemental Monitoring

No supplemental monitoring is performed at the Site.

4.9 Control Systems Monitoring

The current environmental control systems in place at the Site are the application of cover material as well as proper grading of the fill area of the landfill.

5.0 ASSESSMENT, INTERPRETATION AND DISCUSSION

Section 5.0 provides an assessment, interpretation and discussion regarding the potential impact from the landfill on groundwater and surface water features considering information collected during the 2024 groundwater and surface water sampling program, as well as a review of historical data. The effectiveness of the monitoring program, remedial measures in place, site features, control measures/systems in place and operating conditions at the landfill site are also assessed.

5.1 Groundwater Flow Interpretation

Interpretations presented in previous assessments indicate that groundwater within the overburden aquifer at the Site flows toward the northwest and southwest, eventually discharging into Lake Huron. Groundwater contours interpreted from water table elevations determined during the 2024 spring and fall sampling events are shown on Drawings B5 and B6, of Appendix B. The 2024 contours support the historical interpretations regarding groundwater flow direction; it is suspected that a groundwater divide restricts flow in the northwesterly and westerly directions.

Goffco Limited identified a hydraulic conductivity (K) of $1.0x10^{-6}$ m/s (clean sand) in their 2003 report titled “Hydrogeological Investigation – Town of Blind River Landfill”. The porosity of the soils is assumed to be in the range of 30% based on previous hydrogeological assessments on similar material.

Based on the identified hydraulic conductivity and porosity, an estimated lateral gradient for the Site was developed in order to calculate groundwater flow velocities for the spring and fall sampling events. Drawing B4 of this report was referenced in order to determine the groundwater gradient according to the 2024 spring and fall sampling events.

For the spring sampling event, the hydraulic gradient between MW2-02 and MW6-02 was calculated to be 0.025 m/m. Using the identified hydraulic conductivity and porosity, the estimated groundwater flow velocity was calculated to be 2.66 meters/year (m/yr). Gradient and velocity values associated with the fall sampling event are 0.026 m/m and 2.69 m/y.

At the vertical gradient of 0.03 observed during the fall 2024 sampling event at the nested monitoring well locations MW3-02 and MW6-02, the groundwater velocity was determined to be 0.15 m/yr at a hydraulic conductivity of 1 order of magnitude less than that used for the lateral gradient calculation.

At the calculated horizontal and vertical groundwater velocities, precipitation (or leachate) reaching the underlying groundwater system is expected to travel for decades before reaching the Highway 17 right-of-way (ROW) and eventually discharging to Lake Huron.

5.2 Groundwater and Surface Water Quality

The Tables in Appendix G present summaries of analytical results from analyses of the groundwater and surface water samples collected during the reporting period and previous years. ODWS and PWQO are noted where they exist. The comments below have been developed following review of the latest set of groundwater and surface water analytical data.

1. The Site appears to be producing moderately strong leachate;

2. A summary of groundwater ODWS and RU exceedances for the 2024 sampling events is presented in Table 13.

TABLE 13: GROUNDWATER CRITERIA EXCEEDANCES - 2024

Well No.	May 2024		October 2024	
	ODWS	RU	ODWS	RU
MW1-02 (Background)	DOC	DOC	None	None
MW2-02 (Source)	Alkalinity, Chloride, Iron, Manganese, Sodium, TDS, DOC, Benzene	Alkalinity, Barium, Boron, Chloride, Iron, Manganese, Sodium, TDS, Benzene, DOC	Alkalinity, Chloride, Iron, Manganese, Sodium, TDS, DOC	Alkalinity, Barium, Boron, Chloride, Iron, Manganese, Sodium, TDS, DOC
MW3-02 (Boundary)	Manganese, DOC	Iron, Manganese, pH, TDS, DOC	Iron, Manganese, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC
MW4-02 (Boundary)	Chloride, Iron, Manganese, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC, pH	Chloride, Iron, Manganese, Sodium, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC
MW5-02 (Intermediate)	None	pH	None	None
MW6-02 Boundary)	Iron, Manganese, DOC	Iron, Manganese, pH, TDS, DOC	Iron, Manganese, DOC	Iron, Manganese, DOC
MW1-03 (Boundary)	Chloride, Iron, Manganese, Sodium, TDS, DOC	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC
MW1-15 (Intermediate)	Alkalinity, Iron, Manganese, TDS, DOC	Alkalinity, Arsenic, Boron, Iron, Manganese, TDS, Benzene, DOC	Alkalinity, Iron, Manganese, TDS, DOC	Alkalinity, Boron, Iron, Manganese, pH, TDS, DOC
MW2-15 (Intermediate)	None	pH	Dry	NA

TABLE 13: GROUNDWATER CRITERIA EXCEEDANCES - 2024				
Well No.	**May 2024**		**October 2024**	
	ODWS	**RU**	**ODWS**	**RU**
MW3-15 (Boundary)	Iron, Manganese	Iron, Lead, Manganese, DOC	pH	Iron, pH
MW4-15 (Intermediate)	Iron, Manganese	Iron, Manganese	Iron, Manganese, pH	Iron, Manganese, pH
MW1-17 (Boundary)	Iron, Manganese, DOC	Iron, Manganese, DOC	Iron, Manganese, DOC	Iron, Manganese, DOC
MW2-17 (Boundary)	None	None	None	None
MW1-20 (Boundary)	Chloride, Iron, Manganese, Sodium, TDS, DOC	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC	Chloride, Iron, Manganese, Sodium, TDS, DOC	Barium, Chloride, Iron, Manganese, Sodium, TDS, DOC

3. A summary of the surface water PWQO, CWQG and AAC exceedances for the 2024 sampling event is presented in Table 14.

TABLE 14: SURFACE WATER CRITERIA EXCEEDANCES - 2024				
Surface Water Location	**Sampling Event**			
	May	**June**	**August**	**October**
SW1	PWQO Phosphorus, Boron, Iron, Phenols CWQG Un-ionized Ammonia, Iron, Phenols AAC Un-ionized Ammonia, Iron	PWQO Phosphorus, Boron, Iron, Phenols CWQG Iron, Phenols AAC Iron	PWQO Phosphorus, Boron, Cadmium, Iron, Lead, Copper CWQG Cadmium, Iron, Copper, Nitrite AAC Iron, Lead	PWQO Phosphorus, Un-ionized Ammonia, Boron, Iron, Phenols CWQG Un-ionized Ammonia, Iron AAC Iron
SW2	PWQO Phosphorus, Iron, Phenols CWQG Iron	PWQO Phosphorus, Boron, Iron, Phenols CWQG Iron AAC -	PWQO Phosphorus, Boron, Iron CWQG Iron AAC -	PWQO Phosphorus, Boron, Iron CWQG Iron AAC -

TABLE 14: SURFACE WATER CRITERIA EXCEEDANCES - 2024

Surface Water Location	Sampling Event			
	May	**June**	**August**	**October**
SW3	PWQO Phosphorus, Iron, Lead, Phenols, Copper CWQG Cadmium, Iron, Lead, Copper AAC Iron	PWQO Phosphorus, Iron, Phenols CWQG Iron, Copper AAC Iron	DRY	DRY
SW4	PWQO Phosphorus, Boron, Iron, Lead, Phenols, Zinc, Copper CWQG Un-ionized Ammonia, Cadmium, Iron, Lead, Phenols, Zinc, Copper AAC Iron, Zinc	PWQO Phosphorus, Iron, Lead, Phenols CWQG Iron, Lead, Zinc, Copper AAC Iron, Phenols	PWQO Phosphorus, Boron, Iron, Lead, Phenols, Copper CWQG Un-ionized Ammonia, Iron, Phenols AAC Iron, Phenols, Copper	DRY
SW5	DRY			
SW6	PWQO Phosphorus, Iron, Phenols CWQG Iron AAC -	PWQO Phosphorus, Iron CWQG Iron AAC -	PWQO Phosphorus, Iron CWQG Iron AAC Iron	PWQO Phosphorus, Iron, Lead CWQG Iron, Copper AAC Iron

TABLE 14: SURFACE WATER CRITERIA EXCEEDANCES - 2024

Surface Water Location	Sampling Event			
	May	**June**	**August**	**October**
SW7	PWQO Phosphorus, Iron, Zinc, Copper CWQG Chloride, Cadmium, Iron, Zinc, Copper AAC Chloride, Iron	PWQO Phosphorus, Cadmium, Iron, Lead, Phenols, Copper CWQG Chloride, Iron, Lead, Zinc, Copper AAC Cadmium, Iron, Lead, Copper	PWQO Phosphorus, Cadmium, Iron, Lead, Coper CWQG Chloride, Cadmium, Iron, Lead, Copper AAC Chloride, Cadmium, Iron, Lead, Copper	PWQO Phosphorus, Arsenic, Cadmium, Iron, Lead, Phenols, Copper CWQG Chloride, Arsenic, Cadmium, Iron, Lead, Copper AAC Chloride, Cadmium, Iron, Lead, Copper

4. Water quality of SW1, located southwest of the fill area and SW4, located south of the fill area appear to have been impacted by leachate throughout the period that data is available.

5. While SW7 shows elevated concentrations of certain parameters, it is difficult to confirm the source of impact considering its proximity to Highway 17 and the railway line. Continued sampling is recommended to expand the database to assist with an evaluation of impact.

6. Water quality monitoring should continue to be carried out four times annually, as required under ECA No. A-500-7134513066.

Groundwater and surface water quality trend plots are included in Appendix H of this report. While no significant trends are apparent in data from individual monitoring wells:

1. Concentrations of iron and manganese are typically higher at MW4-02, MW6-02, MW1-03, MW1-17 and MW1-20;

2. Concentrations of DOC, TDS and chloride are typically greatest at MW1-03, followed by MW6-02 and MW4-02. Although data is limited, concentrations of these parameters appear to be similar to or greater at MW1-20 than those observed at MW1-03;

3. With the exception of the fall 2020 sampling event where MW1-02 shows elevated levels of certain parameters, for reasons unknown, MW1-02 and MW5-02 consistently plot as the lowest concentrations for the selected parameters mentioned above.

5.2.1 Leachate Generation Rate

It is anticipated that, locally, the entire water surplus would infiltrate into the groundwater system. Based on an annual infiltration of 250mm (per MECP guidance) through 2.0 hectares (approved fill area), it is estimated that 13.7m^3/day of leachate may be produced at the Site.

5.3 Waste Disposal Site Gas impacts

Landfill gas is not currently monitored; however, it is expected that the anticipated small quantities of methane gas produced will not impact adjacent properties. The existing cover at the Site does not show signs of failure. There appears to be ample vegetation growth on all outer slopes as well as historic dumping areas within the current landfill.

5.4 Effectiveness of Engineered Controls

There are no engineered control systems currently in place at the Site.

5.5 Adequacy of the Monitoring Program

The groundwater and surface water monitoring program appear to adequately characterize current conditions at the Site, however, to further assess the extent of leachate migration, the Town has been corresponding with the MECP regarding additional monitoring locations.

5.6 Assessment of the Need for Implementation of Contingency Measures

A trigger mechanisms and contingency plan is currently being finalized for the Site, however, to further assess the results from the analysis of groundwater collected at the Site, a list of trigger parameters and concentrations was developed starting in 2015 and continued during the 2024 reporting period.

5.6.1 Trigger Mechanisms Assessment

A list of groundwater trigger parameters was established as being those parameters where the ratio between the median concentrations in leachate and background water quality is 10 or greater. The source (leachate) monitor constructed at the Site is identified as MW2-02 while the background monitor is identified as MW1-02. The ratios of concentrations in groundwater from these two (2) active monitoring wells were determined in identifying the trigger parameters (as shown in Tables 15.A and 15.B).

Site-specific groundwater trigger concentrations, developed based on MECP's RU Policy were established for each of the trigger parameters identified in Table 15.A and 15.B, as the 75th percentile RU values. The trigger concentrations were calculated using the 10 most recent sampling results. The trigger concentrations are also shown in Table 15.A and 15.B.

The assessment of groundwater trigger mechanisms reveals the following trigger concentration exceedances:

MW1-02

- DOC during the spring sampling event

MW3-02

- Iron, manganese and DOC during the spring and fall sampling events
- Chloride and sodium during the fall sampling event

MW4-02

- Chloride, Iron, Manganese, Sodium and DOC during the spring and fall sampling events

MW5-02

- No trigger exceedances during the 2024 reporting period

MW6-02

- Iron, Manganese and DOC during the spring and fall sampling events

MW1-03

- Barium, chloride, iron, manganese, sodium and DOC during the spring and fall sampling events

MW1-15

- Alkalinity, boron, iron, manganese and DOC during the spring and fall sampling events

MW2-15

- No trigger exceedances during the 2024 reporting period

MW3-15

- Iron during the spring and fall sampling event
- Manganese and DOC during the fall sampling event

MW4-15

- Iron and manganese during the spring and fall sampling events

MW1-17

- Iron, manganese and DOC during the spring and fall sampling events

MW2-17

- No trigger exceedances during the 2024 reporting period

MW1-20

- Barium, chloride, iron, manganese, sodium and DOC during the spring and fall sampling events.

TABLE 15.A: GROUNDWATER TRIGGER MECHANISM ASSESSMENT

Parameter	Ratio to Background MW2-02	Trigger Conc. (mg/L)	2024 Spring Sampling Event Monitoring Well Results (mg/L)												
			MW 1-02	MW 3-02*	MW 4-02*	MW 5-02	MW 6-02*	MW 1-03*	MW 1-15	MW 2-15	MW 3-15*	MW 4-15	MW 1-17*	MW 2-17*	MW 1-20
Alkalinity	18.42	287	38.3	237	92.3	48.8	224	168	**818**	8.5	14.5	33	46.7	62.3	68.4
Barium	39.82	0.2590	0.0054	0.0143	0.11	0.00702	0.217	**0.489**	0.19	0.00304	0.0831	0.00641	0.0129	0.0129	**0.348**
Boron	77.00	1.2721	ND	0.496	0.057	ND	0.129	0.255	**1.41**	ND	ND	ND	0.015	ND	0.014
Chloride	267.44	125.43	0.61	52.8	**357**	1.87	59.1	**741**	77.9	ND	9.1	1.01	12.8	6.8	**925**
Iron	1392.0	0.1750	0.04	**0.207**	**6.59**	ND	**16.8**	**18.3**	**11.6**	0.042	**8.23**	**0.635**	**2.23**	0.035	**24**
Manganese	11.61	0.0554	0.0090	**0.0827**	**0.482**	0.001	**1.05**	**0.596**	**4.45**	0.00255	**0.861**	**0.256**	**0.34**	0.00092	**6.39**
Sodium	30.12	103.07	3.18	39.9	**163**	3.55	32	**445**	72.3	2.17	9.69	3.58	13.4	7.58	**318**
DOC	20.45	4.0550	**6.55**	**15.6**	**5.28**	2.94	**11.4**	**13.4**	**18.9**	2.06	**4.61**	2.61	**12.6**	3.82	**8.67**

*Denotes a boundary well
Grey shaded values exceed Trigger Concentrations
NA – Not Available; ND – Not Detected; NT – Not Tested

TABLE 15.B: GROUNDWATER TRIGGER MECHANISM ASSESSMENT

Parameter	Ratio to Background MW2-02	Trigger Conc. (mg/L)	2024 Fall Sampling Event Monitoring Well Results (mg/L)												
			MW 1-02	MW 3-02*	MW 4-02*	MW 5-02	MW 6-02*	MW 1-03*	MW 1-15	MW 2-15	MW 3-15*	MW 4-15	MW 1-17*	MW 2-17*	MW 1-20
Alkalinity	18.42	287	63.9	193	88.5	47.3	242	201	**855**		9.3	54.4	89.7	71.7	72.8
Barium	39.82	0.2590	0.0093	0.0197	0.148	0.00876	0.203	**0.382**	0.182		0.00472	0.0105	0.0299	0.0109	**0.322**
Boron	77.00	1.2706	0.012	0.328	0.053	ND	0.14	0.241	**1.32**		0.052	0.01	0.022	ND	ND
Chloride	267.44	125.43	0.7	**236**	**518**	1.08	57.8	**658**	74.8		9.94	2.01	21.2	2.48	**914**
Iron	1392.0	0.1750	0.033	**0.508**	**8.2**	ND	**19.4**	**11.6**	**12.1**	DRY	**0.191**	**9.25**	**15.1**	0.015	**23.8**
Manganese	11.61	0.0539	0.0073	**0.258**	**0.632**	0.00124	**1**	**0.449**	**3.84**		0.0285	**1.38**	**0.907**	0.00056	**6.41**
Sodium	30.12	103.07	5.35	**116**	**289**	3.62	34.5	**361**	63.3		6.99	4.22	10.2	4.56	**318**
DOC	20.45	4.0550	2.78	**16**	**6.85**	1.85	**12.9**	**17.7**	**23.4**		2.13	3.45	**23.9**	2.06	**9.35**

*Denotes a boundary well
Grey shaded values exceed Trigger Concentrations
NA – Not Available; ND – Not Detected; NT – Not Tested

As proposed in the Site's Trigger Mechanism and Contingency Plan, in addition to the assessment described above, groundwater quality near the point of discharge to surface water (MW1-03 and MW1-20) was assessed considering compliance with background concentrations as well as PWQO or the CWQG, whichever is more recently published (as shown in Table 16).

The assessment of MW1-03 and MW1-20 to surface water trigger mechanisms reveals the following exceedances:

MW1-03

- Chloride, boron, copper, iron and lead during the spring and fall sampling events
- Total phosphorus and cadmium during the spring sampling event

MW1-20

- Chloride, arsenic, cadmium, copper, iron, lead, total zinc during the spring and fall sampling event
- Total phosphorus, dissolved zinc and phenols during the spring sampling event

TABLE 16: MONITORING WELLS NEAR SUSPECTED DISCHARGE TO SURFACE WATER - TRIGGER PARAMETERS

Parameter	ODWS (mg/L)	SW6 (mg/L) (Background)		PWQO (mg/L)	CWQG (mg/L)	MW1-20 (mg/L)		MW1-03 (mg/L)	
		SPRING	FALL			SPRING	FALL	SPRING	FALL
Un-ionized Ammonia		0	0.0006		0.019	0.0003	0.0006	0.0002	0.0001
pH		7.62	7.66	6.5 – 8.5	6.5 - 9	7.44	7.16	7.41	7.13
Chloride	250	ND	2.02	-	120	**925**	**914**	**741**	**658**
Fluoride	1.5	NT	NT	-	0.12	ND	ND	ND	ND
Total Phosphorus		**0.157**	**0.0891**	0.01	-	**4.04**		**0.21**	NT
Cyanide	0.2	ND	ND	0.005	-	ND	ND	ND	ND
Arsenic	0.025	0.00144	0.00149	0.005	0.005	**0.0246**	**0.0378**	0.00123	0.00093
Barium	1	0.0273	0.0299	-	-	1.21	1.71	0.551	0.438
Boron	5	ND	ND	0.2	1.5	ND	ND	**0.257**	**0.282**
Cadmium	0.005	0.00003	0.0000437	0.0001	0.00005*/0.00009*	**0.000418**	**0.00065**	**0.0000694**	ND
Copper	1	ND	**0.00205**	0.001	0.002*/0.002*	**0.142**	**0.259**	**0.00937**	**0.00297**
Iron	0.3	**1.28**	**1.12**	0.3	0.3	**127**	**203**	**24.5**	**15.9**
Lead	0.01	0.000728	**0.00137**	0.001	0.001*/0.00449*	**0.0683**	**0.108**	**0.0023**	**0.00102**
Zinc (total)		ND	0.0081	0.02		**0.191**	**0.321**	ND	ND
Zinc (dissolved)	5	0.0023	0.0035		0.028*/0.06*	**0.002**	NT	ND	NT
Phenols		**0.0022**	ND	0.001	0.004	**0.0011**	NT	ND	NT

* Dependent on hardness value (mg/L as CaCO3) (spring/fall); Unless noted, metals reported for MW1-20 and MW1-03 are total metals (mg/L)
ND – Not Detected; NT – Not Tested
Bold and shaded values exceed trigger
Trigger parameters are those described in Schedule 3 or the ECA; Trigger values are considered PWQO/CWQG values.

To address the noted trigger concentration exceedances, the Town is pursuing the establishment of a contaminant attenuation zone (CAZ).

5.6.2 Surface Water Trigger Assessment

A list of surface water trigger parameters was established as those parameters listed under Column 3 or Schedule 5 of the MECP Landfill Standards.

As specified in the latest Trigger Mechanisms and Contingency Plan developed for the site (January 2025), trigger concentrations are equivalent to PWQO, CWQG and FEQG values, whichever is more recently published.

Established trigger concentrations for the 2024 reporting period are shown in Tables 17.A, 17.B, 17.C and 17.D.

5.6.3 Contingency Measures

Monitoring wells assessed to-date are intermediate wells in close proximity to the fill area, rather than CAZ boundary wells. In accordance with direction from the MECP, the Town has initiated the process to formally establish a CAZ. The Town is currently in discussion with the MTO regarding access requirements for the installation of CAZ boundary wells and has submitted an easement application with MTO requesting that groundwater beneath the Highway 17 ROW be incorporated into the CAZ.

In accordance with ECA A-500-7134513066, the Town is also constructing improvements to site and local area surface water management facilities. This includes addressing suspected leachate seeps.

TABLE 17.A: SURFACE WATER TRIGGER ASSESSMENT – MAY 2024

Parameter	Units	PWQO	CWQG	FEQG	Surface Water Sampling Location						
					SW1	SW2	SW3	SW4	SW5	SW6	SW7
Alkalinity	mg/L $CaCO_3$	-	-	-	512	114	18	358		43	108
Ammonia	mg/L	-	**0.019**	-	**13.2**	0.0077	**0.0477**	**12.1**		0.0066	**0.095**
Arsenic	mg/L	**0.005**	-	-	ND	0.0005	0.00135	0.00327		0.00092	0.00223
Barium	mg/L	-	-	-	0.116	0.0105	0.0392	0.251		0.01	0.116
Boron	mg/L	0.2	**1.5**	-	0.826	0.134	ND	0.248		ND	ND
Bromide	mg/L	-	-	-							
Cadmium	mg/L	0.0001	**0.00005**[1]	-	ND	0.0000069	**0.0000594**	**0.0000545**		0.0000149	**0.0000892**
Chloride	mg/L	-	**120**	-	67.4	9.54	31	30		ND	**185**
Chromium	mg/L	-	-	-	ND	0.00064	0.00359	0.00324		0.00084	ND
Conductivity	µS/cm	-	-	-	1120	238	146	741		85.7	829
Copper	mg/L	**0.005**	0.002[2]	-	ND	0.00057	**0.00619**	**0.00501**		0.00163	**0.00624**
Hardness	mg/L	-	-	-	384	90.2	26.6	261		42.6	152
Iron	mg/L	0.3	0.3	**0.79**	**4.12**	0.399	**21.4**	**139**		0.602	**57**
Lead	mg/L	0.005	0.001[3]	**0.0189**	ND	ND	0.00151	0.00118		0.000277	0.00089
Manganese	mg/L	-	-	-							
Manganese (Dissolved)	mg/L	-	**0.35**[4]	-	0.229	0.0062	**0.43**	**1.88**		0.0182	**0.705**
Mercury	mg/L	0.0002	**0.000026**	-	ND	ND	0.0000082	ND		ND	0.0000052
Nitrate	mg/L	-	**13**	-	0.583	0.022	ND	ND		ND	ND
Nitrite	mg/L	-	**0.06**	-	0.051	ND	ND	ND	DRY	ND	ND
TKN	mg/L	-	-	-	14.4	0.644	3.74	19.1		0.713	10.6
pH	mg/L	6.5-8.5	6.5-9.0	-	8.47	8.1	6.72	7.36		7.67	6.97
Total Phosphorus	mg/L	0.01	-	-	**0.0377**	**0.0157**	**0.322**	**0.706**		**0.0413**	**2.08**
Suspended Solids	mg/L	-	-	-	9.2	16.4	824	479		7	1720
TDS	mg/L	-	-	-	610	167	95	410		74	490
Turbidity	mg/L	-	-	-							
Sodium	mg/L	-	-	-							
Sulphate	mg/L	-	-	-	6.03	1.01	1.29	ND		1.23	38.8
Zinc	mg/L	0.02	-	-	ND	ND	0.0175	**0.286**		ND	**0.071**
Zinc (Dissolved)	mg/L	-	**0.028**[5]	-	ND	0.0028	0.0069	**0.0588**		0.002	0.0242
BOD_5	mg/L	-	-	-	9	2.8	ND	60.6		2.5	67.6
COD	mg/L	-	-	-	91	56	198	434		56	675
Phenol	mg/L	0.001	**0.004**	-	**0.0042**	**0.0018**	**0.0024**	**0.505**		**0.0022**	ND
DOC	mg/L	-	-	-	32.8	18.4	15	54.8		17.6	12.6
Temperature (Field)		-	-	-	28.5	23.5	20.7	21.7		21.5	17.3
pH (Field)		**6.5-8.5**	-	-	7.76	7.6	7.6	6.94		6.72	6.92
Conductivity (Field)	µS/cm	-	-	-	1.011	0.23	0.154	0.878		0.086	0.707
Dissolved Oxygen (Field)	mg/L	-	-	-	127.3	168.6	93.2	18.1		102.1	88.3
Flow		-	-	-	NA	NA	NA	NA		NA	NA

Notes: Bold trigger values indicate most recently published and current trigger concentration.
[1,2,3,4,5] - Standard dependent on lowest hardness value (26.6 mg/L at SW3) recorded for surface water during the May 2024 sampling event
Bold and shaded surface water values exceed trigger concentration

TABLE 17.B: SURFACE WATER TRIGGER ASSESSMENT – JUNE 2024

Parameter	Units	PWQO	CWQG	FEQG	Surface Water Sampling Location						
					SW1	SW2	SW3	SW4	SW5	SW6	SW7
Alkalinity	mg/L $CaCO_3$	-	-	-	496	168	34.2	194		47.6	116
Ammonia	mg/L	-	**0.019**	-	**9.19**	0.0127	**0.0977**	**1.89**		**0.0807**	**0.0622**
Arsenic	mg/L	**0.005**	-	-	ND	0.00071	0.0005	0.00127		0.00093	0.00467
Barium	mg/L	-	-	-	0.109	0.0275	0.0169	0.114		0.0102	0.166
Boron	mg/L	0.2	**1.5**	-	0.664	0.264	ND	0.176		ND	ND
Bromide	mg/L	-	-	-							
Cadmium	mg/L	0.0001	**0.00006**[1]	-	ND	ND	0.0000374	0.0000384		0.0000115	**0.000451**
Chloride	mg/L	-	**120**	-	49.9	9.14	20.7	12.1		ND	**178**
Chromium	mg/L	-	-	-	ND	0.00078	0.0016	ND		0.00063	0.00982
Conductivity	µS/cm	-	-	-	1040	345	148	397		99.3	829
Copper	mg/L	**0.005**	0.002[2]	-	ND	0.00058	0.0035	0.00452		0.00145	**0.0259**
Hardness	mg/L	-	-	-	364	140	33.2	169		50.8	121
Iron	mg/L	0.3	0.3	**0.79**	**4.62**	**0.86**	**1.75**	**34.2**		0.632	**89.1**
Lead	mg/L	0.005	0.001[3]	**0.0189**	ND	ND	0.000201	0.00152		0.000129	0.00548
Manganese	mg/L	-	-	-							
Manganese (Dissolved)	mg/L	-	**0.38**[4]	-	**0.458**	0.182	0.2	**1.11**		0.0317	0.324
Mercury	mg/L	0.0002	**0.000026**	-	ND	ND	0.0000115	ND		0.0000058	0.0000227
Nitrate	mg/L	-	**13**	-	0.054	ND	0.02	ND		ND	ND
Nitrite	mg/L	-	**0.06**	-	0.032	ND	ND	ND	DRY	ND	ND
TKN	mg/L	-	-	-	11.7	0.935	0.881	7.03		1.04	6.5
pH	mg/L	6.5-8.5	6.5-9.0	-	8.33	8.16	7.11	7.73		7.63	7.06
Total Phosphorus	mg/L	0.01	-	-	0.0365	0.0232	0.0423	0.324		0.036	0.654
Suspended Solids	mg/L	-	-	-	7	4.7	33.1	361		3	3160
TDS	mg/L	-	-	-	592	247	108	252		89	424
Turbidity	mg/L	-	-	-							
Sodium	mg/L	-	-	-							
Sulphate	mg/L	-	-	-	0.64	0.88	0.89	ND		0.97	7.48
Zinc	mg/L	0.02	**-**	-	ND	ND	0.0117	**0.0531**		0.0044	**0.244**
Zinc (Dissolved)	mg/L	-	**0.026**[5]	-	ND	0.0047	0.0127	0.0101		0.0047	0.0098
BOD_5	mg/L	-	-	-	2	ND	ND	15.8		ND	56.8
COD	mg/L	-	-	-	82	64	54	139		60	243
Phenol	mg/L	0.001	**0.004**	-	**0.0043**	0.0013	0.0029	**0.052**		ND	0.0028
DOC	mg/L	-	-	-	31.9	22.1	16.6	32.7		20.6	15
Temperature (Field)		-	-	-	20.8	21.2	17	19		21	17.7
pH (Field)		**6.5-8.5**	-	-	6.68	6.93	6.94	6.84		**6.12**	6.6
Conductivity (Field)	µS/cm	-	-	-	0.956	0.316	0.143	0.368		0.097	0.801
Dissolved Oxygen (Field)	mg/L	-	-	-	73.6	77.3	46.5	19.9		107.1	23.6
Flow		-	-	-	NA	NA	NA	NA		NA	NA

Notes: Bold trigger values indicate most recently published and current trigger concentration.
[1,2,3,4,5] - Standard dependent on lowest hardness value (33.2 mg/L at SW3) recorded for surface water during the June 2024 sampling event
Bold and shaded surface water values exceed trigger concentration

TABLE 17.C: SURFACE WATER TRIGGER ASSESSMENT – AUGUST 2024

Parameter	Units	PWQO	CWQG	FEQG	Surface Water Sampling Location						
					SW1	SW2	SW3	SW4	SW5	SW6	SW7
Alkalinity	mg/L $CaCO_3$	-	-	-	530	263		305		106	69.5
Ammonia	mg/L	-	**0.019**	-	**0.96**	0.0164		**15.5**		**0.0317**	**0.198**
Arsenic	mg/L	**0.005**	-	-	0.00115	0.00076		0.00284		0.00144	0.00333
Barium	mg/L	-	-	-	0.231	0.0274		0.162		0.0273	0.238
Boron	mg/L	0.2	**1.5**	-	0.709	0.369		0.362		ND	ND
Bromide	mg/L	-	-	-							
Cadmium	mg/L	0.0001	**0.00006**[1]	-	**0.00014**	ND		0.000055		0.00003	**0.0003**
Chloride	mg/L	-	**120**	-	48	23.5		29.7		ND	**384**
Chromium	mg/L	-	-	-	ND	ND		ND		ND	0.0268
Conductivity	µS/cm	-	-	-	1090	477		599		196	1580
Copper	mg/L	**0.005**	0.00298[2]	-	**0.0069**	ND		0.00482		ND	**0.0288**
Hardness	mg/L	-	-	-	487	175		178		108	240
Iron	mg/L	0.3	0.3	**0.79**	**26.4**	0.353		**38.5**		**1.28**	**37.9**
Lead	mg/L	0.005	0.00351[3]	**0.0189**	0.00338	ND		0.00323		0.000728	0.00889
Manganese	mg/L	-	-	-							
Manganese (Dissolved)	mg/L	-	**0.47**[4]	-	0.411	0.0273		0.329		0.235	**0.9**
Mercury	mg/L	0.0002	**0.000026**	-	ND	ND		ND		ND	ND
Nitrate	mg/L	-	**13**	-	0.252	ND		ND		ND	ND
Nitrite	mg/L	-	**0.06**	-	**0.143**	ND	DRY	ND	DRY	ND	ND
TKN	mg/L	-	-	-	8.33	0.829		23.9		2.48	6.08
pH	mg/L	6.5-8.5	6.5-9.0	-	7.85	8.15		7.77		7.62	6.76
Total Phosphorus	mg/L	0.01	-	-	0.541	0.0101		0.327		0.157	0.646
Suspended Solids	mg/L	-	-	-	584	9		288		296	2760
TDS	mg/L	-	-	-	725	325		447		146	988
Turbidity	mg/L	-	-	-							
Sodium	mg/L	-	-	-							
Sulphate	mg/L	-	-	-	41.1	ND		0.45		0.75	60.8
Zinc	mg/L	0.02	**-**	-	**0.0413**	ND		**0.0927**		ND	**0.188**
Zinc (Dissolved)	mg/L	-	**0.06**[5]	-	ND	0.0034		0.0135		0.0023	0.0071
BOD_5	mg/L	-	-	-	24	ND		16.3		7.5	23.2
COD	mg/L	-	-	-	86	62		208		69	60
Phenol	mg/L	0.001	**0.004**	-	ND	ND		**0.0127**		ND	ND
DOC	mg/L	-	-	-	25.8	23.5		70.6		28.4	13.2
Temperature (Field)		-	-	-	16.6	25.5		17.4		17.2	19.3
pH (Field)		**6.5-8.5**	-	-	6.7	7.38		6.79		6.49	6.98
Conductivity (Field)	µS/cm	-	-	-	0.939	0.44		0.569		0.222	1.283
Dissolved Oxygen (Field)	mg/L	-	-	-	81.9	114.8		12.1		36.4	130.8
Flow		-	-	-	NA	NA		NA		NA	NA

Notes: Bold trigger values indicate most recently published and current trigger concentration.
[1,2,3,4,5] - Standard dependent on lowest hardness value (108 mg/L at SW6) recorded for surface water during the August 2024 sampling event
Bold and shaded surface water values exceed trigger concentration

TABLE 17.D: SURFACE WATER TRIGGER ASSESSMENT – OCTOBER 2024

Parameter	Units	PWQO	CWQG	FEQG	Surface Water Sampling Location						
					SW1	SW2	SW3	SW4	SW5	SW6	SW7
Alkalinity	mg/L $CaCO_3$	-	-	-	596	249				80.3	106
Ammonia	mg/L	-	**0.019**	-	**12.6**	**0.0722**				**0.0223**	**0.447**
Arsenic	mg/L	**0.005**	-	-	ND	0.00063				0.00149	**0.00623**
Barium	mg/L	-	-	-	0.0992	0.0424				0.0299	0.431
Boron	mg/L	0.2	**1.5**	-	0.687	0.361				ND	ND
Bromide	mg/L	-	-	-	ND	0.22				ND	ND
Cadmium	mg/L	0.0001	**0.00006**[1]	-	ND	ND				0.0000437	**0.000734**
Chloride	mg/L	-	**120**	-	119	36.3				2.02	**382**
Chromium	mg/L	-	-	-	ND	0.00109				0.0021	0.0571
Conductivity	µS/cm	-	-	-	1400	554				286	1520
Copper	mg/L	**0.005**	0.00298[2]	-	ND	ND				0.00205	**0.0588**
Hardness	mg/L	-	-	-	460	184				131	205
Iron	mg/L	0.3	0.3	**0.79**	**1.39**	0.775				**1.12**	**78.2**
Lead	mg/L	0.005	0.00351[3]	**0.0189**	ND	0.000068				0.00137	**0.0197**
Manganese	mg/L	-	-	-							
Manganese (Dissolved)	mg/L	-	**0.47**[4]	-	0.249	0.0538				0.122	**4.42**
Mercury	mg/L	0.0002	**0.000026**	-	ND	ND				ND	0.0000053
Nitrate	mg/L	-	**13**	-	0.586	0.239				0.044	ND
Nitrite	mg/L	-	**0.06**	-	ND	ND	DRY	DRY	DRY	ND	ND
TKN	mg/L	-	-	-	15.9	0.915				1.78	20.5
pH	mg/L	6.5-8.5	6.5-9.0	-	8.11	8.23				7.66	6.76
Total Phosphorus	mg/L	0.01	-	-	0.0372	0.0198				0.0891	3.14
Suspended Solids	mg/L	-	-	-	18.8	11.8				895	11600
TDS	mg/L	-	-	-	779	352				205	758
Turbidity	mg/L	-	-	-	10	3.45				288	>4000
Sodium	mg/L	-	-	-	89.1	30				6.68	222
Sulphate	mg/L	-	-	-	ND	ND				67.9	53.5
Zinc	mg/L	0.02	**-**	-	ND	ND				0.0081	**0.35**
Zinc (Dissolved)	mg/L	-	**0.06**[5]	-	ND	0.0012				0.0035	0.0065
BOD_5	mg/L	-	-	-	5.7	ND				6.9	57.7
COD	mg/L	-	-	-	106	51				62	812
Phenol	mg/L	0.001	**0.004**	-	0.0015	ND				ND	0.0034
DOC	mg/L	-	-	-	36.7	18.3				22.8	23.6
Temperature (Field)		-	-	-	14	13.4				14.8	15.6
pH (Field)		**6.5-8.5**	-	-	7.62	7.99				7.07	8.04
Conductivity (Field)	µS/cm	-	-	-	1.131	0.47				0.264	1.217
Dissolved Oxygen (Field)	mg/L	-	-	-	120.6	67.3				131.2	60.9
Flow		-	-	-	NA	NA				NA	NA

Notes: Bold trigger values indicate most recently published and current trigger concentration.
[1,2,3,4,5] - Standard dependent on lowest hardness value (131 mg/L at SW6) recorded for surface water during the October 2024 sampling event
Bold and shaded surface water values exceed trigger concentration

6.0 ADDITIONAL ANNUAL REPORTING REQUIREMENTS

Section 1.4 of this report outlines the annual reporting requirements for the Town of Blind River Municipal landfill site. The following subsections address the two requirements not addressed earlier in this document.

6.1 Site Plan – 2024 Contours and Areas of Operation

Drawing B2 in Appendix B depicts the following information as per the requirements reproduced in Section 1.4 of this report:

1. 2024 contours and facilities;
2. Areas of landfilling activity (2024 and intended for 2025); and,
3. Progress of final cover.

6.2 Site Capacity

In order to estimate the in-situ waste volume of the landfill site, a topographic survey was completed in the fall of 2024. A contour plan of the active landfill area was completed based on this survey (Drawing B2 in Appendix B) and was subsequently compared to a site survey conducted in the fall of 2014. The comparison indicates that the average annual fill rate over the last 10 years at the site is approximately 5,055 m^3/year. As it was reported in the 2023 Annual Monitoring and Operations Report that 1,758 m^3 of approved disposal capacity remained (with the Site reaching capacity in 2024), the Town has requested an interim volume expansion to bridge the period of time until environmental approvals are obtained. An ECA amendment application was submitted to the MECP in October of 2023 and updated in January of 2025, requesting an additional 13,408 m^3 of disposal volume. The requested volume is expected to provide disposal capacity until the end of 2026.

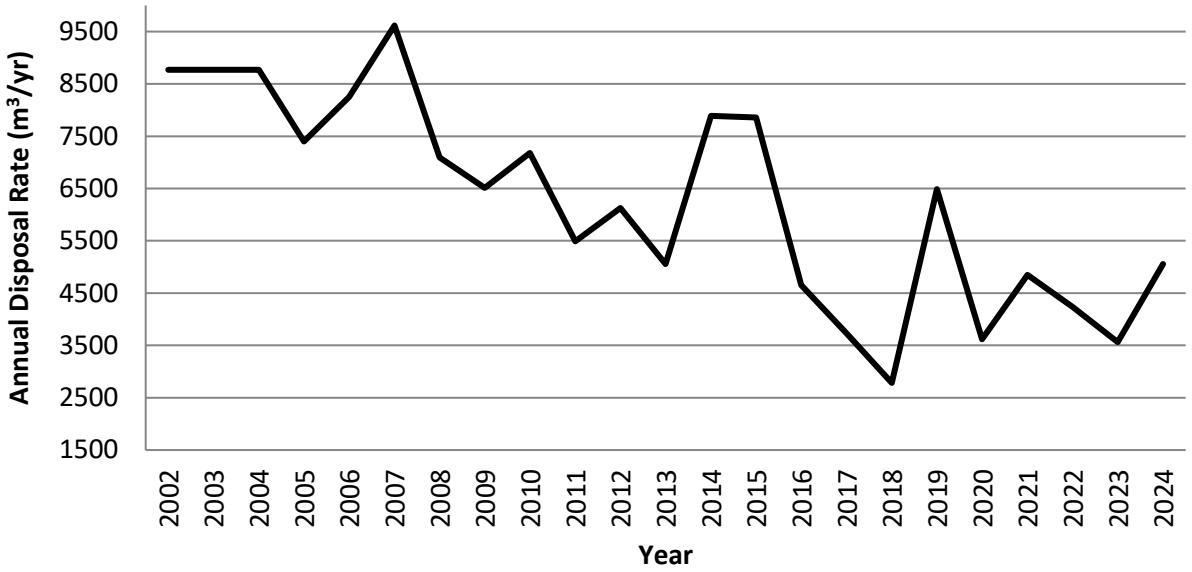
Table 18 presents a summary of estimated volumes deposited at the landfill site during the reporting period and Chart 2 provides a summary of calculated disposal rates from 2002 to 2024.

TABLE 18: VOLUME SUMMARY 2024

Component	Estimated Volume (m^3)
Total Volume	5,055
Daily Cover Material	1,011*
Final Cover	0
Waste	4,044

* Volume of Daily Cover Material estimated as 20% of Total Volume.

Chart 2
Blind River Landfill Site
Historical Disposal Rates



6.2.1 Waste Diversion

There is no record that the exact composition of wastes being disposed of at the Site has ever been determined, however, the Town does participate in a community-recycling program which diverts some common recyclables. Currently, rubber tires, white goods and electronics are stockpiled at the landfill for future recycling. Brush/scrap wood is also stockpiled for grinding or burning, in accordance with MECP procedures, prior to its landfilling.

Table 19 provides a summary of the estimated tonnage of recyclable material received at the Site for 2024 (provided by the Site operator).

TABLE 19: 2024 RECYCLING REPORT

Producer	Recyclable Material (tonnes)		
	FIBER	COMM	E-WASTE
Commercial	101.28	4.92	NA
GFL Depot	34.14	14.70	NA
Landfill	7.30	5.78	NA
Residential	44.59	29.06	NA
Totals	**187.31**	**54.46**	**NA**

The total waste deposited at the Site, as provided by the Town's operator, was estimated to be approximately 2,370 tonnes for 2024. This total waste tonnage has remained relatively constant since the data became available. The total recyclable tonnage, also provided by the operator, was 241.77 tonnes. The estimated diversion rate is therefore calculated to be 10.4%.

6.3 Complaints

During the reporting period, a public complaint was made to the Town regarding waste (a cabinet) being deposited outside the landfill access gate. The cabinet was moved to the proper disposal area within the Site.

An anonymous complaint was also received by the MECP regarding windblown litter, however, following an inspection and update by the Town to the MECP, the MECP was satisfied with the conditions.

6.4 MECP Site Visit

The MECP did not complete an inspection at the Site during the 2024 reporting period.

6.5 General Comments

General comments regarding Site operation during the 2024 reporting period include:

1. The landfill operator noted the following difficulties that were observed and remedied during the reporting period:
    a. The side slopes of the fill area were difficult to grade with the equipment available. A larger bulldozer was purchased for the 2025 operating period.

    b. The contractor noted that the sandy cover material easily eroded. The blending of shredded wood with the cover material has helped.

    c. Standing water was observed near the east toe of the fill area. The contractor has filled and graded this area to promote proper drainage.

    d. The contractor experienced issues hauling daily cover material to the landfill site. There is now a dump truck onsite to complete this task.

2. Signs have been installed and maintained at the main entrance of the Site and throughout the landfill to direct users appropriately.

3. The hours of operation for the Site are Wednesday, Thursday and Friday 10am-6pm and Saturday 9am-5pm during the summer (April 1 – Oct. 31). Wednesday to Saturday 9am-5pm during the winter (Nov.1 – March 31).

4. The Site is closed by a locked gate when a site attendant is not present to supervise landfilling operations.

5. The Town held a household hazardous waste day on July 27, 2024.

6. Throughout the year, a variety of wildlife, including black bears, foxes, crows, ravens, gulls and eagles frequented the Site; however, no incidents of nuisance were reported.

7. The grinding of stockpiled clean wood waste at the Site takes place when required.

8. Litter clean-up activities were ongoing throughout the reporting period.

9. Attention is being paid, by the Town as well as the contracted operator, to minimize environmental impacts, maximize public approval/satisfaction, as well as divert recyclable materials from landfilling.

7.0 CONCLUSIONS

The following conclusions are drawn from the assessments described herein:

1. The Site appears to be generally well run and site operations are considered satisfactory with respect to the control of dust and odour. No vector or vermin problems were observed and the Site was generally kept in good order throughout the reporting period.

2. Environmental monitoring was completed during the 2024 reporting period and the existing monitoring well network is felt to be adequate. Off-site impact in a direction hydrogeologically downgradient from the fill area is suspected and the continued monitoring of these impacts is required.

3. The assessment of groundwater trigger mechanisms reveals that:

    a. The trigger concentrations for iron, manganese and DOC were exceeded at MW3-02, MW4-02, MW6-02, MW1-03, MW1-15, MW1-17 and MW1-20 during the 2024 spring and fall sampling events. Trigger criteria were also exceeded at MW3-15 for DOC, iron and manganese during the spring sampling event and for iron during the fall sampling event. DOC exceeded trigger criteria at MW1-02 during the spring sampling event and iron and manganese exceeded trigger criteria at MW4-15 during the spring and fall sampling events.

    b. Chloride and sodium exceeded trigger criteria at MW4-02, MW1-03 and MW1-20 during the spring and fall sampling events and at MW3-02 during the fall sampling event.

    c. Barium exceeded trigger criteria at MW1-03 and MW1-20 during the spring and fall sampling events.

    d. Trigger criteria were exceeded for alkalinity and boron at MW1-15 during the spring and fall sampling events.

4. The Town is pursuing the establishment of a CAZ and is implementing improvements to site surface water management to address trigger mechanism exceedances.

5. With respect to surface water, SW2 appears to have been formed in a depression constructed during development of the solar farm that was excavated to below the water table. As SW2 is located within the limits of the delineated CAZ, leachate impacts at this location would not be unexpected.

6. SW3 is very near to a contractor's yard and may be impacted by related operations. There is no direct surface water flow pathway from areas potentially impacted by the landfill to SW3.

7. SW4 is a ponded area located just south of the toe of the fill area and within the limits of the delineated CAZ. Similarly to SW2, leachate impacts at this location would not be unexpected.

8. SW5 was not observed during the 2024 Site visits. This surface water location (a previously excavated ditch) has been filled in conjunction with the surface water management improvements.

9. Parameter concentrations at the SW6 appear to confirm this location as an appropriate background location.

10. It is difficult to confirm the source of impact observed at SW7 considering its proximity to Highway 17 and the railway line. Additional sampling is recommended to expand the database to assist with an evaluation of impact.

11. Winter highway de-icing activities may be contributing to the chloride levels impacting water quality at sample locations adjacent/downgradient of Highway 17 (MW4-02, MW1-03, MW1-20, SW7).

12. The Town has requested an interim volume expansion to bridge the period of time until environmental approvals are obtained for a site expansion. An ECA amendment application was submitted to the MECP in October of 2023 and updated in January of 2025, requesting an additional 13,408 m^3 of disposal volume. The requested volume is expected to provide disposal capacity until the end of 2026.

13. The Town is currently undergoing consultation with the MECP regarding the Site's Trigger Mechanisms Plan that may result in changes to the currently monitoring program.

8.0 RECOMMENDATIONS

The following recommendations are provided for the Town's consideration:

1. Groundwater water monitoring should be carried out as recommended (twice annually) to develop an adequate database to evaluate leachate production and migration within and from the Site.

2. Groundwater level measurements should continue to be collected during each sampling event to facilitate the ongoing interpretation of groundwater flow direction.

3. Surface water monitoring should be carried out as recommended in ECA No. A-500-7134513066 (quarterly) to support evaluation of leachate migration within and from the Site.

4. The contracted operator should continue to ensure that all landfill waste is disposed of within the approved area which is delineated by field markers.

5. Adequate cover should continue to be placed on the landfill waste in order to avoid windblown material.

6. The contracted operator should continue to minimize the co-mingling of segregated waste.

7. The steel protective casings at MW1-03 and MW2-15 should be repaired to ensure the integrity of these monitoring wells.

8. The Town should continue to work diligently through the EA process to ensure an adequate waste management plan can be developed and that MECP is provided updates when required.

9. Liaison with MECP Technical Support and Approvals staff should continue to confirm amendments to the Trigger Mechanisms Plan and contingency measures.

This report is respectfully submitted by:
Kresin Engineering Corporation

Jennifer Sharpe, B.Sc.
Environmental Scientist

Chris Kresin, M.Sc.(Eng.), P.Eng.
Consulting Engineer

Appendix A
MECP Amended Provisional Certificate of Approval

BR04.09

23)

Ministry of the Environment
2 St. Clair Ave. West
Toronto ON M4V 1L5

Ministère de l'Environnement
2, avenue St. Clair Ouest
Toronto ON M4V 1L5

Ontario

IVIRONMENTAL ASSESSMENT AND APPROVALS BRANCH

January 6, 2000

:n Corbiere, Municipal Clerk
)rporation of the Town of Blind River
O. Box 640
. Hudson Street
lind River, Ontario
)R 1B0

ear Mr. Corbiere:

e: Use of Sawdust and Wood Bark as daily and Interim Cover: Blind River Landfill Site.

lease find enclosed a Notice of Amendment for Provisional Certificate of Approval No A 713870, which enables e use of sawdust and wood bark as daily or interim cover for a two year temporary period. The Notice requi ie submission of cover performance reports to the District Manager by each of December 31, 2000 and Decembe 0, 2001.

Sincerely,

Andrzej Dominski, P.Eng.
Section 39, Director

incl.
RB/aq

: Ken Corbiere, Clerk, Town of Blind River
District Manager, MOE Subury District Office

RECEIVED
JAN 27

O.C. FORESTRY LTD.

Ministry of the Environment / Ministère de l'Environnement

Ontario

Corporation of the Town of Blind River
Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

You are hereby notified that Provisional Certificate of Approval No. A 7138701 dated May 30, 3, issued to you, Corporation of the Town of Blind River is being amended as follows:

The owner's name is changed

:

Corporation of the Town of Blind River
Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

om:

Town of Blind River
Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

e following definitions are added to your Provisional Certificate of proval:

(a) "Certificate" means the Provisional Certificate of Approval No. A 7138701 as amended from time to time, including all Schedules attached to and forming part of this Certificate, as well as all Notice of Amendments;

(b) "Director" means the one or more persons who from time to time are so designated for the purpose of Part V of the Environmental Protection Act, R.S.O. 1990, as amended from time to time;

(c) "District Manager" means the District Manager of the Sault Ste. Marie District Office of the Ministry of the Environment;

(d) "EPA" means the Environmental Protection Act, R.S.O. 1990, as amended from time to time;

(e) "Owner" means the Corporation of the Town of Deep River;

(f) "Ministry" or "MOE" means the Ontario Ministry of the Environment;

(g) "Regional Director" means the Director, Northern Region of the Ministry of the Environment;

(h) "Site" means the 2 ha landfill operation and adjacent buffer lands located in Part Lot 7, Conc. 1 Striker Township;

Conditions No. 3,4,5,6, and 7 are added to your Provisional Certificate of Approval:

3. The owner is allowed to use wood bark and sawdust as daily and interim cover material for a temporary period of two years, or until the site is closed, whichever is less.

4. Should the use of wood bark or sawdust as daily and interim cover cause any environmental problem the owner shall discontinue its use.

5. Sufficient soil cover shall be available on site for use either when conditions do not permit use of the sawdust or wood bark as daily of interim cover or if performance of the material is unsatisfactory.

6. The performance and impact of the wood bark and sawdust shall be detailed in a written report which is submitted to the District Manager by the end of each of December 2000 and December 2001.

7. Only with the written consent of the District Manager shall sawdust and wood bark be used for daily or interim cover subsequent to the date which occurs two years after the date of this Notice of Amendment. The District Manger may rescind that consent at any time by provision of written notice to the owner.

The reasons for the addition of definitions and conditions 3, 4, 5, 6, and 7 are:

1. *The reason for the addition of the definitions is that it is in the public interest to clearly define terms used in this Certificate.*

2. *The reason for the additions of conditions number 3, 4, 5, 6, and 7 is to ensure that the Site is operated in an environmentally safe manner.*

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you y by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this ice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides t the Notice requiring a hearing shall state:

The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements the Notice should also include:

The name of the appellant;
The address of the appellant;
The Certificate of Approval number;
The date of the Certificate of Approval;
The name of the Director;
The municipality within which the waste disposal site is located;
or
The municipality within which the waste management system is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary,
Environmental Appeal Board,
800 Yonge St., 12th Floor,
P.O. Box 2382
Toronto, Ontario.
M4P 1E4

AND

The Director,
Section 39, Environmental Protection Act,
Ministry of Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario.
M4S 1H2

DATED AT TORONTO this 6th *day of* January, 2000

A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act

EB/aq
c: Ken Corbiere, Clerk, Town of Blind River
District Manager, MOE Subury District Office

COPY

(705) 670-3282 (705) 670-3282

April 25, 1994

The Corporation of the Town of Blind River
P.O. Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

Attention: Mr. Ken Corbiere
Clerk Administrator

Dear Mr. Corbiere:

Re: The Corporation of the Town of Blind River
Amendment to Certificate of Approval No: A7138701

Please find enclosed a Notice which amends Provisional Certificate of Approval No. A7138701, to allow the addition of non-hazardous solid industrial waste and iron sludge waste to the categories of waste which can be accepted and disposed of at your site.

Should you have any questions regarding this amendment, please contact Ms. Maureen Burtch at the Sault Ste. Marie District Office.

Yours truly,

C. J. Lafrance
Supervisor
Approvals and Planning Unit
Mid Ontario Region

MEC/nc/C04-31

bcc: G. LaHaye/M. Burtch, SSM Office
Approvals Branch
Environmental Monitoring & Reporting Branch
J. G. Fry/C. J. Lafrance/File MP 13-02
MEC
C of A File A7138701

Encl.

THIS IS A TRUE COPY OF THE

ORIGINAL DATED ON APRIL 26/94
MEC

Ministry of the Environment | Ministère de l'Environnement

Notice
Avis

ataire

The Corporation of the Town of Blind River
P.O. Box 640, 11 Hudson Street
Blind River, Ontario
P0R 1B0

Pursuant to sections 39(2) and 139(2) of the Environmental Protection Act (the "EPA") R.S.O. 1990, you are hereby notified that Provisional Certificate of Approval No. A7138701 dated November 26, 1980 is being altered to allow the addition of non-hazardous solid industrial waste and iron sludge waste to the categories of waste presently being deposited at this site.

The above-noted Provisional Certificate of Approval is amended by adding the following conditions:

2. Except as otherwise provided by these Conditions, this waste disposal site (landfill) shall be operated in accordance with the application dated October 22, 1993, and supporting documentation, plans and specifications submitted therewith, and the additional items listed in Schedule "A" below.

The reason for Condition 2 is to ensure that this waste disposal site (landfill) is operated in accordance with the application submitted to amend the Provisional Certificate of Approval and not on a basis which the Director has not been asked to consider.

3. (1) The operation of this site shall be limited only to the acceptance and disposal of the following types of waste:

(a) domestic, commercial, and other waste limited to scrap wood and brush;

(b) non-hazardous solid industrial waste; and

(c) iron sludge waste generated only from the potable water treatment facility located at Cameco Corporation in Blind River, all in accordance with Schedule "A" below.

(2) Notwithstanding Condition 3(1) above, no hauled sewage, liquid industrial waste, or hazardous waste, as defined under Regulation 347, R.R.O. 1990, shall be accepted and/or deposited at this site.

The reason for Condition 3 is to ensure that the types of waste accepted and deposited at this site are in accordance with that approved by this Provisional Certificate of Approval.

... 2

Schedule "A"

Schedule "A" is hereby amended to add the following:

Letter dated January 19, 1994 from J.M. Degraw, Cameco Corporation, to Maureen Burtch, Ministry of Environment and Energy, outlining the nature of the iron waste sludge.

Should you wish to appeal any or all of these conditions you may, by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142(1) of the Environmental Protection Act, as amended in 1983, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name and address of the appellant;
4. The Certificate of Approval number;
5. The date of issuance of the Certificate of Approval;
6. The name of the Director;
7. The municipality within which the site is located;
8. A copy of the Certificate of Approval;

And the Notice should be signed and dated by the appellant.

Please note, unless stayed by application under Section 143 of the Environmental Protection Act, this approval is effective from the date of issue.

This Notice must be served upon:

The Secretary
Environmental Appeal Board
112 St. Clair Avenue West
5th Floor
Toronto, Ontario
M4V 1N3

AND

The Director
Section 39, E.P.A.
Ministry of Environment and Energy
199 Larch Street, Suite 1101
Sudbury, Ontario
P3E 5P9

DATED at Sudbury, this 25th day of April, 1994.

Director
Section 39, E.P.A.
Ministry of Environment and Energy

MEC/mec/A7138701.NOT

Ontario

Ministry of the Environment

135 St. Clair Ave., W.,
Toronto, Ontario
M4V 1P5

November 26, 1980

N.O.E. NORTHEASTERN DEC 5 1980 RECEIVED SUDBURY

RECEIVED
OCT 0 ? 2001

Town of Blind River
Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

Re: Landfilling Site
South 1/2 Lot 7, Concession 1
Township of Striker
District of Algoma

The enclosed revised Provisional Certificate of Approval contains a condition requiring it be registered on title. The reason for this condition is attached to the Certificate.

Two copies of the Certificate and reasons are on long paper to facilitate registration. Both of these should be taken to the Land Registry Office and one returned to the Director with registration particulars.

If your Certificate does not contain sufficient legal description for registration because you have not given one to the Director, you will have to provide one under Section 23(1) (e) of The Registry Act or in your application under The Land Titles Act.

In the event that the site including its buffer, is part of a larger parcel of land and you do not wish to prepare a new survey at this time, you may register the Certificate against the larger parcel of land. If you do so, the Director is prepared, if requested in the future.

1. In the case of land recorded under The Land Titles Act, to consent to an application to delete the registration from the title of lands not within the site including its buffer zone, and

2. In the case of land recorded under The Registry Act, to issue a Certificate that lands not used for the actual disposal of waste or buffer zone have not been so used.

Such documents would be issued after suitable draft documents including legal description were submitted by you or your successor. The purpose of such documents would be to assure subsequent purchasers that the lands in question were not affected by section 46 of the Environmental Protection Act.

Yours very truly

Director

Ministry of the Environment
Ontario

a- File in Bk.
c.c. - J. Harmar

FILE: Blind River w.d.s.
Provisional Certificate No. A 713870I

PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE

Under The Environmental Protection Act, 1971 and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Town of Blind River
Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

RECEIVED
DEC - 8 1980
S. S. MARIE
DISTRICT OFFICE

for the use and operation of a landfilling site within a total site area of 2 hectares.

all in accordance with the following plans and specifications:
Application and supporting information forms for a Waste Disposal Site.
Plan of the Waste Disposal Site entitled "Layout of Town Garbage Dump" dated Dec. 10, 1973.

Located: South 1/2 Lot 7, Concession 1
Township of Striker
District of Algoma

which includes the use of the site only for the disposal of the following categories of waste (NOTE: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval) Domestic, commercial and "other" (limited to scrap wood and brush) wastes.

and subject to the following conditions:

1. No operation shall be carried out at the site after sixty days from this condition becoming enforceable unless this Certificate including the reasons for this condition has been registered by the applicant as an instrument in the appropriate Land Registry Office against title to the site and a duplicate registered copy thereof has been returned by the applicant to the Director.

THIS IS A TRUE COPY OF THE ORIGINAL CERTIFICATE MAILED

ON DEC 4 1980

(Signed)

Dated this 26th day of November, 19 80.

Director, Section 39,

Environment
Ontario

NOTICE

TO: Town of Blind River
Box 640
11 Hudson Street
Blind River, Ontario
P0R 1B0

You are hereby notified that Provisional Certificate of Approval No. A 7138701 has been issued to you subject to the conditions outlined therein.

The reasons for the imposition of these conditions are as follows:

The reason for the condition requiring registration of the Certificate is that Section 46 of The Environmental Protection Act, 1971 prohibits any use being made of the lands after they cease to be used for waste disposal purposes within a period of twenty-five years from the year in which such land ceased to be used unless the approval of the Minister for the proposed use has been given. The purpose of this prohibition is to protect future occupants of the site and the environment from any hazards which might occur as a result of waste being disposed of on the site. This prohibition and potential hazard should be drawn to the attention of future owners and occupants by the Certificate being registered on title.

You may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board.

This Notice should be served upon:

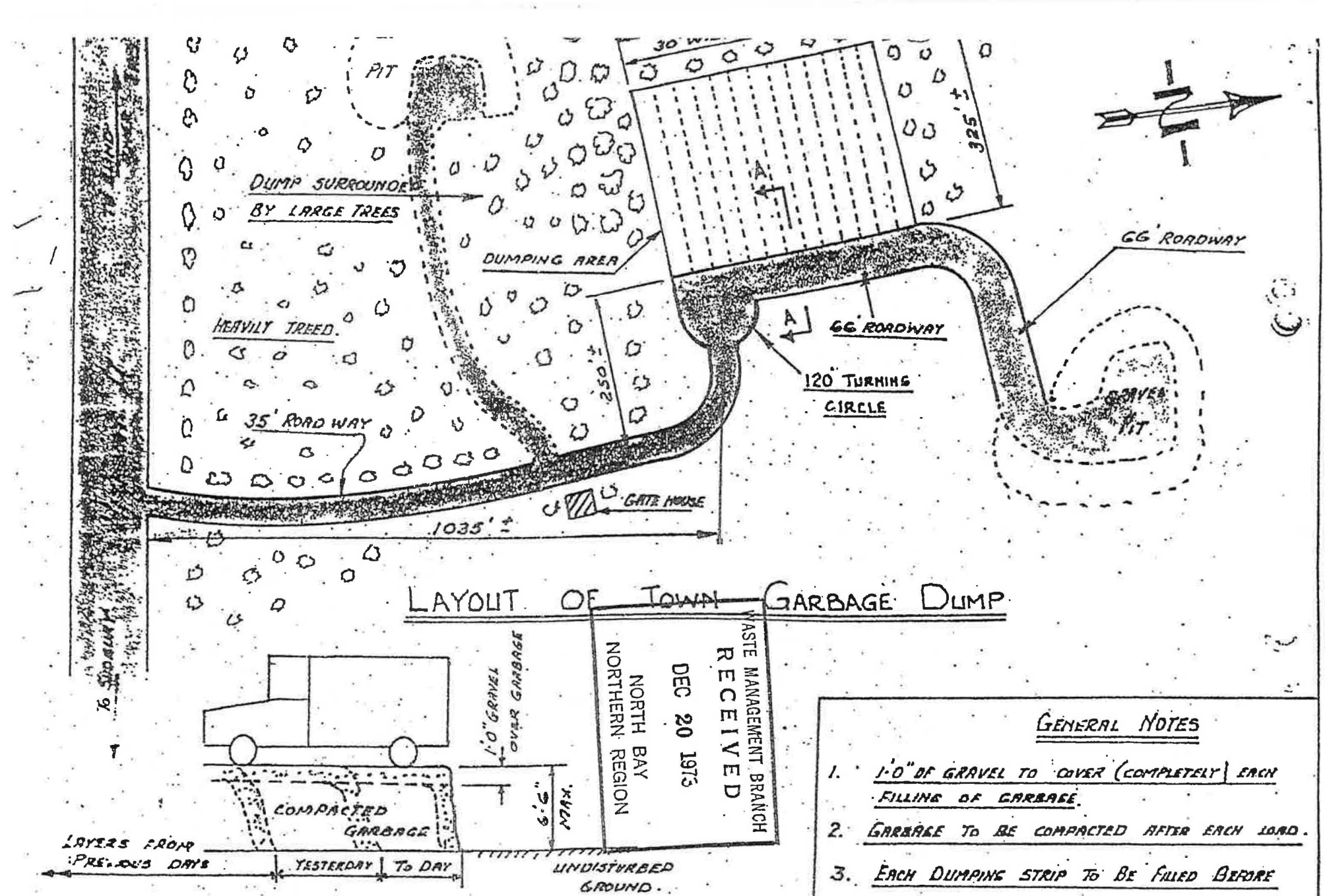
The Secretary,
Environmental Appeal Board,
1 St. Clair Ave. West,
5th Floor,
Toronto, Ontario,
M4V 1K7

AND

The Director,
Section 3a E.P.A.
Ministry of the Environment,

DATED Toronto this 26th day of November, 1980.

T.W. Dixon



General Notes

1. 1'0" of gravel to cover (completely) each filling of garbage.
2. Garbage to be compacted after each load.
3. Each dumping strip to be filled before moving to next strip.

Town of Blind River	Proposed Dump and Dumping Proceedure.	H.C. Kiernan C.E.T.

ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A-500-7134513066
Version: 1.0
Issue Date: October 26, 2022

Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:

CORPORATION OF TOWN OF BLIND RIVER

11 HUDSON ST, BOX 640
BLIND RIVER ONTARIO
P0R1B0

For the following site:

Lot: 7, Concession: 1
Blind River, District of Algoma

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

the establishment of stormwater management works to service the existing municipal waste disposal site (Site), located on south ½ of lot 7, Concession 1, and Highway 17 to the south within in the Town of Blind River, District of Algoma, for the collection, transmission, and disposal of stormwater runoff from a total catchment area of 10.95 hectares to attenuate post-development peak flows to pre-development peak flows for all storm events up to and including the 100-year storm event, infiltrating into ground consisting of the following:

- **drainage swale (Intercepting Swale 1 – Catchment Area 6.1 ha):** one (1) 220 metre long drainage swale with 1.75 metre base width, 3:1 side slope and 1 metre flow depth, flowing along the northern perimeter of existing landfill site, discharging to the proposed infiltration basin located on the western perimeter of the landfill site;
- **drainage swale (Intercepting Swale 2 – Catchment Area 4.85 ha):** one (1) 200 metre long drainage swale with 1.75 metre base width, 3:1 side slope and 1 metre flow depth, flowing along the southern perimeter of existing landfill site, discharging to the proposed infiltration basin located on the southern perimeter of the landfill site;
- **infiltration basin (Catchment Area 10.95 ha):** one (1) infiltration basin located on the western perimeter of the landfill site, having a total length of 225 metres, a width of 12 metres, a base area of 2,700 squared metres, a minimum storage depth of 1.25 metres including 0.75 metres operating depth and 0.5 metres freeboard and providing an approximate storage volume of 2,430 cubic metres to store and infiltrate stormwater run-off from the site, infiltrating at 0.05 cubic metres per second under the 100-year storm event, complete with an overflow riprap spillway, flow in excess of the 100-year storm directed overland on to the attenuation zone, ultimately to the Lake Huron.

including erosion/sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the submitted application and supporting documents listed in Schedule 1 forming part of this Approval.

DEFINITIONS

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this entire Environmental Compliance Approval and any Schedules attached to it;
2. "CAZ " means Contaminant Attenuation Zone;
3. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;
4. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Works are geographically located;
5. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19, as amended;
6. "Ministry" means the ministry of the Minister and includes all, employees or other persons acting on its behalf;
7. "MNRF" means the Ministry of Natural Resources and Forestry of the government of Ontario and includes all officials, employees or other persons acting on its behalf;
8. "OWRA" means the *Ontario Water Resources Act,* R.S.O. 1990, c. O.40;
9. “Owner” means Corporation of Town of Blind River, including any successors and assignees;
10. “Quarterly” means during time periods of three (3) consecutive months beginning on the first day of January, April, July or October;
11. “Works” means the approved sewage works.

TERMS AND CONDITIONS

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

1. **GENERAL CONDITIONS**
    1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
    2. Except as otherwise provided by these Conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.
    3. Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.
    4. Where there is a conflict between the documents listed in Schedule A and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
    5. The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.
    6. The issuance of, and compliance with the conditions of, this Approval does not:
        1. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority/MNRF necessary to construct or operate the sewage works; or
        2. limit in any way the authority of the Ministry to require certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

2. **EXPIRY OF APPROVAL**

1. This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

2. In the event that completion and commissioning of any portion of the Works is anticipated to be delayed beyond the specified expiry period, the Owner shall submit an application of extension to the expiry period, at least twelve (12) months prior to the end of the period. The application for extension shall include the reason(s) for the delay, whether there is any design change(s) and a review of whether the standards applicable at the time of Approval of the Works are still applicable at the time of request for extension, to ensure the ongoing protection of the environment.

3. **CHANGE OF OWNER**

1. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

    a. change of Owner;

    b. change of address of the Owner;

    c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the District Manager; or

    d. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the District Manager.

2. In the event of any change in ownership of the Works, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager and the Director.

3. The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

4. **OPERATION AND MAINTENANCE**

1. If applicable, any proposed storm sewers or other stormwater conveyance in this Approval can be constructed but not operated until the proposed stormwater management facilities in this Approval or any other Approval that are designed to service the storm sewers or other stormwater conveyance are in operation.

2. The Owner shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the Works do not constitute a safety or health hazard to the general public.

3. The Owner shall undertake an inspection of the condition of the Works, at least once a year, and undertake any necessary cleaning and maintenance to ensure that sediment, debris and excessive decaying vegetation are removed from the Works to prevent the excessive build-up of sediment, oil/grit, debris and/or decaying vegetation, to avoid reduction of the capacity and/or permeability of the Works, as applicable. The Owner shall also regularly inspect and clean out the inlet to and outlet from the Works to ensure that these are not obstructed.

4. The Owner shall construct, operate and maintain the Works with the objective that the effluent from the Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam or discoloration on the receiving waters.

5. The Owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the Owner's administrative office for inspection by the Ministry. The logbook shall include the following:

    a. the name of the Works; and

b. the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed and method of clean-out of the Works.

6. The Owner shall prepare an operations manual prior to the commencement of operation of the Works that includes, but is not necessarily limited to, the following information:
    a. operating and maintenance procedures for routine operation of the Works;
    b. inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;
    c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;
    d. contingency plans and procedures for dealing with potential spills and any other abnormal situations and for notifying the District Manager; and
    e. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.
7. The Owner shall maintain the operations manual current and retain a copy at the Owner's administrative office for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

5. **TEMPORARY EROSION AND SEDIMENT CONTROL**
    1. The Owner shall install and maintain temporary sediment and erosion control measures during construction and conduct inspections once every two (2) weeks and after each significant storm event (a significant storm event is defined as a minimum of 25 millimetres of rain in any 24 hours period). The inspections and maintenance of the temporary sediment and erosion control measures shall continue until they are no longer required and at which time they shall be removed and all disturbed areas reinstated properly.
    2. The Owner shall maintain records of inspections and maintenance which shall be made available for inspection by the Ministry, upon request. The record shall include the name of the inspector, date of inspection, and the remedial measures, if any, undertaken to maintain the temporary sediment and erosion control measures.

6. **MONITORING**

Surface Water Monitoring

1. A surface water monitoring program shall be carried out by the Owner, as outlined in Schedule 2, Table 1.
2. A trigger mechanism and contingency plan shall be completed, to the satisfaction of the District Manager, and submitted for concurrence within six months of the issuance of this ECA. The trigger mechanism and contingency plan shall incorporate the following:

- A monitoring well, between CAZ boundary well and the fill area, and accompanying trigger levels that would provide sufficient time to identify a potential for surface water impacts from the landfill leachate plume, before they occur, and time to implement contingency measures, to prevent unacceptable surface water impacts;
- A monitoring well at the CAZ boundary to determine if unacceptable concentrations of leachate parameters are entering surface waters;
- Comparison of parameter concentrations at monitoring wells to those of source leachate well and background well, to determine if elevated parameter concentrations at downgradient wells are a result of landfill operations;
- Trigger concentrations for wells monitoring for potential impacts to surface waters, shall be linked to contingency actions;
- Contingency actions proposed shall be feasible for the Site and be beyond standard operational practices.

Seep Monitoring

3. The Owner shall monitor for seeps as outlined in Schedule 2, Table 2 and results shall be documented in the annual monitoring reports.

7. **REPORTING**

1. One (1) week prior to the start-up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.

2. The Owner shall, upon request, make all reports, manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

3. The Owner shall prepare a performance report within ninety (90) days following the end of the period being reported upon, and submit the report(s) to the District Manager annually by March 31. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be prepared to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

    1. a description of any operating problems encountered and corrective actions taken;

    2. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works, including an estimate of the quantity of any materials removed from the Works;

    3. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

    4. a summary of all spill or abnormal discharge events; and

    5. any other information the District Manager requires from time to time.

    6. a summary and interpretation of surface water monitoring data and groundwater monitoring data used in monitoring for potential impacts to surface waters; and

    7. a summary of results of seep monitoring. If none are found, this information shall also be reported.

8. **RECORD KEEPING**

    1. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation, maintenance and monitoring activities required by this Approval.

REASONS

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted. This condition is also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. Condition 1.6 is included to emphasize that the issuance of this Approval does not diminish any other statutory and regulatory obligations to which the Owner is subject in the construction, maintenance and operation of the Works. The Condition specifically highlights the need to obtain any necessary conservation authority approvals. The Condition also emphasizes the fact that this Approval doesn't limit the authority of the Ministry to require further information.

2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included as regular inspection and necessary removal of sediment and excessive decaying vegetation from the Works are required to mitigate the impact of sediment, debris and/or decaying vegetation on the treatment capacity of the Works. The Condition also ensures that adequate storage is maintained in the Works at all times as required by the design. Furthermore, this Condition is included to ensure that the Works are operated and maintained to function as designed.

5. Condition 5 is included as installation, regular inspection and maintenance of the temporary sediment and erosion control measures is required to mitigate the impact on the downstream receiving watercourse during construction until they are no longer required.
6. Condition 6 is added to ensure the owner has a plan with an organized set of procedures for identifying and responding to potential issues relating to groundwater and surface water contamination near or at the site.
7. Condition 7 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.
8. Condition 8 is included to require that all records are retained for a sufficient time period to adequately evaluate the long-term operation and maintenance of the Works.

APPEAL PROVISIONS

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;

II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

I. The name of the appellant;

II. The address of the appellant;

III. The environmental compliance approval number;

IV. The date of the environmental compliance approval;

V. The name of the Director, and;

VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act* Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 26th day of October, 2022



Aziz Ahmed

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Ryan Wilson, Kresin Engineering Corporation
Kathryn Scott, CORPORATION OF TOWN OF BLIND RIVER

The following schedules are a part of this environmental compliance approval:
Schedule 1

SCHEDULE 1

1. Application for Environmental Compliance Approval, dated June 21, 2021, received on June 21, 2021, submitted by Kresin Engineering Corporation on behalf of the Town of Blind River;
2. Municipal Waste Disposal Site Expansion - SURFACE WATER MANAGEMENT PLAN AND SYSTEM DESIGN, SWM Report, dated June 2021, prepared by Kresin Engineering Corporation;
3. Revised SWM Report "The Corporation of the Town of Blind River Municipal Waste Disposal Site Expansion Surface Water Management Plan and System Design, prepared by Kresin Engineering Corporation, dated April 7, 2022;
4. The Corporation of the Town of Blind River Municipal Waste Disposal Site - Ground and Surface Water Monitoring, Trigger Mechanisms and Contingency Plan (Monitoring Plan), prepared by Kresin Engineering Corporation - Revision 2, dated May 2022;
5. Engineering Drawings, signed, stamped and dated on August 10, 2021, prepared by Kresin Engineering Corporation;
6. Revised Engineering Drawings (2073 BR LF Drainage Management-D1.pdf and 2073 BR LF Drainage Management-D2.pdf) stamped, signed and dated on September 17, 2021; and
7. Response to Information Request, emails received from Ryan Wilson from Kresin Engineering Corporation, dated August 30, 2021 and from Chris Kresin from Kresin Engineering Corporation, dated September 20, 2021 and September 24, 2021 respectively including revised SWM report and revised drawings;

SCHEDULE 2

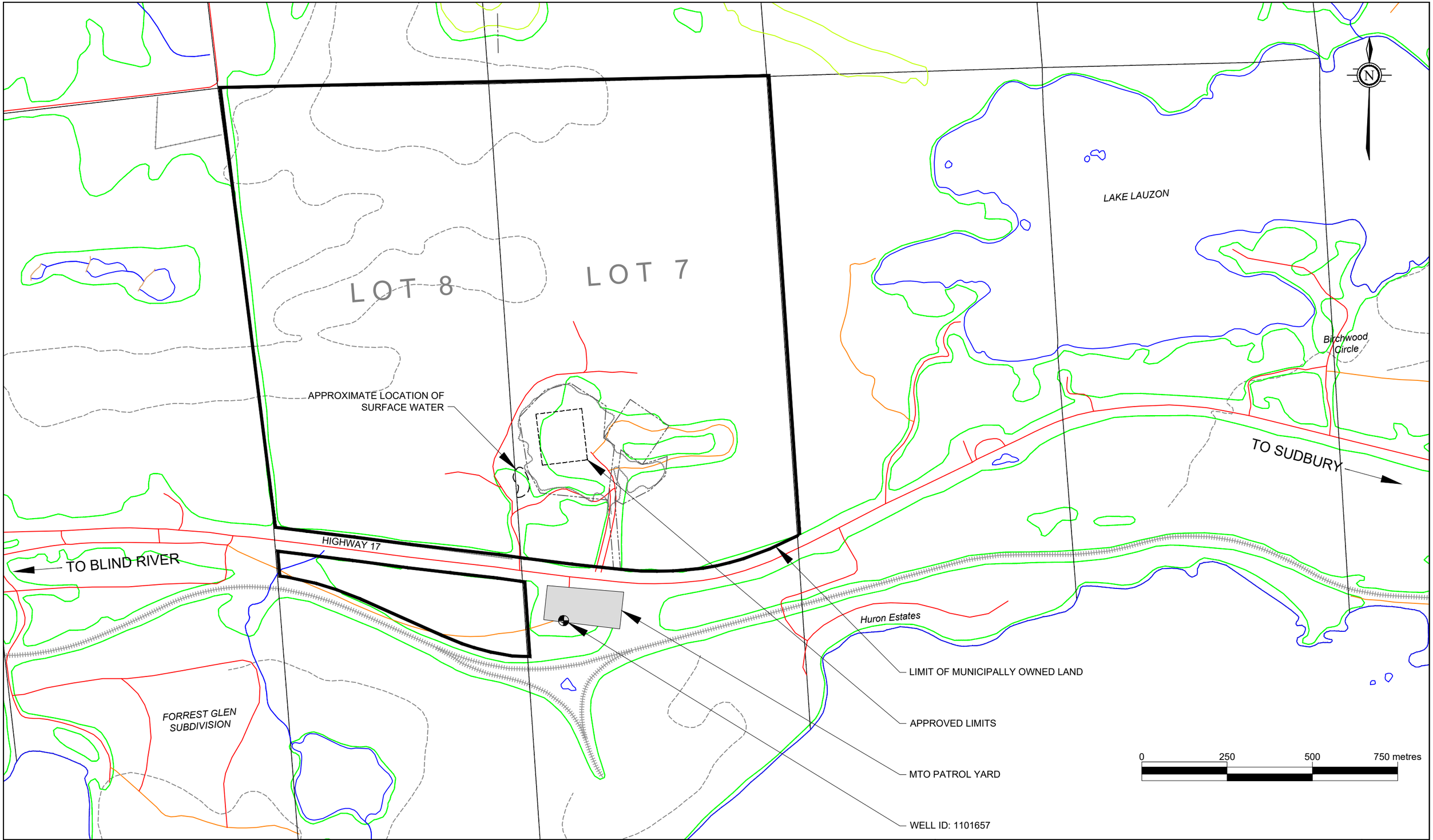
Surface Water Monitoring Program - Table 1

Sampling Locations	Frequency	Parameters to be Analysed
SW1- approximately 80 meters southwest of fill area where water pools	Quarterly	Alkalinity, ammonia, arsenic, barium, boron, cadmium, chloride, conductivity, copper, iron, lead, manganese, mercury, nitrate, nitrite, Total Kjeldahl Nitrogen, pH, total phosphorous, total suspended solids, total dissolved solids, sulphate, zinc, biological oxygen demand (BOD5), chemical oxygen demand, phenol, Chromium, DOC and Hardness. Field Parameters: Conductivity, pH, dissolved oxygen, flow and Temperature.
SW2- approximately 330 meters southwest of fill area	Quarterly	
SW3- drainage ditch approximately 440 meters southwest of fill area	Quarterly	
SW4- approximately 95 meters south of southeast corner of fill area	Quarterly	
SW5- approximately 110 meters southwest of the southeast corner of fill area	Quarterly	
SW6- background location, approximately 200 meters north of fill area	Quarterly	
SW7- 120 meters west of the southwest corner of CAZ, between Hwy 17 right-of-way and railroad tracks, within a wetland	Quarterly	

Seep Monitoring Program - Table 2

Locations	Frequency	Information to be Recorded and Parameters to be Analysed
Inspection of the site for seeps	Quarterly	If a seep is observed and quantity is sufficient, samples shall be taken for the same analysis as for surface water sampling (Table 1). Date and location (including geographic coordinates) shall be recorded. Estimate of flow rate

Appendix B
Referenced Drawings



KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

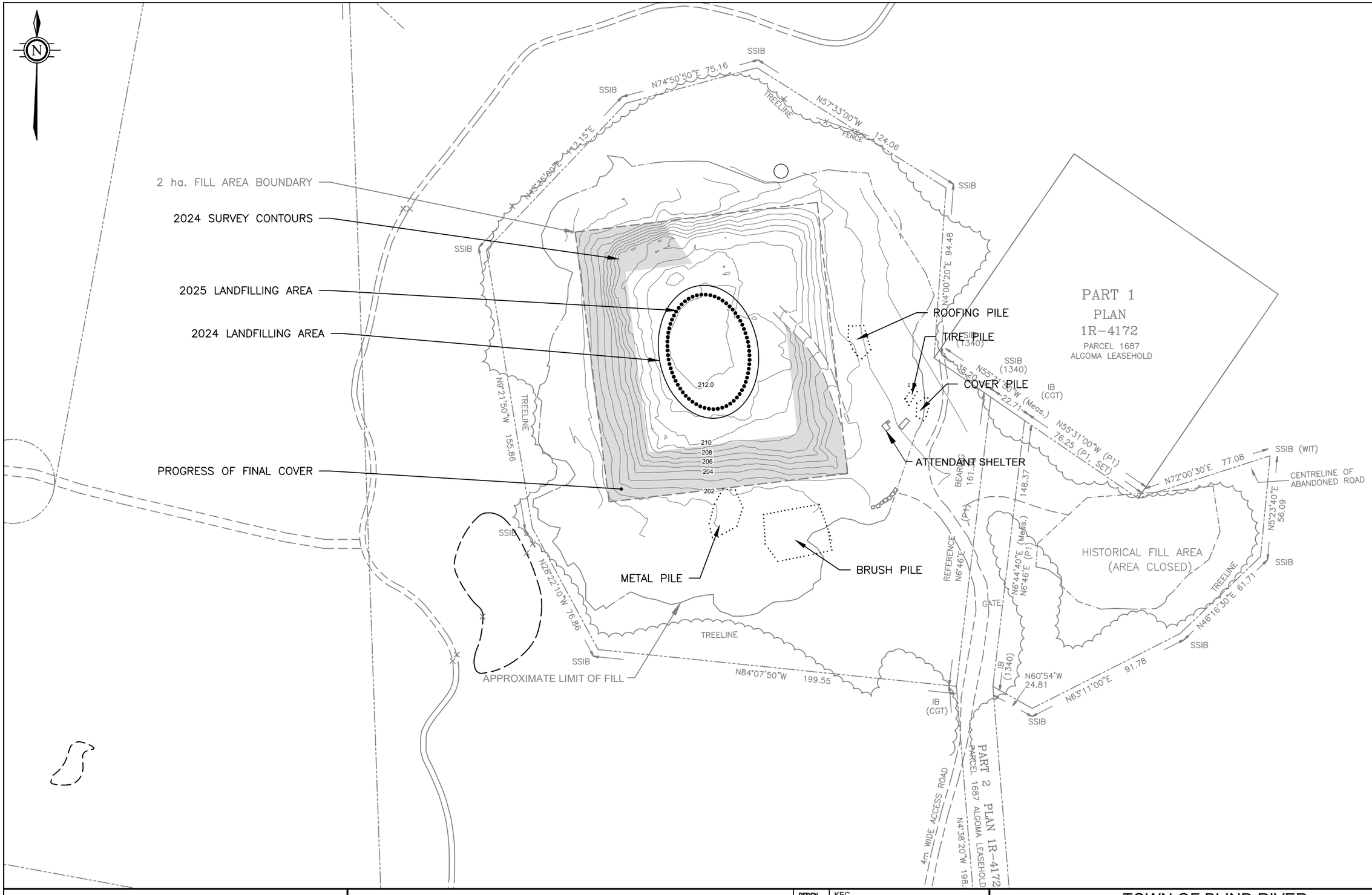
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CHECKED	J. SHARPE	03/2025
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TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE
LOCATION PLAN

B1

Rev 0



KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

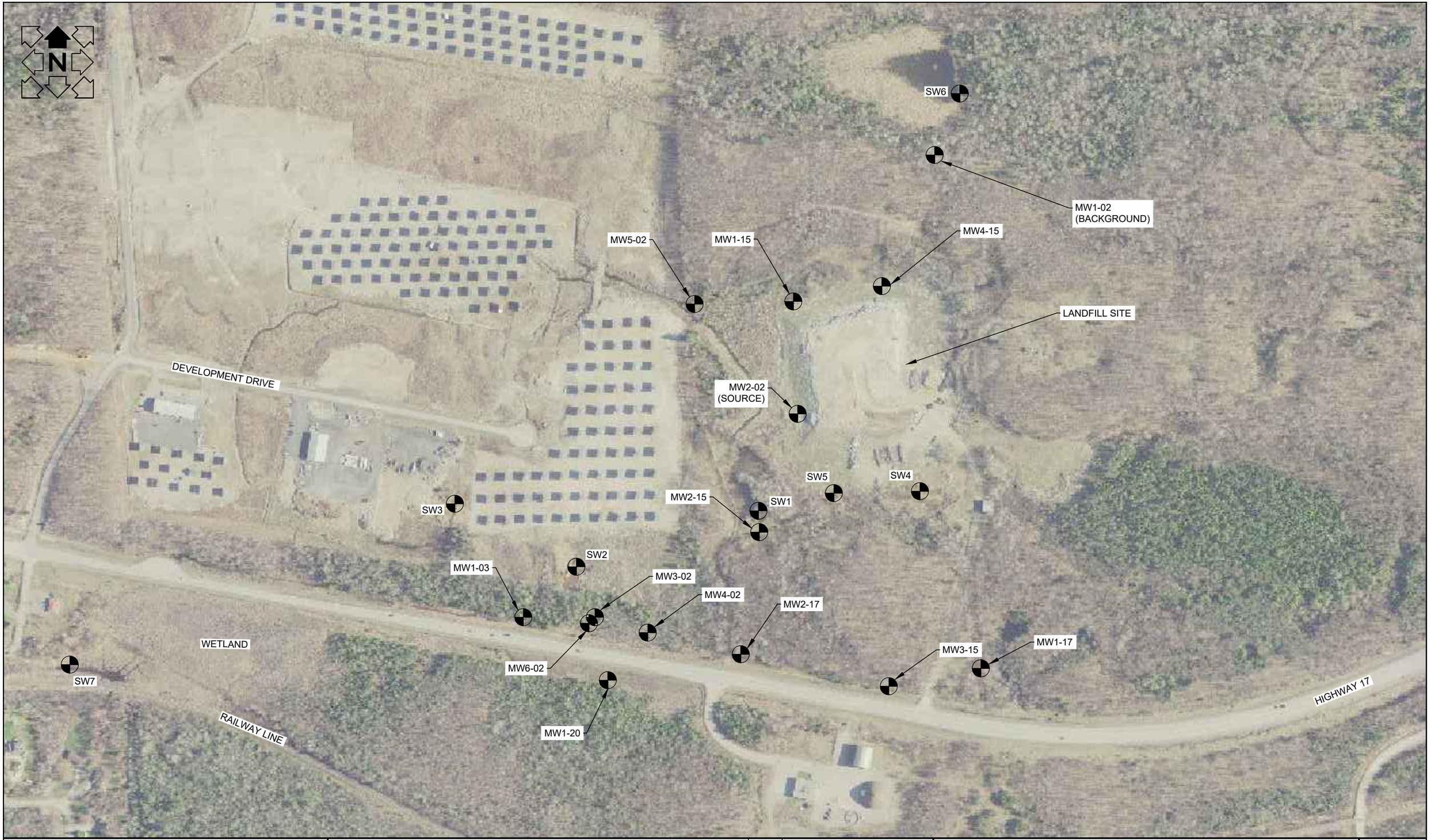
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TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

2024 FALL CONTOURS

B2

Rev 0



KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

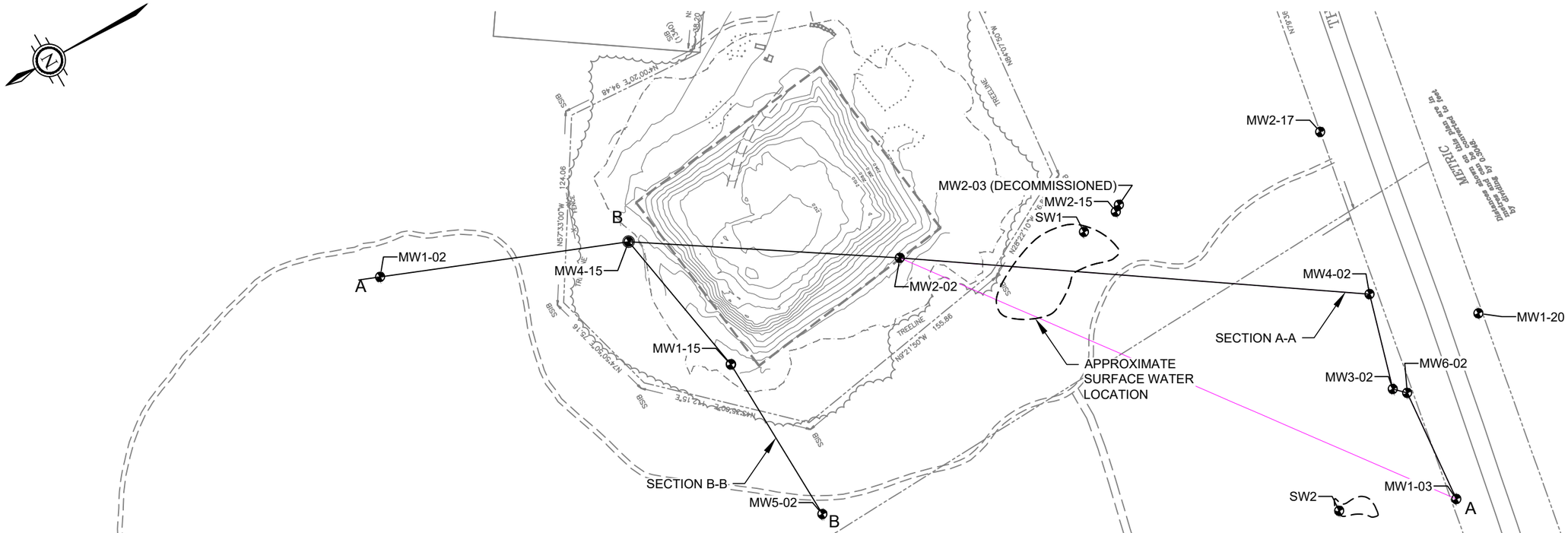
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TOWN OF BLIND RIVER
MUNICIPAL WASTE DISPOSAL SITE

MONITORING WELL AND SURFACE WATER LOCATIONS

B3

Rev 0



KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

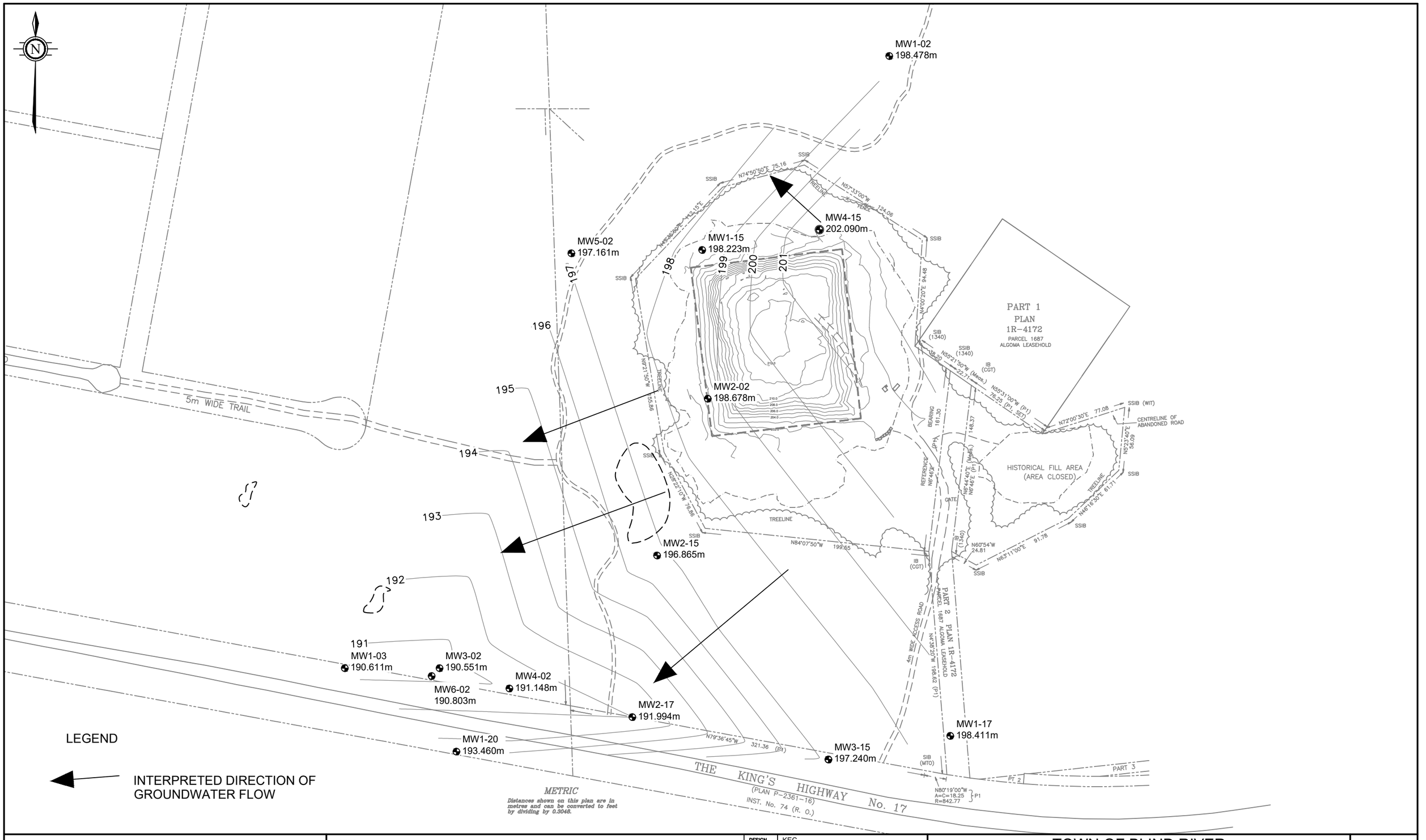
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TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

WATER TABLE ELEVATIONS

B4

Rev 0



KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

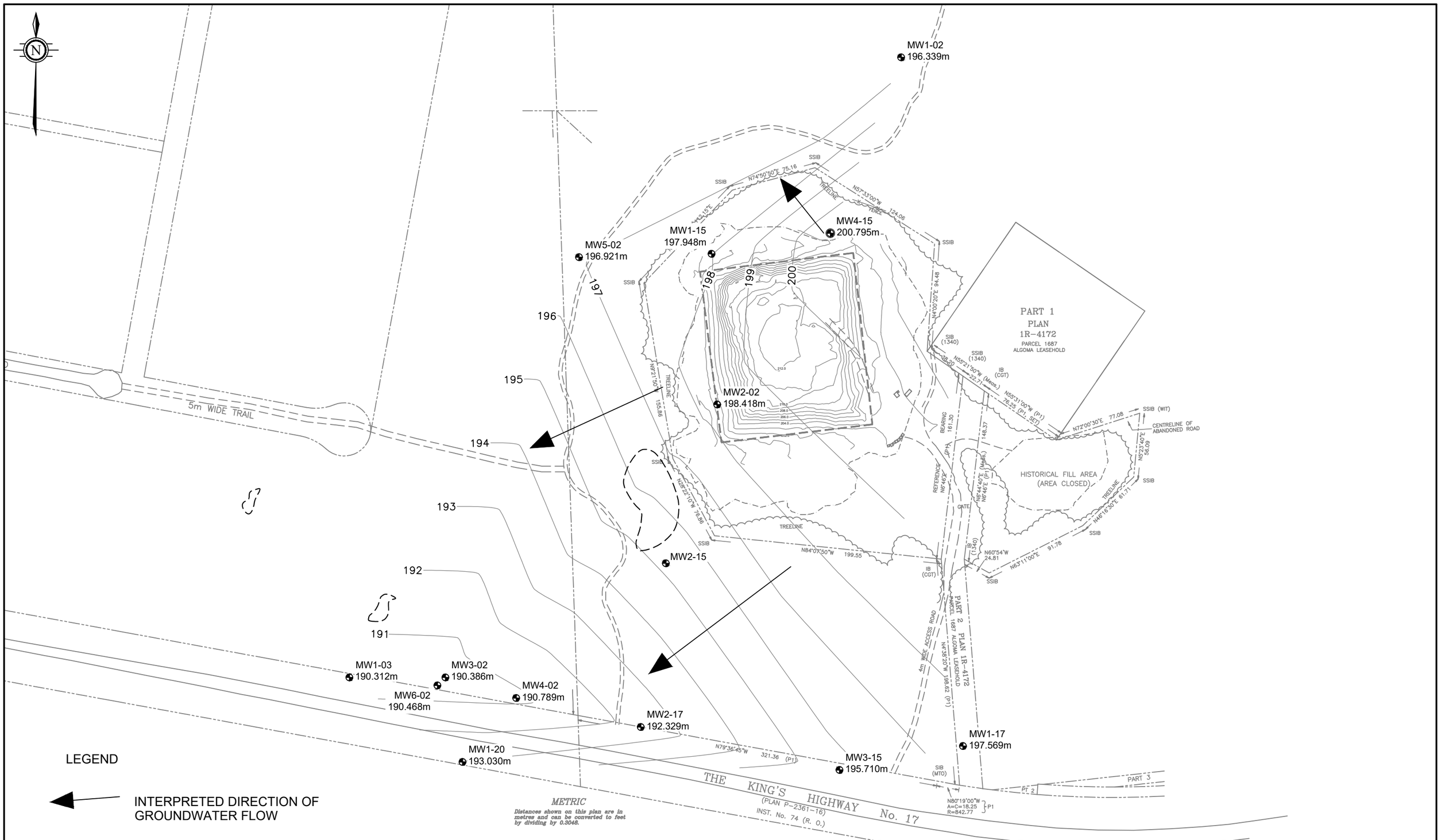
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TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

GROUNDWATER CONTOURS - SPRING 2024

B5

Rev 0



KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

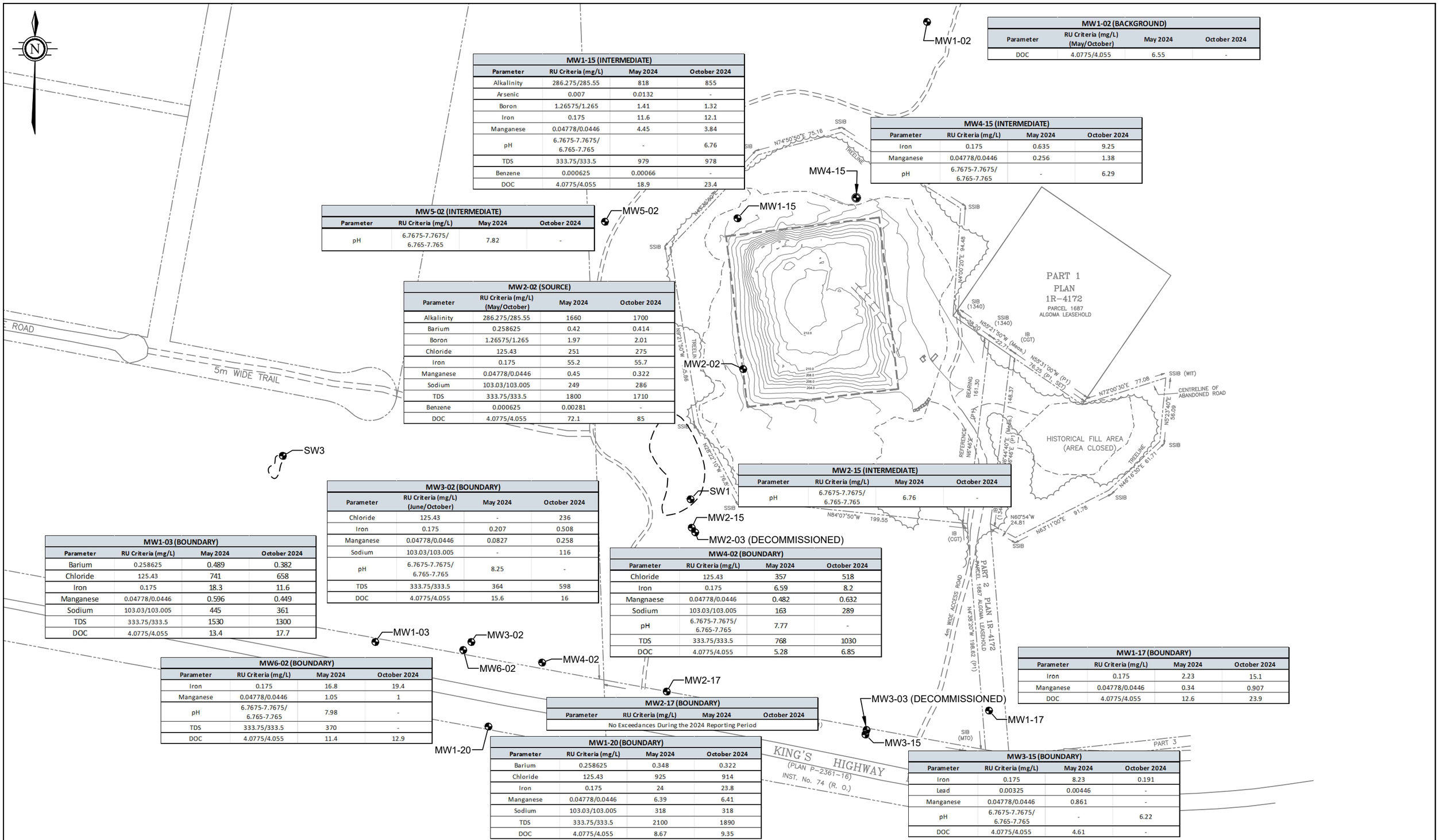
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TOWN OF BLIND RIVER MUNICIPAL LANDFILL SITE

GROUNDWATER CONTOURS - FALL 2024

B6

Rev 0



MW1-02 (BACKGROUND)			
Parameter	RU Criteria (mg/L) (May/October)	May 2024	October 2024
DOC	4.0775/4.055	6.55	-

MW1-15 (INTERMEDIATE)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Alkalinity	286.275/285.55	818	855
Arsenic	0.007	0.0132	-
Boron	1.26575/1.265	1.41	1.32
Iron	0.175	11.6	12.1
Manganese	0.04778/0.0446	4.45	3.84
pH	6.7675-7.7675/ 6.765-7.765	-	6.76
TDS	333.75/333.5	979	978
Benzene	0.000625	0.00066	-
DOC	4.0775/4.055	18.9	23.4

MW4-15 (INTERMEDIATE)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Iron	0.175	0.635	9.25
Manganese	0.04778/0.0446	0.256	1.38
pH	6.7675-7.7675/ 6.765-7.765	-	6.29

MW5-02 (INTERMEDIATE)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
pH	6.7675-7.7675/ 6.765-7.765	7.82	-

MW2-02 (SOURCE)			
Parameter	RU Criteria (mg/L) (May/October)	May 2024	October 2024
Alkalinity	286.275/285.55	1660	1700
Barium	0.258625	0.42	0.414
Boron	1.26575/1.265	1.97	2.01
Chloride	125.43	251	275
Iron	0.175	55.2	55.7
Manganese	0.04778/0.0446	0.45	0.322
Sodium	103.03/103.005	249	286
TDS	333.75/333.5	1800	1710
Benzene	0.000625	0.00281	-
DOC	4.0775/4.055	72.1	85

MW2-15 (INTERMEDIATE)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
pH	6.7675-7.7675/ 6.765-7.765	6.76	-

MW3-02 (BOUNDARY)			
Parameter	RU Criteria (mg/L) (June/October)	May 2024	October 2024
Chloride	125.43	-	236
Iron	0.175	0.207	0.508
Manganese	0.04778/0.0446	0.0827	0.258
Sodium	103.03/103.005	-	116
pH	6.7675-7.7675/ 6.765-7.765	8.25	-
TDS	333.75/333.5	364	598
DOC	4.0775/4.055	15.6	16

MW1-03 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Barium	0.258625	0.489	0.382
Chloride	125.43	741	658
Iron	0.175	18.3	11.6
Manganese	0.04778/0.0446	0.596	0.449
Sodium	103.03/103.005	445	361
TDS	333.75/333.5	1530	1300
DOC	4.0775/4.055	13.4	17.7

MW4-02 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Chloride	125.43	357	518
Iron	0.175	6.59	8.2
Mangnaese	0.04778/0.0446	0.482	0.632
Sodium	103.03/103.005	163	289
pH	6.7675-7.7675/ 6.765-7.765	7.77	-
TDS	333.75/333.5	768	1030
DOC	4.0775/4.055	5.28	6.85

MW6-02 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Iron	0.175	16.8	19.4
Manganese	0.04778/0.0446	1.05	1
pH	6.7675-7.7675/ 6.765-7.765	7.98	-
TDS	333.75/333.5	370	-
DOC	4.0775/4.055	11.4	12.9

MW2-17 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
No Exceedances During the 2024 Reporting Period			

MW1-20 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Barium	0.258625	0.348	0.322
Chloride	125.43	925	914
Iron	0.175	24	23.8
Manganese	0.04778/0.0446	6.39	6.41
Sodium	103.03/103.005	318	318
TDS	333.75/333.5	2100	1890
DOC	4.0775/4.055	8.67	9.35

MW1-17 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Iron	0.175	2.23	15.1
Manganese	0.04778/0.0446	0.34	0.907
DOC	4.0775/4.055	12.6	23.9

MW3-15 (BOUNDARY)			
Parameter	RU Criteria (mg/L)	May 2024	October 2024
Iron	0.175	8.23	0.191
Lead	0.00325	0.00446	-
Manganese	0.04778/0.0446	0.861	-
pH	6.7675-7.7675/ 6.765-7.765	-	6.22
DOC	4.0775/4.055	4.61	-

KRESIN Engineering Corporation
Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

IF THE RU VALUE FOR THE MAY AND OCTOBER SAMPLING EVENTS WERE THE SAME, ONLY A SINGLE RU VALUE WAS LISTED.

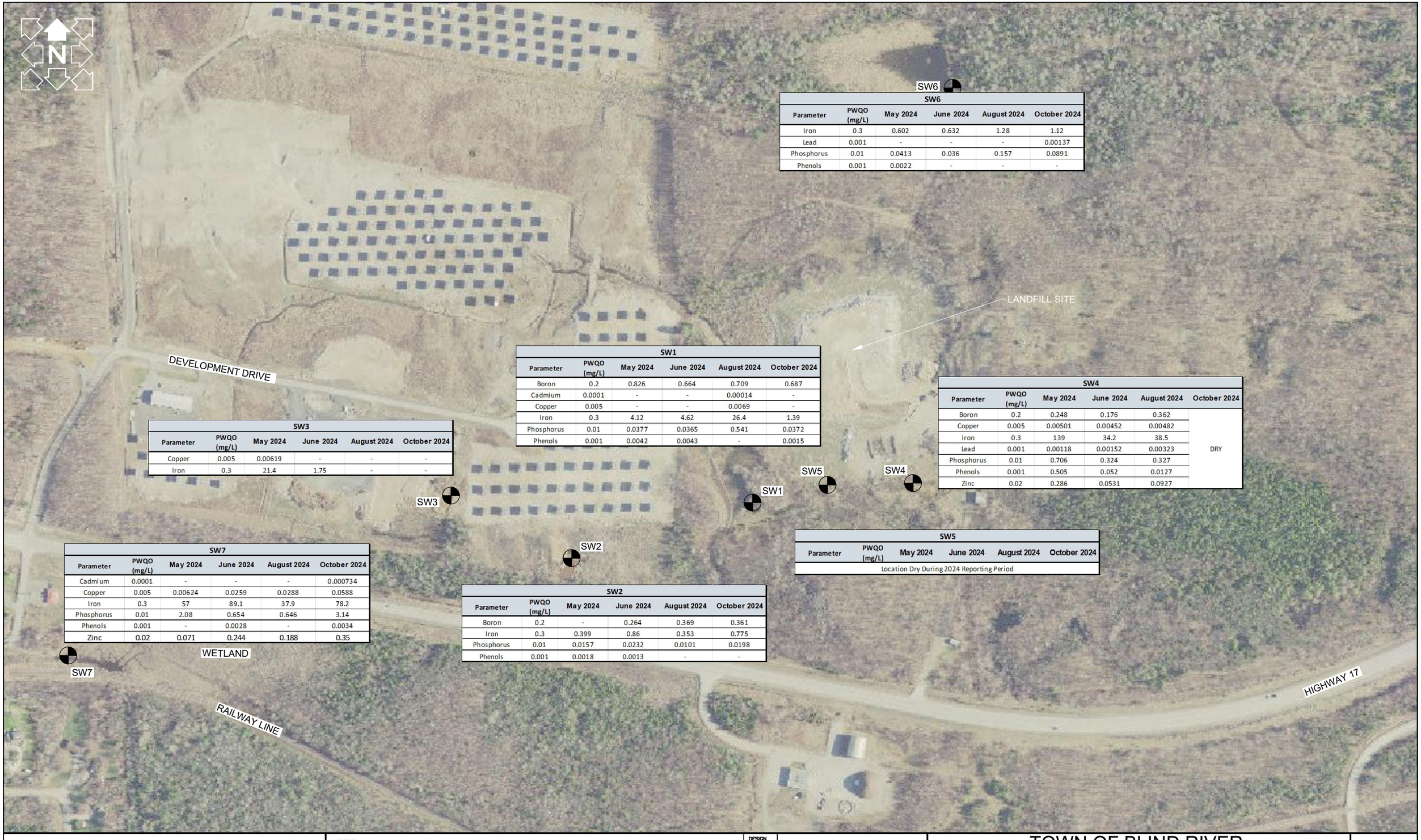
DESIGN	KEC	
DRAWN	K.Sherlock	06/2025
CHECKED	J. SHARPE	07/2025
PROJECT	2421	
FILENAME	2421 report drawings.dwg	
SCALE	1:3000	

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELLS - RU EXCEEDANCES

B7

Rev 0



SW6

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Iron	0.3	0.602	0.632	1.28	1.12
Lead	0.001	-	-	-	0.00137
Phosphorus	0.01	0.0413	0.036	0.157	0.0891
Phenols	0.001	0.0022	-	-	-

SW1

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Boron	0.2	0.826	0.664	0.709	0.687
Cadmium	0.0001	-	-	0.00014	-
Copper	0.005	-	-	0.0069	-
Iron	0.3	4.12	4.62	26.4	1.39
Phosphorus	0.01	0.0377	0.0365	0.541	0.0372
Phenols	0.001	0.0042	0.0043	-	0.0015

SW4

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Boron	0.2	0.248	0.176	0.362	DRY
Copper	0.005	0.00501	0.00452	0.00482	
Iron	0.3	139	34.2	38.5	
Lead	0.001	0.00118	0.00152	0.00323	
Phosphorus	0.01	0.706	0.324	0.327	
Phenols	0.001	0.505	0.052	0.0127	
Zinc	0.02	0.286	0.0531	0.0927	

SW3

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Copper	0.005	0.00619	-	-	-
Iron	0.3	21.4	1.75	-	-

SW5

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Location Dry During 2024 Reporting Period					

SW2

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Boron	0.2	-	0.264	0.369	0.361
Iron	0.3	0.399	0.86	0.353	0.775
Phosphorus	0.01	0.0157	0.0232	0.0101	0.0198
Phenols	0.001	0.0018	0.0013	-	-

SW7

Parameter	PWQO (mg/L)	May 2024	June 2024	August 2024	October 2024
Cadmium	0.0001	-	-	-	0.000734
Copper	0.005	0.00624	0.0259	0.0288	0.0588
Iron	0.3	57	89.1	37.9	78.2
Phosphorus	0.01	2.08	0.654	0.646	3.14
Phenols	0.001	-	0.0028	-	0.0034
Zinc	0.02	0.071	0.244	0.188	0.35

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Sault Ste. Marie, Ontario
(705) 949-4900

NOTES

DESIGN	.	.
DRAWN	JS	07/2025
CHECKED	CK	07/2025
PROJECT	2421	
FILENAME	2421 B8 SW exceedances	
SCALE	1:4,000	

TOWN OF BLIND RIVER
MUNICIPAL WASTE DISPOSAL SITE

SURFACE WATER - PWQO EXCEEDANCES

B8

Rev 0

Appendix C
Borehole Logs and Photographic Inventory

Log of MW-1

Trow

Auger Sample ⊠
SPT (N) Value ○○ ▨ Natural Moisture ×
Dynamic Cone Test —— PL & LL ⊢—○
Shelby Tube ●● ■ Undrained Triaxial at 0
Rock Core ⊠ Overburden Press. 15⊕5
Field Vane Test + S % Strain at Failure 10
Penetrometer ▲
Water Level: Est.: ▽ Measured: ▼ Perched: ▽

Project: Blind River Monitoring Well Installation — Fig. No. 2
Landfill Site
Blind River, Ontario — Project No. S02403E
Borehole Location and elevation datum shown on Drawing No. 1

OW	GWL	SYMBOL	Soil Description	Depth Below Grade m	DEPTH
Grout →			TOPSOIL, ~130 mm thick over	0.13	0
			SAND & GRAVEL, light brown, wet. (compact)		
Bentonite →			**SILTY SAND & GRAVEL**, occasional cobbles from ~1.1 to 1.6 m depth, light brown, wet. (compact)	0.70	1
Sand Pack →				2.10	2
			TILL, silty sand & gravel, cobble layers from ~2.6 to 3.0 m & from 3.5 to 3.8 m depths, grey, wet. (very dense)		
Monitoring Well →					3
					4
			END OF BOREHOLE	4.60	

N Value (20 40 60 80) / Shear Strength
O/150 mm
O/150 mm
O/75 mm

Natural Moisture Content and Atterberg Limits % Dry Weight (10 20 30)

Natural Unit Weight kN/m³

LBHMI3 S02403E GPJ 09/09/02

NOTES:
1. Borehole data requires interpretation assistance from Trow before use by others
2. Borehole advanced using continuous flight hollow stem augering equipment on May 6, 2002.
3. Monitoring well installed to ~4.26 m depth on completion.
4. See Drawing 2 for Notes on Sample Descriptions
5. This Drawing to be read with Trow report S02403E

WATER LEVEL RECORDS

Measurement date	Water Elevation (m)

Log of MW-2

Trow

Auger Sample ⊠
SPT (N) Value ○○ ⊡ Natural Moisture ×
Dynamic Cone Test —— PL & LL ⊢—○
Shelby Tube ●● ■ Undrained Triaxial at 0
Rock Core ⊠ Overburden Press. 15⊕5
Field Vane Test + S % Strain at Failure 10
Penetrometer ▲
Water Level: Est.: ▽ Measured: ▼ Perched: ▼

Project: Blind River Monitoring Well Installation — Fig. No. 4
Landfill Site
Blind River, Ontario — Project No. S02403E
Borehole Location and elevation datum shown on Drawing No. 1

OW	GWL	SYMBOL	Soil Description	Depth Below Grade m	DEPTH	N Value / Shear Strength	Natural Moisture Content and Atterberg Limits % Dry Weight	Natural Unit Weight kN/m³
			SAND & GRAVEL FILL,	GL	0	20 40 60 80	10 20 30	
			GARBAGE,	0.30 0.20				
Grout					1			
Bentonite Seal					2			
Drill Cuttings					3	○		
Sand Pack			**ALLUVIUM,** brown, wet. (soft)	3.66	4			
			ORGANICS, with some clay at base. (soft)	4.42	5	○		
Monitoring Well					6	○		
			SILTY CLAY, grey, wet. (stiff)	6.10				
			END OF BOREHOLE	6.55				

LBHM3 S02403E.GPJ 09/09/02

NOTES:
1. Borehole data requires interpretation assistance from Trow before use by others
2. Borehole advanced using continuous flight hollow stem augering equipment on May 14, 2002.
3. Monitoring well installed to ~6.09 m depth on completion.
4. See Drawing 2 for Notes on Sample Descriptions
5. This Drawing to be read with Trow report S02403E

WATER LEVEL RECORDS

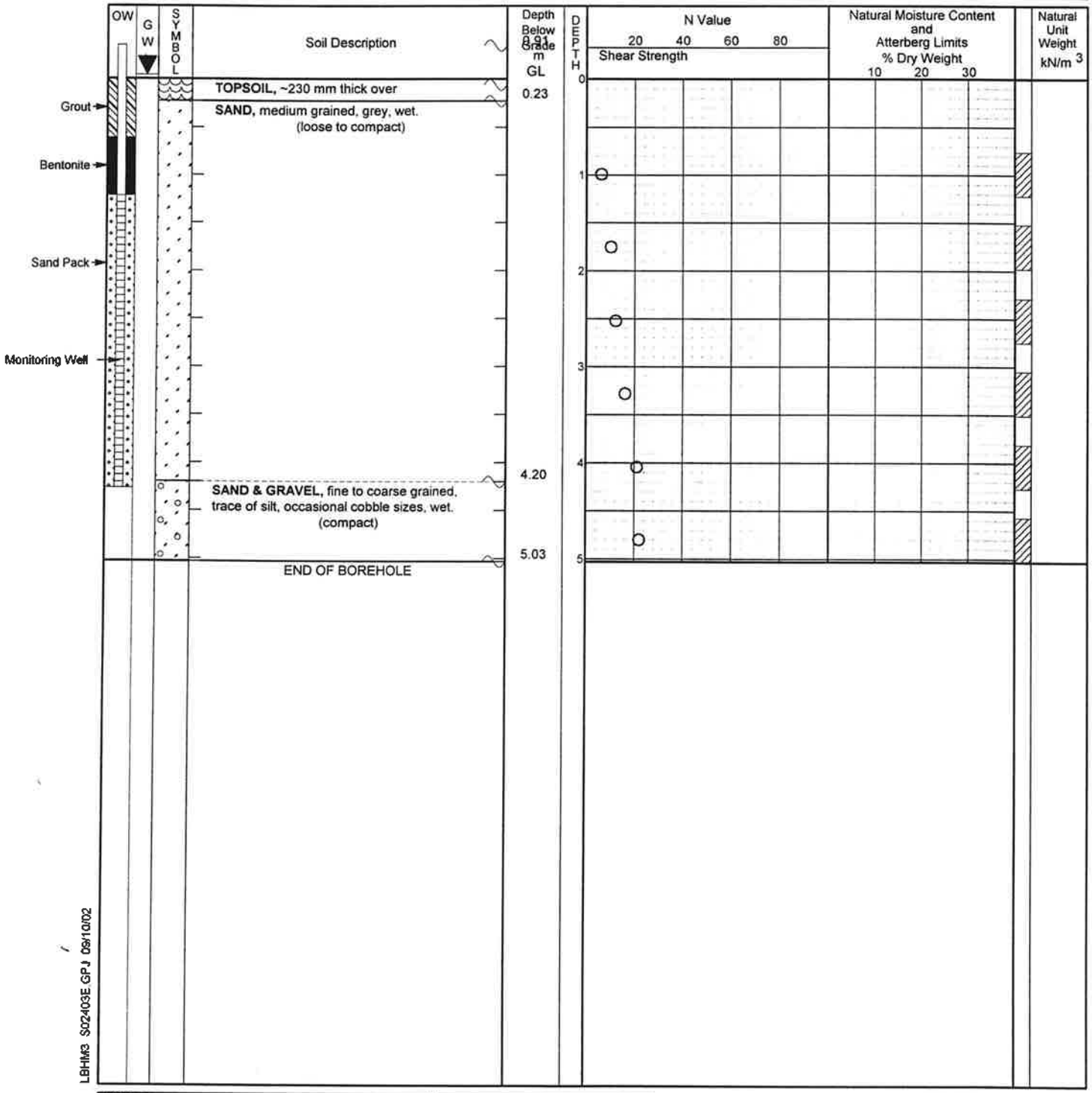
Measurement date	Water Elevation (m)
May 14/02	0.20

Log of MW-3

Trow

Auger Sample ⊠
SPT (N) Value ○○ ▨ Natural Moisture ×
Dynamic Cone Test —— PL & LL ⊢—○
Shelby Tube ●● ■ Undrained Triaxial at Overburden Press. 0
Rock Core ⊠ % Strain at Failure 15⊕5
Field Vane Test + S Penetrometer 10 ▲
Water Level: Est. ▽ Measured: ▼ Perched: ▽

Project: Blind River Monitoring Well Installation — Fig. No. 5
Landfill Site
Blind River, Ontario — Project No. S02403E
Borehole Location and elevation datum shown on Drawing No. 1



LBHM3 S02403E GPJ 09/10/02

NOTES:
1. Borehole data requires interpretation assistance from Trow before use by others
2. Borehole advanced uncased using hand augering equipment on May 14, 2002.
3. Monitoring well installed to ~4.27 m depth on completion.
4. See Drawing 2 for Notes on Sample Descriptions
5. This Drawing to be read with Trow report S02403E

WATER LEVEL RECORDS

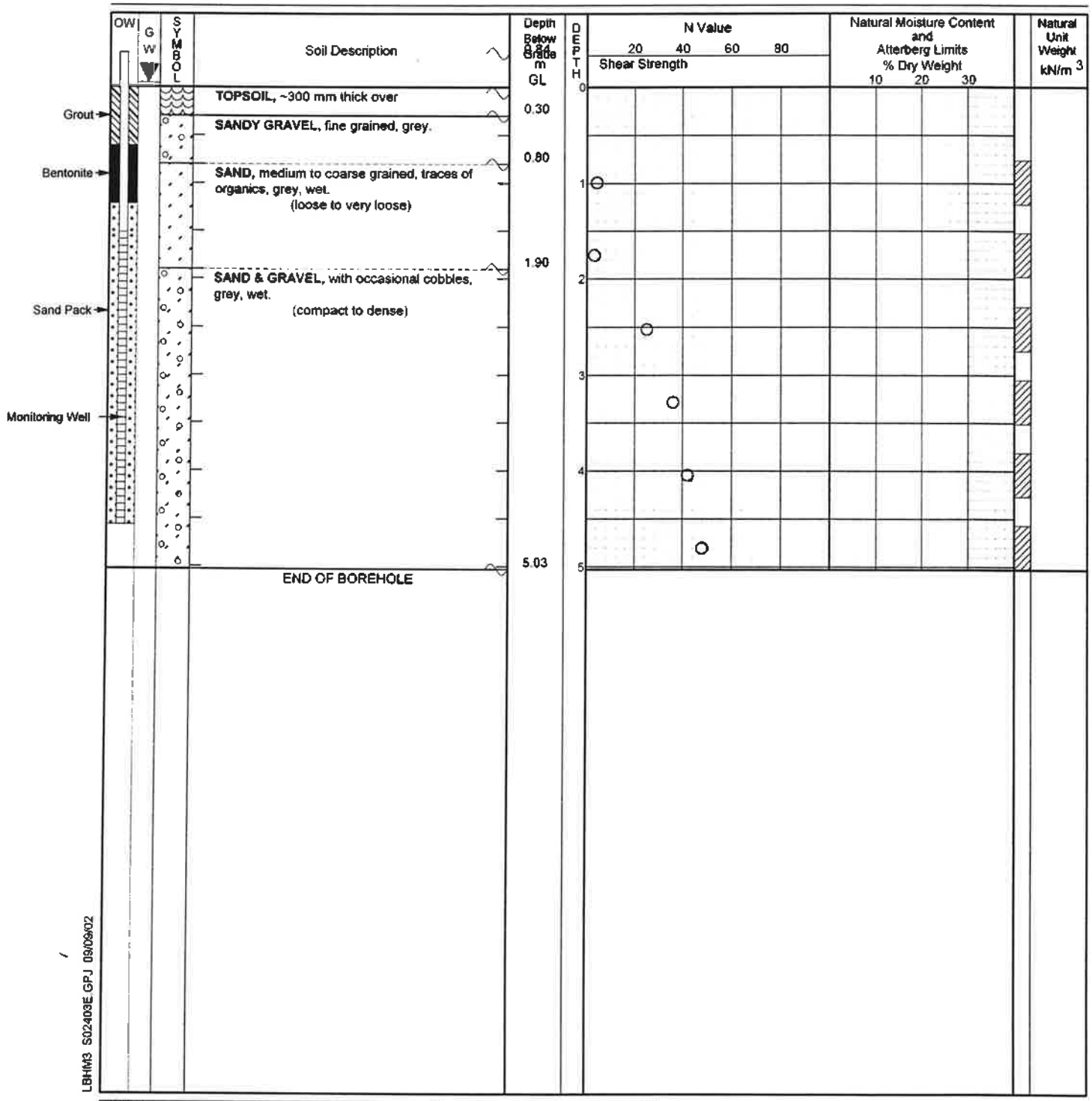
Measurement date	Water Elevation (m)
May 14/02	0.00

Log of MW-4

Trow

Auger Sample ⊠
SPT (N) Value ○○ ▨ Natural Moisture ×
Dynamic Cone Test —— PL & LL ⊢○
Shelby Tube ●● ■ Undrained Triaxial at Overburden Press. 0 / 15⊕5
Rock Core ⊠ % Strain at Failure 10
Field Vane Test + S Penetrometer ▲
Water Level: Est.: ▽ Measured: ▼ Perched: ▽

Project: Blind River Monitoring Well Installation — Fig. No. 6
Landfill Site
Blind River, Ontario — Project No. S02403E
Borehole Location and elevation datum shown on Drawing No. 1



LBHM3 S02403E.GPJ 09/09/02

NOTES:
1. Borehole data requires interpretation assistance from Trow before use by others
2. Borehole advanced using continuous flight hollow stem augering equipment on May 14, 2002.
3. Monitoring well installed to ~4.57 m depth on completion.
4. See Drawing 2 for Notes on Sample Descriptions
5. This Drawing to be read with Trow report S02403E

WATER LEVEL RECORDS

Measurement date	Water Elevation (m)
May 14/02	0.00

Log of MW-5

Trow

Auger Sample ⊠
SPT (N) Value ○○ ▨ Natural Moisture ×
Dynamic Cone Test —— PL & LL ⊢○
Shelby Tube ●● ■ Undrained Triaxial at 0
Rock Core ⊠ Overburden Press. 15⊕5
Field Vane Test + S % Strain at Failure 10
Penetrometer ▲
Water Level: Est.: ▽ Measured: ▼ Perched: ▽

Project: Blind River Monitoring Well Installation — Fig. No. 7
Landfill Site
Blind River, Ontario — Project No. S02403E
Borehole Location and elevation datum shown on Drawing No. 1

OW	GWL	SYMBOL	Soil Description	Depth Below Grade m	DEPTH	N Value / Shear Strength	Natural Moisture Content and Atterberg Limits % Dry Weight	Natural Unit Weight kN/m³
Grout →			TOPSOIL, ~150 mm thick over	GL 0.15	0			
			SAND & GRAVEL, alternating layers of light brown and grey, wet, occasional cobble sizes below ~2.3 m depth. (dense becoming very dense with increasing depth)		1			
Bentonite →					2			
Sand Pack →					3	O/75 mm & Bouncing		
Monitoring Well →				4.04	4	O/75 mm		
			END OF BOREHOLE DUE TO AUGER REFUSAL ON BEDROCK OR BOULDER					

N Value: 20 40 60 80
Natural Moisture Content and Atterberg Limits % Dry Weight: 10 20 30

LBHM3 S02403E.GPJ 06/09/02

NOTES:
1. Borehole data requires interpretation assistance from Trow before use by others
2. Borehole advanced using continuous flight hollow stem augering equipment on May 6, 2002.
3. Monitoring well installed to ~3.96 m depth on completion.
4. See Drawing 2 for Notes on Sample Descriptions
5. This Drawing to be read with Trow report S02403E

WATER LEVEL RECORDS

Measurement date	Water Elevation (m)

Log of MW-6

Trow

Auger Sample ⊠
SPT (N) Value ○○ ◪ Natural Moisture ×
Dynamic Cone Test —— PL & LL ⊢—○
Shelby Tube ●● ■ Undrained Triaxial at 0
Rock Core ⊠ Overburden Press. 15⊕5
Field Vane Test + S % Strain at Failure 10
Penetrometer ▲
Water Level: Est.: ▽ Measured: ▼ Perched: ▽

Project: Blind River Monitoring Well Installation — Fig. No. 8
Landfill Site
Blind River, Ontario — Project No. S02403E
Borehole Location and elevation datum shown on Drawing No. 1

OW	GW	SYMBOL	Soil Description	Depth Below Grade m / GL	DEPTH
			TOPSOIL, ~250 mm thick over	0.25	0
Grout			**SAND**, medium grained, grey, wet. (loose to compact)		1
Bentonite					2
Sand Pack					3
				4.20	4
Bentonite			**SAND & GRAVEL**, fine to coarse grained, trace of silt to ~6.0 m depth, occasional cobble sizes, wet. (compact)		5
Sand Pack					6
Monitoring Well				7.16	7
			END OF BOREHOLE DUE TO AUGER REFUSAL ON BEDROCK OR BOULDER		

N Value (20 40 60 80) — Shear Strength
Natural Moisture Content and Atterberg Limits % Dry Weight (10 20 30)
Natural Unit Weight kN/m³

○/150 mm & Bouncing

LBHM3 S02403E.GPJ 09/10/02

NOTES:
1. Borehole data requires interpretation assistance from Trow before use by others
2. Borehole advanced using continuous flight hollow stem augering equipment on May 14, 2002.
3. Monitoring well installed to ~7.01 m depth on completion.
4. See Drawing 2 for Notes on Sample Descriptions
5. This Drawing to be read with Trow report S02403E

WATER LEVEL RECORDS

Measurement date	Water Elevation (m)
May 14/02	0.00

Log of MW-1

Trow

Auger Sample	⊠	Split Spoon Sample	▨
SPT (N) Value (blows/0.3m)	○	Natural Moisture	×
Dynamic Cone Test	——	Plastic & Liquid Limit	⊢—⊖
Shelby Tube	■	Undrained Triaxial at Overburden Pressure	0 ⊕ 5
Rock Core	⊠	% Strain at Failure	5 10
Field Vane Test & Sensitivity	+ S_u	Pocket Penetrometer	▲
Water Level: Est.: ▽	Measured: ▼	Perched: ▼	

Project: Blind River Landfill — Fig. No. 16

Blind River, Ontario — Project No. S09538G

Hole location and datum see Drawing No. 2

GWL	SYMBOL	Soil Description	Assumed Elev. m	DEPTH	N Value (20 40 60 80) Shear Strength (50 100 kPa)	Natural Moisture Content and Atterberg Limits % Dry Weight (10 20 30)	Sample Type	Natural Unit Weight kN/m³
		TOPSOIL, 200 mm thick.	190.8 190.6	0				
		SAND, brown, wet, loose, well graded, fine to coarse grained, trace silt, trace to some gravel.		1	○			
				2	○	×		
		- grey, compact, poorly graded, medium to coarse grained, some gravel below ~2.3 m depth.		3	○	×		
			167.4					
		END OF BOREHOLE AT ~3.5 m DEPTH.						

Grout

Bentonite

Sand Pack

Observation Well

GEOTECH S09538-1.GPJ 11/20/03

NOTES:
1. Soils log data requires interpretation assistance from Trow before use by others.
2. Borehole advanced using continuous flight hollow stem augers on October 17, 2003.
3. Groundwater not encountered at time of drilling.
4. See Fig. 1A & 1B for Notes on Sample Descriptions.
5. This Drawing to be read with Trow Consulting Engineers Ltd. report S09538G.
6. Borehole logged by S. McAuliffe & Approved by T. Crilly.

WATER LEVEL RECORDS

Date Measured	Water Level Depth Below Grade (m)	Hole Open To (m)

Log of MW-2

Trow

Auger Sample ⊠ Split Spoon Sample ▨
SPT (N) Value (blows/0.3m) ○ Natural Moisture ×
Dynamic Cone Test —— Plastic & Liquid Limit ⊢—○
Shelby Tube ■ Undrained Triaxial at Overburden Pressure 0 / 15⊕5
Rock Core ⊠ % Strain at Failure 10
Field Vane Test & Sensitivity +S= Pocket Penetrometer ▲
Water Level: Est.: ▽ Measured: ▼ Perched: ▼

Project Blind River Landfill Fig. No. 17

Blind River, Ontario Project No. S09538G

Hole location and datum see Drawing No. 2

GWL	SYMBOL	Soil Description	Assumed Elev. m GL	DEPTH	N Value / Shear Strength	Natural Moisture Content and Atterberg Limits % Dry Weight	Sample Type	Natural Unit Weight kN/m³
		TOPSOIL, 80 mm thick.	0.1	0	20 40 60 80 / 50 100 kPa	10 20 30		
		SAND, brown, moist, compact, well graded, fine to coarse grained, some cobbles.		1				
		- wet below ~1.52 m depth.	1.6					
		SILTY SAND, brown, wet, compact to dense, poorly graded, coarse grained, some cobbles.		2				
		AUGER REFUSAL ON BEDROCK OR BOULDER AT ~2.29 m DEPTH.	2.3					

Grout
Bentonite
Sand Pack
Observation Well

GEOTECH S09538-1.GPJ 11/20/03

NOTES:
1. Soils log data requires interpretation assistance from Trow before use by others.
2. Borehole advanced using continuous flight hollow stem augers on October 17, 2003.
3. Groundwater not encountered at time of drilling.
4. See Fig. 1A & 1B for Notes on Sample Descriptions.
5. This Drawing to be read with Trow Consulting Engineers Ltd. report S09538G.
6. Borehole logged by S. McAuliffe & Approved by T. Crilly.

WATER LEVEL RECORDS

Date Measured	Water Level Depth Below Grade (m)	Hole Open To (m)

Log of MW-3

Trow

Auger Sample | Split Spoon Sample
SPT (N) Value (blows/0.3m) | Natural Moisture
Dynamic Cone Test | Plastic & Liquid Limit
Shelby Tube | Undrained Triaxial at Overburden Pressure
Rock Core | % Strain at Failure
Field Vane Test & Sensitivity | Pocket Penetrometer
Water Level: Est.: | Measured: | Perched:

Project: Blind River Landfill — Fig. No. 18

Blind River, Ontario — Project No. S09538G

Hole location and datum see Drawing No. 2

Soil Description	Assumed Elev. m	Depth
BOULDERS AND COBBLES, some sand.	198.4	0
SILTY SAND, brown, moist, dense, poorly graded, fine to medium grained. (TILL).	197.7	1
COBBLES, (TILL)	196.9	2
SAND, brown, moist to wet, compact, poorly graded, fine to medium grained, some silt.	196.1	3
- some cobbles below ~2.74 m depth.		4
- wet below ~3.05 m depth.		
END OF BOREHOLE AT ~5.03 m depth.	193.4	5

Grout
Bentonite
Sand Pack
Observation Well

N Value: 20 40 60 80 — Shear Strength: 50 100 kPa

Natural Moisture Content and Atterberg Limits % Dry Weight: 10 20 30

Sample Type

Natural Unit Weight kN/m³

Auger refusal encountered at 0.3 to 0.6 m depth, 4 times in this area prior to drilling this borehole due to presence of boulders and cobbles.

GEOTECH S09538-1.GPJ 11/20/03

NOTES:
1. Soils log data requires interpretation assistance from Trow before use by others.
2. Borehole advanced using continuous flight hollow stem augers on October 17, 2003.
3. Groundwater not encountered at time of drilling.
4. See Fig. 1A & 1B for Notes on Sample Descriptions.
5. This Drawing to be read with Trow Consulting Engineers Ltd. report S09538G.
6. Borehole logged by S. McAuliffe & Approved by T. Crilly.

WATER LEVEL RECORDS

Date Measured	Water Level Depth Below Grade (m)	Hole Open To (m)

MW1–15

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	1567.02
CLIENT	TOWN OF BLIND RIVER	DATE	DECEMBER 2, 2015
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	JS
GROUND ELEVATION	203.151 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE: STRATIGRAPHIC DESCRIPTION	SAMPLE: SAMPLE DEPTH (m)	SAMPLE: BLOW COUNT	MONITORING WELL DETAILS	DEPTH (m)
0.0 – 1.0		MEDIUM GRAINED SAND/SMALL ROCKS/GARBAGE/MOIST			CEMENT	0.0 – 1.0
1.0 – 3.0		CLAY/SILTY SAND/COARSE SAND/WET	2.5 – 3.0	2,4,12,8	WATER TABLE ELEV. 201.346 m; BENTONITE HOLE PLUG	1.0 – 3.0
3.0 – 4.0		SILTY SAND/MEDIUM TO COARSE SAND/WET				3.0 – 4.0
4.0 – 6.0		SILTY SAND/CLAY/WET	5.5 – 6.0	2,2,2,1	SILICA SAND; WELL SCREEN; BOTTOM OF MONITOR WELL AT 197.202 m	4.0 – 6.0
6.0 – 9.0		END OF BOREHOLE AT 6.798 m				6.0 – 9.0

NOTES: SAND POINT USED FOR INSTALLATION OF MONITORING WELL.

WELL STICK UP 0.849 m; STEEL PROTECTIVE CASING 0.957 m; BOTTOM OF MONITOR WELL INSTALLED AT 5.949 mbgs.

KRESIN Engineering Corporation

DESIGN	. .
DRAWN	. Dec 2015
CHECKED	. .
PROJECT	1567.02
FILENAME	1567.02 well logs
SCALE	NTS

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2015

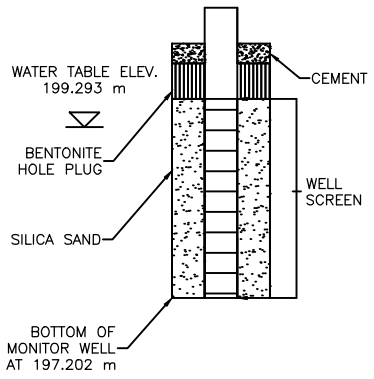
1

Rev 0

MW2–15

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	1567.02
CLIENT	TOWN OF BLIND RIVER	DATE	DECEMBER 1, 2015
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	JS
GROUND ELEVATION	199.933 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE			MONITORING WELL DETAILS	DEPTH (m)
		STRATIGRAPHIC DESCRIPTION	SAMPLE DEPTH (m)	BLOW COUNT		
0.0						0.0
1.0		MEDIUM GRAINED SAND/SMALL ROCKS/MOIST				1.0
2.0		SILTY SAND/MEDIUM TO COARSE SAND/WET				2.0
3.0		END OF BOREHOLE 2.286 m DUE TO AUGER REFUSAL ON BEDROCK OR BOULDER				3.0
4.0						4.0
5.0						5.0
6.0						6.0
7.0						7.0
8.0						8.0
9.0						9.0



NOTES: SAND POINT USED FOR INSTALLATION OF MONITORING WELL.

WELL STICK UP 1.067 m; STEEL PROTECTIVE CASING 1.202 m; BOTTOM OF MONITOR WELL INSTALLED AT 1.948 mbgs.

ATTEMPTED TO TAKE SAMPLE AT 2.286 m – SPLIT SPOON WOULD NOT ADVANCE (BOUNCE).

KRESIN Engineering Corporation

DESIGN	.	.
DRAWN	.	Dec 2015
CHECKED	.	.
PROJECT	1567.02	
FILENAME	1567.02 well logs	
SCALE	NTS	

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2015

2

Rev 0

MW3–15

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	1567.02
CLIENT	TOWN OF BLIND RIVER	DATE	DECEMBER 2, 2015
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	JS
GROUND ELEVATION	196.198 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE			MONITORING WELL DETAILS	DEPTH (m)
		STRATIGRAPHIC DESCRIPTION	SAMPLE DEPTH (m)	BLOW COUNT		
0.0		BOULDERS/COBBLES/SOME SAND			CEMENT	0.0
1.0		SILTY SAND/FINE TO MEDIUM SAND/MOIST			WATER TABLE ELEV. 194.858 m	1.0
2.0		BOULDERS/COBBLES/SOME SAND			BENTONITE HOLE PLUG	2.0
3.0		SILTY SAND/FINE TO MEDIUM SAND/ SOME COBBLES/WET			WELL SCREEN; SILICA SAND/BACKFILL	3.0
4.0						4.0
5.0		END OF BOREHOLE 5.03 m			BOTTOM OF MONITOR WELL AT 191.835 m	5.0
6.0						6.0
7.0						7.0
8.0						8.0
9.0						9.0

NOTES: SAND POINT USED FOR INSTALLATION OF MONITORING WELL.

WELL STICK UP 0.802 m; STEEL PROTECTIVE CASING 0.921 m; BOTTOM OF MONITORING WELL INSTALLED AT 4.363 mbgs.

BOREHOLE LOCATION WITHIN EXISTING MW3–03 LOCATION, PREVIOUSLY INSTALLED BY TROW ASSOCIATES INC.

BOREHOLE DESCRIPTION FROM GEOTECHNICAL INVESTIGATION – PROPOSED WATER SUPPLY SYSTEM UPGRADE LANDFILL MONITORING WELLS, BLIND RIVER ONTARIO BY TROW ASSOCIATES INC. 2003.

KRESIN Engineering Corporation

DESIGN	.	.
DRAWN	.	Dec 2015
CHECKED	.	.
PROJECT	1567.02	
FILENAME	1567.02 well logs	
SCALE	NTS	

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2015

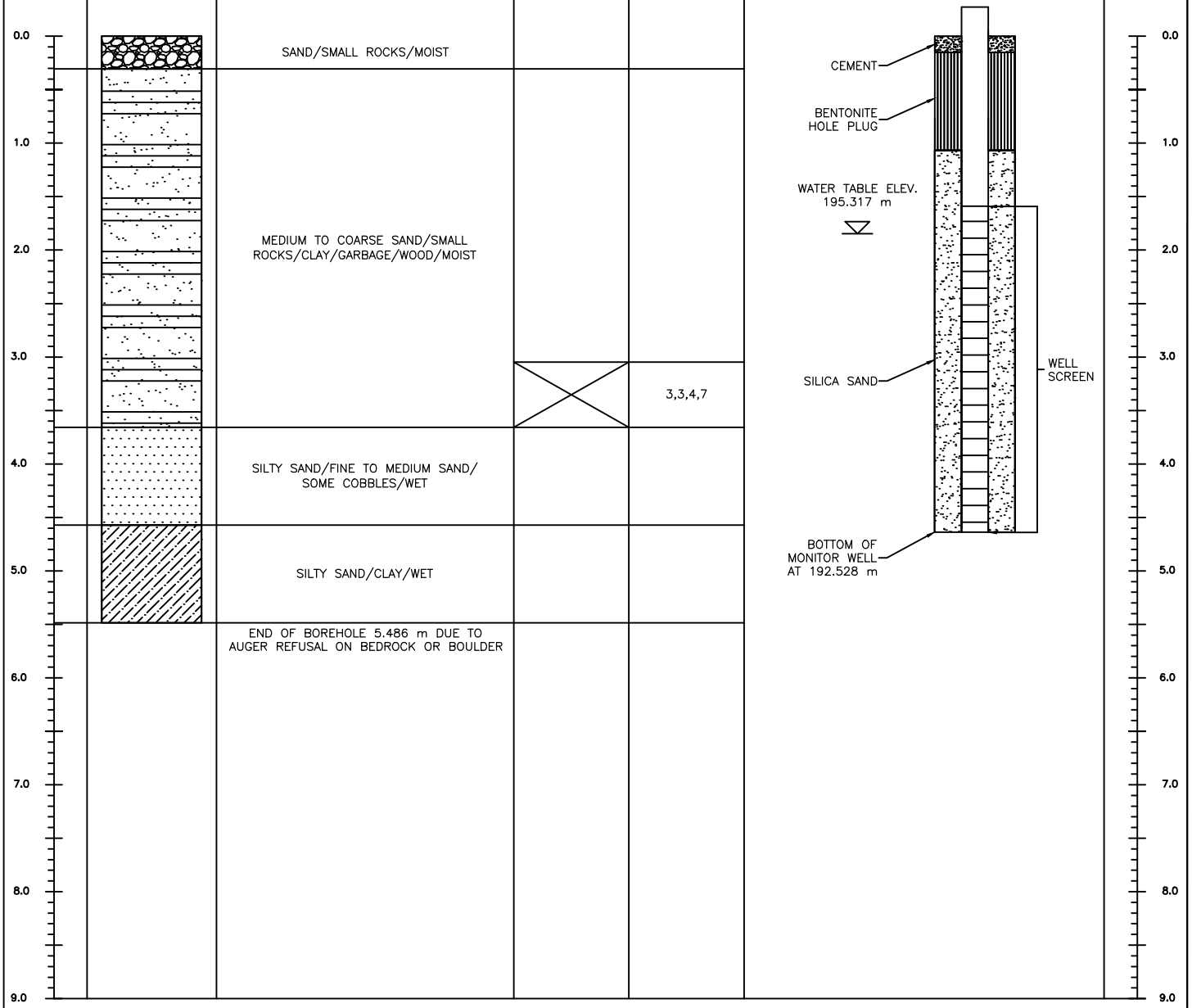
3

Rev 0

MW4–15

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	1567.02
CLIENT	TOWN OF BLIND RIVER	DATE	DECEMBER 1, 2015
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	JS
GROUND ELEVATION	197.165 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE: STRATIGRAPHIC DESCRIPTION	SAMPLE: SAMPLE DEPTH (m)	SAMPLE: BLOW COUNT	MONITORING WELL DETAILS	DEPTH (m)
0.0 – 1.0		SAND/SMALL ROCKS/MOIST			CEMENT; BENTONITE HOLE PLUG	0.0 – 1.0
1.0 – 3.0		MEDIUM TO COARSE SAND/SMALL ROCKS/CLAY/GARBAGE/WOOD/MOIST			WATER TABLE ELEV. 195.317 m	1.0 – 3.0
3.0 – 4.0				3,3,4,7	SILICA SAND; WELL SCREEN	3.0 – 4.0
4.0 – 5.0		SILTY SAND/FINE TO MEDIUM SAND/ SOME COBBLES/WET				4.0 – 5.0
5.0 – 6.0		SILTY SAND/CLAY/WET			BOTTOM OF MONITOR WELL AT 192.528 m	5.0 – 6.0
6.0 – 9.0		END OF BOREHOLE 5.486 m DUE TO AUGER REFUSAL ON BEDROCK OR BOULDER				6.0 – 9.0



NOTES: SAND POINT USED FOR INSTALLATION OF MONITORING WELL.

WELL STICK UP 0.849 m; STEEL PROTECTIVE CASING 0.957 m; BOTTOM OF MONITORING WELL INSTALLED AT 4.637 mbgs.

KRESIN Engineering Corporation

DESIGN	. .
DRAWN	. Dec 2015
CHECKED	. .
PROJECT	1567.02
FILENAME	1567.02 well logs
SCALE	NTS

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2015

4

Rev 0

MW1-17

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	0508.11
CLIENT	TOWN OF BLIND RIVER	DATE	JULY 12, 2017
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	RW
GROUND ELEVATION	199.034 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE			MONITORING WELL DETAILS	DEPTH (m)
		STRATIGRAPHIC DESCRIPTION	SAMPLE DEPTH (m)	BLOW COUNT		
0.0					CEMENT BENTONITE HOLE PLUG WATER TABLE ELEV. 198.090 m WELL SCREEN SILICA SAND BOTTOM OF MONITOR WELL AT 196.596 m	0.0
1.0		COBBLES/GRAVEL/FINE SAND/DRY				1.0
2.0		COBBLES/GRAVE/FINE SAND/WET				2.0
3.0						3.0
4.0						4.0
5.0						5.0
6.0						6.0
7.0						7.0
8.0						8.0
9.0						9.0

NOTES: SAND POINT USED FOR INSTALLATION OF MONITORING WELL.

WELL STICK UP 0.815 m; STEEL PROTECTIVE CASING 0.940 m; BOTTOM OF MONITOR WELL INSTALLED AT 2.438 mbgs.

COBBLES PREVENTED SPLIT SPOON SAMPLE COLLECTION.

KRESIN Engineering Corporation

DESIGN	.	.
DRAWN	JS	Oct 2017
CHECKED	.	.
PROJECT	0508.11	
FILENAME	0508.11 well log	
SCALE	NTS	

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2017

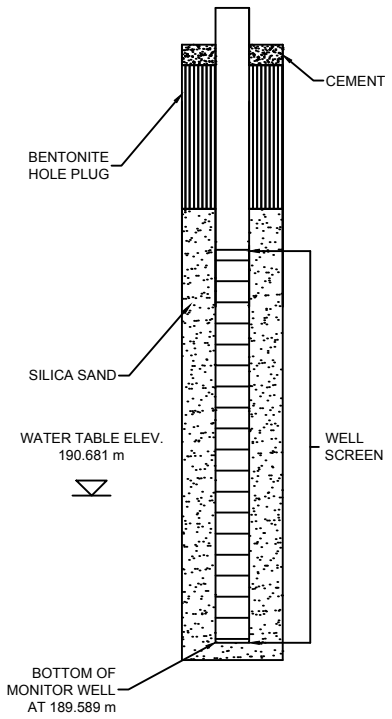
1

Rev 0

MW2-17

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	0508.11
CLIENT	TOWN OF BLIND RIVER	DATE	JULY 12, 2017
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	RW
GROUND ELEVATION	194.034 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE			MONITORING WELL DETAILS	DEPTH (m)
		STRATIGRAPHIC DESCRIPTION	SAMPLE DEPTH (m)	BLOW COUNT		
0.0						0.0
1.0		FINE SAND/DRY				1.0
2.0		MEDIUM SAND/WET				2.0
3.0				1,6,9,6		3.0
4.0		MEDIUM SAND/WET				4.0
5.0						5.0
6.0						6.0
7.0						7.0
8.0						8.0
9.0						9.0



NOTES: SAND POINT USED FOR INSTALLATION OF MONITORING WELL.

WELL STICK UP 0.78 m; STEEL PROTECTIVE CASING 0.94 m; BOTTOM OF MONITOR WELL INSTALLED AT 4.445 mbgs.

KRESIN Engineering Corporation

DESIGN	.	.
DRAWN	JS	Oct 2017
CHECKED	.	.
PROJECT	0508.11	
FILENAME	0508.11 well log	
SCALE	NTS	

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2017

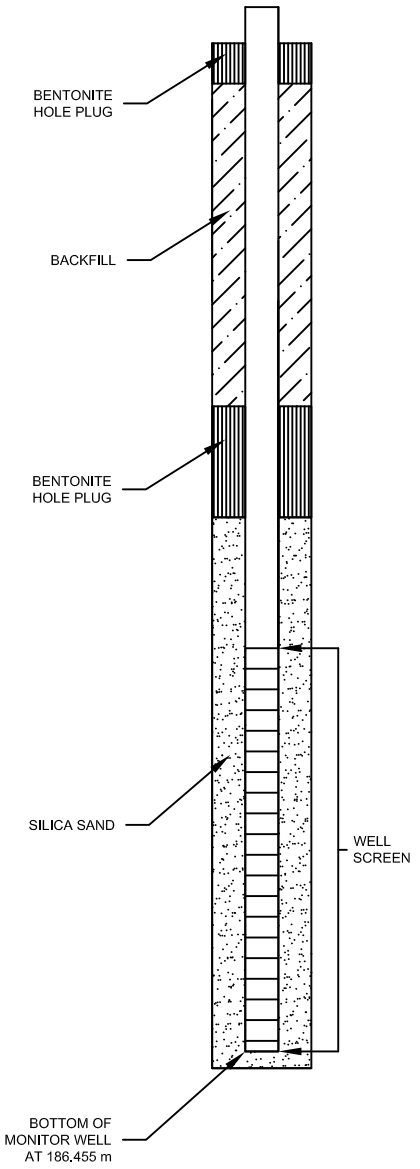
2

Rev 0

MW1-20

PROJECT NAME	BLIND RIVER LANDFILL SITE	PROJECT NO.	2049.02
CLIENT	TOWN OF BLIND RIVER	DATE	September 1, 2020
BOREHOLE TYPE	203 mm (8 inch) DIAMETER AUGER	FIELD SUPERVISOR	JS
GROUND ELEVATION	194.034 m	ENGINEER	

DEPTH (m)	STRATIGRAPHY	SAMPLE: STRATIGRAPHIC DESCRIPTION	SAMPLE: SAMPLE DEPTH (m)	SAMPLE: BLOW COUNT	MONITORING WELL DETAILS	DEPTH (m)
0.0						0.0
1.0		ORGANIC MATERIAL/FINE SANDY SILT/WET				1.0
2.0		DENSE SILTY CLAY/WET				2.0
3.0		LOOSE SILTY CLAY/WET				3.0
4.0						4.0
5.0		DENSE SILTY CLAY/WET				5.0
6.0		DENSE SILTY CLAY/SMALL COBBLES/WET				6.0
7.0		DENSE SILTY CLAY/WET				7.0
8.0						8.0
9.0						9.0



NOTES: BOTTOM OF WELL SCREEN IS CAPPED

WELL STICK UP 0.853 m; STEEL PROTECTIVE CASING 0.915 m; BOTTOM OF MONITOR WELL INSTALLED AT 7.62 mbgs.

KRESIN Engineering Corporation

DESIGN	.	.
DRAWN	JS	Sept 2020
CHECKED	.	.
PROJECT	2049.02	
FILENAME	2049..02 MW1-20 well log	
SCALE	NTS	

TOWN OF BLIND RIVER
MUNICIPAL LANDFILL SITE

MONITORING WELL INSTALLATION - 2020

1-20

Rev 0



Figure C.1. Monitoring location MW1-02



Figure C.2. Monitoring location MW1-02



Figure C.3. Monitoring location MW2-02



Figure C.4. Monitoring location MW2-02



Figure C.5. Monitoring location MW3-02



Figure C.6. Monitoring location MW3-02



Figure C.7. Monitoring location MW4-02



Figure C.8. Monitoring location MW4-02



Figure C.9. Monitoring location MW5-02



Figure C.10. Monitoring location MW5-02



Figure C.11. Monitoring location MW6-02



Figure C.12. Monitoring location MW6-02



Figure C.13. Monitoring location MW1-03



Figure C.14. Monitoring location MW1-03



Figure C.15. Monitoring location MW1-15



Figure C.16. Monitoring location MW1-15



Figure C.17. Monitoring location MW2-15



Figure C.18. Monitoring location MW2-15



Figure C.19. Monitoring Location MW3-15



Figure C.20. Monitoring Location MW3-15



Figure C.21. Monitoring location MW4-15



Figure C.22. Monitoring location MW4-15



Figure C.23. Monitoring location MW1-17



Figure C.24. Monitoring location MW1-17



Figure C.25. Monitoring location MW2-17



Figure C.26. Monitoring Location MW2-17



Figure C.27. Monitoring location MW1-20



Figure C.28. Monitoring location MW1-20



Figure C.29. Surface water location SW1



Figure C.30. Surface water location SW2



Figure C.31. Surface water location SW3



Figure C.32. Surface water location SW4



Figure C.33. Surface water location SW5



Figure C.34. Surface water location SW6



Figure C.3. Surface water location SW7

Appendix D
Observation Well and Surface Water Sampling Protocol

GROUNDWATER MONITORING AND SAMPLING PROTOCOL

1.0 EQUIPMENT PREPARATION

1. All field instruments shall be calibrated according the manufacturer specifications before each sampling event.

2. Sample bottles obtained from the analyzing laboratory shall be inspected for damage and to ensure that all required bottles are present.

2.0 WATER LEVEL MEASUREMENTS

1. If visiting the groundwater location for the first time or if not already collected, record GPS coordinates of the groundwater location.

2. Prior to purging/sampling, water levels shall be measured with the electronic tape.

3. Water level measurements shall be taken without the removal of the dedicated sampling device (tubing and foot-valve arrangements).

4. Water level and well depth measurements shall be taken from the top of the monitoring well. The measurement will be taken from the top of the PVC pipe and not the top of the steel protective casing or the ground level.

5. Measurements shall be recorded.

6. Thoroughly clean the measuring device after taking measurements in each monitor to eliminate contamination between wells.

3.0 PURGING PROCEDURE

1. Prior to sampling, each well shall be purged to remove the stagnant water within the well casing, to allow the sampling to be of fresh groundwater.

2. The volume of standing water in each monitoring well shall be calculated from the recorded static level and the total well depth and recorded. (For a 50 mm diameter well casing, 1 metre of water column = 2 L of water).

3. Three casing volumes shall be removed using the dedicated samplers. The purged water shall be measured into a calibrated container and the volume removed shall be recorded for each well. Slow inflow monitors shall be purged completely dry. The volume of purged water shall be recorded for each well. The water that is purged should be retained to be used for samples ONLY IF the well does not recover to allow sampling. If the purged water is used as a sample it must be clearly labelled as such.

4. Conductivity, temperature pH and dissolved oxygen values shall be field measured and recorded after the removal of each casing volume to confirm that the parameters have stabilized.

4.0 SAMPLING/SUBMISSION PROCEDURE

1. Suitable sample bottles (containing pre-measured preservatives, as required) shall be obtained from the analyzing laboratory in advance of the sampling program.

2. Field blank samples shall be collected during the same time and at the same location during the sampling program. Field blanks shall be collected in a similar manner as the sample but without using the groundwater collection equipment. Distilled water shall be used for submitting field blanks to the laboratory.

3. The number and type of field and spiked blanks shall be determined by prior consultation with the laboratory representative.

4. If possible, samples shall be collected the day following the purging exercise (to permit water-level recovery in the slower responding monitors) by means of the dedicated samplers in each monitor well.

5. Samples collected for metal determinations (which include iron and manganese) shall be field filtered before placement into the sample bottle containing acid preservative. If appreciable sediment is encountered in the sample and filtering cannot be undertaken, a sample should be collected in a clean bottle without preservative, and the sediment shall be allowed to settle before a sample is decanted for submission to a laboratory for subsequent filtering/acidification.

6. Sample bottles for volatile organics shall completely fill the sample bottle, without any air (head) space.

7. Each sample bottle shall be labelled to indicate the project name, well number, time of sample collection, preservatives added and analyses to be performed.

8. Place samples into a cooler with pre-frozen ice packs and deliver to the laboratory within 24 hours after the completion of the sampling program.

9. A Chain of Custody form shall be completed and submitted together with the samples to the laboratory.

SURFACE WATER MONITORING AND SAMPLING PROTOCOL

1. If visiting the surface water location for the first time or if not already collected, record GPS coordinates of the surface water location.

2. Disposable latex gloves shall be worn throughout the sampling procedure.

3. Conductivity, temperature, pH and dissolved oxygen shall be field measured and recorded at each sampling location.

4. If required, QA/QC blanks shall be obtained from the analyzing laboratory in advance of the sampling program. The number and type of blanks shall be determined by prior consultation with a laboratory representative.

5. Suitable sample bottles (containing pre-measured preservatives, as required) shall be obtained from the analyzing laboratory in advance of the sampling program and shall be assigned a unique sample number.

6. Samples shall be collected by partially submerging the sample bottles into the surface water, making sure to not overflow the bottles or flushing out any preservative.

7. Any observations made during sample collection shall be recorded.

8. Each sample bottle shall be labelled to indicate the project name, well number, time of sample collection, preservatives added and analyses to be performed.

9. Samples shall be placed into a cooler with pre-frozen ice packs and delivered to the laboratory within 24 hours after the completion of the sampling program.

10. A Chain of Custody form shall be completed and submitted together with the samples to the laboratory.

Appendix E
Field Record Sheets

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill WEATHER: Sunny 20°C

KEC Project: 2421 RECORDERS: Jenn / Abbi

DESCRIPTION: MW 1-02 GPS INFO:

DATE & TIME: May 15/24 1:13pm

Total depth of well from top of casing:	5.205	m	(a)
Depth to water from top of casing:	1.153	m	(b)
Height of casing above ground	0.922	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 24 Litres

Purged 21 Litres

Meter Readings

ph	6.61
DO	37.4
EC	175
Temp.	7.6°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
5		
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12		
13		
14		

Observation No.	Time	Depth
15		
16		
17		
18		
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 2-02 **GPS INFO:**

DATE & TIME: May 15/24 3:30pm

Total depth of well from top of casing: 6.405 m (a)

Depth to water from top of casing: 2.185 m (b)

Height of casing above ground 0.695 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 24.8 Litres

Purged 24.8 Litres

Meter Readings

ph	6.72
DO	31.9
EC	2926
Temp.	12.3

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
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5		
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14		

Observation No.	Time	Depth
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 3-02 **GPS INFO:**

DATE & TIME: May 15/24 10:55am

Total depth of well from top of casing: 1.742 m (a)

Depth to water from top of casing: 0.946 m (b)

Height of casing above ground 0.914 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged 1 Litres

Meter Readings

ph	6.46
DO	34.9
EC	623
Temp.	8.7°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
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13		
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Observation No.	Time	Depth
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 4-02 **GPS INFO:**

DATE & TIME: May 15/24 11:38am

Total depth of well from top of casing:	4.965	m	(a)
Depth to water from top of casing:	1.069	m	(b)
Height of casing above ground	0.791	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 23 Litres

Purged 10 Litres

Meter Readings

ph	6.25
DO	44.7
EC	1224
Temp.	9.9 °C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
5		
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7		
8		
9		
10		
11		
12		
13		
14		

Observation No.	Time	Depth
15		
16		
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 5-02 **GPS INFO:**

DATE & TIME: May 15/24 1:50pm

Total depth of well from top of casing:	4.621	m	(a)
Depth to water from top of casing:	1.035	m	(b)
Height of casing above ground	0.820	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 21.1 Litres

Purged 5 Litres

Meter Readings

ph	6.7
DO	70.4
EC	136
Temp.	9.8°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Observation No.	Time	Depth
15		
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 6-02 **GPS INFO:**

DATE & TIME: May 15/24 11:04am

Total depth of well from top of casing: 7.430 m (a)

Depth to water from top of casing: 1.195 m (b)

Height of casing above ground 0.790 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = 36.7 Litres

Purged 14 Litres

Meter Readings

ph	6.54
DO	85.6
EC	545
Temp.	13.3 °C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
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11		
12		
13		
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Observation No.	Time	Depth
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28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 1-03 **GPS INFO:**

DATE & TIME: May 15/24 10:43am

Total depth of well from top of casing:	3.495	m	(a)
Depth to water from top of casing:	1.015	m	(b)
Height of casing above ground	1.043	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 14.6 Litres

Purged 14.6 Litres

Meter Readings

ph	5.94
DO	17.5
EC	220
Temp.	7.8°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
5		
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7		
8		
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11		
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Observation No.	Time	Depth
15		
16		
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 1-15 **GPS INFO:**

DATE & TIME: May 15/24 2:42pm

Total depth of well from top of casing:	6.711	m	(a)
Depth to water from top of casing:	2.350	m	(b)
Height of casing above ground	0.848	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = 25.7 Litres

Purged 25.7 Litres

Meter Readings

ph	6.45
DO	37.2
EC	1392
Temp.	11°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
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11		
12		
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14		

Observation No.	Time	Depth
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27		
28		

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 2-15 **GPS INFO:**

DATE & TIME: May 15/24 3:54pm

Total depth of well from top of casing: 3.013 m (a)

Depth to water from top of casing: 1.937 m (b)

Height of casing above ground 1.083 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = 6.3 Litres

Purged 4 Litres

Meter Readings

ph	8.46
DO	75.7
EC	64
Temp.	10.9°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
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11		
12		
13		
14		

Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill WEATHER: Sunny 20°C

KEC Project: 2421 RECORDERS: Jenn / Abbi

DESCRIPTION: MW 3-15 GPS INFO:

DATE & TIME: May 15/24 9:08am

Total depth of well from top of casing:	5.235	m	(a)
Depth to water from top of casing:	2.128	m	(b)
Height of casing above ground	0.821	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 18.3 Litres

Purged 7 Litres

Meter Readings

ph	5.33
DO	41.6
EC	84
Temp.	8.9°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 4-15 **GPS INFO:**

DATE & TIME: May 15/24 2:25pm

Total depth of well from top of casing:	4.898	m	(a)
Depth to water from top of casing:	2.325	m	(b)
Height of casing above ground	0.835	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 15 Litres

Purged 15 Litres

Meter Readings

ph	6.76
DO	34.7
EC	96
Temp.	10.7°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: MW 1-17 **GPS INFO:**

DATE & TIME: May 15/24 12:41pm

Total depth of well from top of casing: 3.053 m (a)

Depth to water from top of casing: 1.485 m (b)

Height of casing above ground 0.862 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = 9.2 Litres

Purged 2 Litres

Meter Readings

ph	6.73
DO	52.9
EC	274
Temp.	11.2°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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* Duplicate

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT: Blind River Landfill
WEATHER: Sunny 20°C
KEC Project: 2421
RECORDERS: Jenn / Abbi
DESCRIPTION: MW 2-17
GPS INFO:
DATE & TIME: May 15/24 10:12am

Total depth of well from top of casing: 5.148 m (a)
Depth to water from top of casing: 2.792 m (b)
Height of casing above ground 0.752 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 13.9 Litres

Purged 13.9 Litres

Meter Readings

ph	5.81
DO	55.9
EC	157
Temp.	8.6°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
WEATHER: Sunny 20°C
KEC Project: 2421
RECORDERS: Jenn / Abbi
DESCRIPTION: MW 1-20
GPS INFO:
DATE & TIME: May 15/24 11:57am

Total depth of well from top of casing:	8.295	m	(a)
Depth to water from top of casing:	1.452	m	(b)
Height of casing above ground	0.878	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 40 Litres

Purged 40 Litres

Meter Readings

ph	6.11
DO	43.7
EC	2411
Temp.	9.3°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: SW1 **GPS INFO:**

DATE & TIME: May 15/24 4:12pm

Total depth of well from top of casing: _____ m (a)

Depth to water from top of casing: _____ m (b)

Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	7.76
DO	127.3
EC	1011
Temp.	28.5 °C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill WEATHER: Sunny 20°C

KEC Project: 2421 RECORDERS: Jenn / Abbi

DESCRIPTION: SW 2 GPS INFO:

DATE & TIME: May 15/24 4:48pm

Total depth of well from top of casing: _____ m (a)

Depth to water from top of casing: _____ m (b)

Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	7.6
DO	168.6
EC	230
Temp.	23.5°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: SW 3 **GPS INFO:**

DATE & TIME: May 15/24 5:00pm

Total depth of well from top of casing: _____ m (a)

Depth to water from top of casing: _____ m (b)

Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	7.6
DO	93.2
EC	154
Temp.	20.7°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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*SW5 DRY/FILLED IN

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn/Abbi

DESCRIPTION: SW4 **GPS INFO:**

DATE & TIME: May 15/24 4:30pm

Total depth of well from top of casing: _____ m (a)

Depth to water from top of casing: _____ m (b)

Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	6.94
DO	18.1
EC	878
Temp.	21.7°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny 20°C

KEC Project: 2421 **RECORDERS:** Jenn / Abbi

DESCRIPTION: SW6 **GPS INFO:**

DATE & TIME: May 15/24 1:35pm

Total depth of well from top of casing: _____ m (a)

Depth to water from top of casing: _____ m (b)

Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	6.72
DO	102.1
EC	86
Temp.	21.5°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
WEATHER: Sunny 20°C
KEC Project: 2421
RECORDERS: Jenn / Abbi
DESCRIPTION: SW 7
GPS INFO:
DATE & TIME: May 15/24 5:25pm

Total depth of well from top of casing: _____ m (a)
Depth to water from top of casing: _____ m (b)
Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	6.92
DO	88.3
EC	707
Temp.	17.3°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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* SW5 has been filled

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind Rivers Land fill
WEATHER: partly sunny, 20°C
KEC Project: 2421.01
RECORDERS: JS/AB
DESCRIPTION: SW1
GPS INFO:
DATE & TIME: June 26, 2024 11:15am

Total depth of well from top of casing: — m (a)
Depth to water from top of casing: — m (b)
Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = — Litres

Purged — Litres

Meter Readings

ph	6.68
DO	73.6 %
EC	0.956 ms
Temp.	20.8°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
WEATHER: Cloudy, drizzle, 18°C
KEC Project: 2421.01
RECORDERS: JS / AB
DESCRIPTION: SW2
GPS INFO:
DATE & TIME: June 26, 2024 12:50pm

Total depth of well from top of casing: — m (a)
Depth to water from top of casing: — m (b)
Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = — Litres

Purged — Litres

Meter Readings

ph	6.93
DO	77.3 %
EC	0.316 mS
Temp.	21.2°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
WEATHER: Cloudy, 20°C
KEC Project: 2421.01
RECORDERS: JS/AB
DESCRIPTION: SW3
GPS INFO:
DATE & TIME: June 26, 2024 12:40pm

Total depth of well from top of casing: – m (a)
Depth to water from top of casing: – m (b)
Height of casing above ground – m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = –Litres

Purged –Litres

Meter Readings

ph	6.94
DO	46.5%
EC	0.143 mS
Temp.	17°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind Rivers Landfill
WEATHER: Partly Sunny, 20°C
KEC Project: 2421.01
RECORDERS: JS/AB
DESCRIPTION: SW4
GPS INFO:
DATE & TIME: June 26, 2024 12:00pm

Total depth of well from top of casing: — m (a)
Depth to water from top of casing: — m (b)
Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = — Litres

Purged — Litres

Meter Readings

ph	6.84
DO	19.9%
EC	0.368mS
Temp.	19°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: partly sunny, 20°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: SW6 — GPS INFO:

DATE & TIME: June 26, 2024 10:40am

Total depth of well from top of casing: – m (a)

Depth to water from top of casing: – m (b)

Height of casing above ground – m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = – Litres

Purged – Litres

Meter Readings

ph	6.12
DO	107.1 %
EC	0.097 mS
Temp.	21 °C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Land fill — WEATHER: overcast, drizzle, 18°C

KEC Project: 2421.01 — RECORDERS: JS/AR

DESCRIPTION: SW7 — GPS INFO:

DATE & TIME: June 26, 2024 1:15pm

Total depth of well from top of casing: — m (a)

Depth to water from top of casing: — m (b)

Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = — Litres

—

Purged _____ Litres

Meter Readings

ph	6.60
DO	23.6 %
EC	0.801 mS
Temp.	17.7 °C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: Sunny, 20°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: SW1 — GPS INFO:

DATE & TIME: Aug. 21, 2024 11:00am

Total depth of well from top of casing: — m (a)

Depth to water from top of casing: — m (b)

Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	6.70
DO	81.9 %
EC	0.939
Temp.	16.16°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — **WEATHER:** Sunny, 25°C

KEC Project: 2421.01 — **RECORDERS:** JS/KS

DESCRIPTION: SW2 — **GPS INFO:**

DATE & TIME: Aug. 21, 2024 1:15pm

Total depth of well from top of casing: — m (a)

Depth to water from top of casing: — m (b)

Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph	7.38
DO	114.8 %
EC	0.440 mS
Temp.	25.5 °C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny, 25°C

KEC Project: 2421.01 **RECORDERS:** JS/AB

DESCRIPTION: SW3 **GPS INFO:**

DATE & TIME: Aug. 21, 2024 1:00pm

Total depth of well from top of casing: _____ m (a)

Depth to water from top of casing: _____ m (b)

Height of casing above ground _____ m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

DRY

Purged _____Litres

Meter Readings

ph _____

DO _____

EC _____

Temp. _____

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Sunny, 22°C

KEC Project: 2421.01 **RECORDERS:** JS/AB

DESCRIPTION: SW4 **GPS INFO:**

DATE & TIME: Aug. 21, 2024 11:20am

Total depth of well from top of casing: – m (a)

Depth to water from top of casing: – m (b)

Height of casing above ground – m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = –Litres

Purged –Litres

Meter Readings

ph	6.79
DO	12.1
EC	0.569mS
Temp.	17.4°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
WEATHER: Sunny, 22°C
KEC Project: 2421.01
RECORDERS: JS/AB
DESCRIPTION: SW5
GPS INFO:
DATE & TIME: Aug. 21, 2024 11:30

Total depth of well from top of casing: – m (a)
Depth to water from top of casing: m (b)
Height of casing above ground – m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = ____Litres

DRY

Purged _____Litres

Meter Readings

ph
DO
EC
Temp.

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Bird River Landfill **WEATHER:** sunny, 20°C

KEC Project: 2421.01 **RECORDERS:** JS / AB

DESCRIPTION: SW6 **GPS INFO:**

DATE & TIME: Aug. 21, 2024 10:35am

Total depth of well from top of casing: - m (a)

Depth to water from top of casing: - m (b)

Height of casing above ground - m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = -Litres

Purged -Litres

Meter Readings

ph	6.49
DO	36.4%
EC	0.222mS
Temp.	17.2°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Bird River landfill WEATHER: Sunny, 22°C

KEC Project: 2421.01 RECORDERS: JS/AB

DESCRIPTION: SW7 GPS INFO:

DATE & TIME: Aug. 21, 2024 12:00pm

Total depth of well from top of casing: - m (a)

Depth to water from top of casing: - m (b)

Height of casing above ground - m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = -_____Litres

Purged -_____Litres

Meter Readings

ph	6.98
DO	130.8 %
EC	1.283 mS
Temp.	19.3°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Partly sunny, 8°C

KEC Project: 2421.01 **RECORDERS:** JS/AB

DESCRIPTION: MW1-02 **GPS INFO:**

DATE & TIME: Oct. 23, 2024 12:29pm

Total depth of well from top of casing: 5.206 m (a)

Depth to water from top of casing: 3.283 m (b)

Height of casing above ground 0.913 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 11.3 Litres

Purged 3 Litres

Meter Readings

ph	6.24
DO	38.1 %
EC	0.129mS
Temp.	11.2°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** Partly Sunny, 8°C

KEC Project: 2421-01 **RECORDERS:** JS/AB

DESCRIPTION: MW2-02 **GPS INFO:**

DATE & TIME: Oct. 23, 2024 2:03pm

Total depth of well from top of casing: 6.403 m (a)

Depth to water from top of casing: 2.460 m (b)

Height of casing above ground 0.710 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 23 Litres

Purged 23 Litres

Meter Readings

ph	6.83
DO	25.6%
EC	2.747
Temp.	12.4 °C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
KEC Project: 2421.01
DESCRIPTION: MW3-02
DATE & TIME: Oct. 23, 2024 10:15am

WEATHER: partly sunny, 8°C
RECORDERS: JS/AB
GPS INFO:

Total depth of well from top of casing: 1.739 m (a)
Depth to water from top of casing: 1.102 m (b)
Height of casing above ground 0.905 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 3.7 Litres

Purged 1 Litres

Meter Readings

ph	6.37
DO	96.2%
EC	0.645 mS
Temp.	11.7°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** pmtly sunny, 8°C

KEC Project: 2421.01 **RECORDERS:** JS/AB

DESCRIPTION: MW4-02 **GPS INFO:**

DATE & TIME: Oct. 23, 2024 10:44am

Total depth of well from top of casing: 4.967 m (a)

Depth to water from top of casing: 1.445 m (b)

Height of casing above ground 0.808 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = 21 Litres

Purged 10 Litres

Meter Readings

ph	6.39
DO	33.9%
EC	1.442mS
Temp.	10.2°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: partly sunny, 8°c

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: MW5-02 — GPS INFO:

DATE & TIME: Oct. 23, 2024 2:42 pm

Total depth of well from top of casing:	4.624	m	(a)
Depth to water from top of casing:	1.280	m	(b)
Height of casing above ground	0.825	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 19.6 Litres

Purged 5 Litres

Meter Readings

ph	8.34
DO	60.4 %
EC	0.154 mS
Temp.	11.1°c

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: Partly sunny, 8°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: MW6-02 — GPS INFO:

DATE & TIME: Oct. 23, 2024 10:33

Total depth of well from top of casing: 7.429 m (a)

Depth to water from top of casing: 1.540 m (b)

Height of casing above ground 0.800 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 34.6 Litres

Meter Readings

ph	6.32
DO	23.8 %
EC	0.570 mS
Temp.	9.8 °C

Purged 13 Litres

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT: Bear River Landfill — WEATHER: partly sunny, 8°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: MW1-03 — GPS INFO:

DATE & TIME: Oct. 23, 2024 9:57am

Total depth of well from top of casing:	3.491	m	(a)
Depth to water from top of casing:	1.311	m	(b)
Height of casing above ground	1.040	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 12.8 Litres

Purged 13 Litres

Meter Readings

ph	5.41
DO	26.3 %
EC	1.789 mS
Temp.	11.4°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: Partly sunny, 8°C

KEC Project: 2421.01 — RECORDERS: JS, AB

DESCRIPTION: MW1-15 — GPS INFO:

DATE & TIME: Oct. 23, 2024 1:18 pm

Total depth of well from top of casing: 6.698 m (a)

Depth to water from top of casing: 2.641 m (b)

Height of casing above ground 0.864 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 24 Litres

Purged 24 Litres

Meter Readings

ph	6.23
DO	34.8%
EC	1.212mS
Temp.	11.5°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Bend River Landfill **WEATHER:** partly sunny, 8°c

KEC Project: 2421.01 **RECORDERS:** JS/AB

DESCRIPTION: MW2-15 **GPS INFO:**

DATE & TIME: Oct. 23, 2024 2:26

Total depth of well from top of casing: 3.011 m (a)

Depth to water from top of casing: DRY m (b)

Height of casing above ground 1.073 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = _____Litres

Purged _____Litres

Meter Readings

ph _____

DO _____

EC _____

Temp. _____

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: Partly Sunny, 8°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: MW3-15 — GPS INFO:

DATE & TIME: Oct 23, 2024 9:10am

Total depth of well from top of casing:	5.245	m	(a)
Depth to water from top of casing:	3.586	m	(b)
Height of casing above ground	0.749	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 9.7 Litres

Purged 3 Litres

Meter Readings

ph	6.15
DO	60%
EC	0.083
Temp.	13.4

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: partly sunny, 8°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: MW4-15 — GPS INFO:

DATE & TIME: Oct. 23, 2024 1:06pm

Total depth of well from top of casing: 4.902 m (a)

Depth to water from top of casing: 3.627 m (b)

Height of casing above ground 0.842 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = 7.5 Litres

Meter Readings

ph	6.27
DO	19.8%
EC	0.139mS
Temp.	12.1°C

Purged 7.5 Litres

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill
WEATHER: Partly sunny, 8°C
KEC Project: 2421.01
RECORDERS: JS/AB
DESCRIPTION: MW1-17
GPS INFO:
DATE & TIME: Oct. 23, 2024 11:38am

Total depth of well from top of casing: 3.056 m (a)
Depth to water from top of casing: 2.272 m (b)
Height of casing above ground 0.807 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 4.6 Litres

Meter Readings

ph	6.46
DO	78.2%
EC	0.272
Temp.	12.2°C

Purged 0.5 Litres

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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*Duplicate.

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT: Blind River Landfill
WEATHER: partly sunny, 8°C
KEC Project: 2421.01
RECORDERS: JS/AB
DESCRIPTION: MW 2-17
GPS INFO:
DATE & TIME: Oct. 23, 2024 9:23am

Total depth of well from top of casing: 5.141 m (a)
Depth to water from top of casing: 2.457 m (b)
Height of casing above ground 0.752 m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 15.8 Litres

Meter Readings

ph	5.62
DO	52.4%
EC	0.166 mS
Temp.	11°C

Purged 16 Litres

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — WEATHER: partly sunny, 8°C

KEC Project: 2421.01 — RECORDERS: JS/AB

DESCRIPTION: MW1-20 — GPS INFO:

DATE & TIME: Oct. 23, 2024 11:01

Total depth of well from top of casing:	8.253	m	(a)
Depth to water from top of casing:	1.889	m	(b)
Height of casing above ground	0.885	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = 37 Litres

Purged 37 Litres

Meter Readings

ph	6.19
DO	29.5%
EC	2.146mS
Temp.	9.3°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill WEATHER: partly sunny, 8°C

KEC Project: 2421.01 RECORDERS: JS/AB

DESCRIPTION: SW1 GPS INFO:

DATE & TIME: Oct. 23, 2024 2:30pm

Total depth of well from top of casing: — m (a)

Depth to water from top of casing: — m (b)

Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = —— Litres

—

Purged _____Litres

Meter Readings

ph	7.62
DO	120.6 %
EC	1.131 mS
Temp.	12.4°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill WEATHER: partly sunny, 8°c

KEC Project: 2421.01 RECORDERS: JS/AB

DESCRIPTION: SW2 GPS INFO:

DATE & TIME: Oct. 23, 2024 3:49

Total depth of well from top of casing: — m (a)

Depth to water from top of casing: — m (b)

Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____m^3 x 1000 = —Litres

Purged —Litres

Meter Readings

ph	7.99
DO	67.3%
EC	0.470 mS
Temp.	13.4°c

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill — **WEATHER:** partly sunny, 8°C

KEC Project: 2421.01 — **RECORDERS:** JS / AB

DESCRIPTION: SW6 — **GPS INFO:**

DATE & TIME: Oct. 23, 2024 12:50pm

Total depth of well from top of casing:	-	m	(a)
Depth to water from top of casing:	-	m	(b)
Height of casing above ground	-	m	

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = -Litres

Purged -Litres

Meter Readings

ph	7.07
DO	131.2
EC	0.264mS
Temp.	14.8°C

Recovery Time of Well

Observation No.	Time	Depth
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Observation No.	Time	Depth
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* SW3 & SW4 - DRY
* SW5 has been filled in

MONITORING WELL RECORD SHEET

KRESIN Engineering Corporation

PROJECT : Blind River Landfill **WEATHER:** partly sunny, 8°C

KEC Project: 2421.01 **RECORDERS:** JS/AB

DESCRIPTION: SW7 **GPS INFO:**

DATE & TIME: Oct. 23, 2024 3:20pm

Total depth of well from top of casing: — m (a)

Depth to water from top of casing: — m (b)

Height of casing above ground — m

Calculate Purge Volume

Note: calc is 3 volumes for 2" well

V= 3 x 0.025^2 x π x (total well depth (a) - distance to water (b))

V= (5.89049×10^{-3}) x (_____ - _____)

V= _____ m^3 x 1000 = — Litres

—

Purged _____ Litres

Meter Readings

ph	8.04
DO	60.9%
EC	1.217mS
Temp.	15.6°C

Recovery Time of Well

Observation No.	Time	Depth
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Observation No.	Time	Depth
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

Appendix F
Laboratory Analytical Results

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **TY2404824**	Page	: 1 of 18
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 16-May-2024 11:00
PO	: ----	Date Analysis Commenced	: 18-May-2024
C-O-C number	: ----	Issue Date	: 04-Jun-2024 10:02
Sampler	: ----		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 18		
No. of samples analysed	: 18		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Andrea Armstrong	Department Manager - Air Quality and Volatiles	VOC, Waterloo, Ontario
Cassandra Grzelewski	Team Leader - Inorganics	Inorganics, Thunder Bay, Ontario
Cassandra Grzelewski	Team Leader - Inorganics	Metals, Thunder Bay, Ontario
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Julie Ruoho	Teamleader Wet Chem	Inorganics, Thunder Bay, Ontario
Kelly Fischer	Technical Specialist	Inorganics, Waterloo, Ontario
Kelly Fischer	Technical Specialist	Metals, Waterloo, Ontario
Krishna Oza	Laboratory Assistant	Inorganics, Thunder Bay, Ontario
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario
Niki Goebel	Inorganics Analyst	Metals, Waterloo, Ontario
Rhiannon Scheffee	Project Manager	Metals, Thunder Bay, Ontario
Sarah Birch	VOC Section Supervisor	VOC, Waterloo, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Inorganics, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Metals, Thunder Bay, Ontario
Taelur Kachur	Laboratory Analyst	Inorganics, Thunder Bay, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Expired: 14-MAY-24

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLHC	*Detection Limit Raised: Dilution required due to high concentration of test analyte(s).*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

HSED	*High sediment content in submitted water sample. Analysis could only proceed using aqueous fraction after decanting. Results may be biased low and may be inappropriate for regulatory or compliance purposes.*
IB:INT	*Ion Balance Reviewed: Imbalance is due to interference or non-measured component.*
OWP	*Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.*
PEHT	*Parameter exceeded recommended holding time prior to analysis.*
VPDW	*Visible particulate observed in Dissolved fraction of field preserved water sample (may represent post-sampling precipitation or filtration issue). Analyzed as submitted*

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)					Client sample ID	Travel VOC Spike	----	----	----	----
					Client sampling date / time	15-May-2024 12:01	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404824-018	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		87.0	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		96.2	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	MW1-02	MW2-02	MW3-02	MW4-02	MW5-02
					Client sampling date / time	15-May-2024 13:13	15-May-2024 15:30	15-May-2024 10:55	15-May-2024 11:38	15-May-2024 13:50
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404824-001	TY2404824-002	TY2404824-003	TY2404824-004	TY2404824-005
						Result	Result	Result	Result	Result
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L		----	1660	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L		----	<2.0	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L		----	<2.0	----	----	----
Conductivity	----	E100/TY	2.0	µS/cm		81.0	3570	603	1350	118
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		35.0	844	186	160	47.6
pH	----	E108/TY	0.10	pH units		7.37	7.13	8.25	7.77	7.82
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		89	1800	364	768	92
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		93.8	148	16.6	202	130
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		38.3	1660	237	92.3	48.8
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		<0.0050	144	0.0977	0.367	0.0074
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		0.61	251	52.8	357	1.87
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L		<0.020	<0.400 DLDS	<0.020	<0.040 DLDS	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		0.197	148	0.799	0.589	0.862

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1-02	MW2-02	MW3-02	MW4-02	MW5-02
					Client sampling date / time	15-May-2024 13:13	15-May-2024 15:30	15-May-2024 10:55	15-May-2024 11:38	15-May-2024 13:50
						TY2404824-001	TY2404824-002	TY2404824-003	TY2404824-004	TY2404824-005
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.027	<0.400 DLDS	0.040	<0.040 DLDS	0.147
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		<0.010	<0.200 DLDS	0.013	<0.020 DLDS	<0.010
Nitrogen, total organic	----	EC363/TY	0.050	mg/L		0.197	<19.1	0.701	<0.250	0.855
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		0.0886	0.341	0.0336	0.111	0.0684
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		4.21	<6.00 DLDS	10.8	8.03	10.1
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	0.0031	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		6.55	72.1 DLHC	15.6	5.28	2.94
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		0.87	40.2	6.45	12.1	1.25
Cation sum	----	EC101/TY	0.10	meq/L		0.87	44.4	6.12	10.8	1.14
Ion balance (cations/anions)	----	EC101/TY	0.010	%		100	110	94.9	89.2	91.2
Ion balance (APHA)	----	EC101/TY	0.01	%		<0.01	4.96	-2.62	-5.68	-4.60
Dissolved Metals										
Arsenic, dissolved	7440-38-2	E421/TY	0.00010	mg/L		0.00036	<0.00100 DLM	0.00027	0.00012	0.00023
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.00537	0.420	0.0143	0.110	0.00702
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		<0.010	1.97	0.496	0.057	<0.010
Cadmium, dissolved	7440-43-9	E421/TY	0.0000050	mg/L		0.0000052	<0.0000500 DLM	0.0000052	<0.0000050	0.0000114
Chromium, dissolved	7440-47-3	E421/TY	0.00050	mg/L		0.00061	<0.00500 DLM	0.00072	<0.00050	0.00436
Copper, dissolved	7440-50-8	E421/TY	0.00020	mg/L		0.00194	<0.00200 DLM	0.00372	0.00033	0.00159
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		0.040	55.2	0.207	6.59	<0.010
Lead, dissolved	7439-92-1	E421/TY	0.000050	mg/L		<0.000050	<0.000500 DLM	<0.000050	<0.000050	<0.000050
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.00902	0.450	0.0827	0.482	0.00100
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/TY	0.050	mg/L		0.564	173	24.9	9.41	1.15
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		3.18	249	39.9	163	3.55
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		<0.0010	<0.0100 DLM	0.0030	<0.0010	0.0110
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		9.46	204	51.9	42.6	12.8
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		2.76	81.4	13.8	13.1	3.80

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	MW1-02	MW2-02	MW3-02	MW4-02	MW5-02
					Client sampling date / time	15-May-2024 13:13	15-May-2024 15:30	15-May-2024 10:55	15-May-2024 11:38	15-May-2024 13:50
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404824-001	TY2404824-002	TY2404824-003	TY2404824-004	TY2404824-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		<2.0	14.5	28.3	<2.0	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		26	252	50	34	14
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		<0.0010	0.0108	0.0020	0.0012	0.0014
Volatile Organic Compounds										
Benzene	71-43-2	E611D/WT	0.50	µg/L		<0.50	2.81	<0.50	<0.50	<0.50
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	1.23	<0.50	<0.50	<0.50
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	75-01-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		81.6	83.5	81.5	81.3	81.3
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		96.5	96.1	96.4	96.6	96.6

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW6-02	MW1-03	MW1-15	MW2-15	MW3-15
					Client sampling date / time	15-May-2024 11:04	15-May-2024 10:43	15-May-2024 14:42	15-May-2024 13:55	15-May-2024 09:08
						TY2404824-006	TY2404824-007	TY2404824-008	TY2404824-009	TY2404824-010
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/TY	2.0	µS/cm		580	2670	1530	27.0	71.8
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		225	308	920	7.41	18.0
pH	----	E108/TY	0.10	pH units		7.98	7.41	7.08	6.76	7.06
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		370	1530	979	31	114
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		252	395	4080	288	467
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		224	168	818	8.5	14.5
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		1.87	1.22	0.625	<0.0050	<0.0050
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		59.1	741	77.9	<0.50	9.10
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L		<0.020	<0.400 DLDS	<0.040 DLDS	<0.020	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		2.13	1.62	1.52	<0.500 DLM	<0.500 DLM
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.045	<0.400 DLDS	<0.040 DLDS	<0.020	0.066
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		<0.010	<0.200 DLDS	<0.020 DLDS	<0.010	<0.010
Nitrogen, total organic	----	EC363/TY	0.050	mg/L		<0.287	<0.500	0.895	<0.500	<0.500
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		0.123	0.210	0.694	0.161	0.276
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		<0.30	<6.00 DLDS	2.00	3.55	6.39
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		11.4	13.4	18.9 DLHC	2.06	4.61 DLHC
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		6.15	24.2	18.6	0.24	0.68
Cation sum	----	EC101/TY	0.10	meq/L		6.82	27.3	22.3	0.26	1.55
Ion balance (cations/anions)	----	EC101/TY	0.010	%		111	113	120	108	228
Ion balance (APHA)	----	EC101/TY	0.01	%		5.16	6.02	9.05	4.00	39.0 IB:INT
Total Metals										
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L		----	0.00123	----	----	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L		----	0.551	----	----	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L		----	0.257	----	----	----
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		----	0.0000694	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW6-02	MW1-03	MW1-15	MW2-15	MW3-15
					Client sampling date / time	15-May-2024 11:04	15-May-2024 10:43	15-May-2024 14:42	15-May-2024 13:55	15-May-2024 09:08
						TY2404824-006	TY2404824-007	TY2404824-008	TY2404824-009	TY2404824-010
						Result	Result	Result	Result	Result
Total Metals										
Calcium, total	7440-70-2	E420/TY	0.050	mg/L		----	88.3	----	----	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		----	0.0130	----	----	----
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		----	0.00937	----	----	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L		----	24.5	----	----	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		----	0.00230	----	----	----
Magnesium, total	7439-95-4	E420/TY	0.0050	mg/L		----	26.8	----	----	----
Manganese, total	7439-96-5	E420/TY	0.00010	mg/L		----	0.701	----	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		----	<0.0000050	----	----	----
Potassium, total	7440-09-7	E420/TY	0.050	mg/L		----	39.5	----	----	----
Sodium, total	7440-23-5	E420/TY	0.050	mg/L		----	423	----	----	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		----	<0.0300 DLM	----	----	----
Dissolved Metals										
Arsenic, dissolved	7440-38-2	E421/TY	0.00010	mg/L		0.00079	<0.00050 DLM	0.0132	0.00011	0.00229
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.217	0.489	0.190	0.00304	0.0831
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		0.129	0.255	1.41	<0.010	<0.200 DLM
Cadmium, dissolved	7440-43-9	E421/TY	0.0000050	mg/L		<0.0000050	<0.0000250 DLM	<0.000100 DLM	<0.0000050	<0.000100 DLM
Chromium, dissolved	7440-47-3	E421/TY	0.00050	mg/L		0.00051	<0.00250 DLM	<0.0100 DLM	<0.00050	<0.0100 DLM
Copper, dissolved	7440-50-8	E421/TY	0.00020	mg/L		0.00024	0.00119	<0.00400 DLM	0.00215	0.0365
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		16.8	18.3	11.6	0.042	8.23
Lead, dissolved	7439-92-1	E421/TY	0.000050	mg/L		<0.000050	<0.000250 DLM	<0.00100 DLM	0.000063	0.00446
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		1.05	0.596	4.45	0.00255	0.861
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000437 VPDW
Potassium, dissolved	7440-09-7	E421/TY	0.050	mg/L		6.30	40.4	4.51	0.237	<1.00 DLM
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		32.0	445	72.3	2.17	9.69
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		0.0011	<0.0050 DLM	<0.0200 DLM	0.0012	<0.0200 DLM
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		61.6	80.2	219	2.37	4.09
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		17.3	26.1	90.6	0.363	1.88
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	MW6-02	MW1-03	MW1-15	MW2-15	MW3-15
					Client sampling date / time	15-May-2024 11:04	15-May-2024 10:43	15-May-2024 14:42	15-May-2024 13:55	15-May-2024 09:08
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404824-006	TY2404824-007	TY2404824-008	TY2404824-009	TY2404824-010
						Result	Result	Result	Result	Result
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		3.7	<2.0	5.4	<2.0	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		55	88	115	22	47
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0031	<0.0010	0.0122	0.0013	0.0012
Volatile Organic Compounds										
Benzene	71-43-2	E611D/WT	0.50	µg/L		<0.50	<0.50	0.66 OWP	<0.50	<0.50
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	75-01-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		81.3	80.2	82.1	81.0	103
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		96.0	95.5	95.9	96.0	94.5

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW4-15	MW1-17	MW2-17	MW1-20	DUPLICATE
					Client sampling date / time	15-May-2024 14:25	15-May-2024 12:41	15-May-2024 10:12	15-May-2024 11:57	15-May-2024 10:45
						TY2404824-011	TY2404824-012	TY2404824-013	TY2404824-014	TY2404824-015
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/TY	2.0	µS/cm		79.4	154	161	3020	171
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		30.3	41.2	62.8	641	64.2
pH	----	E108/TY	0.10	pH units		7.44	6.92	7.67	7.44	7.63
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		78	312	131	2100	234
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		171	1370	779	33400	796
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		33.0	46.7	62.3	68.4	59.7
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		0.170	0.317	0.0118	1.21	0.0112
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		1.01	12.8	6.80	925	12.0
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L		<0.020	<0.020	<0.020	<0.400 DLDS	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		<0.500 DLM	<4.00 DLM	<1.00 DLM	2.48	1.10
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.170	0.116	0.073	<0.400 DLDS	0.061
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		<0.010	<0.010	<0.010	<0.200 DLDS	<0.010
Nitrogen, total organic	----	EC363/TY	0.050	mg/L		<0.500	<4.00	<1.00	1.27	1.09
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		0.368	0.933	0.520	4.04	0.461
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		7.18	9.84	11.4	<6.00 DLDS	10.7
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		2.61 DLHC	12.6	3.82	8.67	3.81
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		0.85	1.51	1.68	27.4	1.76
Cation sum	----	EC101/TY	0.10	meq/L		0.82	1.55	1.61	27.9	1.64
Ion balance (cations/anions)	----	EC101/TY	0.010	%		96.5	103	95.8	102	93.2
Ion balance (APHA)	----	EC101/TY	0.01	%		-1.80	1.31	-2.13	0.90	-3.53
Total Metals										
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L		----	----	----	0.0246	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L		----	----	----	1.21	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L		----	----	----	<0.200 DLM	----
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		----	----	----	0.000418	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW4-15	MW1-17	MW2-17	MW1-20	DUPLICATE
					Client sampling date / time	15-May-2024 14:25	15-May-2024 12:41	15-May-2024 10:12	15-May-2024 11:57	15-May-2024 10:45
						TY2404824-011	TY2404824-012	TY2404824-013	TY2404824-014	TY2404824-015
						Result	Result	Result	Result	Result
Total Metals										
Calcium, total	7440-70-2	E420/TY	0.050	mg/L		----	----	----	290	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		----	----	----	0.153	----
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		----	----	----	0.142	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L		----	----	----	127	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		----	----	----	0.0683	----
Magnesium, total	7439-95-4	E420/TY	0.0050	mg/L		----	----	----	104	----
Manganese, total	7439-96-5	E420/TY	0.00010	mg/L		----	----	----	8.57	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		----	----	----	<0.0000050	----
Potassium, total	7440-09-7	E420/TY	0.050	mg/L		----	----	----	23.3	----
Sodium, total	7440-23-5	E420/TY	0.050	mg/L		----	----	----	342	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		----	----	----	0.191	----
Dissolved Metals										
Arsenic, dissolved	7440-38-2	E421/TY	0.00010	mg/L		0.00070	0.00054	0.00042	0.00250	0.00042
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.00641	0.0129	0.0129	0.348	0.0132
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		<0.010	0.015	<0.010	0.014	<0.010
Cadmium, dissolved	7440-43-9	E421/TY	0.0000050	mg/L		0.0000052	0.0000117	0.0000106	<0.0000050	0.0000095
Chromium, dissolved	7440-47-3	E421/TY	0.00050	mg/L		<0.00050	0.00114	0.00082	<0.00050	0.00090
Copper, dissolved	7440-50-8	E421/TY	0.00020	mg/L		0.00159	0.00303	0.00144	0.00090	0.00141
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		0.635	2.23	0.035	24.0	0.032
Lead, dissolved	7439-92-1	E421/TY	0.000050	mg/L		<0.000050	0.000266	<0.000050	<0.000050	<0.000050
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.256	0.340	0.00092	6.39	0.00160
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/TY	0.050	mg/L		0.522	0.621	0.696	2.13	0.707
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		3.58	13.4	7.58	318	7.72
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		0.0042	0.0093	0.0022	0.0020	<0.0010
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		7.42	9.80	16.2	176	17.1
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		2.86	4.06	5.42	49.0	5.21
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	MW4-15	MW1-17	MW2-17	MW1-20	DUPLICATE
					Client sampling date / time	15-May-2024 14:25	15-May-2024 12:41	15-May-2024 10:12	15-May-2024 11:57	15-May-2024 10:45
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404824-011	TY2404824-012	TY2404824-013	TY2404824-014	TY2404824-015
						Result	Result	Result	Result	Result
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		<2.0	<3.0 DLM	<2.0	<5.0 DLM	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		16	39 HSED	72	51 HSED	66
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0073	0.0035	<0.0010	0.0011	0.0015
Volatile Organic Compounds										
Benzene	71-43-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	75-01-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		80.3	80.9	80.2	80.7	80.0
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		96.0	96.1	95.8	96.0	96.0

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Field Blank	Travel Blank	----	----	----
					Client sampling date / time	15-May-2024 17:10	15-May-2024 12:01	----	----	----
						TY2404824-016	TY2404824-017	--------	--------	--------
						Result	Result	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L		----	<2.0	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L		----	<2.0	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L		----	<2.0	----	----	----
Conductivity	----	E100/TY	2.0	µS/cm		<2.0	<2.0	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		<0.60	<0.60	----	----	----
pH	----	E108/TY	0.10	pH units		6.11	5.34	----	----	----
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		<10	<10	----	----	----
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		<2.0	<2.0	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		<0.0050	0.0058	----	----	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		<0.50	<0.50	----	----	----
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L		<0.020	<0.020	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		<0.050	<0.050	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		<0.020	<0.020	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		<0.010	<0.010	----	----	----
Nitrogen, total organic	----	EC363/TY	0.050	mg/L		<0.051	<0.051	----	----	----
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		<0.0020	<0.0020	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		<0.30	<0.30	----	----	----
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		<0.50	<0.50	----	----	----
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		<0.10	<0.10	----	----	----
Cation sum	----	EC101/TY	0.10	meq/L		<0.10	<0.10	----	----	----
Ion balance (cations/anions)	----	EC101/TY	0.010	%		100	100	----	----	----
Ion balance (APHA)	----	EC101/TY	0.01	%		<0.01	<0.01	----	----	----
Dissolved Metals										
Arsenic, dissolved	7440-38-2	E421/TY	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Field Blank	Travel Blank	----	----	----
					Client sampling date / time	15-May-2024 17:10	15-May-2024 12:01	----	----	----
						TY2404824-016	TY2404824-017	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.00022	0.00016	----	----	----
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		<0.010	<0.010	----	----	----
Cadmium, dissolved	7440-43-9	E421/TY	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Chromium, dissolved	7440-47-3	E421/TY	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Copper, dissolved	7440-50-8	E421/TY	0.00020	mg/L		0.00155	<0.00020	----	----	----
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/TY	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.00018	<0.00010	----	----	----
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Potassium, dissolved	7440-09-7	E421/TY	0.050	mg/L		<0.050	<0.050	----	----	----
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		0.191	<0.050	----	----	----
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		<0.050	<0.050	----	----	----
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		0.0248	<0.0050	----	----	----
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		<2.0	<2.0	----	----	----
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		<10	<10	----	----	----
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0019	<0.0010	----	----	----
Volatile Organic Compounds										
Benzene	71-43-2	E611D/WT	0.50	µg/L		<0.50	<0.50	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	----	----	----
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	----	----	----
Vinyl chloride	75-01-4	E611D/WT	0.50	µg/L		<0.50	<0.50	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		80.2	80.8	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		96.1	95.7	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Descriptive Results

Sub-Matrix: **Groundwater**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
Volatile Organic Compounds		
E611D: Chlorobenzene	Travel VOC Spike - 15-May-2024 12:01	94.17
E611D: Dibromochloromethane	Travel VOC Spike - 15-May-2024 12:01	104.92
E611D: Dichloromethane	Travel VOC Spike - 15-May-2024 12:01	113.59
E611D: Trichloroethylene	Travel VOC Spike - 15-May-2024 12:01	99.27
E611D: Dibromoethane, 1,2-	Travel VOC Spike - 15-May-2024 12:01	102.88
E611D: Dichlorobenzene, 1,2-	Travel VOC Spike - 15-May-2024 12:01	95.9
E611D: Dichlorobenzene, 1,3-	Travel VOC Spike - 15-May-2024 12:01	91.5
E611D: Dichlorobenzene, 1,4-	Travel VOC Spike - 15-May-2024 12:01	92.68
E611D: Dichloroethane, 1,1-	Travel VOC Spike - 15-May-2024 12:01	116.27
E611D: Dichloroethane, 1,2-	Travel VOC Spike - 15-May-2024 12:01	110.54
E611D: Dichloroethylene, 1,1-	Travel VOC Spike - 15-May-2024 12:01	103.65
E611D: Dichloroethylene, cis+trans-1,2-	Travel VOC Spike - 15-May-2024 12:01	NR
E611D: Dichloroethylene, cis-1,2-	Travel VOC Spike - 15-May-2024 12:01	101.77
E611D: Dichloroethylene, trans-1,2-	Travel VOC Spike - 15-May-2024 12:01	92.95
E611D: Dichloropropane, 1,2-	Travel VOC Spike - 15-May-2024 12:01	102.22
E611D: Dichloropropylene, cis+trans-1,3-	Travel VOC Spike - 15-May-2024 12:01	NR
E611D: Dichloropropylene, cis-1,3-	Travel VOC Spike - 15-May-2024 12:01	28.68
E611D: Dichloropropylene, trans-1,3-	Travel VOC Spike - 15-May-2024 12:01	26.2
E611D: Hexane, n-	Travel VOC Spike - 15-May-2024 12:01	30.73
E611D: Hexanone, 2-	Travel VOC Spike - 15-May-2024 12:01	78.08
E611D: Methyl ethyl ketone [MEK]	Travel VOC Spike - 15-May-2024 12:01	106.54
E611D: Methyl isobutyl ketone [MIBK]	Travel VOC Spike - 15-May-2024 12:01	84.8
E611D: Methyl-tert-butyl ether [MTBE]	Travel VOC Spike - 15-May-2024 12:01	99.3
E611D: Tetrachloroethane, 1,1,1,2-	Travel VOC Spike - 15-May-2024 12:01	105.1
E611D: Tetrachloroethane, 1,1,2,2-	Travel VOC Spike - 15-May-2024 12:01	111.02
E611D: Trichloroethane, 1,1,1-	Travel VOC Spike - 15-May-2024 12:01	108.03
E611D: Trichloroethane, 1,1,2-	Travel VOC Spike - 15-May-2024 12:01	97.85
E611D: Xylene, m+p-	Travel VOC Spike - 15-May-2024 12:01	88.84
E611D: Xylene, o-	Travel VOC Spike - 15-May-2024 12:01	90.63
E611D: Xylenes, total	Travel VOC Spike - 15-May-2024 12:01	89.53
E611D: Chloroform	Travel VOC Spike - 15-May-2024 12:01	113.45
E611D: Benzene	Travel VOC Spike - 15-May-2024 12:01	102.22
E611D: Bromomethane	Travel VOC Spike - 15-May-2024 12:01	78.59
E611D: Chloromethane	Travel VOC Spike - 15-May-2024 12:01	82.16
E611D: Chloroethane	Travel VOC Spike - 15-May-2024 12:01	92.99
E611D: Carbon disulfide	Travel VOC Spike - 15-May-2024 12:01	83.92
E611D: Bromoform	Travel VOC Spike - 15-May-2024 12:01	103.59
E611D: Bromodichloromethane	Travel VOC Spike - 15-May-2024 12:01	112.31
E611D: Trichlorofluoromethane	Travel VOC Spike - 15-May-2024 12:01	107.39

Sub-Matrix: **Groundwater**

Method: Compound	*Client sample ID - Client sampling date / time*	*Analytical Results*
E611D: Dichlorodifluoromethane	Travel VOC Spike - 15-May-2024 12:01	61.02
E611D: Acetone	Travel VOC Spike - 15-May-2024 12:01	160
E611D: Vinyl chloride	Travel VOC Spike - 15-May-2024 12:01	91.35
E611D: Styrene	Travel VOC Spike - 15-May-2024 12:01	88.78
E611D: Tetrachloroethylene	Travel VOC Spike - 15-May-2024 12:01	88.75
E611D: Carbon tetrachloride	Travel VOC Spike - 15-May-2024 12:01	114.74
E611D: Ethylbenzene	Travel VOC Spike - 15-May-2024 12:01	84.78
E611D: Toluene	Travel VOC Spike - 15-May-2024 12:01	87.5
E611D: BTEX, total	Travel VOC Spike - 15-May-2024 12:01	NR
E611D: Trihalomethanes [THMs], total	Travel VOC Spike - 15-May-2024 12:01	NR

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 2 of 2

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division
Thunder Bay
Work Order Reference
TY2404824

Telephone : +1 807 623 6463

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Saulte Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounts Payable

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	jennifer@kresinengineering.ca
Email 2	
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	annette@kresinengineering.ca
Email 2	

Turnaround Time (TAT) Requested
☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 1 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.
Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm
For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	TY2022KECO100001	AFE/Cost Center:	PO#
Job #:	Blind River Landfill	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):		ALS Contact: Cassidy Young	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5 Column 1:	(Alk, BOD, Chloride, COD, DOC, EC,	Dissolved Hg, Dissolved As, B, Ba, Ca,	Cd, Cr, Cu, Fe, K, Mg, Mn, Na, PB, Zn,	NH3, NO2, NO3, Total Phosph, pH,	Phenols, SO4, TDS, TKN, TSS, VOC's)	CO3, HCO3, OH, Organic Nitrogen	Ion Balnce, Hardness	Total Cyanide, Fluoride	VOC SPIKE					SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	Travel Blank			Groundwater	10	X	X	X	X	X	X	X	X	X								
	Travel Spike			Groundwater	10										X							
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		
				Groundwater																		

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human consumption/ use? ☐ YES ☑ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
12.6	14.1	15.0	15.6	15.7	14.6		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date: May 15 2024	Time: 8pm	Received by:	Date:	Time:	Received by: LV	Date: 5/16/24	Time: 11:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ON-N G-Groz1-P6 x6

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page [of 7

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Saulte Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounts Payable

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: jennifer@kresinengineering.ca
Email 2:
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: annette@kresinengineering.ca
Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	TY2022KECO100001
Job #:	Blind River Landfill
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Cassidy Young Sampler: Jen Sharpe

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5 Column 1:	(Alk, BOD, Chloride, COD, DOC, EC,	Dissolved Hg, Dissolved As, B, Ba, Ca,	Cd, Cr, Cu, Fe, K, Mg, Mn, Na, PB, Zn,	NH3, NO2, NO3, Total Phosph, pH,	Phenols, SO4, TDS, TKN, TSS, VOC's)	CO3, HCO3, OH, Organic Nitrogen	Ion Balnce, Hardness	Total Cyanide, Fluoride	Total Hg, Total As, B, Ba, Ca,	Cd, Cr, Cu, Fe, K, Mg, Mn, Na, Pb, Zn				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MW1-02	15-May-24	1:13	Groundwater	10	X	X	X	X	X	X	X	X	X								
	MW2-02		3:30	Groundwater		X	X	X	X	X	X	X	X	X								
	MW3-02		10:55	Groundwater		X	X	X	X	X	X	X	X	X								
	MW4-02		11:38	Groundwater		X	X	X	X	X	X	X	X	X								
	MW5-02		1:50	Groundwater		X	X	X	X	X	X	X	X	X								
	MW6-02		11:04	Groundwater	↓	X	X	X	X	X	X	X	X	X								
	MW1-03		10:43	Groundwater	12	X	X	X	X	X	X	X	X	X	X	X						
	MW1-15		2:42	Groundwater	10	X	X	X	X	X	X	X	X	X								
	MW2-15		3:55	Groundwater		X	X	X	X	X	X	X	X	X								
	MW3-15		9:08	Groundwater		X	X	X	X	X	X	X	X	X								
	MW4-15		2:25	Groundwater		X	X	X	X	X	X	X	X	X								
	MW1-17		12:41	Groundwater		X	X	X	X	X	X	X	X	X								
	MW2-17		10:12	Groundwater	↓	X	X	X	X	X	X	X	X	X								
	MW1-20		11:57	Groundwater	12	X	X	X	X	X	X	X	X	X	X	X						
	Duplicate		10:45	Groundwater	10	X	X	X	X	X	X	X	X	X								
	Field Blank	↓	5:10	Groundwater	10	X	X	X	X	X	X	X	X	X								

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

*Samples field filtered when needed.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-12.6	4.1	15.0	15.6	15.7	14.6

SHIPMENT RELEASE (client use)

Released by: Date: May 15, 2024 Time: 8pm

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: LV Date: 5/16/24 Time: 11:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

If any samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ON. N G-Frozen x6

CERTIFICATE OF ANALYSIS

Work Order	: **TY2404822**	Page	: 1 of 6
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 16-May-2024 11:00
PO	: ----	Date Analysis Commenced	: 17-May-2024
C-O-C number	: ----	Issue Date	: 31-May-2024 16:22
Sampler	: ----		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Cassandra Grzelewski	Team Leader - Inorganics	Inorganics, Thunder Bay, Ontario
Julie Ruoho	Teamleader Wet Chem	Inorganics, Thunder Bay, Ontario
Mingjian Yang	Laboratory Assistant	Inorganics, Thunder Bay, Ontario
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario
Niki Goebel	Inorganics Analyst	Metals, Waterloo, Ontario
Rhiannon Scheffee	Project Manager	Metals, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Inorganics, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Metals, Thunder Bay, Ontario
Taelur Kachur	Laboratory Analyst	Inorganics, Thunder Bay, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
BODP	*BOD dilution results differed by more than 30% RPD. Precision of reported BOD result may be less than usual.*
DLHC	*Detection Limit Raised: Dilution required due to high concentration of test analyte(s).*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
IB:INT	*Ion Balance Reviewed: Imbalance is due to interference or non-measured component.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SW1	SW2	SW3	SW4	SW6
					Client sampling date / time	15-May-2024 16:12	15-May-2024 16:48	15-May-2024 17:00	15-May-2024 16:30	15-May-2024 13:35
						TY2404822-001	TY2404822-002	TY2404822-003	TY2404822-004	TY2404822-005
						Result	Result	Result	Result	Result
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L		478	114	18.0	358	43.0
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L		33.2	<2.0	<2.0	<2.0	<2.0
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Conductivity	----	E100/TY	2.0	µS/cm		1120	238	146	741	85.7
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		384	90.2	26.6	261	42.6
pH	----	E108/TY	0.10	pH units		8.47	8.10	6.72	7.36	7.67
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		610	167	95	410	74
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		9.2	16.4	824	479	7.0
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		512	114	18.0	358	43.0
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		13.2	0.0077	0.0477	12.1	0.0066
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		67.4	9.54	31.0	30.0	<0.50
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		14.4 RRV	0.644	3.74	19.1	0.713
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.583	0.022	<0.020	<0.020	<0.020
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		0.051	<0.010	<0.010	<0.010	<0.010
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		0.0377	0.0157	0.322	0.706	0.0413
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		6.03	1.01	1.29	<0.30	1.23
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		32.8 DLHC	18.4	15.0	54.8 DLHC	17.6
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		12.3	2.57	1.26	8.00	0.88
Cation sum	----	EC101/TY	0.10	meq/L		13.3	2.52	1.39	10.0	0.96
Ion balance (cations/anions)	----	EC101/TY	0.010	%		108	98.0	110	125	109
Ion balance (APHA)	----	EC101/TY	0.01	%		3.91	-0.98	4.90	11.1 IB:INT	4.35
Total Metals										
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L		<0.00100 DLM	0.00050	0.00135	0.00327	0.00092
Barium, total	7440-39-3	E420/TY	0.00010	mg/L		0.116	0.0105	0.0392	0.251	0.0100

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SW1	SW2	SW3	SW4	SW6
					Client sampling date / time	15-May-2024 16:12	15-May-2024 16:48	15-May-2024 17:00	15-May-2024 16:30	15-May-2024 13:35
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404822-001	TY2404822-002	TY2404822-003	TY2404822-004	TY2404822-005
						Result	Result	Result	Result	Result
Total Metals										
Boron, total	7440-42-8	E420/TY	0.010	mg/L		0.826	0.134	<0.050 DLM	0.248	<0.010
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		<0.0000500 DLM	0.0000069	0.0000594	0.0000545	0.0000149
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		<0.00500 DLM	0.00064	0.00359	0.00324	0.00084
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		<0.00500 DLM	0.00057	0.00619	0.00501	0.00163
Iron, total	7439-89-6	E420/TY	0.010	mg/L		4.12	0.399	21.4	139	0.602
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		<0.000500 DLM	<0.000050	0.00151	0.00118	0.000277
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000082	<0.0000050	<0.0000050
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		<0.0300 DLM	<0.0030	0.0175	0.286	<0.0030
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		99.2	25.9	6.94	76.1	11.2
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		33.2	6.21	2.25	17.2	3.56
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.229	0.00620	0.430	1.88	0.0182
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		<0.0100 DLM	0.0028	0.0069	0.0588	0.0020
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		9.0	2.8	<2.0	60.6 BODP	2.5
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		91	56	198	434	56
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0042	0.0018	0.0024	0.505 DLHC	0.0022

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SW7	----	----	----	----
				Client sampling date / time	15-May-2024 17:25	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	TY2404822-006	--------	--------	--------	--------
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L	112	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L	<2.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L	<2.0	----	----	----	----
Conductivity	----	E100/TY	2.0	µS/cm	829	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L	152	----	----	----	----
pH	----	E108/TY	0.10	pH units	6.97	----	----	----	----
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L	490	----	----	----	----
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L	1720	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L	108	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L	0.0950	----	----	----	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L	185	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L	10.6	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L	<0.020	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L	<0.010	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L	2.08	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L	38.8	----	----	----	----
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L	<0.0020	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	12.6	----	----	----	----
Ion Balance									
Anion sum	----	EC101/TY	0.10	meq/L	8.18	----	----	----	----
Cation sum	----	EC101/TY	0.10	meq/L	7.32	----	----	----	----
Ion balance (cations/anions)	----	EC101/TY	0.010	%	89.5	----	----	----	----
Ion balance (APHA)	----	EC101/TY	0.01	%	-5.55	----	----	----	----
Total Metals									
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L	0.00223	----	----	----	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L	0.116	----	----	----	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L	<0.100 DLM	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SW7	----	----	----	----
					Client sampling date / time	15-May-2024 17:25	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2404822-006	--------	--------	--------	--------
						Result	----	----	----	----
Total Metals										
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		0.0000892	----	----	----	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		<0.00500 DLM	----	----	----	----
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		0.00624	----	----	----	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L		57.0	----	----	----	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		0.000890	----	----	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		0.0000052	----	----	----	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		0.0710	----	----	----	----
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		42.0	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		11.5	----	----	----	----
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.705	----	----	----	----
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		0.0242	----	----	----	----
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/TY	-	-		Field	----	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		67.6 BODP	----	----	----	----
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		675	----	----	----	----
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		<0.0020 DLM	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **TY2404822**	Page	: 1 of 24
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay, Ontario Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 16-May-2024 11:00
PO	: ----	Issue Date	: 31-May-2024 16:28
C-O-C number	: ----		
Sampler	: ----		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW1	E550	15-May-2024	----	----	----		18-May-2024	4 days	3 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW2	E550	15-May-2024	----	----	----		18-May-2024	4 days	3 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW3	E550	15-May-2024	----	----	----		18-May-2024	4 days	3 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW4	E550	15-May-2024	----	----	----		18-May-2024	4 days	3 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW6	E550	15-May-2024	----	----	----		18-May-2024	4 days	3 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW7	E550	15-May-2024	----	----	----		18-May-2024	4 days	3 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E559-L	15-May-2024	----	----	----		21-May-2024	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW2	E559-L	15-May-2024	----	----	----		21-May-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW3	E559-L	15-May-2024	----	----	----		21-May-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E559-L	15-May-2024	----	----	----		21-May-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E559-L	15-May-2024	----	----	----		21-May-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E559-L	15-May-2024	----	----	----		21-May-2024	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW1	E562	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW2	E562	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW3	E562	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E562	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP] SW6	E562	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP] SW7	E562	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW1	E298	15-May-2024	17-May-2024	28 days	2 days	✓	21-May-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW2	E298	15-May-2024	17-May-2024	28 days	2 days	✓	21-May-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW3	E298	15-May-2024	17-May-2024	28 days	2 days	✓	21-May-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW4	E298	15-May-2024	17-May-2024	28 days	2 days	✓	21-May-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW6	E298	15-May-2024	17-May-2024	28 days	2 days	✓	21-May-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW7	E298	15-May-2024	17-May-2024	28 days	2 days	✓	21-May-2024	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW1	E235.Cl	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW2	E235.Cl	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW3	E235.Cl	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW4	E235.Cl	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW6	E235.Cl	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW7	E235.Cl	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW1	E235.NO3	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW2	E235.NO3	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW3	E235.NO3	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW4	E235.NO3	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW6	E235.NO3	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW7	E235.NO3	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW1	E235.NO2	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW2	E235.NO2	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW3	E235.NO2	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW4	E235.NO2	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW6	E235.NO2	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW7	E235.NO2	15-May-2024	17-May-2024	7 days	2 days	✓	18-May-2024	7 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW1	E235.SO4	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW2	E235.SO4	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW3	E235.SO4	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW4	E235.SO4	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW6	E235.SO4	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW7	E235.SO4	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E318	15-May-2024	22-May-2024	28 days	7 days	✓	22-May-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW2	E318	15-May-2024	22-May-2024	28 days	7 days	✓	22-May-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW3	E318	15-May-2024	22-May-2024	28 days	7 days	✓	22-May-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW4	E318	15-May-2024	22-May-2024	28 days	7 days	✓	22-May-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E318	15-May-2024	22-May-2024	28 days	7 days	✓	22-May-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E318	15-May-2024	22-May-2024	28 days	7 days	✓	22-May-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW1	E372-U	15-May-2024	23-May-2024	28 days	8 days	✓	28-May-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW2	E372-U	15-May-2024	23-May-2024	28 days	8 days	✓	28-May-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW3	E372-U	15-May-2024	23-May-2024	28 days	8 days	✓	28-May-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E372-U	15-May-2024	23-May-2024	28 days	8 days	✓	28-May-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E372-U	15-May-2024	23-May-2024	28 days	8 days	✓	28-May-2024	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E372-U	15-May-2024	23-May-2024	28 days	8 days	✓	28-May-2024	28 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW1	E333	15-May-2024	24-May-2024	14 days	9 days	✓	24-May-2024	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) SW2	E333	15-May-2024	24-May-2024	14 days	9 days	✓	24-May-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) SW3	E333	15-May-2024	24-May-2024	14 days	9 days	✓	24-May-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) SW4	E333	15-May-2024	24-May-2024	14 days	9 days	✓	24-May-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) SW6	E333	15-May-2024	24-May-2024	14 days	9 days	✓	24-May-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) SW7	E333	15-May-2024	24-May-2024	14 days	9 days	✓	24-May-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW1	E509	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW2	E509	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW3	E509	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW4	E509	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW6	E509	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW7	E509	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW1	E421	15-May-2024	22-May-2024	180 days	7 days	✓	22-May-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW2	E421	15-May-2024	22-May-2024	180 days	7 days	✓	22-May-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW3	E421	15-May-2024	22-May-2024	180 days	7 days	✓	22-May-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW4	E421	15-May-2024	22-May-2024	180 days	7 days	✓	22-May-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW6	E421	15-May-2024	22-May-2024	180 days	7 days	✓	22-May-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW7	E421	15-May-2024	22-May-2024	180 days	7 days	✓	22-May-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) [ON MECP] SW1	E358-L	15-May-2024	29-May-2024	3 days	13 days	× EHT	30-May-2024	28 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) [ON MECP] SW2	E358-L	15-May-2024	29-May-2024	3 days	13 days	× EHT	30-May-2024	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) [ON MECP] SW3	E358-L	15-May-2024	29-May-2024	3 days	13 days	× EHT	30-May-2024	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) [ON MECP] SW4	E358-L	15-May-2024	29-May-2024	3 days	13 days	× EHT	30-May-2024	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) [ON MECP] SW6	E358-L	15-May-2024	29-May-2024	3 days	13 days	× EHT	30-May-2024	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) [ON MECP] SW7	E358-L	15-May-2024	29-May-2024	3 days	13 days	× EHT	30-May-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW1	E290	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW2	E290	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW3	E290	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW4	E290	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW6	E290	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW7	E290	15-May-2024	18-May-2024	14 days	3 days	✓	21-May-2024	14 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW1	E100	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW2	E100	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW3	E100	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW4	E100	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW6	E100	15-May-2024	17-May-2024	28 days	2 days	✓	18-May-2024	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW7	E100	15-May-2024	18-May-2024	28 days	3 days	✓	21-May-2024	28 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW1	E108	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] SW2	E108	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW3	E108	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW4	E108	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW6	E108	15-May-2024	17-May-2024	14 days	2 days	✓	18-May-2024	14 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW7	E108	15-May-2024	18-May-2024	14 days	3 days	✓	21-May-2024	14 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW1	E162	15-May-2024	----	----	----		17-May-2024	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW2	E162	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW3	E162	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW4	E162	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW6	E162	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW7	E162	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW1	E160	15-May-2024	----	----	----		17-May-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW2	E160	15-May-2024	----	----	----		17-May-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW3	E160	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW4	E160	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW6	E160	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW7	E160	15-May-2024	----	----	----		22-May-2024	7 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW1	E508	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW2	E508	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW3	E508	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW4	E508	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW6	E508	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW7	E508	15-May-2024	27-May-2024	28 days	12 days	✓	28-May-2024	28 days	13 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW1	E420	15-May-2024	21-May-2024	180 days	6 days	✓	22-May-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW2	E420	15-May-2024	21-May-2024	180 days	6 days	✓	22-May-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW3	E420	15-May-2024	21-May-2024	180 days	6 days	✓	22-May-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW4	E420	15-May-2024	21-May-2024	180 days	6 days	✓	22-May-2024	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW6	E420	15-May-2024	21-May-2024	180 days	6 days	✓	22-May-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW7	E420	15-May-2024	21-May-2024	180 days	6 days	✓	22-May-2024	180 days	7 days	✓

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 22 -

Page 1 of 1

Environmental Division Thunder Bay
Work Order Reference
TY2404822

Telephone : +1 807 623 6463

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Saulte Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounts Payable

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: jennifer@kresinengineering.ca
Email 2:
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: annette@kresinengineering.ca
Email 2:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, stat.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	KECO100/TY2022KECO100001
Job #:	Blind River Landfill
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Cassidy Young

Sampler: Jenn Sharpe

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5, Coloumn 3	(Alkalinity, BOD, Cl, COD, Total Mercury	Conductivity, Total Metals (With Reps)	NH3, NO2, NO3, Total Phosphorus, pH	Phenols 4AAP, SO4, TDS, TKN, TSS)	CO3, HCO3, OH	Ion Balnce, Dissolved Mercury	Dissolved Metals Mn, Zi	Dissolved Hardness, DOC	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	SW1	15-05-24	4:12	Surface Water	10	X	X	X	X	X	X	X	X	X			
	SW2	15-05-24	4:48	Surface Water		X	X	X	X	X	X	X	X	X			
	SW3	15-05-24	5:00	Surface Water		X	X	X	X	X	X	X	X	X			
	SW4	15-05-24	4:30	Surface Water		X	X	X	X	X	X	X	X	X			
	~~SW5~~	~~15-05-24~~		~~Surface Water~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			
	SW6	15-05-24	1:35	Surface Water		X	X	X	X	X	X	X	X	X			
	SW7	15-05-24	5:25	Surface Water	↓	X	X	X	X	X	X	X	X	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

...man consumption/ use?
☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

DOC was field filtered, not preserved.

Total Metal Reportables (As, Ba, B, Cd, Cu, Fe, Mn, Pb, Zi)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
12.6	14.1	15.0	15.6	15.7	~~15.~~ 14.6

SHIPMENT RELEASE (client use)

Released by: | Date: May 15, 2024 | Time: 8pm

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: | Date: | Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: LV | Date: 5/16/24 | Time: 11:00

SEE TERMS AND CONDITIONS FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

[1] If samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

416-0001341934 ON. N G. Grozini 6X

CERTIFICATE OF ANALYSIS

Work Order	: **TY2406756**	Page	: 1 of 6
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 27-Jun-2024 10:48
PO	: ----	Date Analysis Commenced	: 28-Jun-2024
C-O-C number	: ----	Issue Date	: 11-Jul-2024 09:16
Sampler	: ----		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Cassandra Grzelewski	Team Leader - Inorganics	Inorganics, Thunder Bay, Ontario
Cassandra Grzelewski	Team Leader - Inorganics	Metals, Thunder Bay, Ontario
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Julie Ruoho	Teamleader Wet Chem	Inorganics, Thunder Bay, Ontario
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario
Rhiannon Scheffee	Project Manager	Metals, Thunder Bay, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLHC	*Detection Limit Raised: Dilution required due to high concentration of test analyte(s).*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SW1 Surface Water	SW2 Surface Water	SW3 Surface Water	SW4 Surface Water	SW6 Surface Water
					Client sampling date / time	26-Jun-2024 11:15	26-Jun-2024 12:50	26-Jun-2024 12:40	26-Jun-2024 12:00	26-Jun-2024 10:40
						TY2406756-001	TY2406756-002	TY2406756-003	TY2406756-004	TY2406756-005
						Result	Result	Result	Result	Result
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L		483	168	34.2	194	47.6
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L		12.2	<2.0	<2.0	<2.0	<2.0
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Conductivity	----	E100/TY	2.0	µS/cm		1040	345	148	397	99.3
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		364	140	33.2	169	50.8
pH	----	E108/TY	0.10	pH units		8.33	8.16	7.11	7.73	7.63
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		592	247	108	252	89
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		7.0	4.7	33.1	361	3.0
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		496	168	34.2	194	47.6
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		9.19	0.0127	0.0977	1.89	0.0807
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		49.9	9.14	20.7	12.1	<0.50
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		11.7	0.935	0.881	7.03	1.04
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.054	<0.020	0.020	<0.020	<0.020
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		0.032	<0.010	<0.010	<0.010	<0.010
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		0.0365	0.0232 RRV	0.0423 RRV	0.324	0.0360
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		0.64	0.88	0.89	<0.30	0.97
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.100 DLM	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		31.9 DLHC	22.1	16.6	32.7 DLHC	20.6
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		11.3	3.63	1.29	4.22	0.97
Cation sum	----	EC101/TY	0.10	meq/L		11.9	3.87	1.45	4.86	1.12
Ion balance (cations/anions)	----	EC101/TY	0.010	%		105	107	112	115	115
Ion balance (APHA)	----	EC101/TY	0.01	%		2.59	3.20	5.84	7.05	7.18
Total Metals										
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L		<0.00100 DLM	0.00071	0.00050	0.00127	0.00093
Barium, total	7440-39-3	E420/TY	0.00010	mg/L		0.109	0.0275	0.0169	0.114	0.0102

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SW1 Surface Water	SW2 Surface Water	SW3 Surface Water	SW4 Surface Water	SW6 Surface Water
					Client sampling date / time	26-Jun-2024 11:15	26-Jun-2024 12:50	26-Jun-2024 12:40	26-Jun-2024 12:00	26-Jun-2024 10:40
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2406756-001	TY2406756-002	TY2406756-003	TY2406756-004	TY2406756-005
						Result	Result	Result	Result	Result
Total Metals										
Boron, total	7440-42-8	E420/TY	0.010	mg/L		0.664	0.264	<0.010	0.176	<0.010
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		<0.0000500 DLM	<0.0000050	0.0000374	0.0000384	0.0000115
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		<0.00500 DLM	0.00078	0.00160	<0.00250 DLM	0.00063
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		<0.00500 DLM	0.00058	0.00350	0.00452	0.00145
Iron, total	7439-89-6	E420/TY	0.010	mg/L		4.62	0.860	1.75	34.2	0.632
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		<0.000500 DLM	<0.000050	0.000201	0.00152	0.000129
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000115	<0.0000050	0.0000058
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		<0.0300 DLM	<0.0030	0.0117	0.0531	0.0044
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		95.2	41.0	8.73	50.3	13.5
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		30.7	9.18	2.78	10.6	4.16
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.458	0.182	0.200	1.11	0.0317
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000070	<0.0000050	<0.0000050
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		<0.0100 DLM	0.0047 DTC	0.0127	0.0101	0.0047
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		2.0	<2.0	<2.0	15.8	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		82	64	54	139	60
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0043	0.0013	0.0029	0.0520	<0.0010

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	SW7 Surface Water	----	----	----	----
				Client sampling date / time	26-Jun-2024 13:15	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	TY2406756-006	--------	--------	--------	--------
					Result	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L	116	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L	<2.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L	<2.0	----	----	----	----
Conductivity	----	E100/TY	2.0	µS/cm	829	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L	121	----	----	----	----
pH	----	E108/TY	0.10	pH units	7.06	----	----	----	----
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L	424	----	----	----	----
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L	3160	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L	116	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L	0.0622	----	----	----	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L	178	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L	6.50	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L	<0.020	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L	<0.010	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L	0.654	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L	7.48	----	----	----	----
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L	<0.0020	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	15.0	----	----	----	----
Ion Balance									
Anion sum	----	EC101/TY	0.10	meq/L	7.50	----	----	----	----
Cation sum	----	EC101/TY	0.10	meq/L	7.12	----	----	----	----
Ion balance (cations/anions)	----	EC101/TY	0.010	%	94.9	----	----	----	----
Ion balance (APHA)	----	EC101/TY	0.01	%	-2.60	----	----	----	----
Total Metals									
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L	0.00467	----	----	----	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L	0.166	----	----	----	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L	<0.100 DLM	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SW7 Surface Water	----	----	----	----
					Client sampling date / time	26-Jun-2024 13:15	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2406756-006	--------	--------	--------	--------
						Result	----	----	----	----
Total Metals										
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		0.000451	----	----	----	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		0.00982	----	----	----	----
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		0.0259	----	----	----	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L		89.1	----	----	----	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		0.00548	----	----	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		0.0000227	----	----	----	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		0.244	----	----	----	----
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		33.6	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		8.94	----	----	----	----
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.324	----	----	----	----
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		0.0098	----	----	----	----
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/TY	-	-		Field	----	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		56.8	----	----	----	----
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		243	----	----	----	----
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0028	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **TY2406756**	Page	: 1 of 24
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay, Ontario Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 27-Jun-2024 10:48
PO	: ----	Issue Date	: 11-Jul-2024 09:16
C-O-C number	: ----		
Sampler	: ----		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
SW1 - Surface Water	E550	26-Jun-2024	----	----	----		30-Jun-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
SW2 - Surface Water	E550	26-Jun-2024	----	----	----		30-Jun-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
SW3 - Surface Water	E550	26-Jun-2024	----	----	----		30-Jun-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
SW4 - Surface Water	E550	26-Jun-2024	----	----	----		30-Jun-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
SW6 - Surface Water	E550	26-Jun-2024	----	----	----		30-Jun-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
SW7 - Surface Water	E550	26-Jun-2024	----	----	----		30-Jun-2024	4 days	4 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW1 - Surface Water	E559-L	26-Jun-2024	----	----	----		02-Jul-2024	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW2 - Surface Water	E559-L	26-Jun-2024	----	----	----		02-Jul-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW3 - Surface Water	E559-L	26-Jun-2024	----	----	----		02-Jul-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW4 - Surface Water	E559-L	26-Jun-2024	----	----	----		02-Jul-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6 - Surface Water	E559-L	26-Jun-2024	----	----	----		02-Jul-2024	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7 - Surface Water	E559-L	26-Jun-2024	----	----	----		02-Jul-2024	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW1 - Surface Water	E562	26-Jun-2024	06-Jul-2024	28 days	10 days	✓	08-Jul-2024	28 days	12 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW2 - Surface Water	E562	26-Jun-2024	06-Jul-2024	28 days	10 days	✓	08-Jul-2024	28 days	12 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW3 - Surface Water	E562	26-Jun-2024	06-Jul-2024	28 days	10 days	✓	08-Jul-2024	28 days	12 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW4 - Surface Water	E562	26-Jun-2024	06-Jul-2024	28 days	10 days	✓	08-Jul-2024	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW6 - Surface Water	E562	26-Jun-2024	06-Jul-2024	28 days	10 days	✓	08-Jul-2024	28 days	12 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW7 - Surface Water	E562	26-Jun-2024	06-Jul-2024	28 days	10 days	✓	08-Jul-2024	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW1 - Surface Water	E298	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	29-Jun-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW2 - Surface Water	E298	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	29-Jun-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW3 - Surface Water	E298	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	29-Jun-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW4 - Surface Water	E298	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	29-Jun-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW6 - Surface Water	E298	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	29-Jun-2024	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW7 - Surface Water	E298	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	29-Jun-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW1 - Surface Water	E235.Cl	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW2 - Surface Water	E235.Cl	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW3 - Surface Water	E235.Cl	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW4 - Surface Water	E235.Cl	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW6 - Surface Water	E235.Cl	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW7 - Surface Water	E235.Cl	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW1 - Surface Water	E235.NO3	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW2 - Surface Water	E235.NO3	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW3 - Surface Water	E235.NO3	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW4 - Surface Water	E235.NO3	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW6 - Surface Water	E235.NO3	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW7 - Surface Water	E235.NO3	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW1 - Surface Water	E235.NO2	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW2 - Surface Water	E235.NO2	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW3 - Surface Water	E235.NO2	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW4 - Surface Water	E235.NO2	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW6 - Surface Water	E235.NO2	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW7 - Surface Water	E235.NO2	26-Jun-2024	29-Jun-2024	7 days	3 days	✓	01-Jul-2024	7 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
SW1 - Surface Water	E235.SO4	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW2 - Surface Water	E235.SO4	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW3 - Surface Water	E235.SO4	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW4 - Surface Water	E235.SO4	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW6 - Surface Water	E235.SO4	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW7 - Surface Water	E235.SO4	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	01-Jul-2024	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1 - Surface Water	E318	26-Jun-2024	02-Jul-2024	28 days	6 days	✓	02-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW2 - Surface Water	E318	26-Jun-2024	02-Jul-2024	28 days	6 days	✓	02-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW3 - Surface Water	E318	26-Jun-2024	02-Jul-2024	28 days	6 days	✓	02-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW4 - Surface Water	E318	26-Jun-2024	02-Jul-2024	28 days	6 days	✓	02-Jul-2024	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6 - Surface Water	E318	26-Jun-2024	02-Jul-2024	28 days	6 days	✓	02-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7 - Surface Water	E318	26-Jun-2024	02-Jul-2024	28 days	6 days	✓	02-Jul-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW1 - Surface Water	E372-U	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	03-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW2 - Surface Water	E372-U	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	03-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW3 - Surface Water	E372-U	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	03-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW4 - Surface Water	E372-U	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	03-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6 - Surface Water	E372-U	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	03-Jul-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7 - Surface Water	E372-U	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	03-Jul-2024	28 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW1 - Surface Water	E333	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW6 - Surface Water	E333	26-Jun-2024	04-Jul-2024	14 days	8 days	✓	04-Jul-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW2 - Surface Water	E333	26-Jun-2024	05-Jul-2024	14 days	9 days	✓	05-Jul-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW3 - Surface Water	E333	26-Jun-2024	05-Jul-2024	14 days	9 days	✓	05-Jul-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW4 - Surface Water	E333	26-Jun-2024	05-Jul-2024	14 days	9 days	✓	05-Jul-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW7 - Surface Water	E333	26-Jun-2024	05-Jul-2024	14 days	9 days	✓	05-Jul-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW1 - Surface Water	E509	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW2 - Surface Water	E509	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW3 - Surface Water	E509	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW4 - Surface Water	E509	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW6 - Surface Water	E509	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SW7 - Surface Water	E509	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW1 - Surface Water	E421	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	28-Jun-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW2 - Surface Water	E421	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	28-Jun-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW3 - Surface Water	E421	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	28-Jun-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW4 - Surface Water	E421	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	28-Jun-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW6 - Surface Water	E421	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	28-Jun-2024	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW7 - Surface Water	E421	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	28-Jun-2024	180 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW1 - Surface Water	E358-L	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW2 - Surface Water	E358-L	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW3 - Surface Water	E358-L	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	04-Jul-2024	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW4 - Surface Water	E358-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	09-Jul-2024	28 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW6 - Surface Water	E358-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	09-Jul-2024	28 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW7 - Surface Water	E358-L	26-Jun-2024	04-Jul-2024	28 days	8 days	✓	09-Jul-2024	28 days	13 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW1 - Surface Water	E290	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW2 - Surface Water	E290	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW3 - Surface Water	E290	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW4 - Surface Water	E290	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW7 - Surface Water	E290	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW6 - Surface Water	E290	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW1 - Surface Water	E100	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	02-Jul-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW2 - Surface Water	E100	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	02-Jul-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW3 - Surface Water	E100	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	02-Jul-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW4 - Surface Water	E100	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	02-Jul-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW7 - Surface Water	E100	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	02-Jul-2024	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW6 - Surface Water	E100	26-Jun-2024	29-Jun-2024	28 days	3 days	✓	04-Jul-2024	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW1 - Surface Water	E108	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] SW2 - Surface Water	E108	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW3 - Surface Water	E108	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW4 - Surface Water	E108	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW7 - Surface Water	E108	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	02-Jul-2024	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW6 - Surface Water	E108	26-Jun-2024	29-Jun-2024	14 days	3 days	✓	04-Jul-2024	14 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW1 - Surface Water	E162	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW2 - Surface Water	E162	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW3 - Surface Water	E162	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW4 - Surface Water	E162	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW6 - Surface Water	E162	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW7 - Surface Water	E162	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW1 - Surface Water	E160	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW2 - Surface Water	E160	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW3 - Surface Water	E160	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW4 - Surface Water	E160	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW6 - Surface Water	E160	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW7 - Surface Water	E160	26-Jun-2024	----	----	----		02-Jul-2024	7 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW1 - Surface Water	E508	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	05-Jul-2024	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW2 - Surface Water	E508	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	05-Jul-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW3 - Surface Water	E508	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	05-Jul-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW4 - Surface Water	E508	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	05-Jul-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW6 - Surface Water	E508	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	05-Jul-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW7 - Surface Water	E508	26-Jun-2024	03-Jul-2024	28 days	7 days	✓	05-Jul-2024	28 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW1 - Surface Water	E420	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	02-Jul-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW2 - Surface Water	E420	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	02-Jul-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW3 - Surface Water	E420	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	02-Jul-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW4 - Surface Water	E420	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	02-Jul-2024	180 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SW6 - Surface Water	E420	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	02-Jul-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SW7 - Surface Water	E420	26-Jun-2024	28-Jun-2024	180 days	2 days	✓	02-Jul-2024	180 days	6 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

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Environmental Division Thunder Bay
Work Order Reference
TY2406756

Telephone : +1 807 623 6463

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Saulte Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounts Payable

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: jennifer@kresinengineering.ca
Email 2:
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: annette@kresinengineering.ca
Email 2:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Additional fees may apply to rush requests on weekends, s
Date and Time Required for all E&P TATs:
For all tests with rush TATs requested, please conta

Project Information

ALS Account # / Quote #:	KECC100/TY2022KECO100001
Job #:	Blind River Landfill
PO / AFE:	
LSD:	
ALS Lab Work Order # (ALS use only):	TY2406756

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Cassidy Young	Sampler: Jen Sharpe

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5, Column 3	(Alkalinity, BOD, Cl, COD, Total Mercury	Conductivity, Total Metals (With Reps)	NH3, NO2, NO3, Total Phosphorous, pH	Phenols 4AAP, SO4, TDS, TKN, TSS)	CO3, HCO3, OH	Ion Balnce, Dissolved Mercury	Dissolved Metals Mn, Zi	Dissolved Hardness, DOC	CN						SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	SW1	26-June-24	11:15	Surface Water	10	X	X	X	X	X	X	X	X	X	X								
	SW2		12:50	Surface Water		X	X	X	X	X	X	X	X	X	X								
	SW3		12:40	Surface Water		X	X	X	X	X	X	X	X	X	X								
	SW4		12	Surface Water		X	X	X	X	X	X	X	X	X	X								
	~~SW5~~			~~Surface Water~~		X	X	X	X	X	X	X	X	X	X								
	SW6		10:40	Surface Water		X	X	X	X	X	X	X	X	X	X								
	SW7		1:15	Surface Water		X	X	X	X	X	X	X	X	X	X								

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

- Please compare to PWQO

Total Metal Reportables (As, Ba, B, Cd, Cu, Fe, Mn, Pb, Zi)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO
Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
20.4	17.4				

~~SHIPMENT RELEASE (client use)~~			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date: June 26 2024	Time: 430	Received by:	Date:	Time:	Received by:	Date: 27 June 24	Time: 1048

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

(2) ON North

Intake and Login Verification Form

SAMPLE INTAKE		
Priority/Emergency Service Requested	YES	(NO)
Time Sensitive Hold Time	YES	(NO)
Client:	Kresin Engineering	

SAMPLE RECEIPT INFORMATION			
Mode of Delivery:	(Courier)		Drop Off
Courier	ON North		
Waybill Number	4116-000137184		
Temperature	20.4	17.4	Cooler Count 2
Cooling Method	None	Ice	(Ice Packs)

SAMPLE MATRIX/BOTTLE INFORMATION					
Matrix:	(Water)	Soil	Air	Biota	Other
DW Schedule 24 Bottles Correct?				~~Yes~~	~~No~~
DW Metals pH Check <2				~~Yes~~	~~No~~
Regulation Circled, Works # present		~~Yes~~		~~No Reject?~~	

# of Bottles: 10	Sample Count	Ce
Green/white	Ce R, Ce BOD	
Purple/white	Ce nuts, Ce phenols Ce DOC	
Warm red/white	Ce total met, Ce diss met	
Yellow/black	Ce total Hg, Ce diss Hg	
Light blue/white		
Orange/black		
Others (detail)	Ce cyanide	

Comments on Samples and Bottles:
An Fr-3(SW3) received Nutrients bottle empty. will pour ~~poured~~ off from BOD bottle.

Samples Requiring Preservation or Filtering:
N/A

Layout Staff Initials	Am
Date and Time of Layout	27 June 24 1332

ACCOUNT INFO VERIFICATION		
Priority/Emergency Service Requested	YES	(NO)
Confirmed all as accurate as per COC, Sample Remarks or PM		
Client ✓	Work Contact ✓	Quote ✓

RECEIPT DETAIL			
Project ✓	PO ✓	Site/LSD ✓	
Overall Description Entered		Yes	(NA)
Received date/time as per COC		✓	
Recipients match CoC or Sample Remarks		(Yes)	No
Billing Instruction added to remarks		(Yes)	NA
Sample Remarks/Specification Doc checked		✓	
Submission Issues communicated		(Yes)	NA
Sample Info communicated via Remarks		Yes	~~(NA)~~

VERIFICATION CHECKLIST		
Plannned Event Submission	(Yes)	No
Sample Name entered as per CoC	✓	
Sampling Date and time entered as per CoC	✓	
Containers selected in layout order	✓	
Sales items entered from QUOTE ONLY (and/or verified as correct)	✓	
Field Data/EC298A removed if not on COC	Yes	(NA)
Bottle Allocation Verified	✓	
Guideline added or auto-allocated	✓	
Due dates updated	✓	

VALIDATION		
Validation errors resolved?	(Yes)	No
Internal Sublet CoC created	(Yes)	NA

Login Comments:
Nutrients bottle was poured off from BOD

Login Staff Initials:	Am

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page of

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

TY06754_005_AA
250.00 mL Light blue/whit
Sterile HDPE (Sodium thi
osulphate) [ON MECP]
B/C Spray
TY2406754-0065-AA

Sampled 27-Jun
E020 E010

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	Canada Malting Co. Inc.	Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	☐ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:	Tom Lamothe	Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minim
Phone:	807-346-7528	☐ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minir
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minir
Street:	578 Maureen St	Email 1 or Fax tlamothe@canadamalting.com	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge mini
City/Province:	Thunder Bay, ON	Email 2 scott.cashback@canadamalting.com	☐ Same day [E2] if received by 10am M-S - 200% rush surcharg
Postal Code:	P7B 6T9	Email 3 mathtew.johnson@canadamalting.com	Additional fees may apply to rush requests on weeke
Invoice To	Same as Report To ☐ YES ☑ NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report ☑ YES ☑ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	For all tests with rush TATs requested, pleas
Company:	Canada Malting Co. Inc.	Email 1 or Fax canadainvoice@canadamalting.com	
Contact:	Accounts Payable	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:	CMCL100 / TY2022CMCL1000002	AFE/Cost Center:	PO#
Job / Project #:	Monthly	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	TY2406754	ALS Contact: Cassidy Young	Sampler:

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	TC/EC	HPC	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	City Water	27-Jun-24	12 pm	Water		R	R			
	A Steep	"	"	Water		R	R			
	A Spray	"	"	Water		R	R			
	B/C Steep	"	"	Water		R	R			
	B/C Spray	"	"	Water		R	R			

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)	SAMPLE RECEIPT DETAILS (ALS use only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO		Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☒ COOLING INITIATED
Are samples for human consumption/ use? ☐ YES ☑ NO		Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A
		INITIAL COOLER TEMPERATURES °C: 10.7 — FINAL COOLER TEMPERATURES °C:

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date: June 24,2024	Time: 12pm	Received by:	Date:	Time:	Received by: AC	Date: 06-27-24	Time: 12:03

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

MAY 2023 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

1X Drop

CERTIFICATE OF ANALYSIS

Work Order	: **TY2409283**	Page	: 1 of 4
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 22-Aug-2024 09:45
PO	: ----	Date Analysis Commenced	: 23-Aug-2024
C-O-C number	: ----	Issue Date	: 04-Sep-2024 17:24
Sampler	: Jennifer Sharpe		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Cassandra Grzelewski	Team Leader - Inorganics	Inorganics, Thunder Bay, Ontario
Cassandra Grzelewski	Team Leader - Inorganics	Metals, Thunder Bay, Ontario
Julie Ruoho	Teamleader Wet Chem	Inorganics, Thunder Bay, Ontario
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario
Rhiannon Scheffee	Project Manager	Metals, Thunder Bay, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
BODP	*BOD dilution results differed by more than 30% RPD. Precision of reported BOD result may be less than usual.*
CNI	*Test result for Total Cyanide may be biased high due to interference from high nitrite in this sample. Nitrite can cause false positives for T-CN at up to ~ 0.8% of the nitrite concentration. Interpret result as a maximum possible value.*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SW1	SW2	SW4	SW6	SW7
					Client sampling date / time	21-Aug-2024 11:00	21-Aug-2024 11:15	21-Aug-2024 11:20	21-Aug-2024 10:35	21-Aug-2024 12:00
						TY2409283-001	TY2409283-002	TY2409283-003	TY2409283-004	TY2409283-005
						Result	Result	Result	Result	Result
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L		530	263	305	106	69.5
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Conductivity	----	E100/TY	2.0	µS/cm		1090	477	599	196	1580
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		487	175	178	108	240
pH	----	E108/TY	0.10	pH units		7.85	8.15	7.77	7.62	6.76
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		725	325	447	146	988
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		584	9.0	288	296	2760
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		530	263	305	106	69.5
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		0.960	0.0164	15.5	0.0317	0.198
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		48.0	23.5	29.7	<0.50	384
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L		8.33	0.829	23.9	2.48	6.08
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.252	<0.020	<0.020	<0.020	<0.200 DLDS
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L		0.143	<0.010	<0.010	<0.010	<0.100 DLDS
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L		0.541 RRV	0.0101	0.327	0.157	0.646
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		41.1	<0.30	0.45	0.75	60.8
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020 CNI	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		25.8	23.5	70.6	28.4	13.2
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		12.8	5.92	6.94	2.13	13.5
Cation sum	----	EC101/TY	0.10	meq/L		12.8	5.34	7.20	2.38	15.0
Ion balance (cations/anions)	----	EC101/TY	0.010	%		100	90.2	104	112	111
Ion balance (APHA)	----	EC101/TY	0.01	%		0.0	-5.15	1.84	5.54	5.26
Total Metals										
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L		0.00115	0.00076	0.00284	0.00144	0.00333
Barium, total	7440-39-3	E420/TY	0.00010	mg/L		0.231	0.0274	0.162	0.0273	0.238

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SW1	SW2	SW4	SW6	SW7
					Client sampling date / time	21-Aug-2024 11:00	21-Aug-2024 11:15	21-Aug-2024 11:20	21-Aug-2024 10:35	21-Aug-2024 12:00
						TY2409283-001	TY2409283-002	TY2409283-003	TY2409283-004	TY2409283-005
						Result	Result	Result	Result	Result
Total Metals										
Boron, total	7440-42-8	E420/TY	0.010	mg/L		0.709	0.369	0.362	<0.050 DLM	<0.200 DLM
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		0.000140	<0.0000050	0.0000550	0.0000300	0.000300
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		<0.00500	<0.00050	<0.00250 DLM	<0.00250 DLM	0.0268
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		0.00690	<0.00050	0.00482	<0.00250 DLM	0.0288
Iron, total	7439-89-6	E420/TY	0.010	mg/L		26.4	0.353	38.5	1.28	37.9
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		0.00338	<0.000050	0.00323	0.000728	0.00889
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		0.0000086	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		0.0413	<0.0030	0.0927	<0.0150 DLM	0.188
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		144	46.8	48.5	28.5	66.5
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		30.9	14.1	13.7	8.84	18.1
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.411	0.0273	0.329	0.235	0.900
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		<0.0100 DLM	0.0034	0.0135	0.0023	0.0071
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		24.0 BODP	<2.0	16.3	7.5	23.2
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		86	62	208	69	60
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		<0.0010	<0.0010	0.0127	<0.0010	<0.0010

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **TY2409283**	Page	: 1 of 21
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay, Ontario Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill	Date Samples Received	: 22-Aug-2024 09:45
PO	: ----	Issue Date	: 04-Sep-2024 17:19
C-O-C number	: ----		
Sampler	: Jennifer Sharpe		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW1	E550	21-Aug-2024	----	----	----		23-Aug-2024	4 days	2 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW2	E550	21-Aug-2024	----	----	----		23-Aug-2024	4 days	2 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW4	E550	21-Aug-2024	----	----	----		23-Aug-2024	4 days	2 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW6	E550	21-Aug-2024	----	----	----		23-Aug-2024	4 days	2 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW7	E550	21-Aug-2024	----	----	----		23-Aug-2024	4 days	2 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E559-L	21-Aug-2024	----	----	----		28-Aug-2024	28 days	7 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW2	E559-L	21-Aug-2024	----	----	----		28-Aug-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E559-L	21-Aug-2024	----	----	----		28-Aug-2024	28 days	7 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E559-L	21-Aug-2024	----	----	----		28-Aug-2024	28 days	7 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E559-L	21-Aug-2024	----	----	----		28-Aug-2024	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW1	E562	21-Aug-2024	29-Aug-2024	28 days	8 days	✓	29-Aug-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW2	E562	21-Aug-2024	29-Aug-2024	28 days	8 days	✓	29-Aug-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E562	21-Aug-2024	29-Aug-2024	28 days	8 days	✓	29-Aug-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E562	21-Aug-2024	29-Aug-2024	28 days	8 days	✓	29-Aug-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E562	21-Aug-2024	29-Aug-2024	28 days	8 days	✓	29-Aug-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW1	E298	21-Aug-2024	24-Aug-2024	28 days	3 days	✓	26-Aug-2024	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW2	E298	21-Aug-2024	24-Aug-2024	28 days	3 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E298	21-Aug-2024	24-Aug-2024	28 days	3 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E298	21-Aug-2024	24-Aug-2024	28 days	3 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E298	21-Aug-2024	24-Aug-2024	28 days	3 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW1	E235.Cl	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW2	E235.Cl	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW4	E235.Cl	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW6	E235.Cl	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW7	E235.Cl	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW1	E235.NO3	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW2	E235.NO3	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW4	E235.NO3	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW6	E235.NO3	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW7	E235.NO3	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW1	E235.NO2	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW2	E235.NO2	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW4	E235.NO2	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW6	E235.NO2	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW7	E235.NO2	21-Aug-2024	23-Aug-2024	7 days	2 days	✓	24-Aug-2024	7 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW1	E235.SO4	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW2	E235.SO4	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW4	E235.SO4	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW6	E235.SO4	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW7	E235.SO4	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	24-Aug-2024	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E318	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW2	E318	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW4	E318	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E318	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E318	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	27-Aug-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW1	E372-U	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW2	E372-U	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW4	E372-U	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW6	E372-U	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	26-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E372-U	21-Aug-2024	26-Aug-2024	28 days	5 days	✓	26-Aug-2024	28 days	5 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW1	E333	21-Aug-2024	28-Aug-2024	14 days	7 days	✓	28-Aug-2024	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW6	E333	21-Aug-2024	28-Aug-2024	14 days	7 days	✓	28-Aug-2024	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW2	E333	21-Aug-2024	29-Aug-2024	14 days	8 days	✓	29-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW4	E333	21-Aug-2024	29-Aug-2024	14 days	8 days	✓	29-Aug-2024	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
SW7	E333	21-Aug-2024	29-Aug-2024	14 days	8 days	✓	29-Aug-2024	14 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW1	E509	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW2	E509	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW4	E509	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW6	E509	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW7	E509	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SW1	E421	21-Aug-2024	28-Aug-2024	180 days	7 days	✓	28-Aug-2024	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW2	E421	21-Aug-2024	28-Aug-2024	180 days	7 days	✓	28-Aug-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW4	E421	21-Aug-2024	28-Aug-2024	180 days	7 days	✓	28-Aug-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW6	E421	21-Aug-2024	28-Aug-2024	180 days	7 days	✓	28-Aug-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW7	E421	21-Aug-2024	28-Aug-2024	180 days	7 days	✓	28-Aug-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW1	E358-L	21-Aug-2024	30-Aug-2024	28 days	9 days	✓	03-Sep-2024	28 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW2	E358-L	21-Aug-2024	30-Aug-2024	28 days	9 days	✓	03-Sep-2024	28 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW4	E358-L	21-Aug-2024	30-Aug-2024	28 days	9 days	✓	03-Sep-2024	28 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW6	E358-L	21-Aug-2024	30-Aug-2024	28 days	9 days	✓	03-Sep-2024	28 days	13 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW7	E358-L	21-Aug-2024	30-Aug-2024	28 days	9 days	✓	03-Sep-2024	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW1	E290	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW2	E290	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW4	E290	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW6	E290	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW7	E290	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW1	E100	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	23-Aug-2024	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW2	E100	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	23-Aug-2024	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW4	E100	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	23-Aug-2024	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW6	E100	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	23-Aug-2024	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW7	E100	21-Aug-2024	23-Aug-2024	28 days	2 days	✓	23-Aug-2024	28 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW1	E108	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW2	E108	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW4	E108	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW6	E108	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW7	E108	21-Aug-2024	23-Aug-2024	14 days	2 days	✓	23-Aug-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW1	E162	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW2	E162	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW4	E162	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW6	E162	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW7	E162	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW1	E160	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW2	E160	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW4	E160	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW6	E160	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW7	E160	21-Aug-2024	----	----	----		23-Aug-2024	7 days	2 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW1	E508	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW2	E508	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW4	E508	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW6	E508	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW7	E508	21-Aug-2024	28-Aug-2024	28 days	7 days	✓	29-Aug-2024	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW1	E420	21-Aug-2024	27-Aug-2024	180 days	6 days	✓	28-Aug-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW2	E420	21-Aug-2024	27-Aug-2024	180 days	6 days	✓	28-Aug-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW4	E420	21-Aug-2024	27-Aug-2024	180 days	6 days	✓	28-Aug-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW6	E420	21-Aug-2024	27-Aug-2024	180 days	6 days	✓	28-Aug-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW7	E420	21-Aug-2024	27-Aug-2024	180 days	6 days	✓	28-Aug-2024	180 days	7 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Thunder Bay
Work Order Reference
TY2409283

Telephone : +1 807 623 6463

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Sault Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounts Payable

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: jennifer@kresinengineering.ca
Email 2:
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: annette@kresinengineering.ca
Email 2:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Additional fees may apply to rush requests on weekends, s
Date and Time Required for all E&P TATs:
For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #: KECO100/TY2022KECO100001
Job #: Blind River Landfill
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (ALS use only): TY2409283
ALS Contact: Cassidy Young
Sampler: Jen Sharpe

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5, Column 3	(Alkalinity, BOD, Cl, COD, Total Mercury	Conductivity, Total Metals (With Reps)	NH3, NO2, NO3, Total Phosphorus, pH	Phenols 4AAP, SO4, TDS, TKN, TSS)	CO3, HCO3, OH	Ion Balnce, Dissolved Mercury	Dissolved Metals Mn, Zi	Dissolved Hardness, DOC	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	SW1	21-Aug-24	11:00	Surface Water	10	X	X	X	X	X	X	X	X	X			
	SW2		1:15	Surface Water		X	X	X	X	X	X	X	X	X			
	~~SW3~~			~~Surface Water~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			
	SW4		11:20	Surface Water		X	X	X	X	X	X	X	X	X			
	~~SW5~~			~~Surface Water~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			
	SW6		10:35	Surface Water		X	X	X	X	X	X	X	X	X			
	SW7		12	Surface Water		X	X	X	X	X	X	X	X	X			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

- Samples field Filtered when required.
- Please compare to PWQO

Total Metal Reportables (As, Ba, B, Cd, Cr, Cu, Fe, Mn, Pb, Zi)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED
Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO
Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
18.6	18						

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: Jennifer Sharpe	Date: Aug-21, 2024	Time: 4pm	Received by:	Date:	Time:	Received by: AL	Date: 08-22-24	Time: 9:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

2x ON North

CERTIFICATE OF ANALYSIS

Work Order	:	**TY2412235**			
Amendment	:	**1**			
Client	:	**Kresin Engineering Corporation**	Laboratory	:	ALS Environmental - Thunder Bay
Contact	:	Jennifer Sharpe	Account Manager	:	Cassidy Young
Address	:	536 Fourth Line East Sault Ste Marie Ontario Canada P6A 5K8	Address	:	1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	:	----	Telephone	:	+1 807 623 6463
Project	:	Blind River Landfill Fall	Date Samples Received	:	24-Oct-2024 10:00
PO	:	----	Date Analysis Commenced	:	25-Oct-2024
C-O-C number	:	----	Issue Date	:	10-Dec-2024 14:01
Sampler	:	Jenn Sharpe			
Site	:	----			
Quote number	:	Blind River Landfill - 2024			
No. of samples received	:	17			
No. of samples analysed	:	17			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Cassandra Grzelewski	Team Leader - Inorganics	Metals, Thunder Bay, Ontario
Cassandra Grzelewski	Team Leader - Inorganics	Inorganics, Thunder Bay, Ontario
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Julie Ruoho	Teamleader Wet Chem	Inorganics, Thunder Bay, Ontario
Rhiannon Scheffee	Project Manager	Metals, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Metals, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Inorganics, Thunder Bay, Ontario
Taelur Kachur	Laboratory Analyst	Inorganics, Thunder Bay, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
µS/cm	microsiemens per centimetre
pH units	pH units
-	no units
meq/L	milliequivalents per litre
%	percent
NTU	nephelometric turbidity units

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment 10-12-2024: This report has been amended and re-released to allow the reporting of additional analytical data.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
IB:INT	Ion Balance Reviewed: Imbalance is due to interference or non-measured component.
TMV	Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.

Analytical Results

Sub-Matrix: Groundwater
(Matrix: Water)

					Client sample ID	MW1-02	MW2-02	MW3-02	MW4-02	MW5-02
					Client sampling date / time	23-Oct-2024 12:29	23-Oct-2024 14:03	23-Oct-2024 10:15	23-Oct-2024 10:44	23-Oct-2024 14:42
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2412235-001	TY2412235-002	TY2412235-003	TY2412235-004	TY2412235-005
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/TY	2.0	µS/cm		145	3870	1100	1840	118
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		60.1	787	214	191	49.7
pH	----	E108/TY	0.10	pH units		6.91	6.86	7.74	7.33	7.65
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		136	1710	598	1030	79
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		393	214	14.9	376	34.5
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		63.9	1700	193	88.5	47.3
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		0.0269	148	0.263	0.926	0.0638
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		0.70	275	236	518	1.08
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L		<0.020	<1.00 DLDS	<0.200 DLDS	<0.200 DLDS	<0.020
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		0.093	<1.00 DLDS	<0.200 DLDS	<0.200 DLDS	0.149
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		9.38	<15.0 DLDS	6.00	5.09	9.80
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		2.78	85.0	16.0	6.85	1.85
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		1.50	41.7	10.6	16.5	1.19
Cation sum	----	EC101/TY	0.10	meq/L		1.46	45.7	10.1	17.0	1.19
Ion balance (cations/anions)	----	EC101/TY	0.010	%		97.3	110	95.3	103	100
Ion balance (APHA)	----	EC101/TY	0.01	%		-1.35	4.58	-2.42	1.49	0.0

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1-02	MW2-02	MW3-02	MW4-02	MW5-02
					Client sampling date / time	23-Oct-2024 12:29	23-Oct-2024 14:03	23-Oct-2024 10:15	23-Oct-2024 10:44	23-Oct-2024 14:42
						TY2412235-001	TY2412235-002	TY2412235-003	TY2412235-004	TY2412235-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.00925	0.414	0.0197	0.148	0.00876
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		0.012	2.01	0.328	0.053	<0.010
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		0.033	55.7	0.508	8.20	<0.010
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.00733	0.322	0.258	0.632	0.00124
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		5.35	286	116	289	3.62
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		16.4	176	59.8	51.3	13.2
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		4.65	84.3	15.8	15.3	4.06
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		<2.0	12.1	<2.0	<2.0	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		<10	312	46	24	<10

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW6-02	MW1-03	MW1-15	MW3-15	MW4-15
					Client sampling date / time	23-Oct-2024 10:33	23-Oct-2024 09:57	23-Oct-2024 13:18	23-Oct-2024 09:10	23-Oct-2024 13:06
						TY2412235-006	TY2412235-007	TY2412235-008	TY2412235-009	TY2412235-010
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/TY	2.0	µS/cm		584	2370	1630	66.3	126
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		214	250	813	12.0	51.5
pH	----	E108/TY	0.10	pH units		7.09	7.13	6.76	6.22	6.29

Analytical Results

Sub-Matrix: Groundwater
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW6-02	MW1-03	MW1-15	MW3-15	MW4-15
Client sample ID									
Client sampling date / time					23-Oct-2024 10:33	23-Oct-2024 09:57	23-Oct-2024 13:18	23-Oct-2024 09:10	23-Oct-2024 13:06
					TY2412235-006	TY2412235-007	TY2412235-008	TY2412235-009	TY2412235-010
					Result	Result	Result	Result	Result
Physical Tests									
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L	322	1300	978	94	88
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L	172	88.9	2030	569	311
Turbidity	----	E121/TY	0.10	NTU	----	58.4	----	----	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L	242	201	855	9.3	54.4
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L	<0.0500 DLM	1.14	1.22	0.0599	0.586
Bromide	24959-67-9	E235.Br/TY	0.10	mg/L	----	<2.00 DLDS	----	----	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L	57.8	658	74.8	9.94	2.01
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L	0.021	<0.400 DLDS	<0.200 DLDS	<0.020	<0.020
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L	0.049	<0.400 DLDS	<0.200 DLDS	0.082	0.031
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L	<0.30	<6.00 DLDS	<3.00 DLDS	4.81	6.75
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	12.9	17.7	23.4	2.13	3.45
Ion Balance									
Anion sum	----	EC101/TY	0.10	meq/L	6.47	22.6	19.2	0.57	1.29
Cation sum	----	EC101/TY	0.10	meq/L	6.66	22.1	19.8	0.57	1.65
Ion balance (cations/anions)	----	EC101/TY	0.010	%	103	97.8	103	100	128
Ion balance (APHA)	----	EC101/TY	0.01	%	1.45	-1.12	1.54	0.0	12.2 IB:INT

Analytical Results

Sub-Matrix: Groundwater
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW6-02	MW1-03	MW1-15	MW3-15	MW4-15
					Client sampling date / time	23-Oct-2024 10:33	23-Oct-2024 09:57	23-Oct-2024 13:18	23-Oct-2024 09:10	23-Oct-2024 13:06
						TY2412235-006	TY2412235-007	TY2412235-008	TY2412235-009	TY2412235-010
						Result	Result	Result	Result	Result
Total Metals										
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L		----	0.00093	----	----	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L		----	0.438	----	----	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L		----	0.282	----	----	----
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L		----	<0.0000250 DLM	----	----	----
Calcium, total	7440-70-2	E420/TY	0.050	mg/L		----	72.9	----	----	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L		----	0.00644	----	----	----
Copper, total	7440-50-8	E420/TY	0.00050	mg/L		----	0.00297	----	----	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L		----	15.9	----	----	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L		----	0.00102	----	----	----
Magnesium, total	7439-95-4	E420/TY	0.0050	mg/L		----	20.3	----	----	----
Manganese, total	7439-96-5	E420/TY	0.00010	mg/L		----	0.517	----	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		----	<0.0000050	----	----	----
Potassium, total	7440-09-7	E420/TY	0.050	mg/L		----	37.0	----	----	----
Sodium, total	7440-23-5	E420/TY	0.050	mg/L		----	392	----	----	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L		----	<0.0150 DLM	----	----	----
Dissolved Metals										
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.203	0.382	0.182	0.00472	0.0105
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		0.140	0.241	1.32	0.052	0.010
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		19.4	11.6	12.1	0.191	9.25
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		1.00	0.449	3.84	0.0285	1.38
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		34.5	361	63.3	6.99	4.22

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW6-02	MW1-03	MW1-15	MW3-15	MW4-15
					Client sampling date / time	23-Oct-2024 10:33	23-Oct-2024 09:57	23-Oct-2024 13:18	23-Oct-2024 09:10	23-Oct-2024 13:06
						TY2412235-006	TY2412235-007	TY2412235-008	TY2412235-009	TY2412235-010
						Result	Result	Result	Result	Result
Dissolved Metals										
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		57.7	68.8	192	3.04	11.7
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		17.0	19.1	81.1	1.06	5.41
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		<2.0	<2.0	<3.0 DLM	<2.0	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		36	51	113	37	433

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1-17	MW2-17	MW1-20	Duplicate	Trip Blank
					Client sampling date / time	23-Oct-2024 11:38	23-Oct-2024 09:23	23-Oct-2024 11:01	23-Oct-2024 09:40	23-Oct-2024 00:01
						TY2412235-011	TY2412235-012	TY2412235-013	TY2412235-014	TY2412235-015
						Result	Result	Result	Result	Result
Physical Tests										
Conductivity	----	E100/TY	2.0	µS/cm		241	170	2930	171	<2.0
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		100	76.2	601	77.9	<0.60
pH	----	E108/TY	0.10	pH units		6.81	7.11	7.16	7.23	5.51
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		162	137	1890	150	<10
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		1950	1020	42400	1090	<3.0
Turbidity	----	E121/TY	0.10	NTU		----	----	>4000 TMV	----	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		89.7	71.7	72.8	73.4	<2.0
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		0.827	0.0281	2.48	<0.0500 DLM	<0.0050

Analytical Results

Sub-Matrix: Groundwater
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW1-17	MW2-17	MW1-20	Duplicate	Trip Blank
Client sample ID									
Client sampling date / time					23-Oct-2024 11:38	23-Oct-2024 09:23	23-Oct-2024 11:01	23-Oct-2024 09:40	23-Oct-2024 00:01
					TY2412235-011	TY2412235-012	TY2412235-013	TY2412235-014	TY2412235-015
					Result	Result	Result	Result	Result
Anions and Nutrients									
Bromide	24959-67-9	E235.Br/TY	0.10	mg/L	----	----	<2.00 DLDS	----	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L	21.2	2.48	914	2.52	<0.50
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L	0.046	0.021	<0.400 DLDS	0.028	<0.020
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L	0.185	0.078	<0.400 DLDS	0.074	<0.020
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L	0.62	12.0	<6.00 DLDS	12.0	<0.30
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	23.9	2.06	9.35	1.51	<0.50
Ion Balance									
Anion sum	----	EC101/TY	0.10	meq/L	2.42	1.76	27.2	1.79	<0.10
Cation sum	----	EC101/TY	0.10	meq/L	3.13	1.75	27.2	1.78	<0.10
Ion balance (cations/anions)	----	EC101/TY	0.010	%	129	99.4	100	99.4	100
Ion balance (APHA)	----	EC101/TY	0.01	%	12.8 IB:INT	-0.28	0.0	-0.28	0.0
Total Metals									
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L	----	----	0.0378	----	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L	----	----	1.71	----	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L	----	----	<0.200 DLM	----	----
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L	----	----	0.000650	----	----
Calcium, total	7440-70-2	E420/TY	0.050	mg/L	----	----	333	----	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L	----	----	0.276	----	----

Analytical Results

Sub-Matrix: Groundwater
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW1-17	MW2-17	MW1-20	Duplicate	Trip Blank
Client sample ID									
Client sampling date / time					23-Oct-2024 11:38	23-Oct-2024 09:23	23-Oct-2024 11:01	23-Oct-2024 09:40	23-Oct-2024 00:01
					TY2412235-011	TY2412235-012	TY2412235-013	TY2412235-014	TY2412235-015
					Result	Result	Result	Result	Result
Total Metals									
Copper, total	7440-50-8	E420/TY	0.00050	mg/L	----	----	0.259	----	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L	----	----	203	----	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L	----	----	0.108	----	----
Magnesium, total	7439-95-4	E420/TY	0.0050	mg/L	----	----	141	----	----
Manganese, total	7439-96-5	E420/TY	0.00010	mg/L	----	----	10.4	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L	----	----	<0.0000050	----	----
Potassium, total	7440-09-7	E420/TY	0.050	mg/L	----	----	36.6	----	----
Sodium, total	7440-23-5	E420/TY	0.050	mg/L	----	----	380	----	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L	----	----	0.321	----	----
Dissolved Metals									
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L	0.0299	0.0109	0.322	0.0109	<0.00010
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L	0.022	<0.010	<0.010	<0.010	<0.010
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L	15.1	0.015	23.8	<0.010	<0.010
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L	0.907	0.00056	6.41	0.00123	<0.00010
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L	10.2	4.56	318	4.70	<0.050
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L	23.0	19.9	162	20.2	<0.050
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L	10.4	6.45	47.8	6.68	<0.0050
Dissolved metals filtration location	----	EP421/TY	-	-	Field	Field	Field	Field	Field
Aggregate Organics									
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L	7.5	<3.0 DLM	<5.0 DLM	<3.0 DLM	<2.0
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L	120	90	67	168	<10

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)					Client sample ID	Field Blank	----	----	----	----
					Client sampling date / time	23-Oct-2024 16:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2412235-016	----	----	----	----
						Result	----	----	----	----
Physical Tests										
Conductivity	----	E100/TY	2.0	µS/cm		<2.0	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L		<0.60	----	----	----	----
pH	----	E108/TY	0.10	pH units		5.77	----	----	----	----
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L		<10	----	----	----	----
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L		<3.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L		<2.0	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L		0.0282	----	----	----	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L		<0.50	----	----	----	----
Fluoride	16984-48-8	E235.F/TY	0.020	mg/L		<0.020	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L		<0.020	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L		<0.30	----	----	----	----
Cyanides										
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		<0.50	----	----	----	----
Ion Balance										
Anion sum	----	EC101/TY	0.10	meq/L		<0.10	----	----	----	----
Cation sum	----	EC101/TY	0.10	meq/L		<0.10	----	----	----	----
Ion balance (cations/anions)	----	EC101/TY	0.010	%		100	----	----	----	----

Analytical Results

Sub-Matrix: Groundwater
(Matrix: Water)

					Client sample ID	Field Blank	----	----	----	----
					Client sampling date / time	23-Oct-2024 16:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		TY2412235-016	----	----	----	----
						Result	----	----	----	----
Ion Balance										
Ion balance (APHA)	----	EC101/TY	0.01	%		0.0	----	----	----	----
Dissolved Metals										
Barium, dissolved	7440-39-3	E421/TY	0.00010	mg/L		0.00031	----	----	----	----
Boron, dissolved	7440-42-8	E421/TY	0.010	mg/L		<0.010	----	----	----	----
Iron, dissolved	7439-89-6	E421/TY	0.010	mg/L		<0.010	----	----	----	----
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.00015	----	----	----	----
Sodium, dissolved	7440-23-5	E421/TY	0.050	mg/L		0.197	----	----	----	----
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L		<0.050	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L		<0.0050	----	----	----	----
Dissolved metals filtration location	----	EP421/TY	-	-		Field	----	----	----	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		<2.0	----	----	----	----
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		<10	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **TY2412235**	Page	: 1 of 36
Amendment	: **1**		
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay, Ontario Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill Fall	Date Samples Received	: 24-Oct-2024 10:00
PO	: ----	Issue Date	: 10-Dec-2024 13:59
C-O-C number	: ----		
Sampler	: Jenn Sharpe		
Site	: ----		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 17		
No. of samples analysed	: 16		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Organic / Inorganic Carbon	QC-1739747-001	----	Carbon, dissolved organic [DOC]	----	E358-L	1.22 mg/L B	0.5 mg/L	Blank result exceeds permitted value
Organic / Inorganic Carbon	QC-1739777-001	----	Carbon, dissolved organic [DOC]	----	E358-L	0.67 mg/L B	0.5 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] Duplicate	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] Field Blank	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] MW1-02	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] MW1-03	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] MW1-15	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] MW1-17	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] MW1-20	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW2-02	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW2-17	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW3-02	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW3-15	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW4-02	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW4-15	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW5-02	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
MW6-02	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d]										
Trip Blank	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
Duplicate	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
Field Blank	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW1-02	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW1-03	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW1-15	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW1-17	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW1-20	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW2-02	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW2-17	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW3-02	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW3-15	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW4-02	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW4-15	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW5-02	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
MW6-02	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
Trip Blank	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
Duplicate	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	04-Nov-2024	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
Field Blank	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	04-Nov-2024	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW1-02	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW1-03	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW1-15	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW1-17	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW1-20	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW2-02	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW2-17	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW3-02	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW3-15	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW4-02	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW4-15	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW5-02	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW6-02	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] Trip Blank	E298	23-Oct-2024	29-Oct-2024	28 days	7 days	✓	04-Nov-2024	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW1-03	E235.Br	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW1-20	E235.Br	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] Duplicate	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] Field Blank	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1-02	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1-03	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1-15	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1-17	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1-20	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW2-02	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW2-17	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW3-02	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW3-15	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW4-02	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW4-15	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW5-02	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW6-02	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] Trip Blank	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] Duplicate	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] Field Blank	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW1-02	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW1-03	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW1-15	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW1-17	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW1-20	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW2-02	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW2-17	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW3-02	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW3-15	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW4-02	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW4-15	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW5-02	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW6-02	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] Trip Blank	E235.F	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] Duplicate	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] Field Blank	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1-02	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1-03	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1-15	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1-17	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1-20	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW2-02	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW2-17	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3-02	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3-15	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW4-02	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW4-15	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5-02	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW6-02	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] Trip Blank	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	7 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] Duplicate	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] Field Blank	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW1-02	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW1-03	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW1-15	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW1-17	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW1-20	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW2-02	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW2-17	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW3-02	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW3-15	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW4-02	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW4-15	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW5-02	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW6-02	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] Trip Blank	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) Duplicate	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
Field Blank	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
Trip Blank	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW1-02	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW1-03	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW1-15	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW1-17	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW1-20	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW2-02	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
MW2-17	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) MW3-02	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) MW3-15	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) MW4-02	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) MW4-15	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) MW5-02	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide) MW6-02	E333	23-Oct-2024	01-Nov-2024	14 days	9 days	✓	01-Nov-2024	14 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Duplicate	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Field Blank	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW1-02	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW1-03	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW1-15	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW1-17	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW1-20	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW2-02	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW2-17	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW3-02	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW3-15	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW4-02	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW4-15	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW5-02	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW6-02	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Trip Blank	E421	23-Oct-2024	30-Oct-2024	180 days	8 days	✓	30-Oct-2024	180 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] Duplicate	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] Field Blank	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW1-02	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW1-03	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW1-15	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW1-17	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW1-20	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW2-02	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW2-17	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW3-02	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW3-15	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW4-02	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW4-15	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW5-02	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW6-02	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
Trip Blank	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	15 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
Duplicate	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
Field Blank	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW1-02	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW1-03	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW1-15	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW1-17	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW1-20	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW2-02	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW2-17	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3-02	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3-15	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW4-02	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW4-15	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW5-02	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6-02	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] Trip Blank	E290	23-Oct-2024	28-Oct-2024	14 days	6 days	✓	28-Oct-2024	14 days	6 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] Duplicate	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] Field Blank	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW1-02	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW1-03	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW1-15	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW1-17	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW1-20	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW2-02	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW2-17	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW3-02	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW3-15	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW4-02	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW4-15	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW5-02	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MW6-02	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] Trip Blank	E100	23-Oct-2024	28-Oct-2024	28 days	6 days	✓	28-Oct-2024	28 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] Duplicate	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] Field Blank	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1-02	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1-03	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1-15	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1-17	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1-20	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW2-02	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW2-17	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3-02	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3-15	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] MW4-02	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW4-15	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5-02	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW6-02	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] Trip Blank	E108	23-Oct-2024	28-Oct-2024	14 days	6 days	✓	28-Oct-2024	14 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] Duplicate	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] Field Blank	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1-02	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1-03	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1-15	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1-17	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1-20	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW2-02	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW2-17	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3-02	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3-15	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW4-02	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW4-15	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW5-02	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6-02	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] Trip Blank	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] Duplicate	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] Field Blank	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW1-02	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW1-03	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW1-15	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW1-17	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW1-20	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW2-02	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW2-17	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW3-02	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW3-15	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW4-02	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW4-15	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW5-02	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MW6-02	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
Trip Blank	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE [BOD HT-4d]										
MW1-20	E121	23-Oct-2024	----	----	----		25-Oct-2024	48 hrs	52 hrs	× EHT
Physical Tests : Turbidity by Nephelometry										
HDPE [BOD HT-4d]										
MW1-03	E121	23-Oct-2024	----	----	----		25-Oct-2024	48 hrs	53 hrs	× EHTL
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP]										
MW1-03	E508	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	06-Nov-2024	28 days	14 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP]										
MW1-20	E508	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	06-Nov-2024	28 days	14 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
MW1-03	E420	23-Oct-2024	28-Oct-2024	180 days	5 days	✓	29-Oct-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
MW1-20	E420	23-Oct-2024	28-Oct-2024	180 days	5 days	✓	29-Oct-2024	180 days	6 days	✓

Legend & Qualifier Definitions

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1735967	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1737343	2	25	8.0	5.0	✓
Biochemical Oxygen Demand - 5 day	E550	1734027	2	31	6.4	5.0	✓
Bromide in Water by IC	E235.Br	1737971	1	2	50.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	2	26	7.6	5.0	✓
Conductivity in Water	E100	1735966	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738066	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1802555	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	2	37	5.4	5.0	✓
pH by Meter	E108	1735965	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	2	38	5.2	5.0	✓
TDS by Gravimetry	E162	1736961	1	19	5.2	5.0	✓
Total Cyanide	E333	1742892	2	40	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734931	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1736962	2	38	5.2	5.0	✓
Turbidity by Nephelometry	E121	1731775	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1735967	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1737343	2	25	8.0	5.0	✓
Biochemical Oxygen Demand - 5 day	E550	1734027	2	31	6.4	5.0	✓
Bromide in Water by IC	E235.Br	1737971	1	2	50.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	2	26	7.6	5.0	✓
Conductivity in Water	E100	1735966	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738066	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1802555	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	2	37	5.4	5.0	✓
pH by Meter	E108	1735965	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	2	38	5.2	5.0	✓
TDS by Gravimetry	E162	1736961	1	19	5.2	5.0	✓
Total Cyanide	E333	1742892	2	40	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Metals in Water by CRC ICPMS	E420	1734931	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1736962	2	38	5.2	5.0	✓
Turbidity by Nephelometry	E121	1731775	1	16	6.2	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1735967	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1737343	2	25	8.0	5.0	✓
Biochemical Oxygen Demand - 5 day	E550	1734027	2	31	6.4	5.0	✓
Bromide in Water by IC	E235.Br	1737971	1	2	50.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	2	26	7.6	5.0	✓
Conductivity in Water	E100	1735966	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738066	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1802555	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	2	37	5.4	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	2	38	5.2	5.0	✓
TDS by Gravimetry	E162	1736961	1	19	5.2	5.0	✓
Total Cyanide	E333	1742892	2	40	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734931	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	1736962	2	38	5.2	5.0	✓
Turbidity by Nephelometry	E121	1731775	1	16	6.2	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1737343	2	25	8.0	5.0	✓
Bromide in Water by IC	E235.Br	1737971	1	2	50.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	2	26	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738066	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1802555	1	16	6.2	5.0	✓
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Total Cyanide	E333	1742892	2	40	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734931	1	15	6.6	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Thunder Bay	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Thunder Bay	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Thunder Bay	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Thunder Bay	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Thunder Bay	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Thunder Bay	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Thunder Bay	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Thunder Bay	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Thunder Bay	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Waterloo	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Thunder Bay	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Thunder Bay	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Thunder Bay	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 ALS Environmental - Thunder Bay	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Thunder Bay	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Dissolved Metals Water Filtration	EP421 ALS Environmental - Thunder Bay	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

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Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Thunder Bay
Work Order Reference
TY2412235

Telephone : +1 807 623 6463

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Sault Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounting

Reports / Recipients	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	jennifer@kresinengineering.ca
Email 2	
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	annette@kresinengineering.ca
Email 2	

Turnaround Time (TAT) Requested

- ☑ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	KECO100/TY2022KECO100001	AFE/Cost Center:	PO#
Job #:	Blind River Landfill Fall	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (ALS use only): 12235

ALS Contact: Cassidy Young Sampler: Jen Sharpe

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5 Column 1:	Alkalinity, BOD, Conductivity, pH, TDS	TSS, Chloride, Nitrite/Nitrate, Sulfate, TKN	COD, DOC, Total Phosphorous, Phenols	Ammonia, Dissolved Mercury, VOCs	Dissolved Metals: As, B, Ba, Ca, Cd, Cr	Cu, Fe, K, Mg, Mn, Na, Pb, Zn	Schedule 5, Column 2:	Alkalinity, pH, BOD, Chloride, COD, DOC	Conductivity, Ammonia, Nitrate, Sulfate	TSS, TDS, Dissolved Metals: B, Ba, Ca	Fe, Mg, Na	Ion Balance, Organic Nitrogen, Hardness	Total Cyanide, Fluoride	Total Mercury, Total Metals: As, B, Ba, Ca	Cd, Cr, Cu, Fe, K, Mg, Mn, Na, Pb, Zn	Bromide, Turbidity
	MW1-02	23-Oct-24	12:29	Groundwater	6								R	R	R	R	R	R	R			
	MW2-02		2:03	Groundwater	6								R	R	R	R	R	R	R			
	MW3-02		10:15	Groundwater	6								R	R	R	R	R	R	R			
	MW4-02		10:49	Groundwater	6								R	R	R	R	R	R	R			
	MW5-02		2:42	Groundwater	6								R	R	R	R	R	R	R			
	MW6-02		10:39	Groundwater	6								R	R	R	R	R	R	R			
	MW1-03		9:57	Groundwater	9								R	R	R	R	R	R	R	R	R	R
	MW1-15		1:18	Groundwater	6								R	R	R	R	R	R	R			
	MW2-15			Groundwater	6								R	R	R	R	R	R	R			
	MW3-15		9:10	Groundwater	6								R	R	R	R	R	R	R			
	MW4-15		1:06	Groundwater	6								R	R	R	R	R	R	R			
	MW1-17		11:38	Groundwater	6								R	R	R	R	R	R	R			
	MW2-17		9:23	Groundwater	6								R	R	R	R	R	R	R			
	MW1-20		11:01	Groundwater	9								R	R	R	R	R	R	R	R	R	R
	Duplicate		9:40	Groundwater		R	R	R	R	R	R	R	X	X	X	X	X	R	R			
	Trip Blank			Groundwater		R	R	R	R	R	R	R	X	X	X	X	X	R	R			

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	• Please compare to ODWS.
Are samples for human consumption/ use? ☐ YES ☑ NO	• Samples field filtered if required.
	• Duplicate & Trip Blank to be sampled for Sched 5, Col. 2

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
7.8	10.9	7.6	6.9, 10.2	7.4			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date: Oct. 23, 2024	Time: 5pm	Received by:	Date:	Time: 10:00	Received by: ANS	Date: Oct. 24, 2024	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please [illegible]

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

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Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Sault Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounting

Reports / Recipients

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: jennifer@kresinengineering.ca

Email 2:

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: annette@kresinengineering.ca

Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	KECO100/TY2022KECO100001
Job #:	Blind River Landfill Fall
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Cassidy Young **Sampler:**

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5 Column 1:	Alkalinity, BOD, Conductivity, pH, TDS	TSS, Chloride, Nitrite/Nitrate, Sulfate, TKN	COD, DOC, Total Phosphorous, Phenols	Ammonia, Dissolved Mercury, VOCs	Dissolved Metals: As, B, Ba, Ca, Cd, Cr	Cu, Fe, K, Mg, Mn, Na, Pb, Zn	Ion Balance, Organic Nitrogen, Hardness	Total Cyanide, Fluoride	VOC Spike					SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	Field Blank	23-Oct-24	4:00	Groundwater		X	X	X	X	X	X	X	X	X								
	Travel VOC Spike			Groundwater											X							

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

- Please compare to ODWS
- Please analyze for Sched. 5, Col. 2
- Please don't test Spike

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
7.8	10.9	7.6	6.9, 10.2	7.4			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
	Oct 23, 2024	8pm

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
		10:00

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
ANG	Oct 24, 2024	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

[1] For compliance with Ontario Regulation 153/04 or Drinking Water (DW) Systems, please submit using an ALS DW COC form

Sault / ON North

CERTIFICATE OF ANALYSIS

Work Order	:	**TY2412226**			
Amendment	:	**1**			
Client	:	**Kresin Engineering Corporation**	Laboratory	:	ALS Environmental - Thunder Bay
Contact	:	Jennifer Sharpe	Account Manager	:	Cassidy Young
Address	:	536 Fourth Line East Sault Ste Marie Ontario Canada P6A 5K8	Address	:	1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	:	----	Telephone	:	+1 807 623 6463
Project	:	Blind River Landfill Fall	Date Samples Received	:	24-Oct-2024 10:00
PO	:	----	Date Analysis Commenced	:	25-Oct-2024
C-O-C number	:	----	Issue Date	:	10-Dec-2024 14:17
Sampler	:	----			
Site	:	Kresin Engineering - Blind River Landfill			
Quote number	:	Blind River Landfill - 2024			
No. of samples received	:	4			
No. of samples analysed	:	4			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Cassandra Grzelewski	Team Leader - Inorganics	Inorganics, Thunder Bay, Ontario
Julie Ruoho	Teamleader Wet Chem	Inorganics, Thunder Bay, Ontario
Rhiannon Scheffee	Project Manager	Metals, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Metals, Thunder Bay, Ontario
Shannon Veltri	Supervisor - Water Chemistry	Inorganics, Thunder Bay, Ontario
Taelur Kachur	Laboratory Analyst	Inorganics, Thunder Bay, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
µS/cm	microsiemens per centimetre
pH units	pH units
NTU	nephelometric turbidity units
-	no units
meq/L	milliequivalents per litre
%	percent

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment 10-12-2024: This report has been amended and re-released to allow the reporting of additional analytical data.
Amendment 10-12-2024: This report has been amended and re-released to allow the reporting of additional analytical data.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
TMV	Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	SW1	SW2	SW6	SW7	----
Client sample ID					SW1	SW2	SW6	SW7	----
Client sampling date / time					23-Oct-2024 14:30	23-Oct-2024 15:49	23-Oct-2024 12:50	23-Oct-2024 15:20	----
					TY2412226-001	TY2412226-002	TY2412226-003	TY2412226-004	----
					Result	Result	Result	Result	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/TY	2.0	mg/L	596	249	80.3	106	----
Alkalinity, carbonate (as CaCO3)	----	E290/TY	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290/TY	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	----
Conductivity	----	E100/TY	2.0	µS/cm	1400	554	286	1520	----
Hardness (as CaCO3), dissolved	----	EC100/TY	0.60	mg/L	460	184	131	205	----
pH	----	E108/TY	0.10	pH units	8.11	8.23	7.66	6.76	----
Solids, total dissolved [TDS]	----	E162/TY	10	mg/L	779	352	205	758	----
Solids, total suspended [TSS]	----	E160/TY	3.0	mg/L	18.8	11.8	895	11600	----
Turbidity	----	E121/TY	0.10	NTU	10.0	3.45	288	>4000 TMV	----
Alkalinity, total (as CaCO3)	----	E290/TY	2.0	mg/L	596	249	80.3	106	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/TY	0.0050	mg/L	12.6	0.0722	0.0223	0.447	----
Bromide	24959-67-9	E235.Br/TY	0.10	mg/L	<1.00 DLDS	0.22	<0.10	<1.00 DLDS	----
Chloride	16887-00-6	E235.Cl/TY	0.50	mg/L	119	36.3	2.02	382	----
Kjeldahl nitrogen, total [TKN]	----	E318/TY	0.050	mg/L	15.9	0.915	1.78	20.5	----
Nitrate (as N)	14797-55-8	E235.NO3/TY	0.020	mg/L	0.586	0.239	0.044	<0.200 DLDS	----
Nitrite (as N)	14797-65-0	E235.NO2/TY	0.010	mg/L	<0.100 DLDS	<0.010	<0.010	<0.100 DLDS	----
Phosphorus, total	7723-14-0	E372-U/TY	0.0020	mg/L	0.0372	0.0198	0.0891	3.14	----
Sulfate (as SO4)	14808-79-8	E235.SO4/TY	0.30	mg/L	<3.00 DLDS	<0.30	67.9	53.5	----
Cyanides									
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L	<0.0020	<0.0020	<0.0020	0.0025	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	SW1	SW2	SW6	SW7	----
Client sample ID									
Client sampling date / time					23-Oct-2024 14:30	23-Oct-2024 15:49	23-Oct-2024 12:50	23-Oct-2024 15:20	----
					TY2412226-001	TY2412226-002	TY2412226-003	TY2412226-004	----
					Result	Result	Result	Result	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	36.7	18.3	22.8	23.6	----
Ion Balance									
Anion sum	----	EC101/TY	0.10	meq/L	15.3	6.02	3.08	14.0	----
Cation sum	----	EC101/TY	0.10	meq/L	15.9	5.96	3.00	14.6	----
Ion balance (cations/anions)	----	EC101/TY	0.010	%	104	99.0	97.4	104	----
Ion balance (APHA)	----	EC101/TY	0.01	%	1.92	-0.50	-1.32	2.10	----
Total Metals									
Arsenic, total	7440-38-2	E420/TY	0.00010	mg/L	<0.00100 DLM	0.00063	0.00149	0.00623	----
Barium, total	7440-39-3	E420/TY	0.00010	mg/L	0.0992	0.0424	0.0299	0.431	----
Boron, total	7440-42-8	E420/TY	0.010	mg/L	0.687	0.361	<0.020	<0.200 DLM	----
Cadmium, total	7440-43-9	E420/TY	0.0000050	mg/L	<0.0000500 DLM	<0.0000050	0.0000437	0.000734	----
Chromium, total	7440-47-3	E420/TY	0.00050	mg/L	<0.00500 DLM	0.00109	0.00210	0.0571	----
Copper, total	7440-50-8	E420/TY	0.00050	mg/L	<0.00500 DLM	<0.00050	0.00205	0.0588	----
Iron, total	7439-89-6	E420/TY	0.010	mg/L	1.39	0.775	1.12	78.2	----
Lead, total	7439-92-1	E420/TY	0.000050	mg/L	<0.000500 DLM	0.000068	0.00137	0.0197	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000053	----
Sodium, total	7440-23-5	E420/TY	0.050	mg/L	89.1	30.0	6.68	222	----
Zinc, total	7440-66-6	E420/TY	0.0030	mg/L	<0.0300 DLM	<0.0030	0.0081	0.350	----
Dissolved Metals									
Calcium, dissolved	7440-70-2	E421/TY	0.050	mg/L	122	49.0	36.4	56.7	----
Magnesium, dissolved	7439-95-4	E421/TY	0.0050	mg/L	37.7	15.1	9.70	15.4	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SW1	SW2	SW6	SW7	----
					Client sampling date / time	23-Oct-2024 14:30	23-Oct-2024 15:49	23-Oct-2024 12:50	23-Oct-2024 15:20	----
						TY2412226-001	TY2412226-002	TY2412226-003	TY2412226-004	----
						Result	Result	Result	Result	----
Dissolved Metals										
Manganese, dissolved	7439-96-5	E421/TY	0.00010	mg/L		0.249	0.0538	0.122	4.42	----
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	----
Zinc, dissolved	7440-66-6	E421/TY	0.0010	mg/L		<0.0100 DLM	0.0012	0.0035	0.0065	----
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	----
Dissolved metals filtration location	----	EP421/TY	-	-		Field	Field	Field	Field	----
Aggregate Organics										
Biochemical oxygen demand [BOD]	----	E550/TY	2.0	mg/L		5.7	<2.0	6.9	57.7	----
Chemical oxygen demand [COD]	----	E559-L/TY	10	mg/L		106	51	62	812	----
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		0.0015	<0.0010	<0.0010	0.0034	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **TY2412226**	Page	: 1 of 21
Amendment	: **1**		
Client	: **Kresin Engineering Corporation**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Jennifer Sharpe	Account Manager	: Cassidy Young
Address	: 536 Fourth Line East Sault Ste Marie ON Canada P6A 5K8	Address	: 1081 Barton Street Thunder Bay, Ontario Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: Blind River Landfill Fall	Date Samples Received	: 24-Oct-2024 10:00
PO	: ----	Issue Date	: 10-Dec-2024 13:58
C-O-C number	: ----		
Sampler	: ----		
Site	: Kresin Engineering - Blind River Landfill		
Quote number	: Blind River Landfill - 2024		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Organic / Inorganic Carbon	QC-1739747-001	----	Carbon, dissolved organic [DOC]	----	E358-L	1.22 B mg/L	0.5 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW1	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW2	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW6	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Biochemical Oxygen Demand - 5 day										
HDPE [BOD HT-4d] SW7	E550	23-Oct-2024	----	----	----		27-Oct-2024	4 days	4 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW2	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW6	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW7	E559-L	23-Oct-2024	----	----	----		02-Nov-2024	28 days	10 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP] SW1	E562	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	31-Oct-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP] SW2	E562	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	31-Oct-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP] SW6	E562	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	31-Oct-2024	28 days	8 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP] SW7	E562	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	31-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW1	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW2	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW6	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW7	E298	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
SW1	E235.Br	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
SW2	E235.Br	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
SW6	E235.Br	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
SW7	E235.Br	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW1	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW2	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW6	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW7	E235.Cl	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
SW1	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW2	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW6	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW7	E235.NO3	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW1	E235.NO2	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW2	E235.NO2	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW6	E235.NO2	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW7	E235.NO2	23-Oct-2024	29-Oct-2024	7 days	6 days	✓	30-Oct-2024	7 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW1	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW2	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW6	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW7	E235.SO4	23-Oct-2024	29-Oct-2024	28 days	6 days	✓	30-Oct-2024	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E318	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	31-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW2	E318	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	31-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW6	E318	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	31-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] SW7	E318	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	31-Oct-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] SW1	E372-U	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	01-Nov-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] SW2	E372-U	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	01-Nov-2024	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] SW6	E372-U	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	01-Nov-2024	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW7	E372-U	23-Oct-2024	31-Oct-2024	28 days	8 days	✓	01-Nov-2024	28 days	9 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
SW1	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
SW2	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
SW6	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓
Cyanides : Total Cyanide										
Opaque HDPE - total (sodium hydroxide)										
SW7	E333	23-Oct-2024	06-Nov-2024	14 days	14 days	✓	06-Nov-2024	14 days	14 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW1	E509	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	05-Nov-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW2	E509	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	05-Nov-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW6	E509	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	05-Nov-2024	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SW7	E509	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	05-Nov-2024	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW1	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW2	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW6	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW7	E421	23-Oct-2024	30-Oct-2024	180 days	7 days	✓	30-Oct-2024	180 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW1	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW2	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW6	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] SW7	E358-L	23-Oct-2024	30-Oct-2024	28 days	7 days	✓	06-Nov-2024	28 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW1	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW2	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW6	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW7	E290	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW1	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW2	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW6	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW7	E100	23-Oct-2024	28-Oct-2024	28 days	5 days	✓	28-Oct-2024	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW1	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW2	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] SW6	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW7	E108	23-Oct-2024	28-Oct-2024	14 days	5 days	✓	28-Oct-2024	14 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW1	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW2	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW6	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW7	E162	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW1	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW2	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW6	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW7	E160	23-Oct-2024	----	----	----		29-Oct-2024	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] SW2	E121	23-Oct-2024	----	----	----		25-Oct-2024	48 hrs	45 hrs	✓
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] SW7	E121	23-Oct-2024	----	----	----		25-Oct-2024	48 hrs	45 hrs	✓
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] SW1	E121	23-Oct-2024	----	----	----		25-Oct-2024	48 hrs	46 hrs	✓
Physical Tests : Turbidity by Nephelometry										
HDPE [ON MECP] SW6	E121	23-Oct-2024	----	----	----		25-Oct-2024	48 hrs	48 hrs	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW1	E508	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	06-Nov-2024	28 days	14 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW2	E508	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	06-Nov-2024	28 days	14 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW6	E508	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	06-Nov-2024	28 days	14 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] SW7	E508	23-Oct-2024	05-Nov-2024	28 days	13 days	✓	06-Nov-2024	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW1	E420	23-Oct-2024	28-Oct-2024	180 days	5 days	✓	29-Oct-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW2	E420	23-Oct-2024	28-Oct-2024	180 days	5 days	✓	29-Oct-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW6	E420	23-Oct-2024	28-Oct-2024	180 days	5 days	✓	29-Oct-2024	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) SW7	E420	23-Oct-2024	28-Oct-2024	180 days	5 days	✓	29-Oct-2024	180 days	6 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1735967	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1737342	1	20	5.0	5.0	✓
Biochemical Oxygen Demand - 5 day	E550	1734027	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1802554	0	4	0.0	5.0	×
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	1	18	5.5	5.0	✓
Conductivity in Water	E100	1735966	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749851	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738065	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1737968	1	7	14.2	5.0	✓
pH by Meter	E108	1735965	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1742972	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1737175	1	19	5.2	5.0	✓
Total Cyanide	E333	1750461	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1737346	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734930	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1737356	1	14	7.1	5.0	✓
TSS by Gravimetry	E160	1737176	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1731319	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1735967	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1737342	1	20	5.0	5.0	✓
Biochemical Oxygen Demand - 5 day	E550	1734027	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1802554	1	4	25.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	1	18	5.5	5.0	✓
Conductivity in Water	E100	1735966	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749851	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738065	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1737968	1	7	14.2	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
pH by Meter	E108	1735965	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1742972	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1737175	1	19	5.2	5.0	✓
Total Cyanide	E333	1750461	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1737346	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734930	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1737356	1	14	7.1	5.0	✓
TSS by Gravimetry	E160	1737176	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1731319	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1735967	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1737342	1	20	5.0	5.0	✓
Biochemical Oxygen Demand - 5 day	E550	1734027	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1802554	1	4	25.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	1	18	5.5	5.0	✓
Conductivity in Water	E100	1735966	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749851	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738065	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1737968	1	7	14.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1742972	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1737175	1	19	5.2	5.0	✓
Total Cyanide	E333	1750461	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1737346	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734930	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1737356	1	14	7.1	5.0	✓
TSS by Gravimetry	E160	1737176	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	1731319	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1737342	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1802554	1	4	25.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1737577	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1737970	1	18	5.5	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Mercury in Water by CVAAS	E509	1749851	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1738065	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1739747	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	1737967	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1737968	1	7	14.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1742972	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1737969	1	18	5.5	5.0	✓
Total Cyanide	E333	1750461	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1737346	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1749853	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1734930	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1737356	1	14	7.1	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Thunder Bay	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Thunder Bay	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Thunder Bay	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 ALS Environmental - Thunder Bay	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Thunder Bay	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 ALS Environmental - Thunder Bay	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Thunder Bay	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Thunder Bay	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Thunder Bay	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Thunder Bay	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Thunder Bay	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Thunder Bay	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAAS	E508 ALS Environmental - Waterloo	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Biochemical Oxygen Demand - 5 day	E550 ALS Environmental - Thunder Bay	Water	APHA 5210 B (mod)	Samples are diluted and incubated for a specified time period, after which the oxygen depletion is measured using a dissolved oxygen meter. Free chlorine is a negative interference in the BOD method; please advise ALS when free chlorine is present in samples.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Thunder Bay	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K3Fe(CN)6) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Thunder Bay	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 ALS Environmental - Thunder Bay	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Thunder Bay	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Thunder Bay	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Thunder Bay	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Thunder Bay	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 1

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Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	Kresin Engineering Corporation
Contact:	Jennifer Sharpe
Phone:	705-949-4900
	Company address below will appear on the final report
Street:	536 Fourth Line East
City/Province:	Sault Ste. Marie, ON
Postal Code:	P6A 5K8
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Kresin Engineering Corporation
Contact:	Accounting

Reports / Recipients

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: jennifer@kresinengineering.ca

Email 2:

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: annette@kresinengineering.ca

Email 2:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	KECO100/TY2022KECO100001
Job #:	Blind River Landfill Fall
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): TY2412226

ALS Contact: Cassidy Young

Sampler: Jen Sharpe

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Schedule 5, Coloumn 3	(Alkalinity, BOD, Cl, COD, Total Mercury	Conductivity, Total Metals (Wm Reportables	Ammonia, No2/No3, Total Phosphorus, pH	Phenols 4AAP, SO4, TDS, TKN, TSS)	CO3, HCO3, OH, DOC, Total Cyanide	Ion Balince, Dissolved Mercury	Dissolved Mn and Zn, Hardnes	Total Na, Turbidity, Bromide	SUSPECTED HAZARD (see notes)
	SW1	23-Oct-24	2:30	Surface Water	10	X	X	X	X	X	X	X	X	X	
	SW2		3:49	Surface Water	10	X	X	X	X	X	X	X	X	X	
	SW3			Surface Water		X	X	X	X	X	X	X	X	X	
	SW4			Surface Water		X	X	X	X	X	X	X	X	X	
	SW5			Surface Water		X	X	X	X	X	X	X	X	X	
	SW6		12:50	Surface Water		X	X	X	X	X	X	X	X	X	
	SW7		3:20	Surface Water		X	X	X	X	X	X	X	X	X	

Environmental Division
Thunder Bay
Work Order Reference
TY2412226

Telephone : +1 807 623 8463

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

- Please compare to PWQO
- Field filtered when required.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C	
7.8	10.9	7.6	6.9	10.2	7.4

SHIPMENT RELEASE (client use)

Released by: Date: Oct 23, 2024 Time: 16:17

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time: 10:00

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: ANS Date: Oct. 24, 2024 Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white record copy.

[1] For regulated drinking water (DW) samples, please submit using an Authorized DW COC form.

Appendix G
Analytical Data Summaries

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.1: Sampling Location - MW1-02
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																					
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	Oct-13	May-14	Oct-14	May-15	Oct-15	Jun-16	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
																												Duplicate															
Miscellaneous Parameters																																											
Nitrite (as N)	-	mg/L	NT	NT	<0.02	<0.02	0.07	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.02	<0.02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT
Bicarbonate (HCO3)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	104.00	65.50	64.00	113.00	69.10	77.90	63.47	116.84	69.90	56.00	124.00	71.10	78.60	67.80	36.80	68.90	74.70	83.40	66.60	85.20	79.30	87.30	56.7	NT	NT	NT
Carbonate (CO3)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT
Hydroxide (OH)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT
Cyanide	0.2	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.002	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																																												
Cation - Anion Balance	-	%	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-5.80	19.70	4.13	NT	-2.70	4.80	-2.30	-16.40	-3.80	3.20	-19.50	-3.40	-5.10	8.20	-0.01	0.40	-3.60	4.40	8.10	-0.90	9.30	4.00	-4.65	-2.91	100	-1.35
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	98.3	91.8	80.4	108	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	153	133	89	136
Anion Sum	-	me/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.99	1.37	1.29	NT	1.62	1.8	1.48	2.64	1.63	1.38	2.76	1.65	1.8	1.58	1.04	1.6	1.64	22.4	1.54	1.94	1.81	1.69	1.35	1.59	0.87	1.5
Cation Sum	-	me/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.77	2.04	1.65	NT	1.54	1.98	1.42	1.9	1.51	1.47	1.86	1.54	1.53	1.87	1.04	1.62	1.53	24.5	1.81	1.91	2.18	1.84	1.23	1.5	0.87	1.46
Inorganics																																												
Alkalinity	500	mg/L CaCO3	170	110	74	76	1	90	64	88	16	85	111	80.5	49.3	69.2	67.8	59.3	84.4	85.6	65.5	64	92.8	69.1	77.9	63.5	117	69.9	56	124	71.1	78.6	67.8	36.8	68.9	74.7	83.4	66.6	85.2	79.3	87.3	56.7	68.1	38.3	63.9
Ammonia	-	mg/L	0.35	1.62	0.04	0.04	0.02	0.087	0.083	0.246	0.08	0.02	0.02	<0.02	<0.02	<0.020	<0.020	<0.020	0.026	<0.02	0.044	<0.02	<0.02	<0.020	0.047	<0.020	0.136	0.219	0.029	0.024	0.095	0.107	0.157	0.267	<0.020	0.012	2.28	0.005	0.0227	0.0341	<0.010	0.0074	0.0059	<0.050	0.0269
Arsenic	0.025	mg/L	0.002	0.0012	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.00037	NT	0.00074	NT	0.00036	NT
Barium	1	mg/L	0.071	0.23	0.01	0.1	0.01	0.021	0.0172	0.03	0.247	0.034	0.014	0.207	0.089	0.095	0.011	<0.010	<0.010	<0.01	0.011	<0.01	0.0138	<0.010	0.013	0.00769	0.0127	0.00874	0.00812	0.012	0.00892	0.0094	0.0149	0.0059	0.00889	0.00773	0.309	0.0119	0.0111	0.0124	0.027	0.00739	0.00966	0.00537	0.00925
Boron	5	mg/L	0.024	0.026	<0.05	<0.05	<0.05	0.022	0.01	0.02	0.09	<0.05	0.055	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.05	0.016	<0.050	<0.050	0.013	0.014	0.011	0.011	0.018	<0.010	0.011	0.03	<0.010	0.011	0.011	0.011	0.015	0.014	0.018	0.017	<0.010	0.018	<0.010	0.012
Cadmium	0.0001	mg/L	NT	ND	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0000091	NT	0.0000072	NT	0.0000052	NT
Calcium	-	mg/L	36.1	40	22.6	22.6	36.9	19.8	16.6	22.9	6.6	20.6	30.3	21.1	14.6	19.9	20.1	15.9	23.3	20.7	23	18.8	24	17.8	21.7	16	21.3	17.4	17.1	20.7	17.7	18.6	20.7	11.1	18.3	17.4	187	20.3	21.5	23.4	20	13.3	17.1	9.46	16.4
Chloride	250	mg/L	20	1.5	1.3	2.3	2.5	1	0.9	0.64	1.8	2.1	1.9	1.54	0.97	1.66	1.07	0.78	0.98	0.77	0.76	0.7	0.81	0.67	0.75	0.65	0.86	0.78	0.82	0.9	0.77	0.75	0.64	0.83	0.67	0.87	729	0.63	1.04	0.86	0.91	0.74	0.79	0.61	0.7
Chromium	0.05	mg/L	0.016	0.08	<0.001	<0.001	<0.001	0.006	0.0053	0.0039	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.0010	<0.001	<0.0020	<0.0010	<0.0010	0.00028	0.00067	0.00033	0.00031	0.00065	0.00031	0.00036	0.00022	0.00064	<0.0001	<0.0005	<0.0005	NT	0.00023	0.00056	NT	0.00076	NT	0.00061	NT
Conductivity	-	µS/cm	340	240	188	189	283	174	177	147	78	199	236	187	133	166	171	150	197	202	156	156	223	161	174	137	245	155	127	247	155	169	162	98.6	147	148	2590	148	180	170	169	128	153	81	145
Copper	1	mg/L	0.033	0.12	<0.001	<0.001	0.002	0.004	0.0019	0.004	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.00149	NT	0.00149	NT	0.00194	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.023	0.043	<0.020	<0.020	<0.020	<0.020
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	91.7	77.8	50.9	62.5	35	60.1
Iron	0.3	mg/L	8.4	46	0.1	<0.05	0.08	0.36	0.213	0.208	0.908	0.01	0.014	0.188	0.212	0.22	<0.050	<0.050	<0.050	<0.02	<0.02	<0.02	0.13	<0.020	0.068	0.012	0.017	<0.010	<0.010	<0.010	<0.010	0.302	0.125	0.081	<0.010	<0.010	18.5	0.012	0.21	0.02	0.017	0.098	0.066	0.04	0.033
Lead	0.01	mg/L	0.05	0.023	<0.001	<0.001	0.001	<0.001	0.001	<0.001	0.002	<0.01	<0.01	0.018	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.0010	<0.001	<0.00009	<0.0010	<0.0010	<0.0005	<0.00005	0.0002202	<0.00005	0.000283	<0.00005	<0.00005	<0.00050	<0.00050	<0.00005	<0.00005	<0.00050	<0.00050	<0.000050	<0.000050	NT	0.000064	NT	<0.000050	NT
Magnesium	-	mg/L	11.3	20	6.43	6.39	10.3	5.67	5.2	6.63	2.33	6.36	8.59	6.33	4.13	5.21	5.37	4.76	7.06	5.62	6.15	5.64	7.01	5.05	6.95	4.74	6.26	4.8	4.59	6.13	4.96	5.11	6.62	3.3	5.48	5.18	55.2	6.02	6.17	8.07	6.75	4.29	4.81	2.76	4.65
Manganese	0.05	mg/L	1.06	1	0.139	0.151	0.145	0.119	0.0853	0.0617	0.054	0.0233	0.0634	0.0848	0.105	0.032	0.0205	0.0032	0.0519	0.0157	0.0392	0.0036	0.17	0.0171	0.0678	0.00685	0.37	0.0127	0.0132	0.0164	0.00299	0.151	0.123	0.0339	0.0981	0.0279	7.09	0.00704	0.129	0.0169	0.0134	0.0339	0.0107	0.00902	0.00733
Mercury	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Nitrate	10	mg/L	<0.03	0.9	0.76	0.84	0.25	3	0.257	0.33	<0.03	0.32	0.27	0.126	0.12	0.348	0.157	0.215	0.182	0.107	0.154	0.137	0.064	0.224	0.057	0.173	0.289	0.142	0.048	0.049	0.079	0.054	0.89	0.086	0.256	0.039	0.25	0.16	0.101	0.102	0.085	<0.020	0.092	0.092	0.093
Nitrite	1	mg/L	<0.02	<0.02	<0.02	<0.02	0.07	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.02	<0.02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT	<0.010	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.261	0.181	0.275	0.199	0.197	NT
TKN	-	mg/L	0.6	2.7	0.3	1.1	0.32	0.2	0.49	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.3	0.181	NT	0.205	0.197	NT
pH	6.5-8.5	mg/L	7.25	7.59	7.2	7.2	7.3	6.64	6.45	6.92	6.6	7.06	6.89	6.86	6.9	7.04	6.8	7.24	7.2	7.29	6.97	7.04	7.27	7.02	6.7	6.67	7.14	7	6.54	7.35	6.78	6.93	6.52	6.85	7.04	6.99	7.23	6.83	7.03	7.61	7.75	7.33	7.28	7.37	6.91
Total Phosphorous	-	mg/L	0.39	NT	NT	NT	NT	0.212	0.392	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.858	NT	0.25	NT	0.0886	NT
Potassium	-	mg/L	4.55	6	1.8	1.31	2.48	1.7	1.71	1.7	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.09	1.67	0.88	1.59	0.8	NT	NT	NT	NT	NT	NT	NT	NT	0.89	0.549	1.02	0.86	2.25	1.38	1.55	1.65	NT	0.839	NT	0.564	NT
Sodium	200	mg/L	11.2	9.7	6.38	7.19	11	6.11	6.49	6.32	4.49	8	10	7.13	5.76	5.88	6.53	4.45	8.98	5.78	7.77	5.18	6.51	4.85	6.36	4.65	6.01	5.15	4.9	6.46	5.09	5.25	5.6	3.89	5.12	4.84	214	6.19	6.18	6.91	5.9	4.27	5.09	3.18	5.35
Suspended Solids	-	mg/L	360	3140	<2	2	116	320	188.5	1390	3780	971	219	580	555	909	704	1090	1310	753	239	1370	667	1500	260	136	59.1	393	305	32.2	410	2000	144	1120	563	417	12700	883	243	9.29	1500	498	249	93.8	393
TDS	500	mg/L	198	253	150	110	220	200	190	170	290	270	130	184	232	158	216	174	212	152	196	117	136	129	156	126	141	175	126	132	224	272	136	167	137	199	2260	240	148	168	162	153	133	89	136
Sulfate	500	mg/L	70	7	12.8	13.7	ND	13	9.3	9.2	16.1	12.9	13.4	11	14	12	13.2	12.2	14.5	12.5	12.5	10.2	12.4	10	10.3	8.89	12.2	9.83	11.1	12.37	13.64	14.91	16.18	13.3	9.16	5.94	7.3	8.66	9.75	9.29	10.4	9.42	9.63	4.21	9.38
Zinc	5	mg/L	0.145	0.12	0.008	0.073	0.019	0.009	0.0044	0.0039	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0017	NT	0.0017	NT	<0.0010	NT
Volatile Organics																																													
Benzene	1	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<1.8	NT	<1.0	NT
Toluene	24	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	ND	NT	NT	NT	NT	<0.3	<0.2	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																																													
BOD_5	-	mg/L	NT	<2	0.2	0.2	0.2	1	1.8	0.91	2	2	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<2.0	<3.0	<2.0	<2.0
COD	-	mg/L	31.9	5	NT	15	3	<20	<20	<20	19	<3	3	<3	7.6	<3	3.5	<3	9.4	7.8	4.1	<30	4.4	<10	<10	<10	12	<10	<10	<10	<10	<20	36	91	101	18	75	42	26	49	16	42	<10	26	<10
DOC	5	mg/L	6	1.7	2	2	4	6.3	1.7	8.97	16	4	2	5	3.9	2	4.7	2	1.9	2	2.6	<5	2.3	2.5	2.9	6.4	8.3	2.4	2.4	2.8	2.8	13.9	4	9.9	1.73	4.29	11.7	2.42	4.41	3.11	3.2	4.42	2.63	6.55	2.78
Phenol	-	mg/L	6	1.7	2	2	4	0.004	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0010	NT	<0.0010	NT	<0.0010	NT
Field Parameters																																													
pH	-										6.15	7.28	7.1	7.77	7..3	7.09	7.44	7.16	7.48	7.41	7.22	7.78	6.63	7.12	6.69	7.23	6.88	6.86		6.61	7.19	7.62	6.52	8.34	8.43	5.87	8.54	5.84	6.3	6.81	6.41	5.95	6.77	6.61	6.24
Conductivity	-	uS/cm									30	170	170	150	140	140	160	160	0.21	0.18	0.13	0.17	0.15	0.16	0.17	0.23	0.2	0.15		0.1	0.13	0.21	162	0.15	0.27	0.19	0.2	0.19	0.227	0.221	0.228	0.211	0.169	0.175	0.129
DO	-	%									67.4	27.3	35.8	47.5	36.2	37.1	30.3	26.5	33	43.3	41.4	22.3	32.3	27	61.6	27.7	32.3	41.5		24.4	36.1	38.6	34	45.1	27.9	42	35	37.4	36.2	29.8	33.4	25.4	55.1	37.4	38.1
Temp	-	°c									10.5	6.6	9.4	7.2	9.9	8.9	11.6	6.3	11.4	8.1	10.5	6.4	11.6	4.7	10.2	5	10.5	7.9		11.4	5.6	7.7	6.9	8.3	3.8	8	8.5	7.6	12.1	6.8	11.8	8.3	10.5	7.6	11.2
Pesticides																																												
2,3,4,6-Tetrachlorophenol	0.1	mg/L						<0.0005		<0.000079			<0.0005							<0.5																										
2,4,6-Trichlorophenol	0.005	mg/L						<0.0005		<0.000079			<0.0005							<0.5																										
2,4-Dichlorophenol	0.9	mg/L						<0.0005		<0.000079			<0.0005							<0.3																										
Pentachlorophenol	0.06	mg/L						<0.0005		<0.000079			<0.0005							<0.5																										
Aldicarb	0.009	mg/L						<0.0009		<0.0009			<0.0009							<0.001																										
Bendiocarb	0.04	mg/L						<0.0002		<0.0018			<0.0002							<0.0002																										
Carbaryl	0.09	mg/L						<0.0002		<0.0018			<0.0002							<0.0002																										
Carbofuran	0.09	mg/L						<0.0002		<0.0018			<0.0002							<0.0002																										
Diuron	0.15	mg/L						<0.01		<0.009			<0.01							<0.001																										
Temephos	0.28	mg/L						<0.0001		<0.025			<0.0001							<0.0001																										
4,4'-DDD	-	ug/L						NT		<0.00094			<0.1							<0.1																										
4,4'-DDE	-	ug/L						NT		<0.00031			<0.1							<0.1																										
4,4'-DDT	-	ug/L						NT		<0.00047			<0.1							<0.1																										
Aldrin	-	ug/L						NT		<0.00047			<0.02							<0.02																										
Dieldrin	-	ug/L						NT		<0.0013			<0.02							<0.02																										
Heptachlor	-	ug/L						NT		<0.00063			<0.1							<0.1																										
Heptachlor epoxide	-	ug/L						NT		<0.00063			<0.1							<0.1																										
Methoxychlor	0.9	ug/L						NT		<0.0013			<0.1							<0.1																										
o,p-DDT	-	ug/L						NT		<0.00031			<0.1							<0.1																										
Oxychlordane	-	ug/L						NT		NT			<0.1							<0.1																										
α-Chlordane	-	ug/L						NT		<0.00047			<0.1							<0.1																										
γ-BHC (Lindane)	-	ug/L						NT		<0.00047			<0.1							<0.1																										
γ-Chlordane	-	ug/L						NT		<0.00063			<0.1							<0.1																										
Alachlor	0.005	mg/L						<0.0001		<0.0008			<0.0001							<0.0001																										
Atrazine	-	mg/L						<0.0001		<0.0008			<0.0001							<0.0001																										
Azinphos-Methyl (Guthion)	0.02	mg/L						<0.0001		<0.0006			<0.0001							<0.00001																										
Chlorpyriphos (Dursban)	0.09	mg/L						<0.0001		<0.0006			<0.0001							<0.0001																										
Cyanazine (Bladex)	0.01	mg/L						<0.0001		<0.0006			<0.0001							<0.0001																										
Desethyl Atrazine	-	mg/L						<0.0001		<0.001			<0.0001							<0.0001																										
Diazinon	0.02	mg/L						<0.0001		<0.0006			<0.0001							<0.0001																										
Dimethoate	0.02	mg/L						<0.0001		<0.0006			<0.0001							<0.0001																										
Malathion	0.19	mg/L						<0.0001		<0.0006			<0.0001							<0.0001																										
Metolachlor	0.05	mg/L						<0.0001		<0.0004			<0.0001							<0.0001																										
Metribuzin (Sencor)	0.08	mg/L						<0.0001		<0.0004			<0.0001							<0.0001																										
Parathion	0.05	mg/L						<0.01		<0.0004			<0.0001							<0.0001																										
Phorate	0.002	mg/L						<0.0001		<0.00048			<0.0001							<0.0001																										
Prometryne	0.001	mg/L						<0.0001		<0.00021			<0.0001							<0.0001																										
Simazine	0.01	mg/L						<0.0001		<0.00048			<0.0001							<0.0001																										
Terbufos	0.001	mg/L						<0.0002		<0.0004			<0.0002							<0.0002																										
Triallate	0.23	mg/L						<0.0001		<0.0004			<0.0001							<0.0001																										
Trifluralin	0.045	mg/L						<0.0001		<0.0004			<0.0001							<0.0001																										
Benzo(a)pyrene	0.00001	mg/L						<0.00001		<0.00001			<0.00001							<0.00001																										
Total PCBs	0.003	mg/L						<0.00006		<0.00007			<0.00006							<0.035																										
2,4,5-T	0.28	mg/L						<0.0002		<0.000084			<0.0002							<0.0002																	

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.2: Sampling Location - MW2-02 - Source Well
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref: No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																		
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	May-12 DUPLICATE	Oct-12	May-13	Oct-13	May-14	Oct-14	May-15	Oct-15	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters																																											
Nitrite (as N)	-	mg/L																			<0.02	<0.020	<0.02	<0.02	<0.020	NT	<0.020	<0.2	<0.10	<0.10	<0.050	<0.050	NT	NT	NT	NT	NT	<0.20	<0.2	NT	<0.11	<0.200	<0.500	<0.200	NT
Bicarbonate (HCO3)	-	mg/L																		1350	1330	1160	1320	1550	1310	1460	1329	1359	1390	1490	1440	1550.0	1570	1590.0	1520.0	1650.0	1650.0	1640.0	1620.0	1650.0	1640.0	1580	NT	1660	NT
Carbonate (CO3)	-	mg/L																		<5	<5	<5.0	<5.0	<5.0	<2	<2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	NT	<2.0	NT
Hydroxide (OH)	-	mg/L																		<5	<5	<5.0	<5.0	<5.0	<2	<2	NT	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	NT	<2.0	NT
Cyanide	0.2	mg/L																		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0023	0.0035	<0.0050	NT	0.0031	<0.0020
Ion Balance Calculation																																											
Cation - Anion Balance	-	%																		-11.7	2.3	7.8	5.53	NT	3	-1.6	-2.9	6.1	-3.7	3.2	8.1	6.5	5.3	-4.4	2	-7.2	5	-10.4	4.2	-6.5	7	-0.52	4.67	110	4.58
TDS (calculated)	-	mg/L																		1270	1400	1470	1890	1590	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	1950	1570	1760	1800	1710
Anion Sum	-	me/L																		28.3	27.8	25.4	31.5	NT	33.3	32	32.8	34.5	36.4	37.3	35.2	37.4	37.8	38.9	37.5	40.5	40.2	39.6	40.1	39.4	35	38.9	40.8	40.2	41.7
Cation Sum	-	me/L																		22.4	29.1	29.7	37.9	NT	35.4	31	30.9	38.9	33.8	39.8	41.4	42.6	42	35.6	39.1	35.1	44.4	32.1	43.6	34.6	40.7	38.5	44.8	44.4	45.7
Inorganics																																											
Alkalinity	500	mg/L CaCO3	1550	998	1050	1020	1020	800	854	900	1140	959	1020	1010	1110	1140	1140	1060	1190	1100	1090	1160	1320	1270	1310	1260	1330	1360	1390	1490	1440	1550	1570	1590	1520	1650	1650	1640	1620	1650	1640	1580	1680	1660	1700
Ammonia	-	mg/L	179	49	0.02	44.8	45.2	49.9	1.07	49.3	64.8	50.5	58.4	64.7	75.8	54.2	71.9	74.2	78.8	70.8	80.5	77.7	73.9	86.2	77.9	91.8	86.3	98.8	107	101	108	139	118	133	135	148	130	130	134	141	147	119	132	144	148
Arsenic	0.025	mg/L	0.009	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0021	0.002	<0.010	0.001	<0.010	<0.010	<0.01	NT	NT	<0.01	<0.02	<0.0010	NT	<0.0010	<0.0010	<0.002	<0.0010	0.00094	0.00107	0.00119	0.00096	NT	0.001	0.00097	<0.0010	<0.0010	<0.0010	<0.0010	<0.00100	0.00127	<0.00100	NT
Barium	1	mg/L	0.561	0.39	0.12	0.19	0.37	0.226	0.272	0.393	0.39	0.4	0.4	0.21	0.215	0.49	0.566	0.53	0.49	0.19	0.48	0.46	0.48	0.454	0.45	0.456	0.442	0.48	0.462	0.498	0.465	0.469	0.452	0.459	0.116	0.419	0.454	0.383	0.451	0.423	0.423	0.34	0.456	0.42	0.414
Boron	5	mg/L	1.11	1.1	0.69	1.06	0.94	1.1	1.06	1.04	1.13	1.1	0.9	1.36	1.29	1.22	1.29	1.51	1.68	0.96	1.22	1.18	1.87	1.5	1.27	1.54	1.64	1.62	1.76	1.67	1.6	1.91	1.58	2.11	1.79	1.96	1.91	1.92	1.83	2.06	2.07	1.88	2.18	1.97	2.01
Cadmium	0.0001	mg/L	1.002	<0.0001	<0.0001	0.0002	0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.001	<0.0001	<0.0001	<0.0010	<0.000090	<0.00090	<0.0010	<0.00047	NT	<0.00017	<0.00017	<0.0010	<0.000017	NT	<0.00005	<0.00005	<0.0001	<0.00005	<0.000025	<0.000005	<0.0000050	<0.0000050	NT	<0.00005	<0.0000050	<0.000050	<0.000050	<0.000050	<0.0000500	<0.0000050	<0.0000500	NT
Calcium	-	mg/L	362	270	202	204	210	202	201	194	180	151	216	192	206	214	217	220	205	136	189	189	281	187	186	183	182	189	196	188	193	192	188	194	168	194	195	170	184	191	163	166	185	204	176
Chloride	250	mg/L	245	93.2	74.2	65	73.2	85	145	99.2	125	105	128	145	172	197	206	208	240	217	212	228	228	252	251	241	220	257	305	267	230	230	230	253	253	266	255	238	270	229	287	260	255	251	275
Chromium	0.05	mg/L	0.074	0.008	0.006	<0.001	0.015	0.061	0.0279	0.034	0.002	0.01	0.01	0.0092	0.0043	<0.010	0.0039	<0.010	<0.010	<0.010	<0.01	<0.010	0.018	<0.002	0.0033	0.0033	0.0029	0.0033	0.0025	0.0029	0.00321	0.00354	0.0037	0.00452	0.0023	<0.0050	0.0037	0.00394	0.0033	<0.0050	<0.0050	<0.00500	0.00433	<0.00500	NT
Conductivity	-	µS/cm	3790	2000	2050	1970	1880	1310	2010	1160	1950	1990	1970	2150	2130	2250	2470	2430	2790	2600	2530	2790	3200	2930	3220	2960	3070	3060	3180	3320	3330	3620	3440	3430	3390	3450	3550	3530	3590	3670	2960	3400	3670	3570	3870
Copper	1	mg/L	0.064	0.011	0.001	<0.001	<0.001	<0.001	0.0023	0.0017	<0.001	<0.01	<0.01	<0.001	<0.001	<0.010	0.0018	<0.010	<0.010	<0.01	NT	<0.010	<0.01	<0.02	<0.0010	NT	<0.002	<0.002	<0.004	<0.002	0.0021	<0.0002	<0.00020	<0.00020	<0.0002	NT	<0.0020	0.00032	<0.0020	NA	<0.0020	<0.00200	<0.00020	<0.00200	NT
Fluoride	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.025	<0.10	<0.400	NT	<0.400	<1.00
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	806	731	703	NT	844	787
Iron	0.3	mg/L	198	130	12.6	11.6	103	51.3	33.1	41.6	110	105	102	3.06	7.4	102	98.4	92.1	86	<0.2	79.3	89	72.1	84	77	80.6	81.3	81.6	75.5	70	73	63.7	68.9	69.6	0.282	67.3	65.8	64.8	65.7	62.9	62.2	52.9	62.2	55.2	55.7
Lead	0.01	mg/L	0.026	0.0062	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.010	<0.0010	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01	<0.00009	<0.0010	<0.0010	<0.0005	<0.0005	<0.001	<0.0005	<0.00025	<0.00005	<0.000050	<0.000050	<0.0005	<0.0005	<0.000050	<0.00050	<0.00050	<0.00050	<0.0000500	<0.000050	<0.0000500	<0.000500	NT
Magnesium	-	mg/L	66	51	31.1	29.8	31.2	33.4	47	32.7	31.9	31.9	43.5	41.6	46.9	46.4	49.8	45.7	50.4	34.3	45.3	47.7	85.7	52.6	53.7	59	56.8	60.1	64.2	65.3	65.1	67.9	67.7	73.4	72.1	74.2	76.4	69.2	74.1	79.8	78.6	70	84.3	81.4	84.3
Manganese	0.05	mg/L	3.37	1.1	0.827	0.899	0.839	0.81	0.893	0.727	0.774	0.71	0.62	0.566	0.578	0.63	0.525	0.635	0.536	0.43	0.583	0.44	0.809	0.503	0.503	0.454	0.418	0.383	0.397	0.455	0.424	0.397	0.413	0.376	0.368	0.411	0.406	0.391	0.362	0.427	0.345	0.358	0.361	0.45	0.322
Mercury	0.001	mg/L	ND	<0.0001	<0.0001	<0.0001	0.008	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	NT	<0.000001	<0.000001	<0.0001	<0.000010	NT	<0.000005	0.0000066	<0.000005	<0.000005	<0.000005	<0.000005	<0.0000050	<0.0000050	<0.000005	<0.000025	<0.000005	<0.0000050	<0.000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000500	<0.0000050	NT
Nitrate	10	mg/L	ND	<0.03	<0.03	0.07	<0.07	<0.1	<0.1	<0.1	<0.03	<0.03	0.16	<0.03	0.041	<0.030	<0.030	<0.030	<0.15	<0.03	NT	<0.030	<0.03	<0.03	0.057	<0.030	<0.040	<0.4	<0.20	0.21	<0.10	0.23	<0.20	0.28	<0.04	<0.20	<0.20	<0.40	0.48	<0.020	0.1	<0.400	<1.00	<0.400	<1.00
Nitrite	1	mg/L	<0.2	<0.2	<0.1	0.32	<0.1	<0.05	<0.03	<0.03	<0.02	<0.02	<0.1	<0.2	<0.2	<0.020	<0.40	<0.40	<0.10	0.023	<0.02	<0.020	<0.02	<0.02	<0.020	NT	<0.20	<0.2	<0.10	<0.10	<0.05	<0.05	<0.10	0.16	0.24	NT	NT	<0.20	<0.20	<0.010	<0.050	<0.200	<0.500	<0.200	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	22	<33	<16.2	<18.1	<19.1	NT
TKN	-	mg/L	9.2	56.4	47.1	42.4	47	45.3	29.6	49.6	62.3	56.4	60	66.4	87.3	64.2	75.7	72.6	85.9	73.6	NT	NT	88.2	90.2	111	NT	90.1	81.8	96.7	96.1	117	132	133	128	135	NT	145	138	150	163	164	NT	144	148	NT
pH	6.5-8.5	mg/L	7.17	7.17	7.1	7	6.9	6.42	6.53	6.58	7	7.02	7.13	7.67	7.17	6.97	6.86	7.15	6.87	7.18	7.28	7.34	6.9	7.28	6.82	6.83	6.68	6.82	6.69	6.79	6.69	6.87	6.87	6.83	6.97	6.94	7.29	6.88	6.91	7.17	7.1	7.27	7.28	7.13	6.86
Total Phosphorous		mg/L	3.58	NT	NT	NT	NT	0.274	0.271	0.301	0.245	0.273	0.203	0.169	1.53	0.586	0.772	0.599	0.693	1.38	NT	NT	0.61	0.319	0.516	NT	0.242	0.245	0.223	0.254	0.386	0.489	0.448	0.286	0.341	NT	0.242	0.764	0.312	0.657	0.228	1.6	0.248	0.341	NT
Potassium	-	mg/L	126	65	53.9	48.1	59.3	51.6	85.4	64.2	63.2	54.6	73.8	82.7	89	108	119	145	140	107	143	156	167	165	159	NT	168	169	185	189	179	170	183	207	177	186	193	174	176	173	186	164	178	173	NT
Sodium	200	mg/L	218	100	76.1	69.3	74.7	91	140	108	110	83.2	110	115	129	137	138	148	160	114	151	157	168	176	181	198	196	203	229	224	234	225	236	249	242	252	245	230	247	246	248	227	285	249	286
Suspended Solids	-	mg/L	1900	489	430	240	270	570	314	274	655	208	467	247	1070	864	1340	616	546	1510	729	1380	488	356	533	342	246	237	204	372	319	244	262	150	255	176	168	173	232	1.39	370	178	188	148	214
TDS	500	mg/L	2580	1050	1120	1050	1120	1000	1210	1030	1230	1050	1060	1210	1290	1330	1360	1240	1360	1020	1310	1390	1560	1580	1610	1450	1500	1600	1640	1570	1590	1650	1660	1680	1660	1690	1720	1460	1680	1790	1390	1570	1760	1800	1710
Sulfate	500	mg/L	<1.0	1.6	0.9	2.5	2.1	2.2	<1.0	<1	2.2	1.2	<0.3	0.35	2.27	<0.30	<0.30	0.82	<1.5	0.72	1.07	<0.30	167	<0.3	5.09	0.87	<6.0	<6.0	<3.0	<3.0	<1.5	<1.5	<3.0	<3.0	<6.0	<6.0	<3.0	<6.0	7.1	1.39	<1.5	<6.00	<15.0	<6.00	<15.0
Zinc	5	mg/L	3.67	0.43	0.006	0.026	0.007	0.026	0.0882	0.132	0.008	<0.03	<0.03	0.0472	0.0205	<0.030	0.0119	<0.030	0.036	<0.03	NT	NT	<0.03	<0.2	<0.0030	NT	<0.010	<0.010	<0.020	<0.010	<0.005	0.0033	0.0015	0.0048	0.0022	NT	<0.010	0.0015	<0.010	<0.010	<0.010	0.011	<0.00100	0.0016	<0.0100	NT
Volatile Organics																																											
Benzene	1	µg/L	2.7	NT	NT	NT	1.2	2	1.8	1.9	2.1	1	<1	1.3	1.64	1.67	1.63	1.84	1.95	1.52	1.52	1.78	1.93	1.89	1.85	NT	2.02	2.07	2.23	2.46	2.12	2.28	2.4	2.93	2.29	2.97	2.63	2.22	2.68	2.63	2.63	2.38	2.34	2.81	NT
1,4 Dichlorobenzene	5	µg/L	<0.3	NT	NT	NT	NT	<0.3	<0.25	<0.25	1.2	<0.001	<0.001	1.1	1.59	1.08	1.18	1.18	1.23	0.82	0.82	1.07	1.1	0.76	0.71	NT	0.92	1.03	1.11	1.29	1.09	1.18	0.97	1.22	1.05	1.17	1.1	0.87	1.23	1.04	0.91	0.99	0.99	1.23	NT
Dichloromethane	50	µg/L	<0.5	NT	NT	NT	NT	<0.3	<0.25	<0.25	<0.5	<0.001	<0.01	<0.001	<0.5	<0.5	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<0.5	<5.0	<5	NT	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<1.9	<1.0	<1.0	NT
Toluene	24	µg/L	<0.5	NT	NT	NT	NT	0.6	<0.25	<0.25	<1	<1	<1	<0.001	<0.5	<0.5	<0.50	<0.50	<0.50	<0.5	<0.5	0.87	<0.5	<0.5	<0.5	NT	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50	NT
Vinyl Chloride	2	µg/L	<0.5	NT	NT	NT	NT	<0.3	<0.2	<0.25	<2	<2	<2	<0.002	<0.5	<0.5	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NT	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NT
Chlorobenzene		µg/L	NT	NT	NT	NT	NT	NT	4.19	3.99	3	2	<0.01	2.8	4.3	NT	3.39	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	5.78	NT	NT	NT	5.51	NT	NT	NT	NT
Other Organics																																												
BOD_5	-	mg/L	NT	47	5	<2	15	10	20	6.8	25	8	7	8.3	14.3	11.9	9.3	8.6	10.6	7.6	8.5	13	8.3	15.3	15.2	14.1	9.4	9.9	8.3	10	10.1	8.3	9.5	5.7	10.4	9.9	12	12	11.9	9.9	8.1	<3.0	13.4	14.5	12.1
COD	-	mg/L	6350	100	NT	102	125	70	170	66	147	161	115	114	946	401	152	187	145	134	270	392	271	236	202	224	192	215	196	239	239	240	247	240	273	228	229	256	265	284	250	276	252	252	312
DOC	5	mg/L	732	30.1	19	26	32	67	57.5	45	43	39	32	51.8	30.3	41.3	45.2	40.7	47.5	39	38	42.1	83	72.6	64	65.4	30.8	64.7	63.6	59.8	68.8	66.1	83.8	66.7	61	95.9	91.1	76.8	67.5	82.1	73.7	67.7	74.5	72.1	85
Phenol	-	mg/L	NT	0.001	0.017	0.013	0.017	0.028	0.0145	0.0127	0.026	0.016	0.02	0.019	0.0127	0.0141	0.0097	0.0209	0.0123	0.0165	NT	0.0078	0.0053	0.004	0.0222	NT	0.004	0.0121	0.0093	<0.020	0.046	<0.020	0.0019	<0.020	0.0021	NT	NT	0.0068	0.0052	0.0053	NT	0.0033	0.0038	0.0108	
Field Parameters																																												
pH	-													6.75	6.83	6.65	6.72	6.82	7.52	7.12	6.78	6.59	6.59	6.61	6.58	6.5	2.69	6.9	6.45	6.58	6.73	6.59	6.63	6.84	6.87	6.75	6.46	6.7	6.67	5.95	6.73	6.6	6.51	6.6	6.72	6.72	6.83
Conductivity	-	uS/cm												2060	2190	2270	2420	2350	2460	2580	3.1	10.8	10.8	3.08	3.37	2.67	3	2.92	2.56	2.76	2.79	2.49	2.44	3.78	3.44	3.44	3.48	3.08	3.12	3.14	3.767	3.66	3.65	3.66	3.356	2.926	2.747
DO	-	%												25.5	26.1	29.7	11.5	15.7	19.4	9.5	27.9	2.94	2.94	26.6	19.5	5.2	6.7	10.6	10.4	16.1	27.5	32.5	6.6	19.1	18.6	15.5	14.2	16.2	14.6	9.5	18.1	15.8	33.2	15.8	19.7	31.9	25.6
Temp	-	°c												10.9	10.8	14	13.4	13.8	15.3	13.5	14.7	13.3	13.3	15.1	12.7	13	10.2	11.4	10.1	12.2	12.3	13	11	11.7	12.7	11.3	10.8	12.6	10.9	12	12.8	10.8	12.8	10.8	11.3	12.3	112.4
Pesticides																																												
2,3,4,6-Tetrachlorophenol	0.1	mg/L					<0.0005		<0.000093		<0.0005		<0.0005							<0.5																										
2,4,6-Trichlorophenol	0.005	mg/L					<0.0005		<0.000093		<0.0005		<0.0005							<0.5																										
2,4-Dichlorophenol	0.9	mg/L					<0.0005		<0.000093		<0.0005		<0.0005							<0.3																										
Pentachlorophenol	0.06	mg/L					<0.0005		<0.000093		<0.0005		<0.0005							<0.5																										
Aldicarb	0.009	mg/L					<0.0009		<0.0027		<0.009		<0.001							<0.001																										
Bendiocarb	0.04	mg/L					<0.0002		<0.001		<0.0002		<0.0002							<0.00085																										
Carbaryl	0.09	mg/L					<0.0002		<0.001		<0.0002		0.0006							0.00132																										
Carbofuran	0.09	mg/L					<0.0002		<0.001		<0.0002		<0.0002							<0.0002																										
Diuron	0.15	mg/L					<0.01		<0.005		<0.01		<0.001							<0.0001																										
Temephos	0.28	mg/L					<0.0001		<0.014		<0.0001		<0.0001							<0.0001																										
4,4'-DDD	-	ug/L					NT		<0.0012		<0.1		<0.1							<1																										
4,4'-DDE	-	ug/L					NT		<0.00041		<0.1		<0.01							<1																										
4,4'-DDT	-	ug/L					NT		<0.00061		<0.1		<0.1							<1																										
Aldrin	-	ug/L					NT		<0.00061		<0.02		<0.02							<1.18																										
Dieldrin	-	ug/L					NT		<0.0016		<0.02		<0.02							<0.2																										
Heptachlor	-	ug/L					NT		<0.00081		<0.1		<0.1							<1																										
Heptachlor epoxide	-	ug/L					NT		<0.00081		<0.1		<0.1							<1																										
Methoxychlor	0.9	ug/L					NT		<0.0016		<0.1		<0.1							<1																										
o,p-DDT	-	ug/L					NT		<0.00041		<0.1		<0.1							<1																										
Oxychlordane	-	ug/L					NT		NT		<0.1		<0.1							<1																										
α-Chlordane	-	ug/L					NT		<0.00061		<0.1		<0.1							<1																										
γ-BHC (Lindane)	-	ug/L					NT		<0.00061		<0.1		<0.1							<1																										
γ-Chlordane	-	ug/L					NT		<0.00081		<0.1		<0.1							<1																										
Alachlor	0.005	mg/L					<0.0001		<0.00095		<0.0001		<0.0001							<0.0001																										
Atrazine	-	mg/L					<0.0001		<0.00095		<0.0001		<0.0001							<0.0001																										
Azinphos-Methyl (Guthion)	0.02	mg/L					<0.0001		<0.00071		<0.0001		<0.0001							<0.0001																										
Chlorpyriphos (Dursban)	0.09	mg/L					<0.0001		<0.00071		<0.0001		<0.0001							<0.0001																										
Cyanazine (Bladex)	0.01	mg/L					<0.0001		<0.00071		<0.0001		<0.0001							<0.0001																										
Desethyl Atrazine	-	mg/L					<0.0001		<0.0012		<0.0001		<0.0001							<0.0001																										
Diazinon	0.02	mg/L					<0.0001		<0.00071		<0.0001		<0.0001							<0.0001																										
Dimethoate	0.02	mg/L					<0.0001		<0.00071		<0.0001		<0.0001							<0.0001																										
Malathion	0.19	mg/L					<0.0001		<0.00071		<0.0001		<0.0001							<0.0001																										
Metolachlor	0.05	mg/L					<0.0001		<0.00047		<0.0001		<0.0001							<0.0001														

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.3: Sampling Location - MW3-02
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																			
			2002	Mar-04	Nov-04	May-05	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	Oct-13	May-14	Oct-14	May-15	Oct-15	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	23-Oct-24
Miscellaneous Parameters							Dry Well				Dry Well					Dry Well	Dry Well	Dry Well		Dry Well	Dry Well	Dry Well	Dry Well	Dry Well		Dry Well					Frozen										
Nitrite (as N)		mg/L																						NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	<0.010	NT	0.013	NT
Bicarbonate (HCO3)		mg/L																						337.3855		306	NT	282	250	276		228	272	188	243	277	277	285	NT	NT	NT
Carbonate (CO3)		mg/L																						<2.0		<2.0	NT	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	18.2	<2.0	NT	NT	NT
Hydroxide (OH)		mg/L																						<2.0		<2.0	NT	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L																						NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																																								
Cation - Anion Balance		%																						-0.2		1.8	NT	-2.5	-6.6	-7.1		-2.5	-0.4	2.8	-2.8	-0.8	4	-4.69	1.1	94.9	-2.42
TDS (calculated)		mg/L																						NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	346	374	370	364	598
Anion Sum		me/L																						8.48		7.64	NT	7.24	8.11	8.43		6.72	7.08	5.12	6.3	6.55	5.9	6.92	6.27	6.45	10.6
Cation Sum		me/L																						8.45		7.92	NT	6.89	7.1	7.31		6.39	7.03	5.42	5.96	6.45	6.44	6.3	6.41	6.12	10.1
Inorganics																																								
Alkalinity	500	mg/L CaCO3	NT	NT	346	313		NT	329	302		296	361	349	379				325					339		306	254	282	250	276		228	272	188	243	277	296	285	257	237	193
Ammonia	-	mg/L	NT	NT	2.06	1.73		NT	NT	0.37		NT	NT	0.458	1.06				NT					1.09		1.21	0.275	0.286	0.138	0.462		0.163	0.198	1.16	0.21	0.198	0.12	0.077	0.0235	0.0977	0.263
Arsenic	0.025	mg/L	NT	NT	0.001	0.001		0.0039	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	0.00028	NT	0.00032	NT	0.00027	NT
Barium	1	mg/L	NT	NT	0.5	0.09		0.0763	NT	0.153		0.42	NT	0.115	0.111				NT					0.0476		0.0376	0.0264	0.0223	0.0227	0.0192		0.0154	0.0151	0.133	0.0137	0.0198	0.0346	0.0152	0.0144	0.0143	0.0197
Boron	5	mg/L	NT	NT	0.31	0.35		0.431	NT	0.5		0.43	NT	0.295	0.5				NT					0.6		0.453	0.364	0.282	0.267	0.528		0.432	0.362	0.115	0.292	0.309	0.355	0.437	0.54	0.496	0.328
Cadmium	0.0001	mg/L	NT	NT	<0.0001	<0.0001		<0.001	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	1.18E-05	NT	6.7E-06	NT	0.0000052	NT
Calcium	-	mg/L	NT	NT	79.4	66		63.9	66.5	57.7		70.6	NT	81.6	88.4				NT					72.8		66.9	55.9	60.9	65.6	67.2		52	54.7	48.6	49.3	58.5	55.5	53.8	54.6	51.9	59.8
Chloride	250	mg/L	NT	NT	51	49.7		NT	76.3	71.5		102	117	123	126				108					56.3		44.4	70.7	54.3	109	54		68.1	56.5	47.8	49.5	36.3	31.9	42.6	36.2	52.8	236
Chromium	0.05	mg/L	NT	NT	0.002	<0.001		0.0102	NT	NT		NT	NT	NT	NT				NT					<0.0010		0.00088	NT	0.0006	0.00111	0.00066		0.00066	0.00094	NT	0.001	0.00081	NT	0.00082	NT	0.00072	NT
Conductivity	-	µS/cm	NT	NT	820	760		NT	780	813		871	937	953	1090				969					812		718	662	704	854	713		636	666	502	602	639	555	600	582	603	1100
Copper	1	mg/L	NT	NT	0.001	<0.001		0.0238	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	NA	NT	0.00483	NT	0.00372	NT
Fluoride		mg/L																	NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.02	<0.020	<0.020	<0.020	<0.020	<0.200
Hardness		mg/L																	NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	212	208	197	196	186	214
Iron	0.3	mg/L	NT	NT	0.6	0.54		2.79	NT	0.049		0.118	NT	<0.050	0.353				NT					0.79		0.809	0.576	0.3	0.061	0.183		0.035	0.086	7.5	0.135	0.467	0.097	0.164	0.157	0.207	0.508
Lead	0.01	mg/L	NT	NT	<0.001	<0.001		0.0059	NT	<0.01		0.015	NT	<0.0010	<0.0010				NT					<0.00050		0.000118	NT	<0.00005	0.000661	<0.000050		0.000064	<0.00005	<0.000050	<0.000050	<0.000050	NT	<0.000050	NT	<0.000050	NT
Magnesium	-	mg/L	NT	NT	19.9	16.4		16.6	17.6	16.1		18.3	NT	20.5	23.1				NT					18.1		17.2	13.9	15.9	16.4	16.2		13.6	14.1	12.9	11.9	16.1	17	15.2	14.4	13.8	15.8
Manganese	0.05	mg/L	NT	NT	0.412	0.418		0.178	NT	0.0155		0.0806	NT	0.262	0.341				NT					0.579		0.646	NT	0.367	0.288	0.226		0.0477	0.0992	0.706	0.217	0.458	0.248	0.122	0.102	0.0827	0.258
Mercury	0.001	mg/L	NT	NT	<0.0001	<0.0001		<0.0001	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.000005	NT	<0.000005	NT	<0.0000050	NT
Nitrate	10	mg/L	NT	NT	0.14	0.1		NT	0.38	0.12		0.145	0.104	0.094	<0.030				0.489					0.263		0.091	0.13	0.032	0.1	0.154		0.107	0.075	0.294	0.18	0.021	<0.020	0.041	<0.020	0.04	<0.200
Nitrite	1	mg/L	NT	NT	<0.02	0.08		NT	NT	NT		NT	NT	NT	NT				0.129					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	0.01	NT	<0.010	NT	0.013	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT		NT	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	0.877	1.02	0.923	0.688	0.701	NT
TKN	-	mg/L	NT	NT	3.05	2.4		NT	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	1.07	1.14	NT	0.711	0.799	NT
pH	6.5-8.5	mg/L	NT	NT	7.8	7.6		NT	8	7.95		8.39	8.33	7.93	7.38				8.39					7.7		7.6	7.51	7.58	7.65	7.51		7.85	7.95	7.41	7.89	8.2	8.49	8.09	8.36	8.25	7.74
Total Phosphorous	-	mg/L	NT	NT	NT	NT		NT	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		'''	NT	NT	NT	0.0662	NT	0.0379	NT	0.0336	NT
Potassium	-	mg/L	NT	NT	32.5	28.7		1.7	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	34.4	30	33.7		30.5	34.9	4.81	27.6	26.8	NT	26.7	NT	24.9	NT
Sodium	200	mg/L	NT	NT	50.1	55.6		6.11	63.4	55.8		65.9	NT	70.8	73.5				NT					41.4		40	47.8	37.5	38.8	39.3		43.2	51.3	29.8	41.3	33.9	35	38.3	40.9	39.9	116
Suspended Solids	-	mg/L	NT	NT	4	6		NT	495	3380		275	152	130	5890				64					498		90.9	58.5	35.3	126	28.1		19.3	13.9	279	55	<0.30	34.6	52.7	63.8	16.6	14.9
TDS	500	mg/L	NT	NT	490	470		NT	570	530		562	658	629	722				556					538		444	414	427	487	457		365	390	282	378	393	372	374	370	364	598
Sulfate	500	mg/L	NT	NT	<0.2	5		NT	9.9	11.9		5.67	3.62	2.09	0.48				2.14					4.48		13.1	10	3.72	1.64	66.2		11.4	2.83	<0.30	1.53	<0.30	0.49	1.09	5.62	10.8	6
Zinc	5	mg/L	NT	NT	0.045	0.023		0.0278	NT	NT		NT	NT	NT	NT				NT					NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	0.0092	NT	0.0046	NT	0.003	NT
Volatile Organics																																								
Benzene	5	µg/L	NT	NT	NT	NT			NT	NT		NT	NT	NT	NT									NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT			NT	NT		NT	NT	NT	NT									NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT			NT	NT		NT	NT	NT	NT									NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<5.0	NT	<1.8	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT			NT	NT		NT	NT	NT	NT									NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT			NT	NT		NT	NT	NT	NT									NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																																								
BOD_5	-	mg/L	NT	NT	<2	<2			NT	3		<2.0	2.5	2.9	6									7.5		4.9	<2.0	<2.0	2.4	<2.0		<2.0	<2.0	6.1	2.4	<2.0	<3.0	<2.0	<2.0	28.3	<2.0
COD	-	mg/L	NT	NT	NT	43			NT	126		NT	NT	66.3	106									169		70	53	52	56	63		49	47	67	63	64	61	51	43	50	46
DOC	5	mg/L	NT	NT	12	15			NT	17		NT	NT	18.5	21.6									24.8		18.1	15.2	18.2	21.1	15.9		13.7	18	10.3	15.8	18.2	19.4	15.6	18.4	15.6	16
Phenol	-	mg/L	NT	NT	0.003	0.002			NT	NT		NT	NT	NT	NT									NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0010	NT	<0.0010	NT	0.002	NT
Field Parameters																																								
pH	-								7.75	7.41	7.88	7.54	7.66	7.62	8.04	8.02	8.09	7.86	7.82					7.17	7.32	6.57	6.4	6.6	7.84	7.25	7.17	7.49	7.83	7.09	7.62	6.76	6.38	6.52	7.16	6. 46	6.37
Conductivity	-	uS/cm							720	760	730	770	750	840	870	1000	1.04	58.3	0.94					0.72	0.65	0.62	0.57	0.56	0.74	0.7	0.71	0.56	0.61	0.58	0.673	0.622	0.641	0.68	0.614	0.623	0.645
DO	-	%							83.5	54.9	85.4	80.2	77.3	40.3	52.8	26.5	65.3	1.03	86.7					52.4	66.4	67.4	81.8	82.7	90.4	73.7	87.9	73	95.7	74	86.5	67.7	71.2	68	85.2	34.9	96.2
Temp	-	°c							11.7	11.7	8.7	11.9	7.9	16.9	10.9	11	15.2	12.7	12.3					7.5	12.9	14.5	15.1	9.3	5	9.5	5	13.1	8.2	14.9	15.3	10.3	16	14.6	10.3	8.7	11.7
Pesticides																																								
2,3,4,6-Tetrachlorophenol	0.1	mg/L																																							
2,4,6-Trichlorophenol	0.005	mg/L																																						
2,4-Dichlorophenol	0.9	mg/L																																						
Pentachlorophenol	0.06	mg/L																																						
Aldicarb	0.009	mg/L																																						
Bendiocarb	0.04	mg/L																																						
Carbaryl	0.09	mg/L																																						
Carbofuran	0.09	mg/L																																						
Diuron	0.15	mg/L																																						
Temephos	0.28	mg/L																																						
4,4'-DDD	-	ug/L																																						
4,4'-DDE	-	ug/L																																						
4,4'-DDT	-	ug/L																																						
Aldrin	-	ug/L																																						
Dieldrin	-	ug/L																																						
Heptachlor	-	ug/L																																						
Heptachlor epoxide	-	ug/L																																						
Methoxychlor	0.9	ug/L																																						
o,p-DDT	-	ug/L																																						
Oxychlordane	-	ug/L																																						
α-Chlordane	-	ug/L																																						
γ-BHC (Lindane)	-	ug/L																																						
γ-Chlordane	-	ug/L																																						
Alachlor	0.005	mg/L																																						
Atrazine	-	mg/L																																						
Azinphos-Methyl (Guthion)	0.02	mg/L																																						
Chlorpyriphos (Dursban)	0.09	mg/L																																						
Cyanazine (Bladex)	0.01	mg/L																																						
Desethyl Atrazine	-	mg/L																																						
Diazinon	0.02	mg/L																																						
Dimethoate	0.02	mg/L																																						
Malathion	0.19	mg/L																																						
Metolachlor	0.05	mg/L																																						
Metribuzin (Sencor)	0.08	mg/L																																						
Parathion	0.05	mg/L																																						
Phorate	0.002	mg/L																																						
Prometryne	0.001	mg/L																																						
Simazine	0.01	mg/L																																						
Terbufos	0.001	mg/L																																						
Triallate	0.23	mg/L																																						
Trifluralin	0.045	mg/L																																						
Benzo(a)pyrene	0.00001	mg/L																																						
Total PCBs	0.003	mg/L																																						
2,4,5-T	0.28	mg/L																																						
2,4-D	0.1	mg/L																																						
Bromoxynil	0.005	mg/L																																						
Dicamba	0.12	mg/L																																						
Diclofop Methyl	0.009	mg/L																																						
Dinoseb	0.01	mg/L																																						
Picloram	0.19	mg/L																																						
Atrazine + N-dealkylated metabolites	0.005	mg/L																																						
Chlordane (total)	7	ug/L																																						
Aldrin + Dieldrin	0.7	ug/L																																						

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.4: Sampling Location - MW4-02
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																							
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	Oct-12 Duplicate	May-13	Oct-13	May-14	Oct-14	May-15	May-15	Oct-15	Jun-16	Oct-16	Oct-16 Duplicate	May-17	Nov-17	May-18	Nov-18	Feb-20 Frozen	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	23-Oct-24
Miscellaneous Parameters																																													
Nitrite (as N)	-	mg/L																		<0.02	<0.020	<0.020	0.155	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	<0.010	NT	<0.020	NT
Bicarbonate (HCO3)	-	mg/L																		208	115	116	113	163	145	150	138	135.861	161.8237	139	135	131	124	149	122	87.6		121	112	143	133	126	138	148	NT	NT	NT
Carbonate (CO3)	-	mg/L																		<5	<5	<5	<5.0	<5.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L																		<5	<5	<5	<5.0	<5.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L																		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																																													
Cation - Anion Balance	-	%																		0.7	5.1	3.4	3.75	NT	-11.4	0.8	3.5	4	1.9	1.3	1.6	3	1	-1.7	-5.4	2.6		2.3	3.2	-0.7	-1	1.7	4	-3.86	-2.46	89.2	1.49
TDS (calculated)	-	mg/L																		290	284	283	188	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	191	233	312	768	1030
Anion Sum	-	me/L																		5.38	4.75	4.8	3.03	NT	5.08	4.08	3.94	3.77	4.44	3.9	3.75	3.62	3.25	3.81	4.27	3.73		3.2	3.1	3.89	3.42	4.01	3.25	4.04	4.38	12.1	16.5
Cation Sum	-	me/L																		5.45	5.27	5.14	3.75	NT	4.03	4.15	4.22	4.08	4.61	4.01	3.86	3.84	3.32	3.68	3.83	3.93		3.35	3.3	3.83	3.35	4.15	3.55	3.74	4.17	10.8	17
Inorganics																																												
Alkalinity	500	mg/L CaCO3	254	221	171	252	165	190	182	263	139	154	156	142	174	218	242	145	200	171	115	116	113	133	145	150	138	136	162	139	135	131	124	149	122	87.6		121	112	143	133	126	138	148	97	92.3	88.5
Ammonia	-	mg/L	1.08	0.13	1.38	2.18	1.42	1.29	0.845	1.52	1	0.83	0.84	0.801	0.905	1.15	1.34	1.1	1.36	2.86	1.06	1.07	0.717	0.897	0.884	0.86	0.961	0.861	1.06	1.18	0.803	0.789	0.645	0.766	0.607	0.595		0.84	0.646	0.589	0.817	0.424	0.76	0.568	0.637	0.367	0.926
Arsenic	0.025	mg/L	0.051	0.026	<0.001	<0.001	<0.001	<0.001	0.0022	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	0.00021	NT	0.00012	NT	0.00012	NT
Barium	1	mg/L	1.03	0.98	0.12	0.2	0.09	0.114	0.223	0.125	0.419	0.084	0.081	0.073	0.169	0.182	0.196	0.162	0.125	0.128	0.093	0.092	0.058	0.0769	0.088	0.084	0.0802	0.0767	0.0907	0.0743	0.0761	0.0749	0.0534	0.0715	0.0657	0.0605		0.057	0.0629	0.0642	0.0604	0.0664	0.0613	0.0549	0.0637	0.111	0.148
Boron	5	mg/L	0.232	0.14	0.1	0.14	0.14	0.16	0.101	0.152	0.14	0.1	0.1	0.075	0.17	0.174	0.255	0.119	0.214	0.161	0.076	0.081	0.087	0.01	0.097	0.151	0.105	0.105	0.131	0.117	0.091	0.078	0.086	0.117	0.077	0.066		0.099	0.08	0.098	0.085	0.068	0.118	0.086	0.091	0.057	0.053
Cadmium	0.0001	mg/L	0.001	ND	<0.0001	<0.0001	<0.0001	<0.0001	0.00019	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050
Calcium	-	mg/L	63.2	80	37.6	54.6	37.3	34.3	28.2	51	32	31.3	32.3	32.8	38.3	49.1	56.6	57.1	46.4	38.7	37.1	35.5	25.3	28.7	27.4	29.2	31.6	31.6	30.8	30.4	28.5	27.9	23.9	28.4	28.6	25.8		23.8	24	29.5	26	29.4	26.1	26.9	30.5	42.6	51.3
Chloride	250	mg/L	37.5	61.1	21.8	41.1	26.7	35.5	22.9	41.5	50	34.4	24.3	28.7	37.3	63.8	64.6	134	69.2	67.8	98.2	99.1	40.9	40.9	74.7	38.5	41.5	36.7	42.4	37.9	36.9	35	27.1	29.4	63.8	66.1		26.8	30.6	34.2	26.6	51.6	33.9	38.4	85.5	357	518
Chromium	0.05	mg/L	0.279	0.18	<0.001	<0.001	0.001	0.009	0.0184	0.0078	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	<0.0010	<0.0010	0.002	<0.002	<0.0010	<0.0010	<0.0010	0.00047	0.00034	0.00051	0.00051	0.00048	0.0004	0.00036	0.0005	0.00139	0.00047		<0.0005	0.0005	NT	0.00053	<0.00050	NT	<0.000050	NT	<0.00050	NT
Conductivity	-	µS/cm	432	609	417	614	403	397	422	487	390	409	378	370	439	591	671	767	598	584	573	575	356	378	551	435	397	411	451	360	364	356	323	373	467	378		300	303	379	328	426	326	373	475	1350	1840
Copper	1	mg/L	0.932	0.72	0.001	<0.001	<0.001	0.011	0.0767	0.0057	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NA	NT	0.00032	NT	0.00033	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.02	0.048	<0.020	<0.020	<0.040	<0.200
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	114	103	105	114	160	191
Iron	0.3	mg/L	165	130	1.4	0.48	3	2.22	7.03	1.84	0.537	4.18	4.38	0.828	1.34	1.52	4.11	<0.050	4.78	3.61	4.74	4.36	4.32	4.58	3.42	3.22	4.02	3.97	4.17	3.69	4	4.02	4.14	4.03	3.92	4.32		3.61	3.61	3.92	4.09	5.33	3.93	4.92	4.7	6.59	8.2
Lead	0.01	mg/L	0.224	0.21	<0.001	<0.001	<0.001	0.004	0.0284	0.0014	<0.001	<0.01	<0.01	0.019	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.00009	<0.0010	<0.0010	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000054	0.000575	<0.000050		<0.00005	<0.00005	0.014100	<0.000050	<0.000050	NT	<0.000050	NT	<0.000050	NT
Magnesium	-	mg/L	37.8	45	11.5	16.1	10.7	10.2	9.51	15.5	10	10.4	9.16	10	11.7	13.3	23.1	4.76	14	10.4	10.4	9.83	8.51	9.7	8.12	9.45	9.52	9.59	9.05	8.73	8.53	8.52	7.71	8.2	9.19	7.68		7.9	7.57	8.83	7.75	9.79	9.14	9.28	9.27	13.1	15.3
Manganese	0.05	mg/L	1.85	1.3	0.276	0.357	0.246	0.297	0.31	0.323	0.286	0.294	0.241	0.3	0.314	0.426	0.458	0.457	0.383	0.355	0.407	0.389	0.271	0.31	0.29	0.282	0.324	0.326	0.303	0.276	0.281	0.281	0.258	0.303	0.256	0.269		0.27	0.279	0.325	0.279	0.414	0.333	0.292	0.303	0.482	0.632
Mercury	0.001	mg/L	ND	ND	<0.0001	<0.0001	0.0015	<0.0001	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Nitrate	10	mg/L	ND	0.1	<0.03	0.07	0.002	<0.1	<0.12	<0.1	<0.03	<0.03	<0.03	0.053	<0.03	0.034	<0.030	<0.030	0.089	<0.03	<0.030	<0.030	0.039	0.124	0.161	<0.030	<0.020	<0.020	0.031	0.022	0.032	<0.02	<0.02	<0.02	<0.020	0.026		<0.020	0.041	0.071	<0.020	<0.020	<0.020	<0.020	<0.020	<0.040	<0.200
Nitrite	1	mg/L	ND	ND	<0.02	<0.02	0.39	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.020	<0.020	0.155	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	<0.010	NT	<0.020	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	0.765	0.24	0.492	0.273	<0.250	NT
TKN	-	mg/L	2.3	1.9	1.78	2.63	2.18	1.5	1.02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	1.19	1	NT	0.91	0.589	NT
pH	6.5-8.5	mg/L	7.11	7.6	7.3	7.3	7.3	6.68	6.91	7.14	7.3	7.04	7.25	7.23	7.34	7.53	7.28	7.32	7.18	7.53	7.56	7.52	7.02	7.28	7.29	6.87	7.02	7.02	7.05	6.96	7.04	6.94	6.93	7.04	6.9	7.07		7.44	7.29	7.05	7.31	7.45	8.17	7.54	7.37	7.77	7.33
Total Phosphorous		mg/L	2.26	NT	11	NT	NT	0.348	5.07	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	0.308	NT	0.255	NT
Potassium	-	mg/L	21.4	26	12.5	15	13.4	1.7	10.5	18.2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	18.1	10.1	12.8	14.1	NT	NT	NT	NT	NT	NT	11.4	8.56	8.89		11.1	9.17	7.79	10	8.02	NT	7.17	NT	9.41	NT
Sodium	200	mg/L	31.9	48	26.9	41.3	26.9	6.11	29.4	40.4	26	27	26.9	22.6	29.9	37.2	44.8	51	50.4	39.8	46.3	46.4	34	27.5	31.5	29.2	27	25.5	37	27.6	25.1	25.2	22.8	24.5	26.8	34.4		23.4	22.8	26.6	21.2	31.5	27.9	28.1	32.4	163	289
Suspended Solids	-	mg/L	20.1	6830	4	8	718	1410	4410	416	410	95.6	25	66.6	142	394	404	331	266	662	176	177	112	126	1870	793	NT	216	298	617	208	815	280	186	230	500		333	965	916	804	1.34	162	418	238	202	376
TDS	500	mg/L	820	450	260	390	290	300	340	330	270	250	210	237	296	371	440	458	340	292	374	306	184	224	301	311	237	250	274	283	194	253	202	253	274	248		195	332	311	232	298	215	233	312	768	1030
Sulfate	500	mg/L	ND	1.7	0.3	2.6	2.4	1	<1.0	1.3	2.5	2.7	0.3	0.55	1.53	0.62	<0.30	1.73	<0.30	2.66	4.75	4.77	0.33	0.31	2.59	<0.30	0.57	0.45	<0.30	2.86	0.45	0.52	0.71	0.63	1.63	5.62		1.48	<0.30	3.01	<0.30	1.34	<0.30	<0.30	1.47	8.03	5.09
Zinc	5	mg/L	0.502	0.38	0.011	0.048	0.003	0.006	0.0357	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0010	NT	0.0017	NT	<0.0010	NT
Volatile Organics																																												
Benzene	5	µg/L	NT	NT	NT	NT	ND	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<5.0	NT	<1.9	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	<0.3	<0.2	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																																												
BOD_5	-	mg/L	NT	5	<2	<2	2	2	1.7	0.9	<2	<2	<2	<2	2	<2.0	3.5	<2.0	<2.0	2.2	<2.0	2.4	<2.0	5.4	2.8	2.9	<2.0	<2.0	<2.0	3.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		2.1	2.4	<2.5	<2.0	3.1	<3.0	<2.0	<2.0	<2.0	<2.0
COD	-	mg/L	837	31.6	NT	33	40	20	27	29	17	17	25	13.3	25.8	26	34.3	20.6	28.6	21.3	25	23.7	12.3	24.7	39	49	24	15	36	15	20	23	21	41	50	91		32	60	47	31	51	22	46	34	34	24
DOC	5	mg/L	432	609	417	614	403	16	12.6	13.8	9	7	7	4.3	5.5	9.2	17.1	7.1	10	7.5	6.7	8.2	8.7	6.8	8.1	9.3	8.2	6.8	10.6	6.7	9.9	7.1	9	7.5	21.2	4.6		7.6	7.4	7.49	6.61	6.7	8.12	6.4	6.47	5.28	6.85
Phenol	-	mg/L	NT	0.001	0.002	0.002	0.002	0.003	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	<0.0010	NT	<0.0010	NT	0.0012	NT
Field Parameters																																												
pH	-										6.87	6.71	7.04	7.06	7.27	7.45	7.55	7.24	7.31	7.11	6.86	6.86	6.51	6.77	7.45	6.9	6.96	6.96	6.97	6.04	6.07				6.55	7.11	7.42	7.27		8.15	8.22	7.44	6.95	6.62	5.71	6.33	6.88	6.25	6.39
Conductivity	-	uS/cm									360	370	330	310	390	540	540	660	0.62	0.57	0.58	38.2	0.34	0.36	0.48	0.39	0.35	0.35	0.4	0.33	0.3		0.27	0.42	0.48	0.42		0.3	0.3	0.33	0.372	0.534	0.412	0.421	0.508	1.224	1.442
DO	-	%									63.3	41.1	59.1	51.4	36.8	37.1	40.4	33.7	24.9	37.5	38.2	0.58	27.5	35.5	21	12.2	13.5	13.5	20.7	24.4	28.8		32.3	22.2	34.8	21.2		19.3	17.5	19.2	21.9	70	26.2	19.3	40.8	44.7	33.9
Temp	-	°c									10.3	7.9	10	9.2	10	10.6	11.5	7.4	12.3	8.1	11.2	11.2	6.9	11.6	5.1	10.5	5.5	5.5	11.5	10.4	12.5		7	8.7	7.5	7.2		9.1	9	8.9	11.8	9.4	11.9	9	10.4	9.9	10.2
Pesticides																																												
2,3,4,6-Tetrachlorophenol	0.1	mg/L					<0.0005		<0.0001		<0.5		<0.0005							<0.0005																											
2,4,6-Trichlorophenol	0.005	mg/L					<0.0005		<0.0001		<0.5		<0.0005							<0.0005																											
2,4-Dichlorophenol	0.9	mg/L					<0.0005		<0.0001		<0.5		<0.0005							<0.0003																											
Pentachlorophenol	0.06	mg/L					<0.0005		<0.0001		<0.5		<0.0005							<0.0005																											
Aldicarb	0.009	mg/L					<0.0009		<0.00086		<0.009		<0.001							<0.001																											
Bendiocarb	0.04	mg/L					<0.0002		<0.0023		<0.0002		<0.0002							<0.0002																											
Carbaryl	0.09	mg/L					0.00018		<<0.0023		<0.0002		<0.0002							<0.0002																											
Carbofuran	0.09	mg/L					<0.0002		<0.0023		<0.0002		<0.0002							<0.0002																											
Diuron	0.15	mg/L					<0.01		<0.012		<0.01		<0.001							<0.001																											
Temephos	0.28	mg/L					<0.0001		<0.024		<0.0001		<0.0001							<0.0001																											
4,4'-DDD	-	ug/L					NT		<0.00098		<0.1		<0.1							<0.1																											
4,4'-DDE	-	ug/L					NT		<0.00033		<0.1		<0.01							<0.1																											
4,4'-DDT	-	ug/L					NT		<0.00049		<0.1		<0.1							<0.1																											
Aldrin	-	ug/L					NT		<0.00049		<0.02		<0.02							<0.02																											
Dieldrin	-	ug/L					NT		<0.0013		<0.1		<0.02							<0.02																											
Heptachlor	-	ug/L					NT		<0.00066		<0.1		<0.1							<0.1																											
Heptachlor epoxide	-	ug/L					NT		<0.00066		<0.1		<0.1							<0.1																											
Methoxychlor	0.9	ug/L					NT		<0.0013		<0.1		<0.1							<0.1																											
o,p-DDT	-	ug/L					NT		<0.00033		<0.1		<0.1							<0.1																											
Oxychlordane	-	ug/L					NT		NT		<0.1		<0.1							<0.1																											
α-Chlordane	-	ug/L					NT		<0.00049		<0.1		<0.1							<0.1																											
γ-BHC (Lindane)	-	ug/L					NT		<0.00049		<0.1		<0.1							<0.1																											
γ-Chlordane	-	ug/L					NT		<0.00066		<0.1		<0.1							<0.1																											
Alachlor	0.005	mg/L					<0.0001		<0.00081		<0.0001		<0.0001							<0.0001																											
Atrazine	-	mg/L					<0.0001		<0.00081		<0.0001		<0.0001							<0.0001																											
Azinphos-Methyl (Guthion)	0.02	mg/L					<0.0001		<0.00061		<0.0001		<0.0001							<0.0001																											
Chlorpyriphos (Dursban)	0.09	mg/L					<0.0001		<0.00061		<0.0001		<0.0001							<0.0001																											
Cyanazine (Bladex)	0.01	mg/L					<0.0001		<0.00061		<0.0001		<0.0001							<0.0001																											
Desethyl Atrazine	-	mg/L					<0.0001		<0.001		<0.0001		<0.0001							<0.0001																											
Diazinon	0.02	mg/L					<0.0001		<0.00061		<0.0001		<0.0001							<0.0001																											
Dimethoate	0.02	mg/L					<0.0001		<0.00061		<0.0001		<0.0001							<0.0001																											
Malathion	0.19	mg/L					<0.0001		<0.00061		<0.0001		<0.0001							<0.0001																											
Metolachlor	0.05	mg/L					<0.0001		<0.0004		<0.0001		<0.0001							<0.0001																											
Metribuzin (Sencor)	0.08	mg/L					<0.0001		<0.0004		<0.0001		<0.0001							<0.0001																											
Parathion	0.05	mg/L					<0.01		<0.0004		<0.0001		<0.0001							<0.0001																											
Phorate	0.002	mg/L					<0.0001		<0.00048		<0.0001		<0.0001							<0.0001																											
Prometryne	0.001	mg/L					<0.0001		<0.00021		<0.0001		<0.0001							<0.0001																											
Simazine	0.01	mg/L					<0.0001		<0.00048		<0.0001		<0.0001							<0.0001																											
Terbufos	0.001	mg/L					<0.0002		<0.0004		<0.0002		<0.0002							<0.0002																											
Triallate	0.23	mg/L					<0.0001		<0.0004		<0.0001		<0.0001							<0.0001																											
Trifluralin	0.045	mg/L					<0.0001		<0.0004		<0.0001		<0.0001							<0.0001																											
Benzo(a)pyrene	0.00001	mg/L					<0.00001		<0.00001		<0.00001		<0.00001							<0.00001																											
Total PCBs	0.003	mg/L					<0.00006		<0.00008		NT		<0.00002							<0.000035																											
2,4,5-T

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.5: Sampling Location - MW5-02
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																			
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	Oct-13	May-14	Oct-14	May-15	Oct-15	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	23-Oct-24
Miscellaneous Parameters																																										
Nitrite (as N)	-	mg/L																		<0.02	<0.020	<0.02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT	<0.010	NT
Bicarbonate (HCO3)	-	mg/L																		53.6	49.7	40.1	63.4	38.7	49.6	46.27244	52.03213	53	53.4	48.8	48.4	49.6	53.1	47.4	55.5	52.4	51.4	50.5	48.8	49.5	49.6	NT	NT	NT
Carbonate (CO3)	-	mg/L																		<2	<5.0	<5.0	<5.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L																		<5	<5.0	<5.0	<5.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L																		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																																										
Cation - Anion Balance	-	%																		3.2	4.6	10.68	NT	8.2	-4.8	-7	-4.9	-2.1	-1.3	-4.7	-8.3	-9.2	-3.2	-2.2	-5.3	1.2	-7	-3.7	-3.3	3	-6.78	-7.17	91.2	0
TDS (calculated)	-	mg/L																		63.1	69.4	60.6	67.6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	119	NT	NT	61.7	89	96	92	79
Anion Sum	-	me/L																		1.16	1.15	0.92	NT	1.01	1.29	1.13	1.31	1.33	1.32	1.25	1.25	1.26	1.33	1.25	1.36	1.29	1.26	1.27	1.22	1.06	1.26	1.27	1.25	1.19
Cation Sum	-	me/L																		1.24	1.26	1.32	NT	1.19	1.17	0.99	1.18	1.28	1.29	1.14	1.06	1.05	1.25	1.19	1.22	1.33	1.1	1.17	1.14	1.12	1.1	1.1	1.14	1.19
Inorganics																																										
Alkalinity	500	mg/L CaCO3	242	57.8	52	50	54	40	40	45	50	47	51	47	50.2	49.8	44.8	42.8	45	43.9	49.7	40.1	51.9	38.7	49.6	46.4	52.1	53	53.4	48.8	48.4	49.6	53.1	47.4	55.5	52.4	51.4	50.5	48.8	49.5	49.6	50.8	48.8	47.3
Ammonia	-	mg/L	ND	ND	0.07	0.03	<0.02	0.02	0.118	0.192	0.05	0.02	<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	0.026	<0.02	<0.020	0.281	<0.02	<0.020	<0.020	0.024	<0.020	0.055	<0.020	0.058	0.044	0.119	0.327	<0.02	0.018	<0.0050	<0.0050	0.013	0.0244	<0.010	<0.0050	0.0133	0.0074	0.0638
Arsenic	0.025	mg/L	ND	ND	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0002	NT	0.0002	NT	0.00023	NT
Barium	1	mg/L	0.033	0.025	<0.01	0.07	<0.01	0.009	0.0081	0.0099	0.0206	0.031	0.01	0.118	0.072	0.041	<0.010	<0.010	<0.010	<0.01	<0.010	<0.01	0.00847	<0.010	<0.010	0.00705	0.0094	0.008	0.00792	0.0076	0.00715	0.00704	0.00737	0.00697	0.00785	0.00812	0.0098	0.00798	0.00762	0.0221	0.00675	0.00736	0.00702	0.00876
Boron	5	mg/L	0.024	0.017	<0.05	<0.05	<0.05	0.007	0.0085	0.0082	<0.05	<0.05	<0.05	<0.03	<0.05	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.05	0.01	<0.050	<0.050	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.0001	mg/L	ND	ND	<0.0001	0.0001	<0.0001	0.0002	0.00011	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0000128	NT	0.0000067	NT	0.0000114	NT
Calcium	-	mg/L	20.3	16	16.1	15.1	15.9	12.5	9.59	12.3	13.8	12.6	14.8	15	15	14.4	15.5	13.7	14.4	14.3	14.3	14.6	13.5	14.1	13.4	11.5	13.6	15.6	15	12.8	12.1	11.8	14.1	13.8	13.9	15.4	12.2	13.4	12.9	12.1	11.9	12.3	12.8	13.2
Chloride	250	mg/L	22.5	1	1	2.9	73.2	1	0.84	0.71	2.8	1.8	1.8	2.1	0.97	1.56	1.06	0.65	0.81	0.131	0.84	0.63	0.68	0.51	0.64	0.45	0.67	0.66	0.58	1.15	0.73	0.57	0.68	0.76	0.93	1.41	1.08	1.22	1.05	1.1	1.1	1.02	1.87	1.08
Chromium	0.05	mg/L	0.004	ND	<0.001	<0.001	<0.001	0.003	0.0044	0.0024	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0026	0.0033	0.004	0.0035	0.0031	0.003	0.00271	0.0037	0.0034	0.00106	0.00287	0.00358	0.00356	0.00368	0.00404	0.00343	0.00463	NT	0.00349	0.00408	NT	0.00448	NT	0.00436	NT
Conductivity	-	µS/cm	177	144	142	143	139	117	132	104	136	128	138	133	136	129	127	119	123	124	135	110	121	101	131	109	117	130	124	119	119	126	126	115	127	124	124	119	117	110	120	124	118	118
Copper	1	mg/L	0.032	0.017	0.001	0.002	0.001	0.002	0.0018	0.0024	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	0.00518	NT	0.00159	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.022	0.038	<0.020	<0.020	<0.020	<0.020	<0.020
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	48.5	47.4	46.4	46.5	47.6	49.7
Iron	0.3	mg/L	0.32	1.2	<0.05	<0.05	<0.05	0.02	0.02	<0.02	1.04	0.007	0.003	0.0233	<0.05	<0.050	<0.050	<0.050	<0.050	<0.02	<0.020	<0.02	<0.1	<0.020	<0.020	<0.010	<0.010	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	<0.010	<0.010	0.014	<0.010	<0.010	<0.010
Lead	0.01	mg/L	0.005	ND	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.01	<0.01	0.012	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.00009	<0.0010	<0.0010	<0.00005	<0.00005	0.000202	0.000265	<0.00005	<0.00005	0.000602	<0.00005	<0.00005	0.000133	0.000058	<0.000050	<0.000050	<0.000050	NT	0.000144	NT	<0.000050	NT
Magnesium	-	mg/L	4.46	5.6	4.73	4.52	4.6	3.6	3.19	3.72	4.34	3.87	4.28	4.34	4.32	4.01	4.37	4.12	4.32	4.01	4.09	4.51	4.13	3.59	3.94	3.29	3.9	3.82	4.2	3.82	3.47	3.54	4.08	4.02	4.21	4.43	3.95	3.95	3.98	4.19	4.04	3.83	3.8	4.06
Manganese	0.05	mg/L	0.361	0.88	0.325	0.276	0.312	0.135	0.054	0.0555	0.254	0.0105	0.00114	0.0045	0.0069	0.0115	0.0022	0.0025	0.0014	<0.0010	<0.0010	0.0012	0.0009	0.0039	0.0043	0.00071	0.0054	0.00281	0.0234	0.00468	0.001	0.00107	0.00042	0.00185	0.00083	0.00083	0.0006	0.0006	0.00076	0.00096	0.00065	0.00093	0.001	0.00124
Mercury	0.001	mg/L	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	0.0000156	NT	<0.0000050	NT
Nitrate	10	mg/L	ND	0.1	<0.03	0.16	<0.1	<0.1	<0.1	<0.1	0.13	0.08	0.1	0.114	0.157	0.099	<0.030	0.069	0.099	0.131	0.121	0.051	0.084	0.255	0.192	0.147	0.101	0.173	0.11	0.094	0.127	0.139	0.149	0.303	0.164	0.128	0.105	0.053	0.154	0.091	0.105	0.109	0.147	0.149
Nitrite	1	mg/L	ND	ND	<0.02	<0.02	<0.03	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.020	<0.02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT	<0.010	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.113	0.057	0.204	0.083	0.855	NT
TKN	-	mg/L	0.6	1	0.14	0.94	0.22	0.14	0.2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.137	0.057	0.096	0.862	NT
pH	6.5-8.5	mg/L	7.27	7.67	7.4	7.8	7.4	6.59	7	7.16	7.9	7.39	7.4	7.4	7.82	7.35	7.26	7.36	7.49	7.48	7.65	7.45	7.64	7.22	7.35	7.42	7.1	7.68	7.3	7.32	7.52	7.63	7.48	7.41	7.78	7.84	7.6	7.41	7.82	7.89	7.76	7.55	7.82	7.65
Total Phosphorous	-	mg/L	0.23	NT	NT	NT	NT	0.09	0.11	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0456	NT	0.0256	NT	0.0684	NT
Potassium	-	mg/L	2.77	1.7	2.27	1.49	1.52	1.7	1.63	1.78	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.34	1.56	1.39	1.32	1.26	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.09	1.07	1.25	1.02	1.13	0.985	NT	1.02	NT	1.15	NT
Sodium	200	mg/L	9.1	6.1	4.85	7.64	5.76	6.11	4.31	4.12	6.79	5.39	6.41	4.35	4.32	4.15	4.93	4.79	5.13	3.65	3.83	3.69	3.58	3.49	3.43	2.72	3.49	3.41	3.68	3.35	3.24	3.04	3.46	3.37	3.46	3.64	3.16	3.45	3.3	3.41	3.23	3.55	3.62
Suspended Solids	-	mg/L	378	108	<2	<2	76	40	73	190	174	50.8	89.2	262	84	47.1	180	150	224	22.2	41.5	50.5	2.7	365	226	81.1	35.8	193	10.9	108	308	976	75.2	95.2	71.3	67.1	139	53	9.52	44.8	79.1	64.8	130	34.5
TDS	500	mg/L	153	106	100	100	110	100	130	72	140	90	100	109	120	101	122	83	88	80	76	59	85	81	116	94	82	102	91	91	116	385	111	91	100	94	119	90	89	79	89	96	92	79
Sulfate	500	mg/L	62.5	9.2	12.8	15	2.1	13	11.4	9.2	16.8	12.3	13.9	13.2	15.7	12.7	13.5	12.6	14.3	12.2	2.14	11.5	12.9	9.67	12.8	8.85	11.4	11.8	11.1	11.2	12.3	11.6	11.4	12.3	10	9.5	9.53	10.5	9.52	9.74	11.2	10.4	10.1	9.8
Zinc	5	mg/L	0.154	0.11	0.009	0.058	0.01	0.005	0.0027	0.0032	NT	NT	12.3	13.9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0065	NT	0.0043	NT	0.011	NT
Volatile Organics																																											
Benzene	5	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	<0.5	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	<0.5	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	<0.5	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<1.9	NT	<1.0	NT
Toluene	24	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																																											
BOD_5	-	mg/L	NT	ND	<2	<2	<2	1	3.2	1.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2.0	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<2.0	<2.0	<2.0	<2.0
COD	-	mg/L	20	16.4	NT	17	<3	<20	<20	<20	7	<3	5	<3	4.8	<3	<3	5.6	<3	<3	6.3	<3.0	6.8	11	17	13	<10	14	<10	<10	<20	30	<20	<10	<20	23	22	14	<10	<10	<10	14	<10
DOC	5	mg/L	6	1.1	2	33	2	2	2.1	3.5	24	2	2	1.4	1.5	1.8	2.6	1.9	2.2	1.5	2.4	6	1.6	11.5	2	8.6	1.4	4.7	4.3	2.6	2.9	8.9	2.4	1.44	3.19	2.03	2.37	2.79	3.35	1.96	1.85	1.4	2.94	1.85
Phenol	-	mg/L	NT	0.001	<0.002	<0.002	<0.002	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0016	NT	<0.0010	NT	0.0014	NT
Field Parameters																																											
pH	-										7.65	7.91	7.53	7.47	7.73	8.17	7.48	7.32	8.23	8.2	7.52	8	6.92	7.09	7.05	7.42	7.28	5.86	6.65	6.44	7.78	7.86	7.82	8.39	6.2	8.35	6	6.85	7.14	6.9	6.41	7.13	6.7	8.34
Conductivity	-	µS/cm									80	80	80	80	80	80	70	90	0.11	0.09	0.09	0.09	0.1	0.07	0.08	0.07	0.09	0.07	0.07	0.07	0.13	0.12	0.14	0.13	0.12	0.12	0.12	0.141	0.139	0.14	0.126	0.118	0.136	0.154
DO	-	%									64	53.3	68.8	52.3	51.5	57.2	42.9	30.6	56.2	64.7	63.2	35.8	49.4	46	50.1	39.1	53.5	67.2	43.6	61.7	79.5	59.8	75.5	58.4	58.7	73.7	61.4	65.3	55.3	63.3	66.7	68.5	70.4	60.4
Temp	-	°c									10.3	8.6	9.2	7.9	9.5	10.5	11.2	7.1	11.8	7.8	10.6	6.8	10.4	5.2	9.9	5	10.8	8.5	11.6	5.7	7.5	7.8	7.8	4.6	8.6	8.4	8.4	12	7.4	12.8	9.5	10.9	9.8	11.1
Pesticides																																											
2,3,4,6-Tetrachlorophenol	0.1	mg/L									<0.00051		<0.0005		<0.0005					<0.0005																									
2,4,6-Trichlorophenol	0.005	mg/L									<0.00051		<0.0005		<0.0005					<0.0005																									
2,4-Dichlorophenol	0.9	mg/L									<0.00051		<0.0005		<0.0005					<0.0003																									
Pentachlorophenol	0.06	mg/L									<0.00051		<0.0005		<0.0005					<0.0005																									
Diuron	0.15	mg/L						<0.01			<0.0055		<0.01		<0.001					<0.001																									
Temephos	0.28	mg/L						<0.03			<0.015		<0.0001		<0.0001					<0.0001																									
Benzo(a)pyrene	0.00001	mg/L						<0.00001			NT		<0.00001		<0.00001					<0.00001																									
4,4'-DDD	-	ug/L									<0.00063		<0.1		<0.1					<0.0001																									
4,4'-DDE	-	ug/L									<0.00021		<0.1		<0.1					<0.0001																									
4,4'-DDT	-	ug/L									<0.00031		<0.1		<0.1					<0.0001																									
Aldrin	-	ug/L									<0.00031		<0.02		<0.02					<0.0002																									
Dieldrin	-	ug/L									<0.00084		<0.02		<0.02					<0.0002																									
Heptachlor	-	ug/L									<0.00042		<0.1		<0.1					<0.0001																									
Heptachlor epoxide	-	ug/L									<0.00042		<0.1		<0.1					<0.0001																									
Methoxychlor	0.9	ug/L									<0.00084		<0.1		<0.1					<0.0001																									
o,p-DDT	-	ug/L									<0.00021		<0.1		<0.1					<0.0001																									
Oxychlordane	-	ug/L									<0.00052		<0.1		<0.1					<0.0001																									
α-Chlordane	-	ug/L									<0.00031		<0.1		<0.1					<0.0001																									
γ-BHC (Lindane)	-	ug/L									<0.00031		<0.1		<0.1					<0.0001																									
γ-Chlordane	-	ug/L									<0.00042		<0.1		<0.1					<0.0001																									
Alachlor	0.005	mg/L									<0.00051		<0.0001		<0.0001					<0.0001																									
Atrazine	-	mg/L									<0.00051		<0.0001		<0.0001					<0.0001																									
Azinphos-Methyl (Guthion)	0.02	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Chlorpyriphos (Dursban)	0.09	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Cyanazine (Bladex)	0.01	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Desethyl Atrazine	-	mg/L									<0.00064		<0.0001		<0.0001					<0.0001																									
Diazinon	0.02	mg/L									<0.00038		<0.0002		<0.0001					<0.0001																									
Dimethoate	0.02	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Malathion	0.19	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Metolachlor	0.05	mg/L									<0.00026		<0.0001		<0.0001					<0.0001																									
Metribuzin (Sencor)	0.08	mg/L									<0.00026		<0.0001		<0.0001					<0.0001																									
Parathion	0.05	mg/L									<0.00026		<0.0001		<0.0001					<0.0001																									
Phorate	0.002	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Prometryne	0.001	mg/L									<0.00026		<0.0001		<0.0001					<0.0001																									
Simazine	0.01	mg/L									<0.00038		<0.0001		<0.0001					<0.0001																									
Terbufos	0.001	mg/L									<0.00026		<0.0002		<0.0002					<0.0002																									
Triallate	0.23	mg/L									<0.00026		<0.0001		<0.0001					<0.0001																									
Trifluralin	0.045	mg/L									<0.00026		<0.0001		<0.0001					<0.0001																									
Total PCBs	0.003	mg/L									<0.000052		<0.00002		<0.00002					<0.00001																									
2,4,5-T	0.28	ug/L									NT		<0.2		<0.2					<0.2																									
2,4-D	0.1	ug/L									NT		<0.2		<0.2					<0.2																									
Bromoxynil	0.005	ug/L									NT		<0.2		<0.2					<0.2																									
Dicamba	0.12	ug/L									NT		<0.2		<0.2					<0.2																									
Diclofop Methyl	0.009	ug/L									NT		<0.2		<0.2					<0.2																									
Dinoseb	0.01	ug/L									NT		<0.2		<0.2					<0.2																									
Picloram	0.19	ug/L									NT		<0.2		<0.2					<0.2																									
Atrazine + N-dealkylated metabolites	0.005	ug/L									NT		<0.2		<0.2					<0.2																									
Chlordane (total)	7	ug/L									NT		<0.3		<0.3					<0.3																									
Aldrin + Dieldrin	0.7	ug/L									NT		<0.04		<0.04					<0.04																									
Heptachlor + Heptachlor Epoxide	3	ug/L									NT		<0.02		<0.2					<0.2																									

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.6: Sampling Location - MW6-02
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																							
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	Oct-13	May-14	Oct-14	May-15	Oct-15	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	23-Oct-24
Miscellaneous Parameters																																											
Nitrite (as N)	-	mg/L																		<0.02	<0.020	0.035	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT
Bicarbonate (HCO3)	-	mg/L																		278	218	222	270	190	193	189.8576	202.8646	213	213	211	199	187	189	198	219	196	245	184	198	196	270	NT	NT	NT
Carbonate (CO3)	-	mg/L																		<5	<5.0	<5.0	<5.0	<2	<2	NT	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L																		<5	<5.0	<5.0	<5.0	<2	<2	NT	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L																		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																																											
Cation - Anion Balance	-	%																		-2.1	9.1	6.4	NT	3.1	4	6.9	7.7	5.5	5.9	6.6	4.3	10.3	3.3	0.4	-3.6	1.6	-3.3	1.9	10.9	2	-1.36	-0.16	111	1.45
TDS (calculated)	-	mg/L																		309	307	318	304	NT	N	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	333	267	348	330	370	322
Anion Sum	-	me/L																		6.2	5.18	5.49	NT	5.36	5.43	5.29	5.68	6.21	6.09	6.04	5.78	5.37	5.4	5.37	6.02	5.48	6.56	4.98	5.27	4.77	7.1	6.06	6.15	6.47
Cation Sum	-	me/L																		5.94	6.21	6.3	NT	5.71	5.88	6.08	6.63	6.93	6.85	6.89	6.3	6.6	5.77	5.42	5.6	5.66	6.14	5.17	6.56	4.98	6.91	6.04	6.82	6.66
Inorganics																																											
Alkalinity	500	mg/L CaCO3	100	210	189	192	186	210	192	233	211	200	206	204	208	208	207	209	222	228	218	222	221	190	193	190	203	213	213	211	199	187	189	198	219	196	245	184	198	196	270	223	224	242
Ammonia	-	mg/L	0.73	ND	1.02	1.06	1.12	1.21	1.27	0.651	1.18	1.15	1.25	1.27	1.28	1.25	1.25	1.77	0.873	1.71	1.35	1.52	1.41	1.67	1.58	1.48	1.9	2.09	1.76	1.86	1.58	1.73	1.68	0.642	1.75	0.599	0.201	1.54	2.01	1.12	1.63	1.36	1.87	<0.0500
Arsenic	0.025	mg/L	0.003	ND	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.00085	NT	0.00073	NT	0.00079	NT
Barium	1	mg/L	0.203	0.24	0.1	0.12	0.1	0.1	0.0958	0.12	0.123	0.135	0.121	0.198	0.13	0.372	0.15	0.182	0.15	0.175	0.157	0.17	0.169	0.173	0.169	0.189	0.199	0.209	0.187	0.173	0.162	0.17	0.124	0.118	0.14	0.137	0.0167	0.141	0.189	0.178	0.226	0.182	0.217	0.203
Boron	5	mg/L	NT	NT	<0.001	<0.001	<0.001	0.066	0.0833	0.0756	0.11	0.06	<0.05	0.094	0.113	0.141	0.099	0.09	<0.50	0.107	0.115	0.1	0.143	0.131	0.094	0.093	0.099	0.103	0.104	0.101	0.103	0.1	0.105	0.105	0.107	0.122	0.107	0.275	0.091	0.114	0.107	0.118	0.144	0.129	0.14
Cadmium	0.0001	mg/L	ND	ND	<0.0001	<0.0001	0.0001	0.0001	0.00012	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Calcium		mg/L	55.2	70	52.8	54.4	53.1	43.7	32.7	51.3	48.6	45.5	53.3	55.5	53.3	55.7	54.6	58.3	57.9	57	61.3	59.3	56.8	46.8	49.6	50.7	53.8	62.3	55.9	55.6	53.1	54.1	54.6	52.1	56.5	51.7	50.5	44.7	59.9	49.1	62.1	54.5	61.6	57.7
Chloride	250	mg/L	50	55.6	43.5	45.9	52.9	47	45	43.1	50.2	48.5	47	50.2	53.2	48.9	50.3	52.5	58.7	58.1	56.7	65.2	54.8	55.6	55.5	52.7	57.4	69	64.9	64.2	63.1	57.8	57.3	53.2	57.2	54.2	56.8	45.6	46.9	54	60.1	56.3	59.1	57.8
Chromium	0.05	mg/L	0.041	0.031	<0.001	<0.001	0.004	0.01	0.015	0.008	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.0010	<0.01	<0.002	<0.001	<0.001	0.00074	<0.001	0.0007	0.00055	0.0006	0.00069	0.00133	0.00042	0.00024	<0.0005	0.00041	NT	0.00045	0.00063	NT	0.00056	NT	0.00051	NT
Conductivity	-	µS/cm	561	566	522	523	490	474	544	459	497	528	524	543	524	514	555	562	594	617	595	635	595	561	556	503	565	556	567	592	579	567	524	533	551	523	635	477	533	456	581	571	580	584
Copper	1	mg/L	0.046	0.039	<0.001	<0.001	<0.001	0.001	0.0016	0.0025	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	0.00169	NT	0.00024	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.024	0.039	<0.020	<0.020	<0.020	0.021
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	212	185	228	200	225	214
Iron	0.3	mg/L	25.2	52	0.5	0.9	22	4.15	5.99	6.61	25.6	25.9	22.5	0.524	1.36	0.374	<0.050	20.8	25	23.1	25.5	22.6	28	14.2	13.2	20	22.2	17.7	19.7	22.7	18.4	20.3	5.12	0.045	0.049	5.34	0.029	12.2	18.9	11.6	19.9	14.9	16.8	19.4
Lead	0.01	mg/L	0.034	0.016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	0.02	0.016	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00009	<0.001	<0.0010	<0.00005	<0.0010	<0.00005	<0.00005	<0.00005	0.000286	0.000304	<0.0000050	<0.00005	<0.00005	<0.00005	<0.0000050	<0.0000050	<0.0000050	NT	0.00005	NT	<0.0000050	NT
Magnesium	-	mg/L	17	22	12.9	12.3	12	10.5	9.38	12.6	12.2	11.8	12.3	13.3	13.9	13.1	14.4	15.6	16.3	14.8	14.9	17.4	17	13	15.3	13.6	14	15.5	15.1	14.7	13.3	14.6	15	15.2	15.4	15.2	13.5	12.1	15.2	15.1	17.7	15.4	17.3	17
Manganese	0.05	mg/L	1.1	1.3	1.01	1.33	1.04	0.847	0.685	0.934	1	0.795	0.939	0.926	0.945	0.96	1.05	1.08	1.15	1.2	1.08	1.17	1.11	0.874	0.847	0.881	0.917	1.04	0.936	0.96	0.782	0.947	0.501	0.7	0.796	0.384	0.0208	0.926	1.07	0.716	1.22	0.781	1.05	1
Mercury	0.001	mg/L	ND	ND	<0.0001	<0.0001	0.0013	<0.0001	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Nitrate	10	mg/L	ND	0.1	<0.03	0.07	<0.03	<0.1	<0.1	<0.1	<0.03	<0.03	0.07	0.082	0.108	0.34	<0.030	0.271	0.155	0.054	0.047	0.037	0.256	0.11	0.161	0.061	0.083	0.179	0.086	<0.02	0.212	0.024	0.142	1.19	0.292	0.592	0.412	0.315	<0.020	0.072	0.056	0.232	0.045	0.049
Nitrite	1	mg/L	ND	ND	<0.02	0.21	0.44	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.02	0.035		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.014	NT	<0.010	NT	<0.010	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.279	0.51	0.61	0.43	<0.287	NT
TKN	-	mg/L	2.5	0.8	2.03	1.71	1.96	1.68	1.32	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	2.29	1.63	NT	1.79	2.13	NT
pH	6.5-8.5	mg/L	7.24	7.66	7.4	7.1	7	6.47	6.82	6.93	7.4	7.12	7.06	7.1	7.34	7.27	6.97	7.49	7	7.53	7.53	7.04	7.14	7.12	6.94	6.89	6.84	6.88	6.92	6.84	7.01	6.85	7	7.42	7.59	7.39	8.07	7.17	7.7	8.01	7.66	7.81	7.98	7.09
Total Phosphorous	-	mg/L	0.35	NT	NT	NT	NT	0.18	0.598	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.405	NT	0.232	NT	0.123	NT
Potassium	-	mg/L	7.35	4.9	3.65	3.07	2.95	1.7	3.22	3.39	NT	NT	NT	NT	NT	NT	NT	NT	NT	3.3	3.39	3.54	3.3	3.96	NT	NT	NT	NT	NT	NT	NT	4.6	4.78	5.19	5.71	5.49	30	4.39	5.88	NT	6.3	NT	6.3	NT
Sodium	200	mg/L	29.8	34	34.4	32.3	33.1	6.11	41.1	39.4	40.2	35	41.2	38.2	40.3	39.8	37.9	34	42	38.4	40	39.2	38.8	29.6	29.7	28	30.6	32.5	34.1	32.6	32.6	30.6	29.4	31.3	30.7	30.8	39.7	26.4	25.8	26.9	30.3	29.2	32	34.5
Suspended Solids	-	mg/L	910	1200	40	42	342	2930	3290	496	770	370	320	516	254	570	783	2400	2620	1230	812	363	334	3120	887	2570	4030	1600	562	359	620	976	185	466	314	324	61	204	<0.30	83.3	582	297	252	172
TDS	500	mg/L	402	285	330	350	310	400	440	300	370	320	300	374	360	330	350	342	356	326	342	332	409	345	392	393	377	379	347	359	361	385	327	317	345	344	354	299	333	325	348	330	370	322
Sulfate	500	mg/L	ND	ND	0.5	2.5	2.4	<0.2	<0.2	<1	2.1	<0.3	<0.3	0.34	1.78	<0.30	<0.30	0.44	<0.30	<0.30	<0.30	0.32	<0.3	<0.3	<0.3	<0.30	<0.3	<0.30	<0.3	0.44	0.38	<0.30	<0.30	1.73	<0.30	<0.30	1.61	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Zinc	5	mg/L	0.264	0.11	0.15	0.035	0.008	0.003	0.0023	<0.0014	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0025	NT	0.0035	NT	0.0011	NT
Volatile Organics																																												
Benzene	5	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	ND	NT	NT	NT	ND	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<1.9	NT	<1.0	NT
Toluene	24	µg/L	ND	NT	NT	NT	NT	<0.3	<0.25	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.5	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	ND	NT	NT	NT	NT	<0.3	<0.2	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																																												
BOD_5	-	mg/L	NT	ND	3	<2	<2	3	3.6	0.88	<2	<2	<2	<2	2.3	<2.0	<2.0	2.3	<2.0	<2.0	<2.0	<2.0	3.9	<2	2.9	3.1	2.8	5.4	<2	2.3	3.5	<2.0	4.7	7.6	3	3.1	2.7	<2.0	6.7	<3.0	<3.0	<3.0	3.7	<2.0
COD	-	mg/L	62	34.4	NT	38	53	20	41	42	37	41	42	35	102	36.8	34.2	49.2	22.8	32.5	34.8	35.6	44.5	57	49	41	35	52	41	45	43	99	79	96	64	83	79	45	59	39	69	36	55	36
DOC	5	mg/L	16.4	10.3	7	11	12	20	19.3	14.1	11	13	10	7.9	8.9	11.6	15.4	10.9	13.7	13.5	10.6	19.7	15.2	13.3	13.8	19.9	13.2	14	14	13.9	12.8	18.2	9.7	10.1	14.1	11.3	14.3	10.5	13.9	11.1	11.6	11.1	11.4	12.9
Phenol	-	mg/L	NT	0.001	0.004	0.004	0.003	0.004	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0014	NT	<0.0010	NT	0.0031	NT
Field Parameters																																												
pH	-										6.99	6.92	7.06	6.9	7.03	6.58	7.72	7.56	7.23	6.92	6.87	6.63	6.61	6.9	6.8	6.89	6.96	6.31	6.26	6.52	7.45	7.16	7.26	7.27	7.94	8.24	7.37	7.04	6.8	6.31	6.41	6.86	6.54	6.32
Conductivity	-	µS/cm									540	550	500	520	510	500	530	610	680	690	660	28.4	0.65	0.54	0.56	0.51	0.54	0.53	0.53	0.59	0.64	0.62	0.57	0.55	0.59	0.53	0.47	0.583	0.678	0.65	0.126	0.612	0.545	0.57
DO	-										66.8	71.8	18.9	50.9	17.7	12.8	43.6	35.9	27.5	21.6	34.7	0.67	38.5	15	29	5.2	26.8	29.5	22.1	38.9	25.6	16.2	21.4	37	17	21.4	15.7	24.2	14.8	17.3	66.7	39.7	85.6	23.8
Temp	-										10	9.9	9.2	10.7	8.6	8.2	8.9	6.8	10.5	7.7	10.2	8.9	11.6	5.6	9.6	5.8	10.5	8.8	11	7.3	8.4	7.6	7.5	5.8	9.3	8.7	8.6	10.6	7.1	10.1	9.5	9.2	13.3	9.8
Pesticides																																												
2,3,4,6-Tetrachlorophenol	0.1	mg/L					<0.0005		<0.000061		<0.0005		<0.0005							<0.0005																										
2,4,6-Trichlorophenol	0.005	mg/L					<0.0005		<0.000061		<0.0005		<0.0005							<0.0005																										
2,4-Dichlorophenol	0.9	mg/L					<0.0005		<0.000061		<0.0005		<0.0005							<0.0003																										
Pentachlorophenol	0.06	mg/L					<0.0005		<0.000061		<0.0005		<0.0005							<0.0005																										
Aldicarb	0.009	mg/L					<0.0009		<0.00085		<0.009		<0.001							<0.001																										
Bendiocarb	0.04	mg/L					<0.0002		<0.0022		<0.0002		<0.0002							<0.0002																										
Carbaryl	0.09	mg/L					<0.0002		<0.0022		<0.0002		<0.0002							<0.0002																										
Carbofuran	0.09	mg/L					<0.0002		<0.0022		<0.0002		<0.0002							<0.0002																										
Diuron	0.15	mg/L					<0.01		<0.011		<0.01		<0.001							<0.001																										
Temephos	0.28	mg/L					<0.0001		<0.024		<0.0001		<0.0001							<0.001																										
4,4'-DDD	-	ug/L					NT		<0.0008		<0.1		<0.1							<0.1																										
4,4'-DDE	-	ug/L					NT		<0.00027		<0.1		<0.01							<0.1																										
4,4'-DDT	-	ug/L					NT		<0.0004		<0.1		<0.1							<0.1																										
Aldrin	-	ug/L					NT		<0.0004		<0.02		<0.02							<0.02																										
Dieldrin	-	ug/L					NT		<0.0011		<0.02		<0.02							<0.02																										
Heptachlor	-	ug/L					NT		<0.00053		<0.1		<0.1							<0.1																										
Heptachlor epoxide	-	ug/L					NT		<0.00053		<0.1		<0.1							<0.1																										
Methoxychlor	0.9	ug/L					NT		<0.0011		<0.1		<0.1							<0.1																										
o,p-DDT	-	ug/L					NT		<0.00027		<0.1		<0.1							<0.1																										
Oxychlordane	-	ug/L					NT		NT		<0.1		<0.1							<0.1																										
α-Chlordane	-	ug/L					NT		<0.0004		<0.1		<0.1							<0.1																										
γ-BHC (Lindane)	-	ug/L					NT		<0.0004		<0.1		<0.1							<0.1																										
γ-Chlordane	-	ug/L					NT		<0.00053		<0.1		<0.1							<0.1																										
Alachlor	0.005	mg/L					<0.0001		<0.00088		<0.0001		<0.0001							<0.0001																										
Atrazine	-	mg/L					<0.0001		<0.00088		<0.0001		<0.0001							<0.0001																										
Azinphos-Methyl (Guthion)	0.02	mg/L					<0.0001		<0.00066		<0.0001		<0.0001							<0.0001																										
Chlorpyriphos (Dursban)	0.09	mg/L					<0.0001		<0.00066		<0.0001		<0.0001							<0.0001																										
Cyanazine (Bladex)	0.01	mg/L					<0.0001		<0.00066		<0.0001		<0.0001							<0.0001																										
Desethyl Atrazine	-	mg/L					<0.0001		<0.0011		<0.0001		<0.0001							<0.0001																										
Diazinon	0.02	mg/L					<0.0001		<0.00066		<0.0001		<0.0001							<0.0001																										
Dimethoate	0.02	mg/L					<0.0001		<0.00066		<0.0001		<0.0001							<0.0001																										
Malathion	0.19	mg/L					<0.0001		<0.00066		<0.0001		<0.0001							<0.0001																										
Metolachlor	0.05	mg/L					<0.0001		<0.00044		<0.0001		<0.0001							<0.0001																										
Metribuzin (Sencor)	0.08	mg/L					<0.0001		<0.00044		<0.0001		<0.0001							<0.0001																										
Parathion	0.05	mg/L					<0.01		<0.00044		<0.0001		<0.0001							<0.0001																										
Phorate	0.002	mg/L					<0.0001		<0.0005		<0.0001		<0.0001							<0.0001																										
Prometryne	0.001	mg/L					<0.0001		<0.00022		<0.0001		<0.0001							<0.0001																										
Simazine	0.01	mg/L					<0.0001		<0.0005		<0.0001		<0.0001							<0.0001																										
Terbufos	0.001	mg/L					<0.0002		<0.00044		<0.0002		<0.0002							<0.0002																										
Triallate	0.23	mg/L					<0.0001		<0.00044		<0.0001		<0.0001							<0.0001																										
Trifluralin	0.045	mg/L					<0.0001		<0.00044		<0.0001		<0.0001							<0.0001																										
Benzo(a)pyrene	0.00001	mg/L					0.00001		<0.00001		<0.00001		<0.00001							<0.00001																										
Total PCBs	0.003	mg/L					<0.00006		<0.00006		<0.0006		<0.00002							<0.000035																										
2,4,5-T	0.28	mg/L					<0.0002		<0.000093		<0.0002		<0.0002							<0.0002																										
2,4-D	0.1	mg/L					<0.0002		<0.00037		<0.0002		<0.0002							<0.0002																										
Bromoxynil	0.005	mg/L					<0.0002		<0.0005		<0.0002		<0.0002							<0.0002																										
Dicamba	0.12	mg/L					<0.0002		<0.00037		<0.0002		<0.0002							<0.0002																										
Diclofop Methyl	0.009	mg/L					<0.0002		<0.00037		<0.0002		<0.0002							<0.0002																										
Dinoseb	0.01	mg/L					<0.0002		<0.000093		<0.0002		<0.0002							<0.0002																										
Picloram	0.19	mg/L					<0.0002		<0.000093		<0.0002		<0.0002							<0.0002																				

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.7: Sampling Location - MW1-03
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																																					
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	Oct-13	May-14	Oct-14	Oct-14	May-15	Oct-15	Oct-15	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters																																			Frozen										
																							Duplicate			DUP	No Sample		Duplicate																	
Nitrite (as N)	-	mg/L																		<0.02	<0.020	<0.02	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	<0.200	NT	<0.200	NT
Bicarbonate (HCO3)	-	mg/L																		179	224	193	200	163	238	190	190		212	214	246	237	251	233	219	219		157	177	224	257	225	195	225	NT	NT	NT
Carbonate (CO3)	-	mg/L																		<5	<5.0	<5.0	<5.0	<5.0	<2	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L																		<5	<5.0	<5.0	<5.0	<5.0	<2	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L																		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																																													
Cation - Anion Balance	-	%																		-2.1	8.6	3.66	NT	NT	1.6	-3	1.7		2.8	3.4	2.1	3.6	0.4	-2	2.4	1.4		1	2.5	-0.4	-1.7	5.1	-1	-1.56	-0.77	113	-1.12
TDS (calculated)	-	mg/L																		309	404	392	306	276	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	988	1290	1140	1530	1300
Anion Sum	-	me/L																		6.2	6.53	6.53	NT	NT	8.29	6.24	6.1		7.9	7.92	8.17	7.47	7.66	6.81	6.17	6.32		21.2	18.8	13	13	14.1	17.1	22.7	19.6	24.2	22.6
Cation Sum	-	me/L																		5.94	7.76	7.44	NT	NT	8.56	5.88	6.31		8.36	8.49	8.53	8.04	7.73	6.54	6.48	6.49		21.6	19.8	12.9	12.6	15.6	16.7	22	19.3	27.3	22.1
Inorganics																																													
Alkalinity	500	mg/L CaCO3	NT	12.6		28	127	210	61	136	112	33	206	103	158	151	31.9	154	203	147	224	193	164	133	238	190	190		212	214	246	237	251	233	219	219		157	177	224	257	225	195	225	214	168	201
Ammonia	-	mg/L	NT	ND	0.52	0.32	0.67	0.68	0.522	0.662	0.59	0.31	1.52	0.617	1.08	1.14	0.364	1.08	1.61	1.04	1.53	1.37	0.948	1.05	1.66	1.38	1.36		2.17	2	2.48	2.25	2.2	2.15	1.88	2.28		3.79	2.6	1.71	1.61	1.68	1.31	1.28	0.937	1.22	1.14
Arsenic	0.025	mg/L	NT	0.013	<0.001	0.008	<0.001	0.002	0.0018	0.0019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0010	NT	<0.00100	NT	<0.00050	NT
Barium	1	mg/L	NT	0.42	0.11	0.28	0.1	0.209	0.101	0.13	0.153	0.077	0.2	0.152	0.209	0.168	0.075	0.169	0.197	0.196	0.255	0.242	0.178	0.173	0.246	0.173	0.182		0.277	0.293	0.248	0.231	0.225	0.194	0.193	0.19		0.676	0.47	0.235	0.228	0.285	0.331	0.375	0.321	0.489	0.382
Boron	5	mg/L	NT	ND	0.09	0.25	0.24	0.15	0.0922	0.0816	0.2	0.1	0.23	0.152	0.235	0.173	0.093	0.174	0.305	0.184	0.222	0.242	0.19	0.185	0.193	0.209	0.233		0.243	0.255	0.242	0.258	0.22	0.221	0.233	0.27		0.28	0.287	0.255	0.285	0.29	0.318	0.248	0.28	0.255	0.241
Cadmium	0.0001	mg/L	NT	ND	0.0001	0.0003	0.0003	0.0002	0.00011	<0.00001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.000050	NT	<0.0000500	NT	<0.0000250	NT
Calcium	-	mg/L	NT	8.6	10.1	4.4	16.3	10.7	4.05	6.63	10.5	3.8	26.3	11.6	19.6	25.8	6.21	25	33.4	29.5	40.3	101	39.3	27.8	26.6	47.7	27.2	31		42.7	43.4	44.1	39.3	38.9	34.3	35.4	34.9		101	64.2	34	27.5	39.1	43.1	56.1	48.9	80.2	68.8
Chloride	250	mg/L	NT	1.14	47.2	24.7	52.9	39	22.2	15.2	61.6	25.5	67.4	41.1	55.7	55.5	35.3	79.3	91.8	86.5	101	118	89	NT	0.087	86.1	81.7		130	129	116	96.2	93.3	76	63.1	68.1		628	530	301	277	338	490	647	543	741	658
Chromium	0.05	mg/L	NT	0.04	0.004	0.005	0.004	0.01	0.008	0.0065	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0019	0.0015	<0.010	<0.002	<0.002	0.0013	0.0017	0.0017		0.00133	0.00136	0.00141	0.00145	0.00126	0.00145	0.00173	0.00129		0.00084	0.00178	NT	0.00293	<0.0050	NT	<0.00500	NT	<0.00250	NT
Conductivity	-	µS/cm	NT	69.4	681	156	425	263	191	139	418	180	600	361	472	460	206	572	675	580	780	760	612	551	880	677	652		782	782	779	761	761	692	641	614		2150	2050	1430	1370	1640	1600	2310	2130	2670	2370
Copper	1	mg/L	NT	0.22	0.002	<0.001	0.001	0.009	0.0034	0.0076	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NA	NT	<0.00200	NT	0.00119	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.02	<0.10	<0.400	<0.400	<0.400	<0.400
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	1640	179	225	187	308	250
Iron	0.3	mg/L	NT	31	4.8	2.26	5.53	2.54	1.43	3.76	4.96	1.92	9.32	2.92	2.13	7.2	2.78	5.74	7.75	7.44	7.9	8.67	6.17	6.02	9.01	5.7	5.87		7.65	7.86	7.74	6.5	7.2	6.15	5.87	5.66		23	15.6	9.18	7.24	10.3	11.3	15.2	10.8	18.3	11.6
Lead	0.01	mg/L	NT	0.038	0.001	0.001	0.001	0.002	0.0014	0.0021	<0.01	<0.01	<0.01	0.011	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.000117	0.000136	<0.001	<0.0010	<0.0010		<0.00005	<0.00005	0.000181	0.000192	<0.00005	<0.00005	0.000583	<0.000050		<0.00005	<0.00005	<0.000050	<0.000050	<0.00050	NT	<0.000500	NT	<0.000250	NT
Magnesium	-	mg/L	NT	7.3	5.42	1.31	7.94	4.99	1.78	2.97	9	1.94	18	9.62	13.1	14.3	3.12	16.1	19.6	15.1	20	21.3	14.5	14.1	20.9	14.1	15.1		19.7	20	20.4	17.7	18.1	14.7	16.1	15.5		43.7	28.6	13.3	10.3	14.1	17.5	20.6	15.8	26.1	19.1
Manganese	0.05	mg/L	NT	0.46	0.109	0.038	0.142	0.089	0.0391	0.0739	0.11	0.0266	0.27	0.0811	0.184	0.196	0.0441	0.153	0.23	0.202	0.227	0.237	0.169	0.165	0.255	0.167	0.174		0.211	0.212	0.22	0.192	0.207	0.175	0.174	0.209		0.885	0.58	0.329	0.256	0.362	0.426	0.485	0.403	0.596	0.449
Mercury	0.001	mg/L	NT	ND	<0.0001	<0.0001	0.0011	<0.0001	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Nitrate	10	mg/L	NT	0.4	<0.03	0.12	<0.03	<0.1	<0.1	<0.1	<0.03	<0.03	<0.03	0.039	<0.03	<0.030	<0.030	<0.030	0.032	<0.03	<0.03	<0.03	0.031	<0.03	0.087	<0.030	<0.030		<0.040	<0.040	<0.020	0.021	<0.02	<0.02	<0.020	0.022		<0.10	<0.40	<0.10	<0.10	<0.020	<0.10	<0.400	<0.400	<0.400	<0.400
Nitrite	1	mg/L	NT	ND	<0.02	<0.02	0.44	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.02	<0.02	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.010	NT	<0.200	NT	<0.200	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	0.65	1.78	0.56	0.683	<0.500	NT
TKN	-	mg/L	NT	1.1	1.4	1.29	2.24	1.48	1.27	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	2.33	3.09	1.62	1.62	1.62	NT
pH	6.5-8.5	mg/L	NT	6.24	3.1	6.1	6.5	6.25	6.06	6.33	6.8	6.26	7.03	6.8	7.03	6.95	6.13	6.74	6.93	7.22	7.32	6.87	6.86	6.8	6.8	6.72	6.73		6.64	6.59	6.62	7.08	6.79	6.88	6.86	7.06		6.73	7.13	7.16	7.22	7.99	7.45	7.36	7.34	7.41	7.13
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	0.407/0.424	0.512	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	0.242	NT	0.334	NT	0.21	NT
Potassium	-	mg/L	NT	2.6	11.5	6.44	15.6	1.7	10.9	9.52	NT	NT	NT	NT	NT	NT	NT	NT	NT	24.8	38	29.6	NT	27.3	29.8	NT	NT		NT	NT	NT	NT	NT	NT	28.6	33.9		60	50.5	34	33	36.9	NT	40.2	NT	40.4	NT
Sodium	200	mg/L	NT	9.7	45.3	23.2	57.4	6.11	29.3	21.6	53.2	26.2	66.2	41.1	47.1	54.1	24.7	50.8	65.3	55.3	69.4	65.9	48.7	48.4	70.9	53.7	56.5		68.7	70.3	76.2	73.7	67.7	56.3	50.2	48.9		235	278	199	209	251	277	363	326	445	361
Suspended Solids	-	mg/L	NT	7900	4	<2	6620	2020	6370	3620	100	1040	299	337	731	257	479	652	241	67.6	310	147	593	5170	356	196	358		1000	668	449	405	360	138	116	626		105	221	170	235	2.43	690	424	214	395	88.9
TDS	500	mg/L	NT	140	400	160	410	300	290	190	300	250	330	320	374	313	250	360	400	330	484	402	406	336	496	405	372		466	451	491	447	441	410	375	380		1300	1170	753	811	895	975	1290	1140	1530	1300
Sulfate	500	mg/L	NT	2.6	147	5.7	2.4	3.2	1.4	<1	5.6	6.9	0.6	4.98	2.02	0.61	0.77	0.51	0.38	<0.3	0.51	1.8	0.47	0.63	1.41	0.56	0.62		<0.60	<0.60	0.33	1.09	0.58	0.69	0.78	0.83		16	17.5	4.1	2.4	2.43	2.6	<6.00	<6.00	<6.00	<6.00
Zinc	5	mg/L	NT	0.08	0.015	0.145	0.014	0.005	0.0024	0.0069	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.010	NT	<0.0100	NT	<0.0050	NT
Total Metals																																													
Arsenic		mg/L																																									0.00097	0.00123	0.00093	
Barium		mg/L																																								0.332	0.551	0.438	
Boron		mg/L																																								0.305	0.257	0.282	
Cadmium		mg/L																																								0.0000778	0.0000694	<0.0000250	
Chromium		mg/L																																								0.00722	0.013	0.00644	
Copper		mg/L																																								0.00398	0.00937	0.00297	
Iron		mg/L																																								13.5	24.5	15.9	
Lead		mg/L																																								0.00126	0.0023	0.00102	
Mercury		mg/L																																								<0.0000050	<0.0000050	<0.0000050	
Zinc		mg/L																																								0.0073	<0.0300	<0.0150	
Volatile Organics																																													
Benzene	5	µg/L	NT	NT	NT	NT	NT	1.4	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<5.0	NT	<1.9	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	<0.3	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	<0.3	<0.25		<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																																													
BOD_5	-	mg/L	NT	ND	<2	<2	<2	3	4	2.2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	2.1	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	<2.0		<2.0	<2.0	<2.5	<2.0	<2.0	<3.0	<3.0	2.3	<2.0	<2.0
COD	-	mg/L	NT	16.3	NT	94	90	50	83	<20	72	173	108	102	123	63.5	108	92.8	66.6	85.4	101	85.3	115	229	70	68	222		79	121	79	125	85	64	61	99		59	83	95	109	85	101	76	76	88	51
DOC	5	mg/L	NT	2.8	16	30	20	26	39.1	35.6	16	35	15	20.5	14.7	20.4	26.6	15.2	18.2	16.4	23.7	31.9	32.8	33.4	19	28.7	23.8		20.2	20.4	19.4	18.3	18	17.7	19.5	16.5		13.9	20.5	27	22.4	22	17.6	17.4	19.7	13.4	17.7
Phenol	-	mg/L	NT	0.002	0.003	0.004	0.003	0.004	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	<0.0010	NT	<0.0010	NT	<0.0010	
Field Parameters																																													
pH	-										6.32	6.66	6.85	6.8	7.17	7.27	7.82	7.25	7.07	6.92	7.02	6.54	7.03	7.03	7.12	6.58	6.58	6.76	6.8	6.8	6.85	6.53	6.74	7.17	6.74	7.17		7.20	7.32	6.69	6.77	6.66	6.07	5.87	6.48	5.94	5.41
Conductivity	-	µS/cm									380	130	510	320	420	450	170	510	0.71	0.57	0.8	0.76	0.58	0.58	0.77	0.59	0.59	0.78	0.77	0.77	0.75	0.64	0.65	0.76	0.65	0.76		2.01	1.92	1.31	1.47	1.733	1.834	2.323	1.9	0.22	1.789
DO	-	%									25.4	35	17.1	35.4	47.7	15.3	31.3	25.1	14.3	23.1	28.6	13.1	25.8	25.8	25.1	10.1	10.1	10.3	13.1	13.1	14.3	25.9	17.1	44.4	17.1	44.4		19.2	20.8	23.2	24.6	24.3	20.5	35.9	22.2	17.5	26.3
Temp	-	°C									11.4	8.5	10.3	9.3	9.4	10	11.6	7.3	12.1	8.7	11.8	6.5	11.9	11.9	4.7	10.3	10.3	5.5	11.8	11.8	9	13.1	6.4	7.6	6.4	7.6		9.4	8.9	10.7	12.4	6.6	12.9	8.7	11.2	7.8	11.4
Pesticides																																													
2,3,4,6-Tetrachlorophenol	0.1	mg/L						<0.0005		<0.0000065			<0.0005							<0.0005																											
2,4,6-Trichlorophenol	0.005	mg/L						<0.0005		<0.0000065			<0.0005							<0.0005																											
2,4-Dichlorophenol	0.9	mg/L						<0.0005		<0.0000065			<0.0005							<0.0003																											
Pentachlorophenol	0.06	mg/L						<0.0005		<0.0000065			<0.0005							<0.0005																											
Aldicarb	0.009	mg/L						<0.0009		<0.00067		<0.009	<0.001							<0.001																											
Bendiocarb	0.04	mg/L						<0.0002		<0.0013		NT	<0.0002							<0.0002																											
Carbaryl	0.09	mg/L						<0.0002		<0.0013		NT	<0.0002							<0.0002																											
Carbofuran	0.09	mg/L						<0.0002		<0.0013		NT	<0.0002							<0.0002																											
Diuron	0.15	mg/L						<0.01		<0.0067		<0.01	<0.001							<0.001																											
Temephos	0.28	mg/L						<0.0001		<0.019			<0.0001							<0.0001																											
4,4'-DDD	-	ug/L						NT		<0.001			<0.1							<0.1																											
4,4'-DDE	-	ug/L						NT		<0.00034			<0.01							<0.1																											
4,4'-DDT	-	ug/L						NT		<0.00051			<0.1							<0.1																											
Aldrin	-	ug/L						NT		<0.00051			<0.02							<0.02																											
Dieldrin	-	ug/L						NT		<0.0014			<0.02							<0.02																											
Heptachlor	-	ug/L						NT		<0.00068			<0.1							<0.1																											
Heptachlor epoxide	-	ug/L						NT		<0.00068			<0.1							<0.1																											
Methoxychlor	0.9	ug/L						NT		<0.0014			<0.1							<0.1																											
o,p-DDT	-	ug/L						NT		<0.00034			<0.1							<0.1																											
Oxychlordane	-	ug/L						NT		NT			<0.1							<0.1																											
α-Chlordane	-	ug/L						NT		<0.00051			<0.1							<0.1																											
γ-BHC (Lindane)	-	ug/L						NT		<0.00051			<0.1							<0.1																											
γ-Chlordane	-	ug/L						NT		<0.00068			<0.1							<0.1																											
Alachlor	0.005	mg/L						<0.0001		<0.0007			<0.0001							<0.0001																											
Atrazine	-	mg/L						<0.0001		<0.0007			<0.0001							<0.0001																											
Azinphos-Methyl (Guthion)	0.02	mg/L						<0.0001		<0.00053			<0.0001							<0.0001																											
Chlorpyriphos (Dursban)	0.09	mg/L						<0.0001		<0.00053			<0.0001							<0.0001																											
Cyanazine (Bladex)	0.01	mg/L						<0.0001		<0.00053			<0.0001							<0.0001																											
Desethyl Atrazine	-	mg/L						<0.0001		<0.00088			<0.0001							<0.0001																											
Diazinon	0.02	mg/L						<0.0001		<0.00053			<0.0001							<0.0001																											
Dimethoate	0.02	mg/L						<0.0001		<0.00053			<0.0001							<0.0001																											
Malathion	0.19	mg/L						<0.0001		<0.00053			<0.0001							<0.0001																											
Metolachlor	0.05	mg/L						<0.0001		<0.00035			<0.0001							<0.0001																											
Metribuzin (Sencor)	0.08	mg/L						<0.0001		<0.00035			<0.0001							<0.0001																											
Parathion	0.05	mg/L						<0.01		<0.00035			<0.0001							<0.0001																											
Phorate	0.002	mg/L						<0.0001		<0.00049			<0.0001							<0.0001																											
Prometryne	0.001	mg/L						<0.0001		<0.00022			<0.0001							<0.0001																											
Simazine	0.01	mg/L						<0.0001		<0.00049			<0.0001							<0.0001																											
Terbufos	0.001	mg/L						<0.0002		<0.00035			<0.0002							<0.0002																											

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.9: Sampling Location - MW3-03
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																								
			2002	Mar-04	Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	May-13	Oct-13	May-14	May-14	Oct-14	May-15	Oct-15	2016 - 2024
Miscellaneous Parameters																									DUP				Well Decommissioned
Nitrite (as N)		mg/L																		<0.02	<0.020	<0.020	<0.020	NT	NT	NT	NT	NT	
Bicarbonate (HCO3)		mg/L																		<5	<5.0	<5.0	<5.0	6	2.9	4.3	5.3	3.3	4.4
Carbonate (CO3)		mg/L																		<5	<5.0	<5.0	<5.0	<5.0	<2	<2	<2	NT	<2
Hydroxide (OH)		mg/L																		<5	<5.0	<5.0	<5.0	<5.0	<2	<2	<2	NT	<2
Ion Balance Calculation																													
Cation - Anion Balance		%																		Low EC	7.4	11.99	5.66	NT	9.2	7.3	15	0.9	7.4
TDS (calculated)		mg/L																		36.4	36.8	28	24.3	21.2	NT	NT	NT	NT	NT
Anion Sum		me/L																		0.54	0.57	0.43	0.39	NT	0.3	0.33	0.34	0.41	0.49
Cation Sum		me/L																		0.6	0.66	0.52	0.42	NT	0.36	0.38	0.46	0.42	0.57
Inorganics																													
Alkalinity	500	mg/L CaCO3	NT	NT	NT	<5	11	180	15	19	6	7	8	5.8	6.9	7.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.9	4.3	5.3	3.3	4.4
Ammonia		mg/L	NT	NT	NT	<0.02	0.07	0.066	0.0459	0.141	0.03	0.02	0.05	<0.02	<0.02	0.02	<0.020	<0.020	0.028	0.06	<0.020	<0.02	0.024	0.189	<0.020	<0.020	0.023	0.066	0.024
Arsenic	0.025	mg/L	NT	NT	NT	<0.001	<0.001	<0.001	<0.001	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Barium	1	mg/L	NT	NT	NT	0.09	0.01	0.08	0.0533	0.242	0.0325	0.04	0.028	0.091	0.083	0.02	0.021	0.016	0.045	0.017	0.017	<0.01	<0.01	0.00575	<0.010	<0.010	<0.010	0.00739	0.015
Boron	5	mg/L	NT	NT	NT	<0.05	<0.05	0.002	<0.002	0.0022	<0.05	<0.05	<0.05	<0.03	<0.05	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.05	<0.05	<0.01	<0.05	<0.050	0.059	<0.010	<0.010
Cadmium	0.0001	mg/L	NT	NT	NT	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Calcium		mg/L	NT	NT	NT	6	5.3	4.7	3.1	4.06	3.7	2.3	3.9	2.51	3.4	2.99	3.92	2.43	8.64	3.25	3.16	2.21	1.26	1.35	1.71	1.82	1.94	2.52	3.82
Chloride	250	mg/L	NT	NT	NT	23.7	13.8	22.1	13.2	9.19	9.2	9.8	15	12.1	13.9	11.3	13.4	12.8	20.4	15.5	14.2	10.7	10	4.38	5.48	5.62	5.38	9.85	11.9
Chromium	0.05	mg/L	NT	NT	NT	<0.001	<0.001	0.002	0.0012	0.0014	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.001	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	0.00048	0.00045
Conductivity		µS/cm	NT	NT	NT	102	95	92	93.2	67.9	97	66	91	72.2	85.9	74.9	77.5	68.4	94.9	81.1	79.8	57.2	57.3	47.4	38.9	41.7	44.1	51.7	62.1
Copper	1	mg/L	NT	NT	NT	0.002	0.003	0.006	0.0044	0.0273	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Iron	0.3	mg/L	NT	NT	NT	<0.05	0.06	0.1	<0.02	0.278	0.019	0.077	0.051	0.156	0.81	<0.050	0.058	<0.050	0.151	<0.02	<0.020	0.067	<0.020	0.23	0.052	0.202	0.252	0.037	0.027
Lead	0.01	mg/L	NT	NT	NT	<0.001	0.001	<0.001	<0.001	0.0031	<0.001	<0.01	<0.01	0.014	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.000456	<0.001	<0.001	<0.0010	0.00009	<0.00005
Magnesium		mg/L	NT	NT	NT	1.34	1.29	0.947	0.665	0.72	0.86	0.52	0.77	0.556	0.74	0.57	0.78	30	3.92	0.626	0.646	0.588	0.33	0.328	0.456	0.419	0.379	0.509	0.658
Manganese	0.05	mg/L	NT	NT	NT	0.013	0.016	0.011	0.0057	0.0237	0.007	0.006	0.0072	0.0062	0.0094	0.0056	0.0099	0.0037	0.0417	0.0049	0.005	0.0051	0.0028	0.0115	0.004	0.0068	0.0065	0.00414	0.00523
Mercury	0.001	mg/L	NT	NT	NT	<0.0001	0.0025	<0.0001	<0.0001	<0.0001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Nitrate	10	mg/L	NT	NT	NT	0.23	0.14	<0.1	<0.1	<0.1	<0.03	<0.03	0.12	<0.03	0.082	<0.030	<0.030	<0.030	0.143	<0.03	0.154	0.043	0.033	<0.03	0.095	0.123	<0.030	0.034	0.037
Nitrite	1	mg/L	NT	NT	NT	<0.02	0.13	<0.05	<0.03	<0.03	NT	NT	NT	NT	NT	NT	NT	NT	NT		<0.020	<0.020	<0.020		NT	NT	NT	NT	NT
TKN		mg/L	NT	NT	NT	0.31	2.97	0.5	0.22		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
pH	6.5-8.5	mg/L	NT	NT	NT	5.9	8.3	5.38	5.53	5.48	6.1	5.9	5.86	6	5.88	6.07	5.55	5.57	5.68	5.46	6.02	5.54	5.56	5.62	5.59	5.77	5.72	5.69	5.56
Total Phosphorous		mg/L	NT	NT	NT	NT	NT	0.86	1.24	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Potassium		mg/L	NT	NT	NT	0.71	1.17	1.7	0.45	0.9	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	<0.50	<0.50	<0.50	0.149	<0.5	<0.5	NT	NT	NT
Sodium	200	mg/L	NT	NT	NT	10.6	11.2	6.11	10.45	9.1	12.6	9.12	12.5	9.51	10.7	8.71	10.5	7.82	20.2	9.82	10.4	8.21	7.47	7.44	4.69	4.49	5.94	5.12	6.86
Suspended Solids		mg/L	NT	NT	NT	6	36900	3250	5310	27600	675	1620	32500	829	999	756	19900	4160	841	1280	817	4270	4270	7970	2130	1200	11600	2720	162
TDS	500	mg/L	NT	NT	NT	50	180	100	130	160	110	80	240	98	100	64	92	<10	80	38	70	43	48	34	32	34	60	65	52
Sulfate	500	mg/L	NT	NT	NT	6.9	9.6	5.2	5.3	4.7	7.9	6.6	8	5.6	8.62	7.61	5.9	5.33	7.13	5	7.68	6.09	5.08	7.59	3.76	3.67	3.87	2.97	3.15
Zinc	5	mg/L	NT	NT	NT	0.106	0.008	0.004	0.0026	0.0062	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Volatile Organics																													
Benzene	5	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	<0.3	<0.25	<0.25	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
Other Organics																													
BOD_5		mg/L	NT	NT	NT	<2	<2	0.9	0.96	0.66	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2	<2	<2	<2
COD		mg/L	NT	NT	NT	6	73	<20	<20	<20	3	<3	<3	<3	6.9	20.5	30.3	14.5	22.9	17.6	25.2	34.7	29	140	45	27	49	62	<10
DOC	5	mg/L	NT	NT	NT	3	8	4	1.7	3.5	13	5	2	4	2.6	3.6	5.3	3.4	2.8	2.6	3.2	11	11.9	6.7	4.7	4.8	5	3.8	10.7
Phenol		mg/L	NT	NT	NT	<0.002	0.006	0.003	<0.001	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Field Parameters																													
pH											5.84	6.23	6.58	7.12	6.95	6.35	7.19	6.24	6.07	6.2	7.07	6.1	6.1	6.97	8.61		7.75	8.13	6.71
Conductivity		µS/cm									50	20	50	20	40	40	40	40	0.07	0.04	0.06	0	0	0.01	0		0	0	0.03
DO		%									89.5	58.3	74.2	81.5	65.7	86	44.6	33.7	64.4	80.6	77.5	57.8	57.8	54.6	55		62.5	59.7	53
Temp		°									12.9	9.4	12	10	12.1	11.2	14.5	8.2	14.5	8.8	13.1	7.2	7.2	13.5	6.4		12.7	6.7	13.3
Pesticides																													
2,3,4,6-Tetrachlorophenol	0.1	mg/L																		<0.0005									
2,4,6-Trichlorophenol	0.005	mg/L					<0.0005	<0.001		<0.00051		<0.0005		<0.0005						<0.0005									
2,4-Dichlorophenol	0.9	mg/L					<0.0005	<0.001		<0.00051		<0.0005		<0.0005						<0.0003									
Pentachlorophenol	0.06	mg/L					<0.0005	<0.001		<0.00051		<0.0005		<0.0005						<0.0005									
Aldicarb	0.009	mg/L					<0.0009	<0.0007		<0.00051		<0.009		<0.001						<0.001									
Bendiocarb	0.04	mg/L					<0.0002	<0.001		<0.001		<0.0002		<0.0002						<0.0002									
Carbaryl	0.09	mg/L					<0.0002	<0.001		<0.001		<0.0002		<0.0002						<0.0002									
Carbofuran	0.09	mg/L					<0.0002	<0.001		<0.001		<0.0002		<0.0002						<0.0002									
Diuron	0.15	mg/L					<0.01	<0.007		<0.0051		<0.007		<0.001						<0.001									
Temephos	0.28	mg/L					<0.0001	<0.02		<0.014		<0.0001		<0.0001						<0.0001									
4,4'-DDD	-	ug/L					NT	<0.002		<0.0009		<0.1		<0.1						<0.1									
4,4'-DDE	-	ug/L					NT	<0.0005		<0.0003		<0.1		<0.1						<0.1									
4,4'-DDT	-	ug/L					NT	<0.0008		<0.00045		<0.1		<0.1						<0.1									
Aldrin	-	ug/L					NT	<0.0008		<0.00045		<0.02		<0.02						<0.02									
Dieldrin	-	ug/L					NT	<0.002		<0.0012		<0.02		<0.02						<0.02									
Heptachlor	-	ug/L					NT	<0.001		<0.0006		<0.1		<0.1						<0.1									
Heptachlor epoxide	-	ug/L					NT	<0.001		<0.0006		<0.1		<0.1						<0.1									
Methoxychlor	0.9	ug/L					NT	<0.002		<0.0012		<0.1		<0.1						<0.1									
o,p-DDT	-	ug/L					NT	<0.0005		<0.0003		<0.1		<0.1						<0.1									
Oxychlordane	-	ug/L					NT	<0.001		<0.00075		<0.1		<0.1						<0.1									
α-Chlordane	-	ug/L					NT	<0.0008		<0.00045		<0.1		<0.1						<0.1									
γ-BHC (Lindane)	-	ug/L					NT	<0.0008		<0.00045		<0.1		<0.1						<0.1									
γ-Chlordane	-	ug/L					NT	<0.001		<0.0006		<0.1		<0.1						<0.1									
Alachlor	0.005	mg/L					<0.0001	<0.0004		<0.00056		<0.0001		<0.0001						<0.0001									
Atrazine	-	mg/L					<0.0001	<0.0004		<0.00056		<0.0001		<0.0001						<0.0001									
Azinphos-Methyl (Guthion)	0.02	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Chlorpyriphos (Dursban)	0.09	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Cyanzine (Bladex)	0.01	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Desethyl Atrazine	-	mg/L					<0.0001	<0.0005		<0.0007		<0.0001		<0.0001						<0.0001									
Diazinon	0.02	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Dimethoate	0.02	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Malathion	0.19	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Metolachlor	0.05	mg/L					<0.0001	<0.0002		<0.00028		<0.0001		<0.0001						<0.0001									
Metribuzin (Sencor)	0.08	mg/L					<0.0001	<0.0002		<0.00028		<0.0001		<0.0001						<0.0001									
Parathion	0.05	mg/L					<0.01	<0.0002		<0.00028		<0.0001		<0.0001						<0.0001									
Phorate	0.002	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Prometryne	0.001	mg/L					<0.0001	<0.0002		<0.00028		<0.0001		<0.0001						<0.0001									
Simazine	0.01	mg/L					<0.0001	<0.0003		<0.00042		<0.0001		<0.0001						<0.0001									
Terbufos	0.001	mg/L					<0.0002	<0.0002		<0.00028		<0.0002		<0.0002						<0.0002									
Triallate	0.23	mg/L					<0.0001	<0.0002		<0.00028		<0.0001		<0.0001						<0.0001									
Trifluralin	0.045	mg/L					<0.0001	<0.0002		<0.00028		<0.0001		<0.0001						<0.0001									
Benzo(a)pyrene	0.00001	mg/L																		<0.00001									
Total PCBs	0.003	mg/L					<0.00006	<0.0002		<0.075		<0.0002		<0.00002						<0.000035									
2,4,5-T	0.28	mg/L					<0.0002	<0.00008		<0.000067		<0.0002		<0.0002						<0.0002									
2,4-D	0.1	mg/L					<0.0002	<0.0003		<0.00027		<0.0002		<0.0002						<0.0002									
Bromoxynil	0.005	mg/L					<0.0002	<0.0008		<0.00067		<0.0002		<0.0002						<0.0002									
Dicamba	0.12	mg/L					<0.0002	<0.0003		<0.00027		<0.0002		<0.0002						<0.0002									
Diclofop Methyl	0.009	mg/L					<0.0002	<0.0003		<0.00027		<0.0002		<0.0002						<0.0002									
Dinoseb	0.01	mg/L					<0.0002	<0.00008		<0.000067		<0.0002		<0.0002						<0.0002									
Picloram	0.19	mg/L					<0.0002	<0.00008		<0.000067		<0.0002		<0.0002						<0.0002									
Atrazine + N-dealkylated metabolites	0.005	mg/L					NT	<0.0009				<0.0002		<0.0002						<0.0002									
Chlordane (total)	7	ug/L					NT	<0.004				<0.3		<0.3						<0.3									
Aldrin + Dieldrin	0.7	ug/L					<0.04	<0.004				<0.04		<0.04						<0.04									
Heptachlor + Heptachlor Epoxide	3	ug/L					<0.2	<0.004						<0.2						<0.2									

Shaded concentrations exceed ODWS
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.10: Sampling Location - MW1-15
MECP Landfill Standards Guideline: Schedule 5 Parameters, Column 2
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																
			Jun-16	Oct-16	May-17	Nov-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters																				
			Well Constructed				Duplicate													
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.100	NT	<0.020	NT
Bicarbonate (HCO3)	-	mg/L	794	874	858	817	855	824	858	814	893	881	829	879	827	820	834	NT	NT	NT
Carbonate (CO3)	-	mg/L	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																				
Cation - Anion Balance	-	%	5.9	3.3	-0.4	-0.3	-1.8	1.8	3	2.3	1.8	2.1	0.9	-2.8	-4.6	9	4.28	2.78	120	1.54
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	Jul-02	1000	1010	979	978
Anion Sum	-	me/L	18.5	20	19.6	18.7	19.6	2.31	19.6	18.6	20.2	19.8	18.8	19.7	18.4	15.8	19	19.2	18.6	19.2
Cation Sum	-	me/L	20.8	21.4	19.4	18.6	18.9	18.9	20.8	19.5	21	20.6	19.1	18.7	16.8	19	20.7	20.3	22.3	19.8
Inorganics																				
Alkalinity	500	mg/L CaCO3	794	874	858	817	855	824	858	814	893	881	829	879	827	820	834	850	818	855
Ammonia	-	mg/L	1.39	0.417	0.33	0.317	0.195	0.243	0.266	0.198	0.171	0.315	0.349	0.692	0.479	1.33	0.678	0.842	0.625	1.22
Arsenic	0.025	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0097	NT	0.0137	NT	0.0132	NT
Barium	1	mg/L	0.23	0.218	0.178	0.17	0.177	0.184	0.179	0.16	0.189	0.184	0.163	0.193	0.158	0.208	0.175	0.212	0.19	0.182
Boron	5	mg/L	0.97	0.995	0.919	0.927	0.935	0.989	1.33	1.17	1.24	1.36	1.38	1.42	1.06	1.34	1.55	1.41	1.41	1.32
Cadmium	0.0001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.000050	NT	<0.0000500	NT	<0.000100	NT
Calcium	-	mg/L	219	217	199	195	192	200	210	198	205	203	194	186	174	191	205	198	219	192
Chloride	250	mg/L	87	88.7	84.3	83.3	87.8	84.3	85.4	80.7	84.2	76.4	80.2	77.7	66.9	83.3	82.6	76.8	77.9	74.8
Chromium	0.05	mg/L	0.00048	0.00045	0.00041	0.00056	0.00074	0.0003	0.00059	0.0004	<0.0005	0.00056	<0.0050	0.00059	<0.0050	NT	<0.00500	NT	<0.0100	NT
Conductivity	-	µS/cm	1480	1600	1630	1640	1660	1670	1620	1540	1600	1640	1640	1640	1610	1360	1570	1620	1530	1630
Copper	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	<0.00200	NT	<0.00400	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02	<0.10	<0.200	<0.400	<0.040	<0.200
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	704	817	854	832	920	813
Iron	0.3	mg/L	7.67	7.24	6.43	6.62	6.68	6.88	8.46	0.697	9.19	10.1	10.2	9.43	7.51	10.8	12.5	12.3	11.6	12.1
Lead	0.01	mg/L	<0.00005	<0.00005	<0.00005	0.000215	0.000066	0.000057	<0.000050	<0.00005	<0.0005	0.000096	0.00006	0.000051	<0.00050	NT	<0.000500	NT	<0.00100	NT
Magnesium	-	mg/L	81.8	89.1	78.8	72.2	76.6	80.9	84.5	82.6	87.3	84.5	74.4	74.4	65.7	82.5	83.1	81.9	90.6	81.1
Manganese	0.05	mg/L	4.01	4.55	3.95	3.97	4.12	3.86	4.55	3.74	4.47	3.91	4.16	3.49	2.83	3.75	4.68	4.24	4.45	3.84
Mercury	0.001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	0.0000062	NT	<0.0000050	NT
Nitrate	10	mg/L	<0.040	<0.040	<0.040	<0.040	<0.020	<0.020	<0.020	0.196	<0.10	<0.040	<0.20	<0.10	<0.020	<0.10	<0.200	<0.400	<0.040	<0.200
Nitrite	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.027	NT	<0.100	NT	<0.020	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	2.96	1.78	0.972	1.36	0.895	NT
TKN	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	3.44	3.09	NT	2.2	1.52	NT
pH	6.5-8.5	mg/L	6.66	6.74	6.65	6.83	6.81	6.7	6.74	6.93	6.86	7.09	6.81	6.86	7.14	7.45	7.14	7.12	7.08	6.76
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.61	NT	0.486	NT	0.694	NT
Potassium	-	mg/L	3.83	4.03	NT	NT	NT	3.51	4.07	3.98	3.79	4.16	3.74	4.36	3.59	NT	4.24	NT	4.51	NT
Sodium	200	mg/L	57.4	59.8	55.7	53.9	55.5	53.6	60.4	58.7	64.4	63.4	58.2	57.3	49.1	58.4	65.2	63.9	72.3	63.3
Suspended Solids	-	mg/L	42700	12100	14300	16600	8620	2720	8370	1840	2020	1350	990	7060	0.66	1520	1620	2000	4080	2030
TDS	500	mg/L	1010	988	1200	892	1190	1030	878	945	989	979	949	1010	1050	949	1000	1010	979	978
Sulfate	500	mg/L	7.56	3.18	2.22	1.86	1.71	2.31	1.01	2.52	<1.5	0.69	<3.0	<1.5	0.66	<1.5	<3.00	<6.00	2	<3.00
Zinc	5	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010		<0.0100	NT	<0.0200	NT
Volatile Organics																				
Benzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	Jan-00	NT	0.65	NT	0.66	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<2.0	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																				
BOD_5	-	mg/L	5.7	3.5	5.2	2.6	2.8	<2.0	<2.0	<2.0	3.6	3.2	4.4	5.5	<2.0	3.2	<3.0	4.6	5.4	<3.0
COD	-	mg/L	74	270	46	153	98	187	133	271	104	105	110	81	153	98	98	53	115	113
DOC	5	mg/L	10.3	16.3	17.8	19.5	18.2	34.3	20.5	15.7	18.1	30.4	27	26.2	23.1	23.7	17.6	18.2	18.9	23.4
Phenol	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	Jan-00	NT	<0.0010	NT	0.0122	
Field Parameters																				
pH	-		6.4	6.17	6.68	6.74		6.6	6.61	7.32	6.46	7.14	5.88	6.43	6.52	6.49	5.92	6.5	6.45	6.23
Conductivity	-	µS/cm	1.37	1.26	1.22	1.73		1.58	1.57	1.52	1.47	1.51	1.14	1.676	1.78	1.639	1.523	1.454	1.392	1.212
DO	-	%	14.1	15.3	9.4	20.2		11.3	20.1	11.4	12.2	16	17.3	15.2	13.4	19.4	16.6	33.2	37.2	34.8
Temp	-	°	9.8	11.9	10	10.2		10.6	9.9	9	10.3	10.3	11	11.3	10.1	11.8	10	11	11	11.5

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.11: Sampling Location - MW2-15
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																
			Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters																			
			Well Constructed												DRY		DRY		DRY
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		<0.010		<0.010	
Bicarbonate (HCO3)	-	mg/L	25.1	13.3	10.8	15.7	11	14.4	10.8	11.2	15.1	11.8	13.1	9.8		7.6		NT	
Carbonate (CO3)	-	mg/L	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0		NT	
Hydroxide (OH)	-	mg/L	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0		NT	
Cyanide	0.2	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020		<0.0050		<0.0020	
Ion Balance Calculation																			
Cation - Anion Balance	-	%	-13.3	2.7	0.9	1.5	3.5	-6	-5.9	-2.9	2.2	-3.1	3.3	1.6		4.35		108	
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		33		31	
Anion Sum	-	me/L	0.87	0.63	0.35	0.42	0.3	0.48	0.36	0.27	0.35	0.29	0.32	0.3		0.22		0.24	
Cation Sum	-	me/L	0.67	0.67	0.36	0.43	0.32	0.43	0.32	0.26	0.37	0.27	0.34	0.31		0.24		0.26	
Inorganics																			
Alkalinity	500	mg/L CaCO3	25.1	13.3	10.8	15.7	11	14.4	10.8	11.2	15.1	11.8	13.1	9.8		7.6		8.5	
Ammonia	-	mg/L	2.31	0.048	0.048	<0.020	0.05	0.061	<0.020	<0.010	<0.005	0.0063	0.0066	0.02		<0.0500		<0.0050	
Arsenic	0.025	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.00012		<0.00010		0.00011	
Barium	1	mg/L	0.000145	0.000379	0.000975	0.00357	0.0031	0.00165	0.00251	0.0042	0.00519	0.00496	0.00445	0.00756		0.016		0.00304	
Boron	5	mg/L	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Cadmium	0.0001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	9.4E-06		<0.0000050		<0.0000050	
Calcium	-	mg/L	0.269	0.205	1.61	3.39	3.07	1.87	3.38	2.49	3.74	2.83	3.01	3.39		2.46		2.37	
Chloride	250	mg/L	0.74	0.8	0.94	0.57	0.43	1	1.73	<0.50	0.43	0.48	0.27	1.24		<0.50		<0.50	
Chromium	0.05	mg/L	0.00045	0.00026	0.00019	0.00031	0.00102	0.00037	0.00021	<0.0005	0.00032	NT	0.00035	<0.00050		<0.00050		<0.00050	
Conductivity	-	µS/cm	66.7	71.2	36.2	42.3	35.3	50.1	62.5	30.1	35.6	35.1	32.1	36		25		27	
Copper	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		0.00258		0.00215	
Fluoride	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.02		<0.020		<0.020	
Hardness	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.6		7.6		7.41	
Iron	0.3	mg/L	0.134	0.066	0.033	0.09	0.078	0.101	0.027	0.05	0.095	0.051	0.089	0.081		0.018		0.042	
Lead	0.01	mg/L	0.000328	0.000375	0.000055	0.00008	0.000698	0.000168	<0.00005	0.000101	0.000092	<0.000050	0.000102	0.000103		<0.000050		0.000063	
Magnesium	-	mg/L	0.0119	0.0336	0.281	0.821	0.471	0.275	0.515	0.376	0.562	0.394	0.43	0.505		0.354		0.363	
Manganese	0.05	mg/L	0.0041	0.00512	0.0197	0.0377	0.0102	0.00721	0.00694	0.00505	0.0119	0.00635	0.00792	0.00517		0.00184		0.00255	
Mercury	0.001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050		<0.0000050		<0.0000050	
Nitrate	10	mg/L	0.089	0.092	0.083	0.092	0.064	0.171	0.277	0.054	0.108	0.106	<0.020	0.516		<0.020		<0.020	
Nitrite	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010		<0.010		<0.010	
Organic Nitrogen	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.587		0.379		<0.500	
TKN	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.607		NT		<0.500	
pH	6.5-8.5	mg/L	6.24	6.19	5.93	5.94	5.69	6.24	5.78	5.93	6.18	5.82	5.99	6.1		6.54		6.76	
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.268		0.219		0.161	
Potassium	-	mg/L	0.058	0.157	NT	NT	0.291	0.383	0.271	0.319	0.328	0.27	0.42	0.335		0.258		0.237	
Sodium	200	mg/L	14.7	14.7	5.58	4.01	2.34	6.47	2.11	1.92	2.55	1.8	2.94	1.78		1.67		2.17	
Suspended Solids	-	mg/L	12500	2050	3480	2500	2130	3160	383	1190	1060	1510	1840	1.77		506		288	
TDS	500	mg/L	80	66	172	50	32	58	28	33	35	36	50	37		33		31	
Sulfate	500	mg/L	16.6	16.2	5.08	3.99	3.03	7.3	3.58	2.13	0	1.5	2.33	1.77		3.18		3.55	
Zinc	5	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0022		0.0038		0.0012	
Volatile Organics																			
Benzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50		<0.50		<0.50	
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50		<0.50		<0.50	
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0		<1.9		<1.0	
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50		<0.50		<0.50	
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50		<0.50		<0.50	
Other Organics																			
BOD_5	-	mg/L	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0		<2.0	
COD	-	mg/L	191	38	41	55	92	75	54	91	42	47	22	53		46		22	
DOC	5	mg/L	10.7	5.8	3.7	3.3	8.9	6.2	2.33	4.2	3.41	3.53	3.33	2.93		2.78		2.06	
Phenol	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.001		0.002		0.0013	
Field Parameters																			
pH	-		6.2	7.56	6.42	7.57	7.79	8.62	8.77	8.02	8.57	7.63	6.46	7.01		7.36		8.46	
Conductivity	-	µS/cm	0	0.06	0	0.05	0.03	N/A	0.05	0.03	0.04	0.04	0.119	0.045		0.092		0.064	
DO	-	%	64.7	93.4	89.4	68.6	56.8	87.6	65.6	56.6	58.4	44.5	68.8	78.1		82		75.7	
Temp	-	°	11.7	14.6	6.2	6.9	11.4	6.9	3.9	13.1	8.5	11.9	14.7	10.6		13.7		10.9	

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.12: Sampling Location - MW3-15
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																
			Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	14-Jun-23	11-Oct-23	May-24	Oct-24
Miscellaneous Parameters																			
			Well Constructed																
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT
Bicarbonate (HCO3)	-	mg/L	70.8	43	29.6	43.5	28.1	23.7	16.1	17.6	19.3	18.9	15	23	14.4	17	NT	NT	NT
Carbonate (CO3)	-	mg/L	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																			
Cation - Anion Balance	-	%	-16.7	-19.3	-7.4	14.1	16.3	6.6	14.7	-0.6	10.1	-3.7	2.6	2.2	Low EC	5.56	-2.86	228	0
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	May-00	Jan-00	94	75	114	94
Anion Sum	-	me/L	1.74	1.23	0.98	1.16	1.01	0.87	0.59	0.69	0.72	0.68	0.58	0.73	0.49	0.68	0.54	0.68	0.57
Cation Sum	-	me/L	1.24	0.83	0.84	1.54	1.41	0.99	0.8	0.69	0.88	0.63	0.62	0.76	0.54	0.76	0.51	1.55	0.57
Inorganics																			
Alkalinity	500	mg/L CaCO3	70.8	43	29.6	43.5	28.1	23.7	16.1	17.6	19.3	18.9	15	23	14.4	17	13.7	14.5	9.3
Ammonia	-	mg/L	0.2	0.16	0.263	0.218	0.371	0.254	0.237	0.012	0.0096	0.0101	0.0058	0.018	<0.010	<0.0500	0.0069	<0.0050	0.0599
Arsenic	0.025	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.00027	NT	0.00016	NT	0.00229	NT
Barium	1	mg/L	0.00671	0.00616	0.00516	0.0101	0.0103	0.00644	0.00289	0.00276	0.00729	0.00611	0.00564	0.00618	0.0162	0.00595	0.0051	0.0831	0.00472
Boron	5	mg/L	0.373	0.155	0.427	0.556	0.307	0.384	0.268	0.115	0.255	0.131	0.121	0.193	0.081	0.199	0.123	<0.200	0.052
Cadmium	0.0001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	9.5E-06	NT	7.4E-06	NT	<0.000100	NT
Calcium	-	mg/L	4.33	4.08	4.47	6.26	4.01	4.77	3.92	4.01	3.8	3.23	3.13	3.55	3.22	3.14	2.88	4.09	3.04
Chloride	250	mg/L	9.38	8.05	9.58	7.46	12.7	10.6	6.61	9.01	9.21	7.19	6.12	6.19	4.95	6.8	5.08	9.1	9.94
Chromium	0.05	mg/L	0.00147	0.00053	0.00125	0.00278	0.00403	0.00113	0.00094	0.00056	0.00106	NT	0.00042	0.00067	NT	0.00052	NT	<0.0100	NT
Conductivity	-	µS/cm	129	112	97.9	117	109	85.2	67.7	75.9	76.7	77	65.4	73.4	55.9	72.8	61.4	71.8	66.3
Copper	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	0.00502	NT	0.0365	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.03	0.046	<0.020	<0.020	<0.020	<0.020
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	13.7	12.3	12.7	10.9	18	12
Iron	0.3	mg/L	1.46	0.762	1.4	5.82	5.98	1.4	0.762	0.486	1.81	0.946	0.863	2.02	0.409	2.5	0.398	8.23	0.191
Lead	0.01	mg/L	0.00122	0.000596	0.00139	0.00199	0.00316	0.000808	0.000148	0.000163	0.000387	0.000289	0.00018	0.000285	NT	0.000161	NT	0.00446	NT
Magnesium	-	mg/L	0.932	0.983	0.995	1.78	1.24	1.53	1.28	1.18	1.39	0.989	0.998	1.18	1.03	1.19	0.91	1.88	1.06
Manganese	0.05	mg/L	0.582	0.532	0.795	1.37	1	0.954	0.668	0.605	0.881	0.427	0.356	0.642	0.23	0.83	0.236	0.861	0.0285
Mercury	0.001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	7.3E-06	NT	5.3E-06	NT	4.37E-05	NT
Nitrate	10	mg/L	0.021	0.028	0.053	0.025	0.034	0.057	0.06	0.077	0.047	0.25	0.076	0.03	0.048	0.028	0.048	0.066	0.082
Nitrite	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT	<0.010	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.485	0.266	0.377	0.511	<0.500	NT
TKN	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.503	0.266	NT	0.518	<0.500	NT
pH	6.5-8.5	mg/L	6.58	6.46	6.34	6.55	6.37	6.38	6.61	6.5	6.58	6.48	6.12	6.4	6.78	6.8	6.61	7.06	6.22
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.477	NT	0.25	NT	0.276	NT
Potassium	-	mg/L	0.508	0.561	0.297	0.542	0.358	0.506	0.354	0.378	0.468	0.339	0.456	0.362	NT	0.341	NT	<1.00	NT
Sodium	200	mg/L	18.8	10.5	9.31	15.5	14.6	10.8	9.11	7.49	9.69	7.05	6.88	7.72	6.53	8.44	5.85	9.69	6.99
Suspended Solids	-	mg/L	16400	3820	2400	12500	9430	3900	3280	1420	1200	2370	3840	4.27	691	736	1430	467	569
TDS	500	mg/L	685	354	302	229	319	155	155	182	127	141	198	123	129	94	75	114	94
Sulfate	500	mg/L	2.83	6.97	5.47	3.89	4.48	4.26	3.88	4.01	3.3	4.06	5.12	4.27	5.15	6.82	5.7	6.39	4.81
Zinc	5	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0097	NT	0.0036	NT	<0.0200	NT
Volatile Organics																			
Benzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<1.9	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																			
BOD_5	-	mg/L	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5	<2.0	<2.0	<3.0	<3.0	<3.0	<2.0	<2.0
COD	-	mg/L	117	31	60	132	129	275	159	77	55	95	31	64	27	10	50	47	37
DOC	5	mg/L	12.5	5.4	14	22.9	18.9	12.8	8.07	10.3	8.19	4.63	4.44	5.88	2.72	3.85	3.32	4.61	2.13
Phenol	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0012	NT	0.0024	NT	0.0012	
Field Parameters																			
pH	-		6.34	6.42	7.11	6.89	7.43	7.89	8.03	9.08	8.92	7.91	6.29	6.7	5.3	6.15	6.36	5.33	6.15
Conductivity	-	µS/cm	0.13	0.08	0.08	0.15	0.14	0.1	0.11	0.09	0.08	0.07	0.076	0.104	0.088	0.109	0.116	0.084	0.083
DO	-	%	26.7	23.8	21.8	43.8	27.6	52.5	45.6	22.5	33.3	27	31.1	24.4	39.2	32.4	43.8	41.6	60
Temp	-	°	9.4	13.2	7.1	11.2	7.7	8.3	6.3	11	9.9	11	13	7.5	12.7	10.1	10.9	8.9	13.4

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.13: Sampling Location - MW4-15
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event																			
			Jun-16	Oct-16	May-17	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	Nov-20	May-21	May-21	Oct-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters						Duplicate							Duplicate		Duplicate		Duplicate						
			Well Constructed in																				
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT
Bicarbonate (HCO3)	-	mg/L	44.7	48.2	40.7	40.7	39.1	35.7	40.4	38.8	39.1	35.3	36.6	35.2	36.6	49.6	47.5	37	44.3	46.1	NT	NT	NT
Carbonate (CO3)	-	mg/L	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide'	0.2	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																							
Cation - Anion Balance	-	%	-1.5	12.1	0.5	-0.7	-4.7	-0.2	10.1	4.5	-1.6	-0.2	-2.1	-2.8	-5.9	8.6	10	-1.4	10	6.31	8.18	96.5	12.2
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	Mar-00	Feb-00	73	98	78	88
Anion Sum	-	me/L	1.18	1.17	1.02	1.03	0.98	0.91	1.01	0.93	0.96	0.85	0.87	0.85	0.89	1.13	1.09	0.88	0.87	1.04	1.46	0.85	1.29
Cation Sum	-	me/L	1.15	1.49	1.03	1.02	0.89	0.91	1.24	1.02	0.93	0.85	0.84	0.8	0.79	1.35	1.33	0.85	1.06	1.18	1.72	0.82	1.65
Inorganics																							
Alkalinity	500	mg/L CaCO3	44.7	48.2	40.7	40.7	39.1	35.7	40.4	38.8	39.1	35.3	36.6	35.2	36.6	49.6	47.5	37	44.3	46.1	66	33	54.4
Ammonia	-	mg/L	0.78	0.476	0.44	0.442	0.663	0.343	0.84	0.497	0.141	0.11	0.0912	0.082	0.134	0.632	0.644	0.068	0.521	0.132	0.684	0.17	0.586
Arsenic	0.025	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	Jan-00	NT	0.00192	NT	0.0007	NT
Barium	1	mg/L	0.00959	0.0121	0.00831	0.00846	0.00773	0.00653	0.00908	0.00936	0.00675	0.00631	0.00948	0.00602	0.00579	0.0105	0.0102	0.00712	0.0156	0.0076	0.0125	0.00641	0.0105
Boron	5	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	0.01	0.01	0.028	<0.010	0.01
Cadmium	0.0001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	0.0000086	NT	0.0000052	NT
Calcium	-	mg/L	10.7	11.2	9.75	9.72	8.99	9.26	9.58	9.55	9.26	8.29	8.26	8.09	8.04	9.49	9.42	8.64	10.4	10.6	12.8	7.42	11.7
Chloride	250	mg/L	1.15	1.7	1.28	1.27	1.05	1.15	2.32	1.43	1.37	1.09	1	1.05	1.14	1.24	1.25	0.84	1.4	0.93	1.97	1.01	2.01
Chromium	0.05	mg/L	0.00022	0.00018	<0.0001	<0.0001	<0.0001	0.0002	0.0002	<0.0001	<0.0005	0.0003	0.00038		0.00021	0.00037	0.00032	<0.00050	NT	<0.00050	NT	<0.00050	NT
Conductivity	-	µS/cm	103	108	98.2	98.7	95.2	93.8	97.9	99.2	90.3	81.5	83.4	82.8	85.8	108	103	81.4	94.6	96	139	79.4	126
Copper	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	0.00284	NT	0.00159	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.024	Jan-00	<0.020	<0.020	<0.020	<0.020
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	32.4	Feb-00	42.9	54.7	30.3	51.5
Iron	0.3	mg/L	2.86	6.9	1.26	1.09	0.908	0.334	4.38	0.453	0.291	0.451	0.481	0.459	0.418	5.61	5.35	0.591	6.09	1.86	9.83	0.635	9.25
Lead	0.01	mg/L	0.00033	0.000096	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	0.000058	0.000051	0.000111	NT	0.00009	NT	<0.000050	NT
Magnesium	-	mg/L	3.16	3.98	3.1	3.11	2.63	2.81	3.39	3.73	3.18	2.83	2.73	2.48	2.47	3.93	3.99	2.63	4.52	3.99	5.52	2.86	5.41
Manganese	0.05	mg/L	0.317	0.798	0.279	0.297	0.24	0.135	0.633	0.856	0.217	0.224	0.223	0.185	0.188	1.01	1.02	0.158	1.03	1.97	1.55	0.256	1.38
Mercury	0.001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Nitrate	10	mg/L	<0.020	0.026	0.151	0.15	0.19	0.243	0.14	0.039	0.229	0.146	0.133	0.157	0.171	<0.020	<0.020	0.124	0.048	0.1	0.044	0.17	0.031
Nitrite	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT	<0.010	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.399	0.2	0.239	0.816	<0.500	NT
TKN	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.467	0.718	NT	1.5	<0.500	NT
pH	6.5-8.5	mg/L	6.36	6.11	6.35	6.32	6.45	6.29	6.39	6.46	6.53	7.20	7.19	6.78	6.5	6.33	6.6	7.25	6.84	7.18	6.62	7.44	6.29
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.324	NT	0.246	NT	0.368	NT
Potassium	-	mg/L	1.17	0.807	NT	NT	NT	0.661	0.731	0.649	0.693	0.698	0.709	0.649	0.633	0.61	0.62	0.66	NT	0.628	NT	0.522	NT
Sodium	200	mg/L	3.58	3.4	3.49	3.46	3.41	3.39	3.38	3	3.46	3.35	3.26	3.17	3.2	3.36	3.29	3.34	3.49	3.51	3.62	3.58	4.22
Suspended Solids	-	mg/L	69500	13500	6490	10600	11700	5070	2540	464	277	416	446	277	1120	816	330	4.95	1070	253	824	171	311
TDS	500	mg/L	199	88	268	340	69	112	84	68	76	79	86	75	76	86	81	75	81	73	98	78	88
Sulfate	500	mg/L	12.4	7.51	7.48	8.15	7.45	7.07	6.27	5.58	5.75	5.2	5.05	4.9	5.45	5.08	4.97	4.95	4.69	4.24	4.02	7.18	6.75
Zinc	5	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0039	NT	0.0049	NT	0.0042	NT
Volatile Organics																							
Benzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<2.0	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																							
BOD_5	-	mg/L	3.1	2.9	2.9	2.4	5	2.3	2.3	3.1	2.4	<2.0	2.3	2.5	2.6	<2.0	<2.0	<2.0	<3.0	<3.0	<5.0	<2.0	<2.0
COD	-	mg/L	124	179	13	11	122	48	89	87	15	29	47	33	42	18	27	22	18	14	56	16	433
DOC	5	mg/L	4.7	3	2.6	1.9	1.6	7.5	2.8	2.19	3.6	2.59	2.49	2.14	2.8	6.46	4.29	2.78	2.89	2.9	3.82	2.61	3.45
Phenol	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0010		0.0015	NT	0.0073	
Field Parameters																							
pH	-		6.64	6.28	7.06		7.65	7.81	7.08	8.44	6.58	7.49	7.49	6.04	6.04	5.95	5.95	6.94	6.08	6.2	6.15	6.76	6.27
Conductivity	-	µS/cm	0.05	0.11	0.06		0.12	0.13	0.12	0.15	0.11	0.1	0.1	0.1	0.1	0.139	0.139	0.111	0.149	0.127	0.166	0.096	0.139
DO	-	%	12.1	15.5	18.4		30.3	47.6	24.5	17	21	24.9	24.9	27.2	27.2	24	24	44.9	38.3	27.5	21.1	34.7	19.8
Temp	-	°	7.7	11.4	7.8		9.5	11	8.9	7.6	8.5	9.4	9.4	9	9	10.9	10.9	7.8	12.2	9.2	10.7	10.7	12.1

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.14: Sampling Location - MW1-17
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters																
			Well Constructed in													
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT
Bicarbonate (HCO3)	-	mg/L	44.7	89	107	134	110	110	104	NT	80	94.7	70.5	NT	NT	NT
Carbonate (CO3)	-	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NT	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NT	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation																
Cation - Anion Balance	-	%	0	-7.2	15.2	4.2	2.8	1.1	-2.8	NT	4.9	5	3.36	7.88	103	12.8
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	Nov-00	May-00	266	192	312	162
Anion Sum	-	me/L	1.22	2.2	3.59	4.25	3.22	3.3	2.84	NT	2.64	2.24	2.3	2.63	1.51	2.42
Cation Sum	-	me/L	1.22	1.9	4.87	4.62	3.4	3.37	2.69	NT	2.92	2.48	2.46	3.08	1.55	3.13
Inorganics																
Alkalinity	500	mg/L CaCO3	44.7	89	107	134	110	110	104	NT	80	94.7	70.5	93.4	46.7	89.7
Ammonia	-	mg/L	0.573	0.755	4.46	1.28	1.02	0.707	0.616	1.14	0.459	1.15	0.476	0.768	0.317	0.827
Arsenic	0.025	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	0.00103	NT	0.00087	NT	0.00054	NT
Barium	1	mg/L	0.0164	0.00297	0.056	0.0246	0.0281	0.0317	0.0213	0.0424	0.0252	0.0547	0.0257	0.0396	0.0129	0.0299
Boron	5	mg/L	<0.010	0.023	0.075	0.04	0.03	0.042	0.026	0.038	0.024	0.033	0.023	0.039	0.015	0.022
Cadmium	0.0001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	0.0000116	NT	0.0000167	NT	0.0000117	NT
Calcium	-	mg/L	6	0.535	31.1	25.7	16.7	16.6	11.2	20.3	14.4	19.3	15	23.8	9.8	23
Chloride	250	mg/L	8.9	9.28	27.7	14.4	17.6	11.5	8.94	NT	15.4	21.1	17.4	25.8	12.8	21.2
Chromium	0.05	mg/L	0.00152	0.00124	0.00188	0.00178	0.00111	0.00187	NT	0.00301	0.00202	NT	0.00151	NT	0.00114	NT
Conductivity	-	µS/cm	110	205	363	408	287	314	272	NT	271	228	225	262	154	241
Copper	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	0.00301	NT	0.00303	NT
Fluoride		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	0.048	0.093	0.05	0.028	<0.020	0.046
Hardness		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	57.7	84.6	65	99.6	41.2	100
Iron	0.3	mg/L	3.53	0.246	12.5	1.81	3.58	2.34	3.4	11.4	3.92	15.3	6.15	14.4	2.23	15.1
Lead	0.01	mg/L	0.000385	0.000975	0.00392	0.000504	0.00108	0.000751	0.000858	0.00129	0.0011	NT	0.000502	NT	0.000266	NT
Magnesium	-	mg/L	1.89	0.14	11.4	8.48	6.86	6.27	4.08	7.44	5.3	8.83	6.7	9.76	4.06	10.4
Manganese	0.05	mg/L	0.196	0.00765	1.04	0.901	0.618	0.623	0.39	0.741	0.433	0.835	0.654	0.892	0.34	0.907
Mercury	0.001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	NT	0.0000071	NT	<0.0000050	NT
Nitrate	10	mg/L	0.036	0.076	0.023	0.034	0.118	0.093	0.069	NT	0.092	0.068	0.235	0.068	0.116	0.185
Nitrite	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	NT	<0.010	NT	<0.010	NT
Organic Nitrogen		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	3.7	1	0.734	0.892	<4.00	NT
TKN	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	4.2	2.15	NT	1.66	<4.00	NT
pH	6.5-8.5	mg/L	6.41	6.78	6.82	6.79	7.05	6.91	6.78	NT	7.13	7.02	7.21	7.16	6.92	6.81
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	0.87	NT	0.45	NT	0.933	NT
Potassium	-	mg/L	0.641	0.227	0.937	1.05	1.62	1.75	1.16	2.11	1.16	NT	1.25	NT	0.621	NT
Sodium	200	mg/L	11.6	40.6	30.5	54.7	39.2	40.4	34.6	28	33.6	17.1	19.3	10.1	13.4	10.2
Suspended Solids	-	mg/L	12800	18700	328000	32600	6660	3000	1790	NT	29	1000	1740	468	1370	1950
TDS	500	mg/L	151	328	2340	410	364	263	283	NT	317	186	266	192	312	162
Sulfate	500	mg/L	3.56	7.45	31.7	56	25.1	37.7	24.4	NT	29	3.69	18.1	1.31	9.84	0.62
Zinc	5	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	0.0121	NT	0.0101	NT	0.0093	NT
Volatile Organics																
Benzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	NT	<2.0	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	NT	<0.50	NT	<0.50	NT
Other Organics																
BOD_5	-	mg/L	9.4	6.2	13.4	6.9	3.9	6	8.2	NT	4.3	<3.0	<3.0	6.4	<3.0	7.5
COD	-	mg/L	1150	476	2980	1520	242	83	113	96	66	110	130	86	39	120
DOC	5	mg/L	12.2	15.5	29.4	19.5	14.7	21.7	16.4	30.9	20.9	24.9	15.4	21.7	P	23.9
Phenol	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	0.0026	NT	0.0016	NT	0.0035	
Field Parameters																
pH	-		7.52	7.07	7.62	7.73	8.61	8.71	7.84	6.94	6.58	6.67	5.52	6.68	6.73	6.46
Conductivity	-	µS/cm	0.17	0.26	0.4	0.49	0.34	0.34	0.31	0.347	0.341	0.36	0.313	0.275	0.274	0.272
DO	-	%	28.5	29.8	30.2	33.6	33.3	27	38.2	21.4	33.7	55.7	46.8	67.2	52.9	78.2
Temp	-	°	5.9	10.6	6	4.4	12.7	7	11.7	14.3	10.2	16	11.8	11.4	11.2	12.2

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.15: Sampling Location - MW2-17
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Nov-17	May-18	May-18	Nov-18	Nov-18	Feb-20	Feb-20	Jun-20	Jun-20	Nov-20	May-21	Oct-21	17-May-22	17-May-22	21-Sep-22	21-Sep-22	Jun-23	Jun-23	Oct-23	Oct-23	May-24	May-24	Oct-24	Oct-24
Miscellaneous Parameters					DUPLICATE		DUPLICATE		DUPLICATE		DUPLICATE					Duplicate		Duplicate		Duplicate		Duplicate		Duplicate		Duplicate
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	<0.010	NT	NT	<0.010	NT	NT	NT
Bicarbonate (GCO3)	-	mg/L	38.2	49.2	38.3	64.9	65.1	65.3	60	69	66.4	64.8	61.1	72	71.3	64.2	69.5	69.4	65.5	66.3	NT	NT	NT	NT	NT	NT
Carbonate (CO3)	-	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	NT	NT	NT	NT	NT	NT
Hydroxide (OG)	-	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<2.0	<2.0	NT	NT	NT	NT	NT	NT
Cyanide	0.2	mg/L													<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.0020
Ion Balance Calculation																										
Cation - Anion Balance	-	%	3.2	-4.6	-6.4	-5.7	-5.4	0.2	3	-2.5	-1.4	-2.7	-4.8	-1.6	-4.1	-0.8	7	8	-1.4	-3.21	-4.19	-4.48	95.8	-0.28	-0.28	-0.28
TDS (calculated)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	236	127	84.5	85.2	158	195	146	155	131	150	137	150
Anion Sum	-	me/L	3.79	1.43	1.51	2.29	2.36	1.66	1.63	1.77	1.77	1.73	1.79	2.05	1.76	1.66	1.44	1.44	2.17	2.25	1.74	1.75	1.68	1.79	1.76	1.79
Cation Sum	-	me/L	4.04	1.3	1.33	2.04	2.12	1.67	1.73	1.69	1.72	1.64	1.63	1.99	1.62	1.64	1.64	1.68	2.11	2.11	1.6	1.6	1.61	1.78	1.75	1.78
Inorganics																										
Alkalinity	500	mg/L CaCO3	38.2	49.2	38.3	64.9	65.1	65.3	60	69	66.4	64.8	61.1	72	71.3	64.2	69.5	69.4	65.5	66.3	71.5	72	62.3	73.4	71.7	73.4
Ammonia	-	mg/L	0.101	0.13	0.186	0.029	0.147	<0.020	<0.020	0.026	0.03	0.0079	0.0091	0.0086	0.035	0.0255	0.026	0.036	<0.0500	<0.0500	0.0107	0.0106	0.0118	<0.0500	0.0281	<0.0500
Arsenic	0.025	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.00044	0.00044	NT	NT	0.00043	0.00043	NT	NT	0.00042	NT	NT	NT
Barium	1	mg/L	0.0198	0.00796	0.00797	0.0119	0.0122	0.00967	0.00981	0.0106	0.0109	0.012	0.00985	0.0127	0.0113	0.0115	0.0107	0.0114	0.0133	0.0139	0.0115	0.0115	0.0129	0.0109	0.0109	0.0109
Boron	5	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.0001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0000064	0.0000065	NT	NT	0.0000058	0.000006	NT	NT	0.0000106	NT	NT	NT
Calcium	-	mg/L	13.5	8.31	8.43	20.3	20.4	18.8	18.8	17.9	18.4	17.4	16.1	19.1	17.8	18.1	18.3	18.7	20.1	19.6	18.7	18.6	16.2	20.2	19.9	20.2
Chloride	250	mg/L	100	8.34	20.5	25.9	28.3	4.35	6.97	6.02	8.01	7.27	13.1	13	4.91	6.05	2.53	2.54	22.1	24.4	2.56	2.59	6.8	2.52	2.48	2.52
Chromium	0.05	mg/L	0.00079	0.00106	0.00092	0.00124	0.00059	0.0005	0.00059	0.00066	0.00061	0.00089	NT	0.00107	0.00069	0.00067	NT	NT	0.0008	0.00075	NT	NT	0.00082	NT	NT	NT
Conductivity	-	µS/cm	442	146	165	229	234	162	170	162	168	162	178	197	162	162	150	152	214	221	168	168	161	171	170	171
Copper	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NA	NT	NT	NT	0.00052	0.00049	NT	NT	0.00144	NT	NT	NT
Fluoride	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.022	0.0026	0.048	0.048	<0.020	<0.020	<0.020	<0.020	<0.020	0.028	0.021	0.028
Hardness	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	66.4	67.6	72	73	76	75	70.2	70.2	62.8	77.9	76.2	77.9
Iron	0.3	mg/L	0.083	0.094	0.09	<0.010	<0.010	<0.010	<0.010	0.01	0.011	0.046	0.023	0.156	0.014	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.035	<0.010	0.015	<0.010
Lead	0.01	mg/L	0.00006	0.000149	0.000075	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	0.000091	<0.000050	<0.000050	NT	NT	<0.000050	<0.000050	NT	NT	<0.000050	NT	NT	NT
Magnesium	-	mg/L	3.53	2.48	2.5	6.13	6.25	5.98	6.08	6.01	6.14	5.33	4.92	5.9	5.32	5.44	6.38	6.53	6.27	6.34	5.72	5.78	5.42	6.68	6.45	6.68
Manganese	0.05	mg/L	0.0076	0.00228	0.00209	0.00042	0.00036	0.00126	0.00078	0.00057	0.00073	0.00103	0.00077	0.00181	0.00056	0.00053	<0.00050	<0.00050	0.00016	0.00019	0.00028	0.00026	0.00092	0.00123	0.00056	0.00123
Mercury	0.001	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0000050	<0.0000050	NT	NT	<0.0000050	<0.0000050	NT	NT	<0.0000050	NT	NT	NT
Nitrate	10	mg/L	0.03	0.055	0.032	0.084	0.073	0.088	0.082	0.074	0.0801	0.084	0.068	0.075	0.058	0.062	0.057	0.063	0.063	0.06	0.072	0.071	0.073	0.074	0.078	0.074
Nitrite	1	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.010	<0.010	NT	NT	<0.010	<0.010	NT	NT	<0.010	NT	NT	NT
Organic Nitrogen	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	3.13	6.68	1.1	1.62	1.6	1.54	0.813	0.785	<1.00	NT	NT	NT
TKN	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	3.16	6.7	1.12	1.66	NT	NT	0.824	0.796	<1.00	NT	NT	NT
pH	6.5-8.5	mg/L	6.68	6.68	6.54	7.12	7	7.46	7.25	7.25	7.29	7.19	6.94	7.06	7.21	7.2	7.58	7.68	7.54	7.63	7.57	7.5	7.67	7.23	7.11	7.23
Total Phosphorous	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	4.1	2.4	NT	NT	0.622	0.638	NT	NT	0.52	NT	NT	NT
Potassium	-	mg/L	0.923	0.428	0.426	0.951	0.96	0.856	0.868	0.83	0.838	0.844	0.765	0.974	0.774	0.797	NT	NT	0.848	0.858	NT	NT	0.696	NT	NT	NT
Sodium	200	mg/L	69.8	14.6	14.9	11.4	12.7	5.02	6.14	6.41	6.4	6.86	9.05	11.6	6.27	6.02	4.2	4.48	13.1	13.6	4.02	4.04	7.58	4.7	4.56	4.7
Suspended Solids	-	mg/L	4920	2970	1810	2010	4420	566	693	363	402	1510	413	833	9.32	3210	2350	2860	1670	1310	682	537	779	1090	1020	1090
TDS	500	mg/L	448	161	234	224	193	136	151	154	150	163	125	121	236	127	140	132	158	195	146	155	131	150	137	150
Sulfate	500	mg/L	9.35	10	7.65	12.3	12.3	11.1	10.9	10.5	10.3	10.7	9.4	11.7	9.32	9.66	10.2	10.3	11.2	11	11.2	11.2	11.4	12	12	12
Zinc	5	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0010	<0.0010	NT	NT	<0.0010	<0.0010	NT	NT	0.0022	NT	NT	NT
Volatile Organics																										
Benzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	<0.50	NT	NT	<0.50	<0.50	NT	NT	<0.50	NT	NT	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	<0.50	NT	NT	<0.50	<0.50	NT	NT	<0.50	NT	NT	NT
Dichloromethane	50	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<5.0	<5.0	NT	NT	<2.0	<2.0	NT	NT	<1.0	NT	NT	NT
Toluene	24	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	<0.50	NT	NT	<0.50	<0.50	NT	NT	<0.50	NT	NT	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.50	<0.50	NT	NT	<0.50	<0.50	NT	NT	<0.50	NT	NT	NT
OtGer Organics																								NT		
BOD_5	-	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5	<2.0	<3.3	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<2.0		<3.0	<3.0
COD	-	mg/L	131	235	275	260	281	106	90	42	50	128	64	52	16	28	74	103	<10	<10	67	<10	72	<3.0	90	168
DOC	5	mg/L	8.7	4.1	7.1	2	1.8	1.41	1.4	3.92	3.03	4.51	2.96	3.77	2.46	3.06	2.22	1.98	2.72	1.99	2.77	1.37	3.82	3.81	2.06	1.51
Phenol	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.0010	0.005	NT	NT	<0.0010	<0.0010	NT	NT	<0.0010	1.51	NT	NT
Field Parameters																										
pH	-		7.13	8.57	8.57	7.65	7.65	7.76	7.76	8.65	8.65	8.58	7.56	6.88	6.85	6.85	4.82	4.82	5.62	5.62	6.57	6.57	5.81	5.81	5.62	5.62
Conductivity	-	µS/cm	0.42	0.15	0.15	0.19	0.19	0.17	0.17	0.16	0.16	0.16	0.18	0.181	0.178	0.178	0.178	0.178	0.187	0.187	0.168	0.168	0.157	0.157	0.166	0.166
DO	-	%	38.2	43.8	43.8	56.2	56.2	45.6	45.6	46.6	46.6	51.2	44.9	48.6	50.4	50.4	35.2	35.2	52	52	55.4	55.4	55.9	55.9	52.4	52.4
Temp	-	°	9.9	7.6	7.6	8.7	8.7	7	7	8.7	8.7	9.4	10.5	11.3	7.3	7.3	10.9	10.9	8.2	8.2	10.1	10.1	8.6	8.6	11	11

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.16: Sampling Location - MW1-20
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 2

KEC Project Ref. No. 2421

Parameter	ODWS	Units	Date of Sampling Event								
			Nov-20	44335	Oct-21	May-22	Sep-22	Jun-23	Oct-23	May-24	Oct-24
Miscellaneous Parameters											
			Well Constructed in Fall 2020								
Nitrite (as N)	-	mg/L	NT	NT	NT	NT	NT	<0.200	NT	<0.200	NT
Bicarbonate (HCO3)	-	mg/L	76.1	76	74.5	74.6	79.4	70.3	NT	NT	NT
Carbonate (CO3)	-	mg/L	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Hydroxide (OH)	-	mg/L	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	NT	NT	NT
Cyanide	0.2	mg/L				<0.0020	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Ion Balance Calculation											
Cation - Anion Balance	-	%	5.1	-2.1	0.4	7.5	-1	0.19	1.62	102	0
TDS (calculated)	-	mg/L	NT	NT	NT	NT	Nov-03	1910	2260	2100	1890
Anion Sum	-	me/L	1.75	21.6	24.9	22.4	25.7	26.8	27.3	27.4	27.2
Cation Sum	-	me/L	1.94	20.7	25.1	26.1	25.3	26.9	28.2	27.9	27.2
Inorganics											
Alkalinity	500	mg/L CaCO3	76.1	76	74.5	74.6	79.4	70.3	83.2	68.4	72.8
Ammonia	-	mg/L	<0.0050	1.91	1.93	2.33	2.52	2	2.3	1.21	2.48
Arsenic	0.025	mg/L	NT	NT	NT	Jan-00	NT	0.00213	NT	0.0025	NT
Barium	1	mg/L	0.0136	0.23	0.312	0.347	0.326	0.277	0.403	0.348	0.322
Boron	5	mg/L	0.018	<0.010	<0.010	<0.10	0.011	<0.100	0.015	0.014	<0.010
Cadmium	0.0001	mg/L	NT	NT	NT	<0.000050	NT	<0.0000500	NT	<0.0000050	NT
Calcium	-	mg/L	21.6	133	141	183	158	153	172	176	162
Chloride	250	mg/L	0.77	711	830	742	863	899	910	925	914
Chromium	0.05	mg/L	0.00058	0.00092	0.00069	<0.0050	NT	<0.00500	NT	<0.00050	NT
Conductivity	-	µS/cm	162	2410	2760	2720	2360	2840	3060	3020	2930
Copper	1	mg/L	NT	NT	NT	NA	NT	0.00221	NT	0.0009	NT
Fluoride	-		NT	NT	NT	<0.02	<0.10	<0.400	<1.00	<0.400	<0.400
Hardness	-		NT	NT	NT	Oct-01	Aug-01	571	627	641	601
Iron	0.3	mg/L	0.061	17.1	20.8	21.3	20.4	26.2	24.1	24	23.8
Lead	0.01	mg/L	<0.00005	<0.000050	<0.000050	<0.00050	NT	<0.000500	NT	<0.000050	NT
Magnesium	-	mg/L	6.66	37.7	41.1	48.7	47.6	45.8	48	49	47.8
Manganese	0.05	mg/L	0.0163	5.29	5.4	6.73	6.48	6.51	6.7	6.39	6.41
Mercury	0.001	mg/L	NT	NT	NT	<0.0000050	NT	<0.0000050	NT	<0.0000050	NT
Nitrate	10	mg/L	0.091	<0.20	<0.20	<0.020	<0.10	<0.400	<1.00	<0.400	<0.400
Nitrite	1	mg/L	NT	NT	NT	<0.010	NT	<0.200	NT	<0.200	NT
Organic Nitrogen	-					0.772	3.40	0.76	2.06	1.27	NT
TKN	-	mg/L	NT	NT	NT	3.11	0.88	NT	4.36	2.48	NT
pH	6.5-8.5	mg/L	7.36	6.64	6.75	7.35	7.49	7.27	7.31	7.44	7.16
Total Phosphorous	-	mg/L	NT	NT	NT	6.5	NT	8.13	NT	4.04	NT
Potassium	-	mg/L	1.66	1.84	2.21	2.09	NT	1.82	NT	2.13	NT
Sodium	200	mg/L	6.17	225	303	265	303	326	330	318	318
Suspended Solids	-	mg/L	388	15400	10400	<0.30	26400	39900	71500	33400	42400
TDS	500	mg/L	162	1610	1560	1700	1620	1910	2260	2100	1890
Sulfate	500	mg/L	9.85	<3.0	<3.0	<0.30	<1.5	<6.00	<15.0	<6.00	<6.00
Zinc	5	mg/L	NT	NT	NT	<0.010	NT	<0.0100	NT	0.002	NT
Total Metals											
Arsenic		mg/L	NT	NT	NT	0.0204	0.0304	0.0194	0.0431	0.0246	0.0378
Barium		mg/L	NT	NT	NT	0.79	0.956	0.958	1.97	1.21	1.71
Boron		mg/L	NT	NT	NT	<0.10	<0.10	<0.100	0.056	<0.200	<0.200
Cadmium		mg/L	NT	NT	NT	0.000417	0.000591	0.000565	0.0014	0.000418	0.00065
Chromium		mg/L	NT	NT	NT	0.112	0.137	0.0714	0.286	0.153	0.276
Copper		mg/L	NT	NT	NT	0.154	0.189	0.1	0.422	0.142	0.259
Iron		mg/L	NT	NT	NT	90.6	111	83	222	127	203
Lead		mg/L	NT	NT	NT	0.0554	0.0734	0.0688	0.149	0.0683	0.108
Mercury		mg/L	NT	NT	NT	0.000015	0.000005	<0.0000050	0.000131	<0.0000050	<0.0000050
Zinc		mg/L	NT	NT	NT	0.163	0.195	0.146	0.38	0.191	0.321
Volatile Organics											
Benzene	5	µg/L	NT	NT	NT	<0.50	NT	NT	NT	<0.50	NT
1,4 Dichlorobenzene	5	µg/L	NT	NT	NT	<0.50	NT	NT	NT	<0.50	NT
Dichloromethane	50	µg/L	NT	NT	NT	<5.0	NT	NT	NT	<1.0	NT
Toluene	24	µg/L	NT	NT	NT	<0.50	NT	NT	NT	<0.50	NT
Vinyl Chloride	2	µg/L	NT	NT	NT	<0.50	NT	NT	NT	<0.50	NT
Other Organics											
BOD_5	-	mg/L	<2.0	<15	<5.0	<5.0	<3.0	<5.0	<10.0	<5.0	<5.0
COD	-	mg/L	67	178	84	73	120	47	67	51	67
DOC	5	mg/L	2.63	14.4	14.2	13.3	10.9	9.74	10.5	8.67	9.35
Phenol	-	mg/L	NT	NT	NT	Jan-00	NT	0.0015	NT	0.0011	
Field Parameters											
pH	-		7.75	6.95	6.68	6.48	6.36	6.12	6.49	6.11	6.19
Conductivity	-	µS/cm	2.31	2.06	2.947	2.608	2.845	2.64	2.581	2.411	2.146
DO	-	%	22	20.1	27.1	16.2	26	20.1	28.1	43.7	29.5
Temp	-	°	7.6	9.1	9.2	7	8.9	8.2	9	9.3	9.3

Shaded concentrations exceed ODWS
NT = Not Tested
ND = Not Detected

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.17: Sampling Location - SW1
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

Parameter	PWQO	Units	Date of Sampling Event																		
			Nov-04	May-05	Oct-05	Jun-06	Dec-06	May-07	Oct-07	May-08	Oct-08	Jun-09	Oct-09	May-10	Oct-10	May-11	Sep-11	May-12	Oct-12	May-13	Oct-13	May-14
Miscellaneous Parameters																						
Nitrite (as N)		mg/L																0.139	0.378	0.096	0.027	0.047
Bicarbonate (HCO3)		mg/L																722	508	436	686	NT
Carbonate (CO3)		mg/L																<5	<5.0	<5.0	<5.0	NT
Hydroxide (OH)		mg/L																<5	<5.0	<5.0	<5.0	NT
Ion Balance Calculation																						
Cation - Anion Balance		%																5.2	8.4	7.45	NT	6.7
TDS (calculated)		mg/L																906	1050	743	767	NT
Anion Sum		me/L																16.4	16.2	11.3	NT	8.53
Cation Sum		me/L																18.2	19.2	14.9	NT	9.76
Inorganics																						
Alkalinity	-	mg/L CaCO3	562	601	617	580	430	506	601	558	678	591	540	546	598	570	579	592	508	436	562	329
Ammonia	-	mg/L	27	26	22.2	28.6	32.5	30.1	20.5	23.8	28	29.5	27.4	24.5	23.9	28.3	24.1	29.8	11	17.1	21.4	13.7
Arsenic	0.005	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002	0.002	0.0025	0.0018	0.003	<0.0010	<0.0010	<0.0010	<0.001	<0.0010	<0.0010	0.00061	<0.0010
Barium	-	mg/L	0.04	0.06	0.06	0.0865	0.0776	0.072	0.09	0.08	0.11	0.078	0.081	0.102	0.091	0.108	0.102	0.114	0.074	0.083	0.101	0.076
Boron	0.2	mg/L	0.56	0.63	0.07015	0.1403	0.428	0.599	0.64	0.51	0.56	0.694	0.736	0.649	0.638	0.73	0.923	0.762	1.03	0.683	0.719	0.619
Bromide	-	mg/L																				
Cadmium	0.0001	mg/L	<0.0001	0.0004	0.00036	<0.0001	<0.0001	<0.0001	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.000090	<0.000090	<0.000090	<0.00010	0.000029	0.000029	<0.000017	<0.000010	0.000023
Chloride	-	mg/L	59.8	61	101	85	83.1	80.2	109	114	164	142	174	180	143	196	193	162	238	115	112	52
Chromium	-	mg/L	0.006	0.001	0.002	0.002	0.0019	0.0133	<0.001	0.002	0.002	0.0014	0.0014	0.0014	0.0011	<0.0010	0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Conductivity	-	µS/cm	522	1280	1350	1050	1275	892	1330	1380	1630	1540	1410	1470	1470	1580	1660	1570	1820	1290	1360	832
Copper	0.005	mg/L	<0.001	<0.001	<0.001	0.001	0.00198	<0.001	0.001	<0.001	0.002	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	0.0011	0.00054	0.001
Iron	0.3	mg/L	0.18	0.4	1.67	0.83	10.8	2.02	0.9	0.53	1.13	0.992	0.52	1.43	1.72	1.78	0.845	1.19	0.196	0.597	1.49	5.58
Lead	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.000090	<0.0010
Manganese	-	mg/L	0.202	0.082	0.38	NT	0.768	0.2	NT	NT	NT	NT	NT	NT	NT	0.636	0.241	0.445	NT	NT	NT	NT
Manganese (Dissolved)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Mercury	0.0002	mg/L	<0.0001	<0.0001	0.0009	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.000010	<0.000010	<0.00010	<0.000010
Nitrate	-	mg/L	<0.003	0.43	0.3	<0.1	0.18	<0.1	0.1	0.12	0.13	0.06	0.054	0.075	<0.030	0.05	0.125	0.119	1.52	0.274	<0.03	0.243
Nitrite	-	mg/L	<0.02	0.18	0.41	<0.05	<0.03	0.035	<0.02	0.25	<0.1	<0.2	<0.4	<0.020	<0.020	<0.40	0.161	0.139	0.378	0.096	0.027	0.047
Sodium	-	mg/L																				
TKN	-	mg/L	27.6	26	23.2	35.1	32	26.4	21.7	25.4	29	30.2	26.9	27.3	29.8	28.8	24.6	29.5	13.7	20.2	23.4	17.3
pH	6.5-8.5	mg/L	7.4	7.9	8.1	7.65	7.51	7.54	7.8	7.68	7.86	7.74	7.9	7.93	7.75	7.63	7.99	8.22	8.29	7.75	7.74	7.22
Total Phosphorous	0.01	mg/L	NT	NT	NT	0.071	0.0791	0.0908	0.032	0.026	0.086	0.0417	0.0214	0.0449	0.0985	0.0829	0.0561	0.246	0.0231	0.0403	0.0264	0.0508
Suspended Solids	-	mg/L	2	10	10	20	36	7	2	8.5	71.8	5.6	3.6	41.4	14.4	17.4	17.8	NT	14.1	49.2	128	40.8
TDS	-	mg/L	670	670	810	820	743	735	900	780	920	875	851	878	888	870	925	876	1050	669	764	433
Sulfate	-	mg/L	0.5	2.4	3.9	0.4	<1.0	<1	14.9	1	2.1	0.66	1.67	0.51	11	8.76	3.61	1.23	48.7	40.3	0.58	22.9
Zinc	0.02	mg/L	<0.003	0.038	<0.003	0.001	0.0038	0.0049	0.01	0.005	0.012	0.0036	0.0147	0.0038	0.0085	0.004	0.0053	0.0054	0.0084	0.0045	0.0024	0.0092
Zinc (Dissolved)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Other Organics																						
BOD_5	-	mg/L	4	<2	3	3	3.8	3.7	4	3	5	11.8	5.3	2.9	7.3	3.8	4.8	5.6	<2.0	2.6	7.3	8.4
COD	-	mg/L	NT	68	78	90	79	73	79	74	82	78.6	84.1	90.3	85.9	88.8	82.6	119	92.8	55.9	78.1	45
Phenols	0.001	mg/L	0.009	0.01	0.009	0.025	0.0115	0.0073	0.016	0.011	0.019	0.0109	0.0033	0.0065	0.0043	0.0124	0.0067	0.0233	0.0024	<0.0010	0.0029	0.0091
DOC	-	mg/L	16	21	22	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Field Parameters																						
Temperature		°C						15.2	11.7		8.9	13.1	6.8	23.9	16.2	16.2	18.6	24.3	16.6	19.7	13.3	9.9
pH								7.43	7.48		7.79	7.4	7.57	7.89	8.17	8.01	7.9	7.78	8.06	7.34	6.82	6.89
Conductivity		mS/cm							1330		1580	1300	1380	1470	1380	1530	1.76	1.7	1.85	1.31	1.36	0.76
Dissolved Oxygen		%						88.2	23.9		36.5	52.4	24.4	70.5	27.3	39.4	23.8	34.1	72.5	80.3	11.6	49.9

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.17: Sampling Location - SW1
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

Parameter	PWQO	Units	Date of Sampling Event																		
			Oct-14	May-15	Oct-15	Jun-16	Oct-16	May-17	Nov-17	May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Aug-23	Sep-23	Oct-23
Miscellaneous Parameters												Frozen								NOT SAMPLED		
Nitrite (as N)		mg/L	0.027	0.024	0.098	0.293	0.263	0.121	0.011	0.097	0.035		0.094	0.022	0.106	0.018	<0.010	0.169	0.071	DRY	0.191	<0.100
Bicarbonate (HCO3)		mg/L	416	320	311	355	249	287	213	295	198		409	353	293	386	356	370	347		414	412
Carbonate (CO3)		mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	9.2	16.6	26.4		<2.0	<2.0
Hydroxide (OH)		mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0		<2.0	<2.0
Ion Balance Calculation																						
Cation - Anion Balance		%	1.7	-6.3	-0.9	-0.5	1.2	2.9	5.7	1.2	-10.3		-0.2	-1.4	-2.3	5.1	-1	6	0.6		3.33	3.51
TDS (calculated)		mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	547	521		659	612
Anion Sum		me/L	10.5	8.35	10.5	9.76	8.43	7.6	5.32	7.34	5.58		9.99	8.51	7.07	9.56	8.91	9.08	9.14		11.6	11
Cation Sum		me/L	10.9	7.36	10.3	9.65	8.63	8.05	5.96	7.52	4.54		9.95	8.28	6.75	10.6	8.74	10.3	9.25		12.4	11.8
Inorganics																						
Alkalinity	-	mg/L CaCO3	416	320	311	355	249	287	213	295	198		409	353	293	386	365	386	373		414	412
Ammonia	-	mg/L	14.3	13.5	7.56	6.33	2.61	6.94	6.26	8.93	3.88		8.28	9.27	5.61	9.25	9.2	7.67	4.65		2.7	7.13
Arsenic	0.005	mg/L	<0.0010	0.0006	0.00081	0.00062	0.00058	0.00112	0.00161	0.00043	0.0006		<0.0010	0.00048	0.00046	0.00112	0.00099	<0.0010	0.00054		0.00053	0.00037
Barium	-	mg/L	0.086	0.0706	0.0984	0.0362	0.0409	0.146	0.0648	0.0616	0.0388		0.0863	0.0602	0.0692	0.126	0.126	0.101	0.0622		0.0849	0.0703
Boron	0.2	mg/L	0.49	0.514	0.843	0.727	0.721	0.442	0.277	0.458	0.324		0.72	0.393	0.486	0.625	0.631	0.8	0.705		1.14	0.76
Bromide	-	mg/L																				
Cadmium	0.0001	mg/L	<0.000017	0.000017	0.000025	0.0000118	0.0000162	0.000192	0.000106	<0.0000050	<0.000030		<0.00005	0.0000071	0.0000871	0.0000285	0.000102	<0.000050	0.000012		0.0000054	<0.0000050
Chloride	-	mg/L	75.5	59.5	91.5	72.2	83	45.1	29.6	40.4	43.8		57.3	46.8	37.3	62.7	48.4	81	49.8		102	88.5
Chromium	-	mg/L	<0.0010	0.00083	0.00104	0.00073	0.00068	0.00376	0.00592	0.00064	0.00135		<0.005	0.00067	0.00057	0.00171	0.00233	<0.0050	0.00083		0.00058	0.00058
Conductivity	-	µS/cm	1030	799	1000	887	837	729	533	718	517		888	793	672	911	857	864	810		1090	1060
Copper	0.005	mg/L	<0.0010	0.00085	0.00148	0.00077	0.00156	0.00548	0.0115	0.00077	0.0017		<0.005	0.00066	0.00113	0.00125	0.0036	<0.0050	0.00103		<0.00050	0.00054
Iron	0.3	mg/L	3.09	2.33	5.04	1.26	1.41	9.88	10.3	1.58	2.85		1.42	3.19	1.8	19.6	17	3.7	3.2		0.439	1.42
Lead	0.001	mg/L	<0.0010	0.000203	0.000724	0.000061	0.000251	0.00245	0.0111	0.000229	0.000623		<0.0005	0.000084	0.000126	0.00083	0.00182	<0.00050	0.000305		<0.000050	<0.000050
Manganese	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	NT	0.355			0.0882	0.176
Manganese (Dissolved)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	0.0589	0.225	<0.0000050		<0.0000050	<0.0000050
Mercury	0.0002	mg/L	<0.00001	<0.000005	<0.000005	<0.000005	<0.0000050	<0.0000050	0.0000288	<0.0000050	<0.0000050		<0.000005	<0.000005	<0.0000050	0.0000062	0.0000055	<0.0000050	<0.0000050		<0.0000050	<0.0000050
Nitrate	-	mg/L	0.071	0.085	0.304	1.41	1.2	2.06	0.517	0.826	0.265		0.227	0.527	0.999	0.205	0.999	0.169	0.644		0.112	0.378
Nitrite	-	mg/L	0.027	0.024	0.098	0.293	0.263	0.121	0.011	0.097	0.035		0.094	0.022	0.106	0.018	<0.010	0.1	0.071		0.191	<0.100
Sodium	-	mg/L																				
TKN	-	mg/L	12.9	13.2	8.29	8.79	4.27	11.3	9.5	11	4.52		10.5	11.5	7.27	11	13	12.2	5.55		4.04	6.82
pH	6.5-8.5	mg/L	7.44	7.39	7.6	7.9	7.99	7.71	7.08	7.79	7.34		8.09	7.72	8.03	7.93	8.32	8.38	8.48		8.25	8.28
Total Phosphorous	0.01	mg/L	0.03	0.0765	0.121	0.188	0.0512	0.292	0.309	0.0537	0.0567		0.023	0.0532	0.062	0.141	0.223	0.161	0.0636		0.0294	0.0197
Suspended Solids	-	mg/L	21.1	19.4	41.5	27.2	10.5	283	391	23.7	25.5		5.9	9.5	11.2	121	202	114	53.5		14.2	15.5
TDS	-	mg/L	561	462	587	562	494	388	282	394	348		545	444	354	520	458	551	521		659	612
Sulfate	-	mg/L	3.49	13.4	79.6	24.8	48.3	20.6	9.17	11	17.9		8.57	4.62	3.97	2.68	8.56	14.3	11.2		22.9	11.5
Zinc	0.02	mg/L	0.0065	0.0063	0.0161	0.0069	0.0068	0.043	0.033	0.0066	0.0162		<0.030	<0.030	0.0224	0.007	0.0292	<0.030	0.0039		<0.0030	<0.0030
Zinc (Dissolved)	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	0.0021	0.0021	<0.0010		0.0019	0.0015
Other Organics																						
BOD_5	-	mg/L	<2.0	2.8	3	12.4	4.6	21.9	10.4	3.2	2.7		<2.0	<2.0	2.7	3.5	25.8	5.3	12.8		2.5	2.3
COD	-	mg/L	69	68	70	72	72	147	150	57	67		69	59	70	91	143	82	61		73	56
Phenols	0.001	mg/L	0.01	<0.001	0.0045	0.0054	<0.020	0.042	<0.020	<0.0010	<0.020		0.0013	<0.0010	0.0018	0.0145	0.0018	0.0021	0.0023		<0.0010	0.0019
DOC	-	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT	NT	24.8	28.2	24.8		28.5	20.8
Field Parameters																						
Temperature		°C	9.7	12.1	14.3	16.6	15.2	10	3.1	18.5	2.5		16.3	9.8	19.1	17.1	19.9	25.7	22.4		18.9	12.4
pH			7.19	7.3	7.07	6.35	6.57	6.57	7.37	7.5	7.42		7.26	7.16	6.73	7.29	7.8	7.93	7.58		7.39	7.79
Conductivity		mS/cm	0.96	0.76	0.93	0.84	0.68	0.61	0.48	0.73	0.62		0.86	0.74	0.63	0.982	0.935	1.065	0.802		1.047	1.032
Dissolved Oxygen		%	30	39.4	33.1	109	73.1	104.3	34.9	137	30.4		63.1	48	108.1	51.7	142.5	136.6	142.1		92.6	99.6

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.17: Sampling Location - SW1
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	May-24	Jun-24	Aug-24	Oct-24
Miscellaneous Parameters						
Nitrite (as N)		mg/L	0.051	0.032	0.143	<0.100
Bicarbonate (HCO3)		mg/L	478	483	530	596
Carbonate (CO3)		mg/L	33.2	12.2	<2.0	<2.0
Hydroxide (OH)		mg/L	<2.0	<2.0	<2.0	<2.0
Ion Balance Calculation						
Cation - Anion Balance		%	3.91	2.59	0	1.92
TDS (calculated)		mg/L	610	592	725	779
Anion Sum		me/L	12.3	11.3	12.8	15.3
Cation Sum		me/L	13.3	11.9	12.8	15.9
Inorganics						
Alkalinity	-	mg/L CaCO3	512	496	530	596
Ammonia	-	mg/L	13.2	9.19	0.96	12.6
Arsenic	0.005	mg/L	<0.00100	<0.00100	0.00115	<0.00100
Barium	-	mg/L	0.116	0.109	0.231	0.0992
Boron	0.2	mg/L	0.826	0.664	0.709	0.687
Bromide	-	mg/L	NT	NT	NT	<1.00
Cadmium	0.0001	mg/L	<0.0000500	<0.0000500	0.00014	<0.0000500
Chloride	-	mg/L	67.4	49.9	48	119
Chromium	-	mg/L	<0.00500	<0.00500	<0.00500	<0.00500
Conductivity	-	µS/cm	1120	1040	1090	1400
Copper	0.005	mg/L	<0.00500	<0.00500	0.0069	<0.00500
Iron	0.3	mg/L	4.12	4.62	26.4	1.39
Lead	0.001	mg/L	<0.000500	<0.000500	0.00338	<0.000500
Manganese	-	mg/L	NT			NT
Manganese (Dissolved)	-	mg/L	0.229	0.458	0.411	0.249
Mercury	0.0002	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nitrate	-	mg/L	0.583	0.054	0.252	0.586
Nitrite	-	mg/L	0.051	0.032	0.143	<0.100
Sodium	-	mg/L				89.1
TKN	-	mg/L	14.4	11.7	8.33	15.9
pH	6.5-8.5	mg/L	8.47	8.33	7.85	8.11
Total Phosphorous	0.01	mg/L	0.0377	0.0365	0.541	0.0372
Suspended Solids	-	mg/L	9.2	7	584	18.8
TDS	-	mg/L	610	592	725	779
Sulfate	-	mg/L	6.03	0.64	41.1	<3.00
Zinc	0.02	mg/L	<0.0300	<0.0300	0.0413	<0.0300
Zinc (Dissolved)	-	mg/L	<0.0100	<0.0100	<0.0100	<0.0100
Other Organics						
BOD_5	-	mg/L	9	2	24	5.7
COD	-	mg/L	91	82	86	106
Phenols	0.001	mg/L	0.0042	0.0043	<0.0010	0.0015
DOC	-	mg/L	32.8	31.9	25.8	36.7
Field Parameters						
Temperature		°C	28.5	20.8	16.6	14
pH			7.76	6.68	6.7	7.62
Conductivity		mS/cm	1.011	0.956	0.939	1.131
Dissolved Oxygen		%	127.3	73.6	81.9	120.6

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.18: Sampling Location - SW2
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	Date of Sampling Event															
			May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	May-22	Sep-22	Jun-23	Aug-23	Sep-23	Oct-23	May-24	Jun-24	Aug-24	Oct-24
Miscellaneous Parameters			NOT SAMPLED		Frozen														
Nitrite (as N)		mg/L		<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Bicarbonate (HCO3)		mg/L		133		146	121	120	185	112	230	123	212	243	228	114	168	263	249
Carbonate (CO3)		mg/L		<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	8.8	<2.0	<2.0	<2.0	13.2	<2.0	<2.0	<2.0	<2.0
Hydroxide (OH)		mg/L		<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ion Balance Calculation																			
Cation - Anion Balance		%		4.8		2.6	-1.2	2.4	-1	3.5	6	2.04	-2.58	3.79	-1.49	-0.98	3.2	-5.15	-0.5
TDS (calculated)		mg/L		NT		NT	NT	NT	NT	NT	317	200	329	358	328	167	247	325	352
Anion Sum		me/L		3.54		3.27	2.69	2.74	4.28	2.56	4.99	2.88	5.17	5.84	5.79	2.57	3.63	5.92	6.02
Cation Sum		me/L		3.9		3.44	2.63	2.87	4.19	2.75	5.61	3	4.91	6.3	5.62	2.52	3.87	5.34	5.96
Inorganics																			
Alkalinity	-	mg/L CaCO3		133		146	121	120	185	112	239	123	212	243	241	114	168	263	249
Ammonia	-	mg/L		0.619		0.038	0.0171	0.013	0.0279	0.0117	0.02	0.0152	0.0074	0.0096	0.298	0.0077	0.0127	0.0164	0.0722
Arsenic	0.005	mg/L		0.00104		0.00081	0.00049	0.00061	0.00074	0.0005	<0.0010	0.00062	0.00104	0.00083	0.0006	0.0005	0.00071	0.00076	0.00063
Barium	-	mg/L		0.0351		0.021	0.022	0.0288	0.0336	0.0182	0.0388	0.0159	0.0265	0.0424	0.0397	0.0105	0.0275	0.0274	0.0424
Boron	0.2	mg/L		0.291		0.184	0.097	0.133	0.198	0.152	0.38	0.255	0.427	0.515	0.433	0.134	0.264	0.369	0.361
Bromide	-	mg/L														NT	NT	NT	0.22
Cadmium	0.0005	mg/L		0.0000441		0.0000057	<0.000005	0.0000195	0.0000069	0.0000087	<0.000050	<0.0000050	0.0000083	<0.0000050	<0.0000050	0.0000069	<0.0000050	<0.0000050	<0.0000050
Chloride	-	mg/L		21.9		12.4	9.64	11.6	20.4	11.7	34.4	15.1	33.2	34.8	34.1	9.54	9.14	23.5	36.3
Chromium	-	mg/L		0.00287		0.00065	0.0006	0.00066	0.00066	0.00053	<0.0050	0.00058	0.00087	0.00066	0.00068	0.00064	0.00078	<0.00050	0.00109
Conductivity	-	µS/cm		332		298	252	261	404	254	493	273	496	548	550	238	345	477	554
Copper	0.005	mg/L		0.00295		<0.001	<0.0005	0.00093	<0.00050	<0.0010	<0.0050	0.00069	<0.00050	<0.00050	<0.00050	0.00057	0.00058	<0.00050	<0.00050
Iron	0.3	mg/L		2.8		0.781	1.02	0.952	0.725	0.498	0.74	0.308	0.38	0.644	0.631	0.399	0.86	0.353	0.775
Lead	0.001	mg/L		0.00125		0.000061	0.00007	0.000181	0.000068	0.000092	<0.00050	0.00006	<0.000050	<0.000050	0.000057	<0.000050	<0.000050	<0.000050	0.000068
Manganese	-	mg/L		NT		NT	NT	NT	NT	NT	0.043	NT	0.0341	0.0586	0.0115	NT			NT
Manganese (Dissolved)	-	mg/L								0.0116	0.0326	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0062	0.182	0.0273	0.0538
Mercury	0.0002	mg/L		0.0000172		<0.000005	<0.000005	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nitrate	-	mg/L		0.056		<0.020	<0.020	<0.020	0.02	<0.020	<0.010	<0.020	0.021	<0.020	0.021	0.022	<0.020	<0.020	0.239
Nitrite	-	mg/L		<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sodium	-	mg/L																	30.0
TKN	-	mg/L		1.93		0.88	0.801	1.23	1.17	0.723	0.878	0.768	1.11	0.782	0.836	0.644	0.935	0.829	0.915
pH	6.5-8.5	mg/L		7.62		7.8	7.61	7.78	7.86	8.18	8.4	8.24	8.23	8.15	8.47	8.1	8.16	8.15	8.23
Total Phosphorous	0.01	mg/L		0.172		0.0157	0.0383	0.0986	0.0841	0.0282	0.0203	0.0151	0.0151	0.0159	0.0188	0.0157	0.0232	0.0101	0.0198
Suspended Solids	-	mg/L		190		<3.0	6.7	8.8	7.9	6.2	10.9	11.1	5.7	9.4	16.3	16.4	4.7	9	11.8
TDS	-	mg/L		238		221	168	135	256	151	305	200	329	358	328	167	247	325	352
Sulfate	-	mg/L		13.1		<0.30	<0.30	0.32	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.46	1.01	0.88	<0.30	<0.30
Zinc	0.02	mg/L		0.0128		0.0031	<0.003	0.0051	<0.0030	<0.0030	<0.030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zinc (Dissolved)	-	mg/L		NT	NT	NT	NT	NT	NT	0.0014	0.0022	0.0034	<0.0010	0.002	<0.0010	0.0028	0.0047	0.0034	0.0012
Other Organics																			
	-																		
BOD_5	-	mg/L		5.8		<2.0	<2.0	3.2	2.2	<2.0	<3.0	<2.0	2.5	2	2.8	2.8	<2.0	<2.0	<2.0
COD	-	mg/L		111		63	48	59	72	49	56	52	64	51	42	56	64	62	51
Phenols	0.001	mg/L		0.04		<0.0010	<0.001	0.0014	0.0027	0.0012	<0.0010	0.0016	<0.0010	0.0044	0.002	0.0018	0.0013	<0.0010	<0.0010
DOC	-	mg/L		NT		NT	NT	NT	NT	16.6	21.1	21.5	22.6	19.7	19.1	18.4	22.1	23.5	18.3
Field Parameters																			
Temperature		°C		0.5		18.3	7.3	19.6	18.8	18.6	20.9	19.7	25.4	19.5	12.7	23.5	21.2	25.5	13.4
pH				8.04		8.01	8.1	7.33	7.3	8.08	7.7	7.82	8.01	7.38	7.92	7.6	6.93	7.38	7.99
Conductivity		mS/cm		0.34		0.31	0.27	0.25	0.464	0.288	0.756	0.301	0.494	0.536	0.54	0.23	0.316	0.44	0.47
Dissolved Oxygen		%		86.1		102.4	58	110.4	56.2	114.3	79.8	114	95.9	94.5	102.9	168.6	77.3	114.8	

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.19: Sampling Location - SW3
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	Date of Sampling Event																
			May-18	Nov-18	Feb-20	Jun-20	Nov-20	May-21	Oct-21	17-May-22	Sep-22	Jun-23	August 8, 223	Sep-23	Oct-23	May-24	Jun-24	21-Aug-24	Oct-24
Miscellaneous Parameters			NOT SAMPLED		Frozen	NOT SAMPLED		NOT SAMPLED	NOT SAMPLED	NOT SAMPLED	NOT SAMPLED	NOT SAMPLED	NOT SAMPLED	NOT SAMPLED	NOT SAMPLED				
Nitrite (as N)		mg/L		<0.010			<0.010	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	<0.010	<0.010	DRY	DRY
Bicarbonate (HCO_3)		mg/L		24.3			30.5									18	34.2		
Carbonate (CO_3)		mg/L		<2.0			<2.0									<2.0	<2.0		
Hydroxide (OH)		mg/L		<2.0			<2.0									<2.0	<2.0		
Ion Balance Calculation																			
Cation - Anion Balance		%		3.2			23.5									4.9	5.84		
TDS (calculated)		mg/L		NT			NT									95	108		
Anion Sum		me/L		1.45			0.84									1.26	1.29		
Cation Sum		me/L		1.54			1.36									1.39	1.45		
Inorganics																			
Alkalinity	-	mg/L $CaCO_3$		24.3			30.5									18	34.2		
Ammonia	-	mg/L		0.872			0.26									0.0477	0.0977		
Arsenic	0.005	mg/L		0.00028			0.00068									0.00135	0.0005		
Barium	-	mg/L		0.0208			0.0127									0.0392	0.0169		
Boron	0.2	mg/L		0.011			<0.010									<0.050	<0.010		
Bromide	-	mg/L																	
Cadmium	0.0005	mg/L		0.0000254			0.0000244									0.0000594	0.0000374		
Chloride	-	mg/L		24.1			7.34									31	20.7		
Chromium	-	mg/L		0.00105			0.00151									0.00359	0.0016		
Conductivity	-	µS/cm		159			83.6									146	148		
Copper	0.005	mg/L		0.00204			0.00226									0.00619	0.0035		
Iron	0.3	mg/L		1.36			5.83									21.4	1.75		
Lead	0.001	mg/L		0.000137			0.00022									0.00151	0.000201		
Manganese	-	mg/L		NT			NT									NT			
Manganese (Dissolved)	-															0.43	0.2		
Mercury	0.0002	mg/L		0.0000054			0.0000085									0.0000082	0.000007		
Nitrate	-	mg/L		0.105			0.032									<0.020	0.02		
Nitrite	-	mg/L		<0.010			<0.010									<0.010	<0.010		
Sodium	-	mg/L																	
TKN	-	mg/L		1.25			0.942									3.74	0.881		
pH	6.5-8.5	mg/L		6.35			6.97									6.72	7.11		
Total Phosphorous	0.01	mg/L		0.016			0.0317									0.322	0.0423		
Suspended Solids	-	mg/L		50.4			14.7									824	33.1		
TDS	-	mg/L		86			80									95	108		
Sulfate	-	mg/L		13.2			1.16									1.29	0.89		
Zinc	0.02	mg/L		0.0038			0.0202									0.0175	0.0117		
Zinc (Dissolved)	-															0.0069	0.0127		
Other Organics																			
BOD_5	-	mg/L		<2.0			<2.0									<2.0	<2.0		
COD	-	mg/L		33			62									198	54		
Phenols	0.001	mg/L		0.03			<0.0010									0.0024	0.0029		
DOC	-	mg/L		NT			NT									15	16.6		
Field Parameters																			
Temperature		°C		2.4			7.3									20.7	17		
pH				8.37			8.14									7.6	6.94		
Conductivity		mS/cm		0.16			0.16									0.154	0.143		
Dissolved Oxygen		%		48			59.2									93.2	46.5		

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.20: Sampling Location - SW4
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	Sampling Event									
			May-22	Sep-22	Jun-23	Aug-23	Sep-23	Oct-23	May-24	Jun-24	Aug-24	Oct-24
Miscellaneous Parameters												
Nitrite (as N)		mg/L	0.013	<0.010	<0.020	<0.010	<0.010	0.055	<0.010	<0.010	<0.010	DRY
Bicarbonate (HCO3)		mg/L	283	227	304	249	164	191	358	194	305	
Carbonate (CO3)		mg/L	<2.0	3.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Hydroxide (OH)		mg/L	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Ion Balance Calculation												
Cation - Anion Balance		%	-3.6	8	0.14	0.39	3.7	1.88	11.1	7.05	1.84	
TDS (calculated)		mg/L	320	389	366	429	286	293	410	252	447	
Anion Sum		me/L	6.59	5.26	7.12	6.4	4.55	5.22	8	4.22	6.94	
Cation Sum		me/L	6.13	6.2	7.14	6.45	4.9	5.42	10	4.86	7.2	
Inorganics												
Alkalinity	-	mg/L CaCO3	283	230	304	249	164	191	358	194	305	
Ammonia	-	mg/L	11.9	16.8	9.79	5.14	4.4	8.47	12.1	1.89	15.5	
Arsenic	0.005	mg/L	0.00102	0.0025	0.00108	0.00156	0.0018	0.00178	0.00327	0.00127	0.00284	
Barium	-	mg/L	0.109	0.102	0.091	0.158	0.124	0.109	0.251	0.114	0.162	
Boron	0.2	mg/L	0.26	0.39	0.414	0.405	0.523	0.386	0.248	0.176	0.362	
Bromide	-	mg/L							NT	NT	NT	
Cadmium	0.0005	mg/L	0.0000376	<0.000050	0.0000427	0.0000237	0.0000973	0.000125	0.0000545	0.0000384	0.000055	
Chloride	-	mg/L	32.8	45.3	37.1	50.6	36.3	36.3	30	12.1	29.7	
Chromium	-	mg/L	0.00124	<0.0050	0.00114	0.00132	0.00369	0.00446	0.00324	<0.00250	<0.00250	
Conductivity	-	µS/cm	643	549	642	612	438	514	741	397	599	
Copper	0.005	mg/L	0.0025	<0.0050	0.00353	0.00175	0.0076	0.0104	0.00501	0.00452	0.00482	
Iron	0.3	mg/L	22.3	23.8	14.6	18.8	28.9	43	139	34.2	38.5	
Lead	0.001	mg/L	0.000554	0.00228	0.00143	0.000808	0.00368	0.005	0.00118	0.00152	0.00323	
Manganese	-	mg/L		0.0904		0.191	0.0736	0.00408	NT			
Manganese (Dissolved)	-		0.118	0.0506	<0.0000050	<0.0000050	<0.0000050	<0.0000050	1.88	1.11	0.329	
Mercury	0.0002	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Nitrate	-	mg/L	0.046	<0.010	0.051	<0.020	<0.020	0.153	<0.020	<0.020	<0.020	
Nitrite	-	mg/L	0.013	<0.020	<0.020	<0.010	<0.010	0.055	<0.010	<0.010	<0.010	
Sodium	-	mg/L										
TKN	-	mg/L	14.8	24.7	11.9	8.45	7.09	12.7	19.1	7.03	23.9	
pH	6.5-8.5	mg/L	8.14	8.30	8.08	7.91	7.56	8.21	7.36	7.73	7.77	
Total Phosphorous	0.01	mg/L	0.215	0.187	0.148	0.161	0.223	0.236	0.706	0.324	0.327	
Suspended Solids	-	mg/L	103	89	250	76.1	1180	379	479	361	288	
TDS	-	mg/L	320	297	366	429	286	293	410	252	447	
Sulfate	-	mg/L	<0.30	6.63	<0.60	<0.30	12	17.7	<0.30	<0.30	0.45	
Zinc	0.02	mg/L	0.0173	<0.030	0.0142	0.0104	0.0381	0.0526	0.286	0.0531	0.0927	
Zinc (Dissolved)	-		0.0022	<0.010	0.0016	0.0011	<0.0020	0.001	0.0588	0.0101	0.0135	
Other Organics												
BOD_5	-	mg/L	10.2	4.7	16.4	8.9	27	23.8	60.6	15.8	16.3	
COD	-	mg/L	124	195	75	178	170	86	434	139	208	
Phenols	0.001	mg/L	0.0017	0.003	0.0023	0.0028	0.0032	0.0019	0.505	0.052	0.0127	
DOC	-	mg/L	23.6	64.9	23.7	51.2	39.2	30.4	54.8	32.7	70.6	
Field Parameters												
Temperature		°C	20.1	26.1	20.6	28.9	19	14.5	21.7	19	17.4	
pH			7.23	7.6	7.35	7.65	7.42	8.07	6.94	6.84	6.79	
Conductivity		mS/cm	0.705	0.645	0.674	0.593	0.462	0.498	0.878	0.368	0.569	
Dissolved Oxygen		%	160.1	43.4	70.5	82.7	54.5	105.7	18.1	19.9	12.1	

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.21: Sampling Location - SW5
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	Sampling Event		
			May-22	Sep-22	2023-2024
Miscellaneous Parameters					NOT SAMPLED
					Location Filled
Nitrite (as N)		mg/L	<0.010	<0.010	
Bicarbonate (HCO3)		mg/L	168	365	
Carbonate (CO3)		mg/L	<2.0	11	
Hydroxide (OH)		mg/L	<2.0	<1.0	
Ion Balance Calculation					
Cation - Anion Balance		%	-2	-5	
TDS (calculated)		mg/L	213	424	
Anion Sum		me/L	3.82	7.84	
Cation Sum		me/L	3.67	7.13	
Inorganics					
Alkalinity		mg/L CaCO3	168	376	
Ammonia		mg/L	5.07	24.3	
Arsenic	0.005	mg/L	0.00106	0.0018	
Barium		mg/L	0.0736	0.127	
Boron	0.2	mg/L	0.177	0.36	
Bromide		mg/L	NT	NT	
Cadmium	0.0001	mg/L	0.000053	<0.000050	
Chloride		mg/L	16.4	52.3	
Chromium		mg/L	0.00125	<0.0050	
Conductivity		µS/cm	379	666	
Copper	0.005	mg/L	0.003	<0.0050	
Iron	0.3	mg/L	11.1	16	
Lead	0.001	mg/L	0.00105	<0.00050	
Manganese		mg/L		0.544	
Manganese (Dissolved)		mg/L	0.285	0.517	
Mercury	0.0002	mg/L	<0.0000050	<0.0000050	
Nitrate		mg/L	<0.020	<0.010	
Nitrite		mg/L	<0.010	<0.020	
Sodium		mg/L			
TKN		mg/L	6.22	37.6	
pH	6.5-8.5	mg/L	7.98	8.34	
Total Phosphorous	0.01	mg/L	0.106	0.265	
Suspended Solids		mg/L	84.8	40	
TDS		mg/L	213	434	
Sulfate		mg/L	0.33	3.26	
Zinc	0.02	mg/L	0.0091	<0.030	
Zinc (Dissolved)		mg/L	0.0014	<0.010	
Other Organics					
BOD_5		mg/L	6.7	4.9	
COD		mg/L	72	89	
Phenols	0.001	mg/L	0.0014	0.0065	
DOC		mg/L	15.2	30.2	
Field Parameters					
Temperature		°C	17	19.6	
pH			7.32	7.39	
Conductivity		mS/cm	0.456	0.906	
Dissolved Oxygen		%	94.8	38.8	

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.22: Sampling Location - SW6
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	Sampling Event									
			May-22	Sep-22	Jun-23	Aug-23	Sep-23	Oct-23	May-24	Jun-24	Aug-24	Oct-24
Miscellaneous Parameters							NOT SAMPLED					
Nitrite (as N)		mg/L	<0.010	<0.010	<0.010	<0.010	DRY	<0.010	<0.010	<0.010	<0.010	<0.010
Bicarbonate (HCO3)		mg/L	32.2	47.3	36.1	49.8		31	43	47.6	106	80.3
Carbonate (CO3)		mg/L	<2.0	<1.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0
Hydroxide (OH)		mg/L	<2.0	<1.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0
Ion Balance Calculation												
Cation - Anion Balance		%	4.3	13	5.94	5.26		-0.4	4.35	7.18	5.54	-1.32
TDS (calculated)		mg/L	54	83	91	101		99	74	89	146	205
Anion Sum		me/L	0.66	0.88	0.87	1.08		1.24	0.88	0.97	2.13	3.08
Cation Sum		me/L	0.72	1.15	0.98	1.2		1.23	0.96	1.12	2.38	3
Inorganics												
Alkalinity	-	mg/L CaCO3	32.2	47.3	36.1	49.8		31	43	47.6	106	80.3
Ammonia	-	mg/L	0.0076	0.072	0.024	0.0259		0.0227	0.0066	0.0807	0.0317	0.0223
Arsenic	0.005	mg/L	0.0011	0.00249	0.001	0.00241		0.00092	0.00092	0.00093	0.00144	0.00149
Barium	-	mg/L	0.0131	0.0474	0.00964	0.0284		0.0113	0.01	0.0102	0.0273	0.0299
Boron	0.2	mg/L	<0.010	0.015	0.018	0.029		0.022	<0.010	<0.010	<0.050	<0.020
Bromide	-	mg/L										<0.10
Cadmium	0.0005	mg/L	0.0000205	0.0000718	0.0000161	0.0000558		0.0000055	0.0000149	0.0000115	0.00003	0.0000437
Chloride	-	mg/L	0.44	1.27	<0.50	1.53		0.66	<0.50	<0.50	<0.50	2.02
Chromium	-	mg/L	0.00071	0.00247	0.00057	0.00259		<0.00050	0.00084	0.00063	<0.00250	0.0021
Conductivity	-	µS/cm	62	99.5	86.9	107		133	85.7	99.3	196	286
Copper	0.005	mg/L	0.0014	0.0023	0.00184	0.00168		0.00075	0.00163	0.00145	<0.00250	0.00205
Iron	0.3	mg/L	1.39	2.18	0.414	2.63		0.246	0.602	0.632	1.28	1.12
Lead	0.001	mg/L	0.000357	0.00208	0.00028	0.00138		0.000182	0.000277	0.000129	0.000728	0.00137
Manganese	-	mg/L		1.43		0.134		0.0126	NT			NT
Manganese (Dissolved)	-	mg/L	0.0568	0.0887	<0.0000050	<0.0000050		<0.0000050	0.0182	0.0317	0.235	0.122
Mercury	0.0002	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000068		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nitrate	-	mg/L	<0.020	<0.010	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	0.044
Nitrite	-	mg/L	<0.010	<0.020	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
Sodium	-	mg/L										6.68
TKN	-	mg/L	0.94	3.02	1.97	3.27		0.984	0.713	1.04	2.48	1.78
pH	6.5-8.5	mg/L	7.49	7.70	7.62	7.5		7.55	7.67	7.63	7.62	7.66
Total Phosphorous	0.01	mg/L	0.0822	0.202	0.068	0.271		0.0494	0.0413	0.036	0.157	0.0891
Suspended Solids	-	mg/L	13.8	18.2	3.7	148		15.4	7	3	296	895
TDS	-	mg/L	54	54.5	91	101		99	74	89	146	205
Sulfate	-	mg/L	<0.30	3.04	7.04	2.1		28.9	1.23	0.97	0.75	67.9
Zinc	0.02	mg/L	0.0041	0.0114	<0.0030	0.0094		<0.0030	<0.0030	0.0044	<0.0150	0.0081
Zinc (Dissolved)	-	mg/L	0.0022	0.0013	0.0024	0.0012		<0.0010	0.002	0.0047	0.0023	0.0035
Other Organics												
BOD_5	-	mg/L	2.4	13.8	<2.0	6.6		<2.0	2.5	<2.0	7.5	6.9
COD	-	mg/L	59	95	48	109		42	56	60	69	62
Phenols	0.001	mg/L	0.002	0.0015	0.0016	0.0038		<0.0010	0.0022	<0.0010	<0.0010	<0.0010
DOC	-	mg/L	17	24.9	18.4	27.5		18.7	17.6	20.6	28.4	22.8
Field Parameters												
Temperature		°C	19.5	21.6	23.5	22.8		11.3	21.5	21	17.2	14.8
pH			7.01	6.77	6.53	7.96		8.1	6.72	6.12	6.49	7.07
Conductivity		mS/cm	0.072	0.114	0.093	0.192		0.157	0.086	0.097	0.222	0.264
Dissolved Oxygen		%	104.8	125	150.9	101.4		99.6	102.1	107.1	36.4	131.2

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Town of Blind River Municipal Landfill Site
Ground and Surface Water Monitoring Results

TABLE G.23: Sampling Location - SW7
MECP Landfill Standards Guideline:
Schedule 5 Parameters, Column 3

KEC Project Ref. No. 2421

Parameter	PWQO	Units	Sampling Event									
			May-22	Sep-22	Jun-23	Aug-23	Sep-23	Oct-23	May-24	Jun-24	Aug-24	Oct-24
Miscellaneous Parameters												
Nitrite (as N)		mg/L	<0.050	<0.050	<0.010	<0.100	<0.200	<0.100	<0.010	<0.010	<0.100	<0.100
Bicarbonate (HCO3)		mg/L	167	107	85.3	136	84.7	65	112	116	69.5	106
Carbonate (CO3)		mg/L	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Hydroxide (OH)		mg/L	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ion Balance Calculation												
Cation - Anion Balance		%	1.3	-2	1.83	-5.95	2.92	0.81	-5.55	-2.6	5.26	2.1
TDS (calculated)		mg/L	609	776	524	1220	919	834	490	424	988	758
Anion Sum		me/L	9.94	13.3	8.85	18.7	13.3	12.3	8.18	7.5	13.5	14
Cation Sum		me/L	10.2	12.8	9.18	16.6	14.1	12.5	7.32	7.12	15	14.6
Inorganics												
Alkalinity	-	mg/L CaCO3	167	107	85.3	136	84.7	65	108	116	69.5	106
Ammonia	-	mg/L	0.0202	0.05	0.073	0.126	0.0338	0.0405	0.095	0.0622	0.198	0.447
Arsenic	0.005	mg/L	0.00064	0.00106	0.00248	0.00584	0.00469	0.00046	0.00223	0.00467	0.00333	0.00623
Barium	-	mg/L	0.0589	0.0753	0.116	0.264	0.236	0.094	0.116	0.166	0.238	0.431
Boron	0.2	mg/L	0.034	0.053	0.042	<0.100	0.087	0.051	<0.100	<0.100	<0.200	<0.200
Bromide	-	mg/L							NT	NT	NT	<1.00
Cadmium	0.0005	mg/L	0.0000437	0.0000094	0.000105	0.000434	0.000373	0.0000129	0.0000892	0.000451	0.0003	0.000734
Chloride	-	mg/L	231	404	244	566	394	345	185	178	384	382
Chromium	-	mg/L	0.00116	0.00155	0.00314	0.0275	0.0172	0.00119	<0.00500	0.00982	0.0268	0.0571
Conductivity	-	µS/cm	1100	1280	926	2010	1430	1430	829	829	1580	1520
Copper	0.005	mg/L	0.0019	0.0017	0.00698	0.0347	0.0224	0.0013	0.00624	0.0259	0.0288	0.0588
Iron	0.3	mg/L	5.83	4.18	28.6	40.4	69.1	3.76	57	89.1	37.9	78.2
Lead	0.001	mg/L	0.000381	0.000452	0.00118	0.0125	0.00749	0.000371	0.00089	0.00548	0.00889	0.0197
Manganese	-	mg/L		0.295		0.767	1.32	0.672	NT			NT
Manganese (Dissolved)	-	mg/L	0.248	0.201	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.705	0.324	0.9	4.42
Mercury	0.0002	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000296	0.000074	<0.0000050	0.0000052	<0.0000050	<0.0000050	0.0000053
Nitrate	-	mg/L	<0.10	<0.050	<0.020	<0.200	<0.400	<0.200	<0.020	<0.020	<0.200	<0.200
Nitrite	-	mg/L	<0.050	<0.10	<0.010	<0.100	<0.200	<0.100	<0.010	<0.010	<0.100	<0.100
Sodium	-	mg/L										222
TKN	-	mg/L	1.47	4.4	2	9.04	5.68	0.66	10.6	6.5	6.08	20.5
pH	6.5-8.5	mg/L	8.01	7.67	7.31	6.97	6.87	7.84	6.97	7.06	6.76	6.76
Total Phosphorous	0.01	mg/L	0.109	0.521	0.369	0.846	1.19	0.0622	2.08	0.654	0.646	3.14
Suspended Solids	-	mg/L	97	271	1530	7300	6180	27.6	1720	3160	2760	11600
TDS	-	mg/L	609	749	524	1220	919	834	490	424	988	758
Sulfate	-	mg/L	5.1	6	12.8	<3.00	23.8	59.8	38.8	7.48	60.8	53.5
Zinc	0.02	mg/L	0.0156	0.0075	0.064	0.14	0.21	0.0145	0.071	0.244	0.188	0.35
Zinc (Dissolved)	-	mg/L	0.005	0.0014	0.009	0.0011	0.0029	0.0066	0.0242	0.0098	0.0071	0.0065
Other Organics												
BOD_5	-	mg/L	7.8	12.5	37.9	80.6	70.9	<3.0	67.6	56.8	23.2	57.7
COD	-	mg/L	66	152	48	401	287	26	675	243	60	812
Phenols	0.001	mg/L	0.0013	0.0015	<0.0010	0.0031	0.0028	<0.0010	<0.0020	0.0028	<0.0010	0.0034
DOC	-	mg/L	16.7	17.6	13.8	37.2	19.7	8.74	12.6	15	13.2	23.6
Field Parameters												
Temperature		°C	17.5	23	16.6	25.7	19.9	14.2	17.3	17.7	19.3	15.6
pH			7.74	8.45	7.38	7	6.76	7.83	6.92	6.6	6.98	8.04
Conductivity		mS/cm	1.188	0.704	0.958	1.815	1.28	1.237	0.707	0.801	1.283	1.217
Dissolved Oxygen		%	105.1	170.6	39.8	77.7	30.1	104.9	88.3	23.6	130.8	60.9

Shaded concentrations exceed PWQO
ND = Not Detected
NT = Not Tested

Appendix H
Water Quality Data Trends

Groundwater Quality Trends

Charts H.1-H.6 plot annual concentrations (2 samples per year) of selected parameters at certain groundwater sampling locations. No statistically significant trends appear evident in the data associated with the above mentioned monitoring wells. Reasonable Use Criteria shown on the plots are developed using median background concentrations based on the entire data set associated with MW1-02.

Chart H.1
Town of Blind River Municipal Landfill Site
Alkalinity Concentration Trending

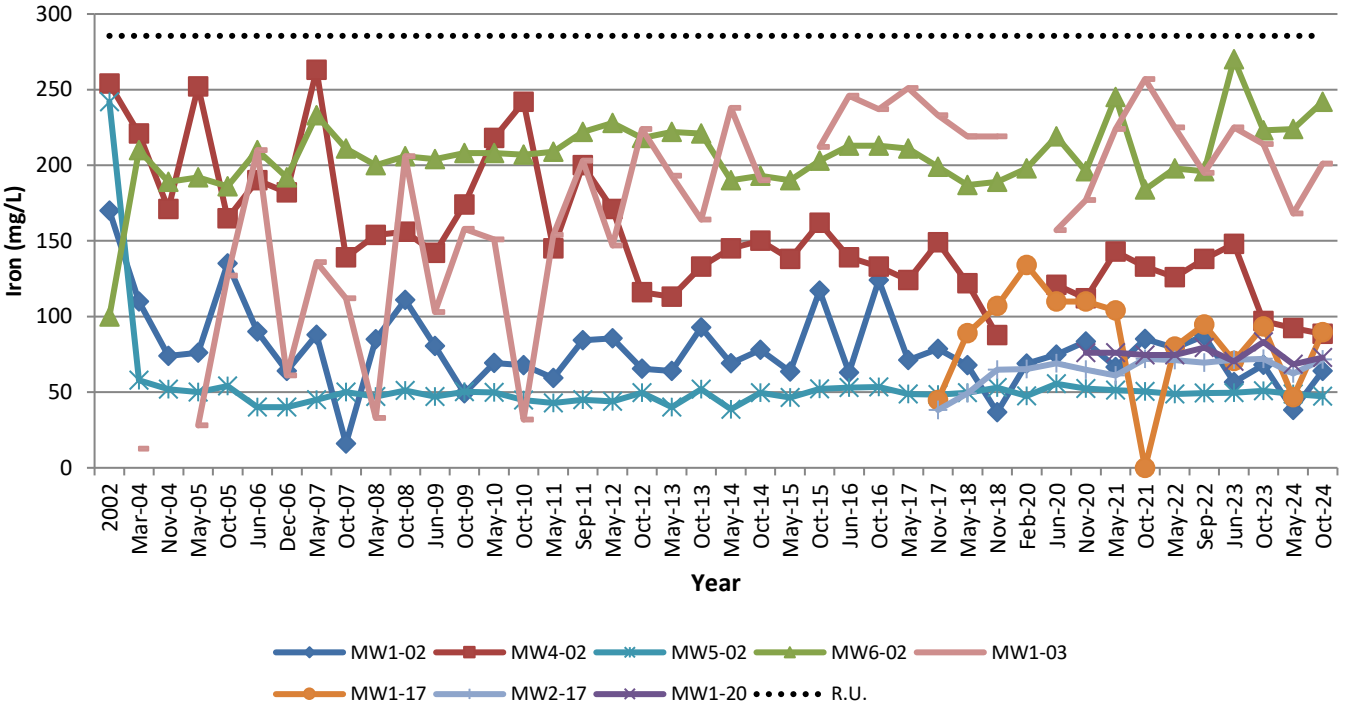


Chart H.2
Town of Blind River Municipal Landfill Site
Iron Concentration Trending

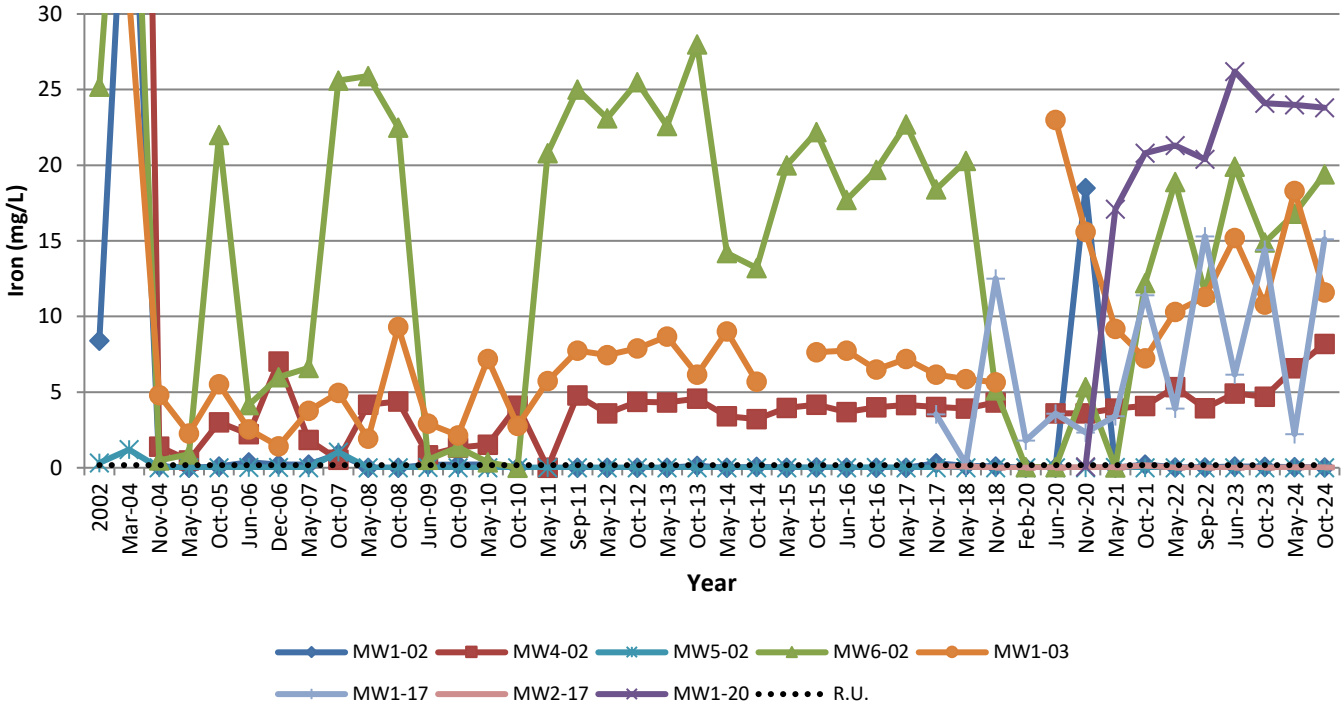


Chart H.3
Town of Blind River Municipal Landfill Site
Manganese Concentration Trending

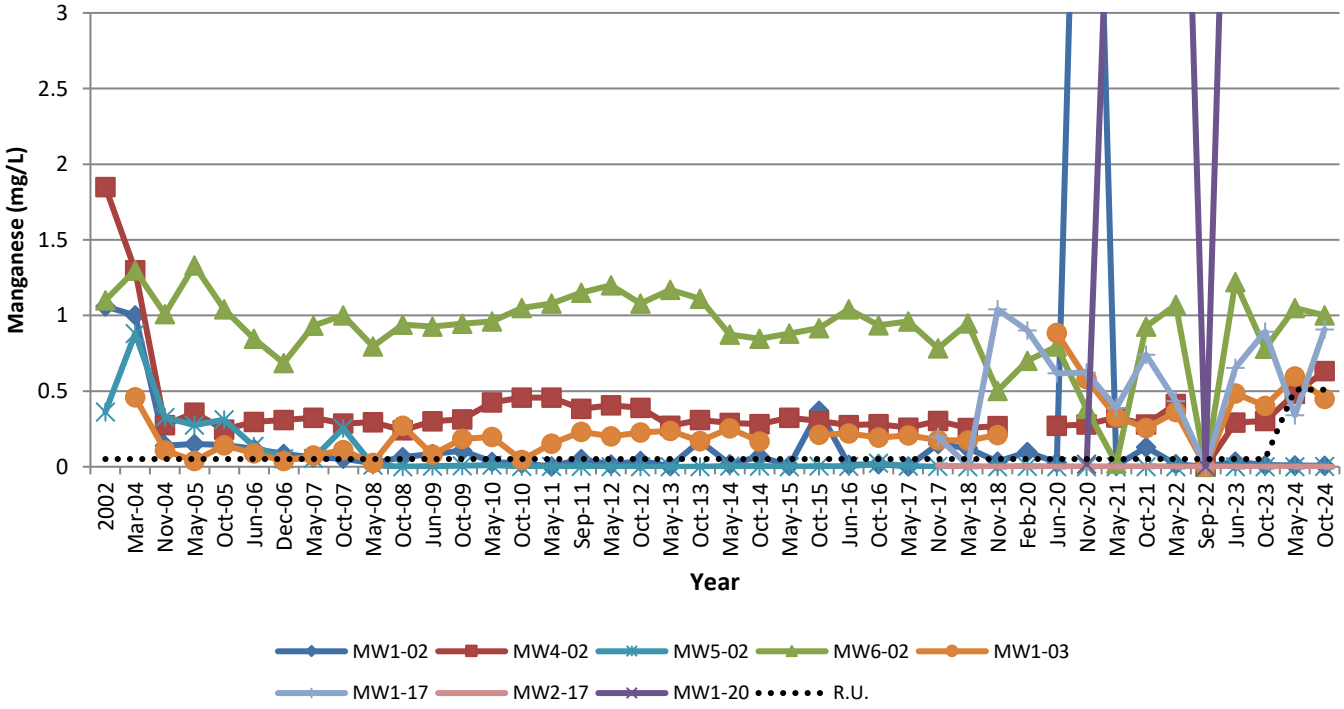


Chart H.4
Town of Blind River Municipal Landfill Site
DOC Concentration Trending

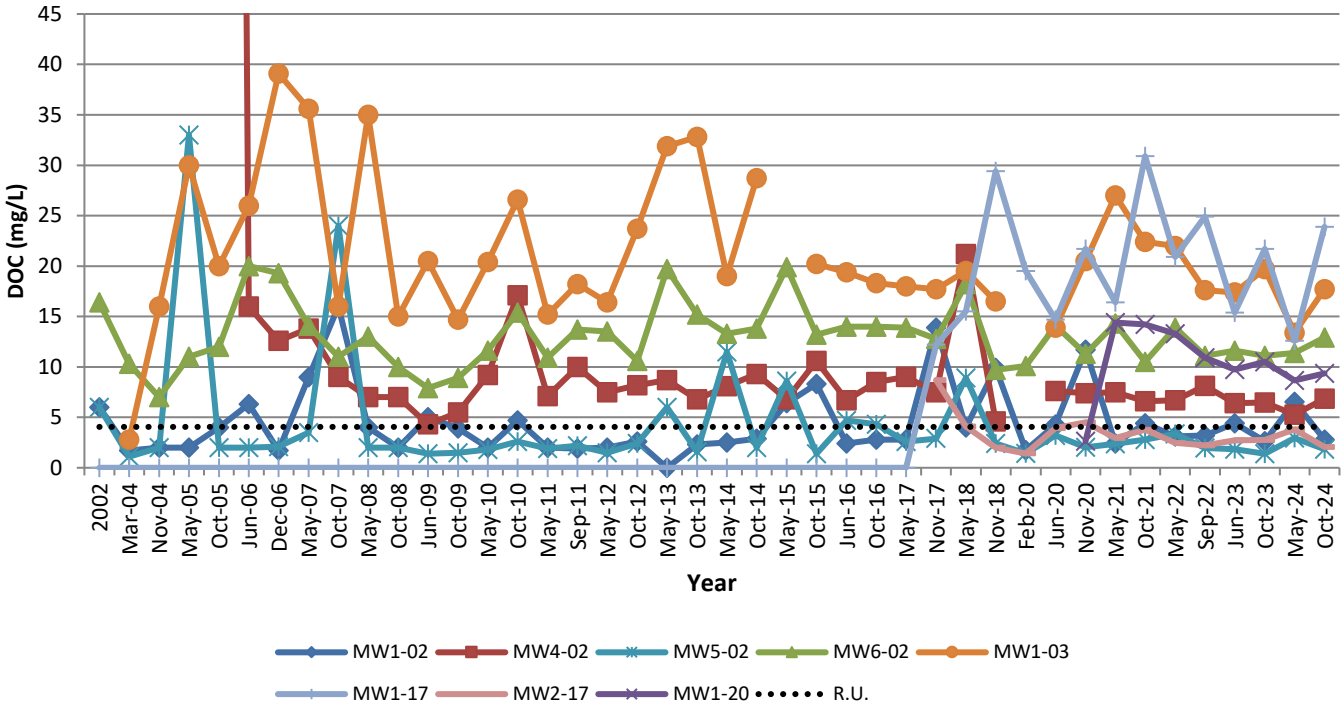


Chart H.5
Town of Blind River Municipal Landfill Site
TDS Concentration Trending

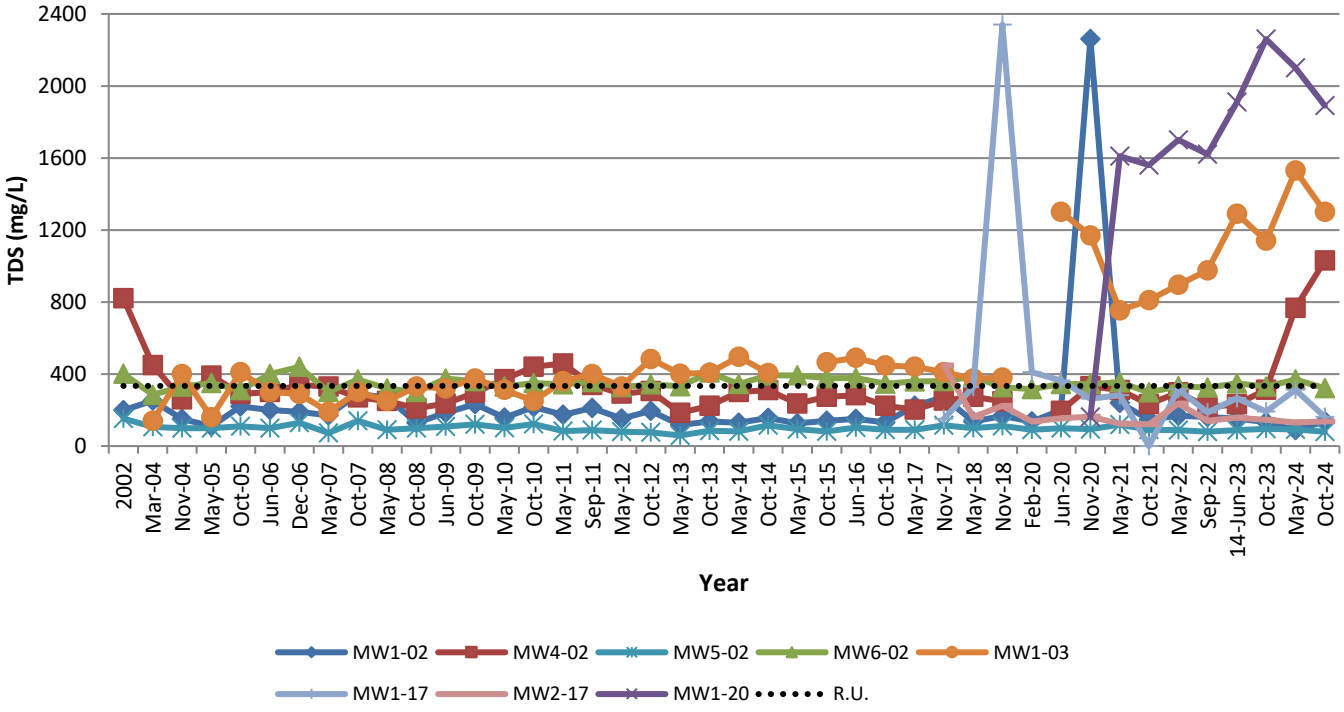
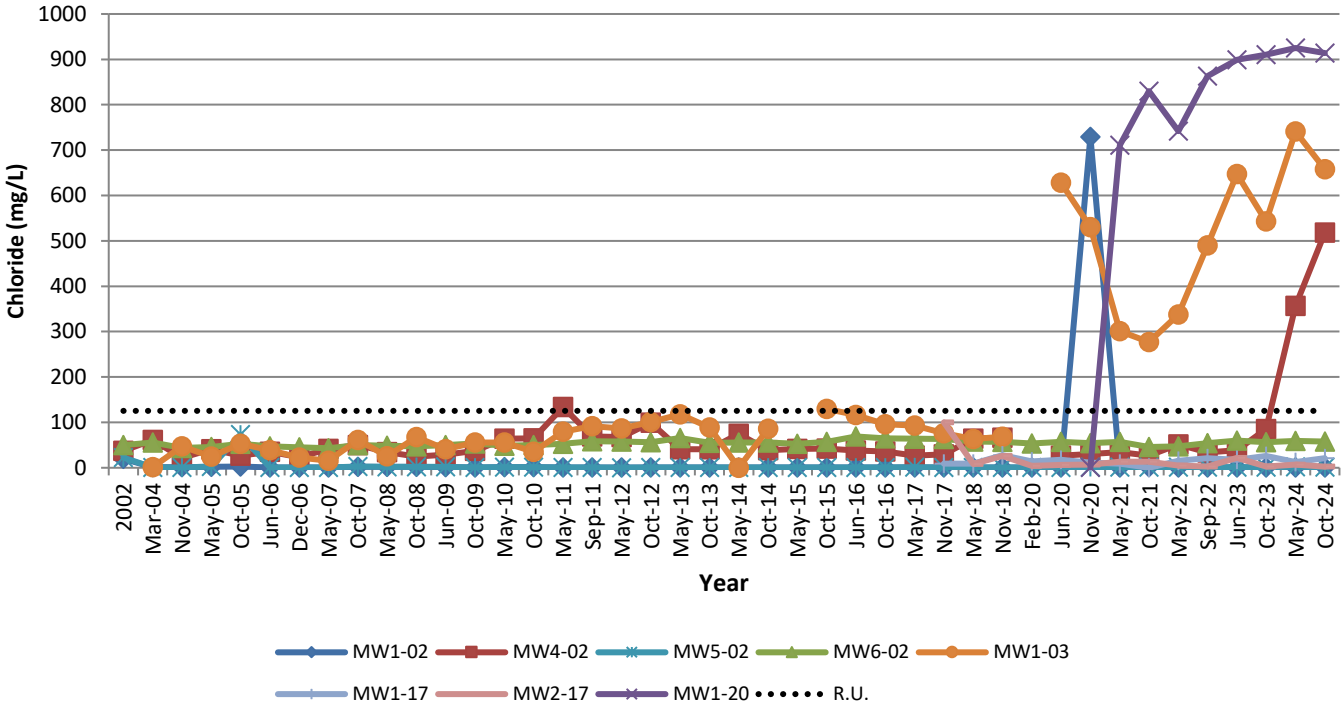


Chart H.6
Town of Blind River Municipal Landfill Site
Chloride Concentration Trending



Surface Water Quality Trending

Charts H.7 - H.10 plot annual concentrations of selected parameters at surface water sampling locations. No statistically significant trends appear evident in the data associated with the above-mentioned sampling location.

Chart H.7
Town of Blind River Municipal Landfill Site
Iron Concentration Trending

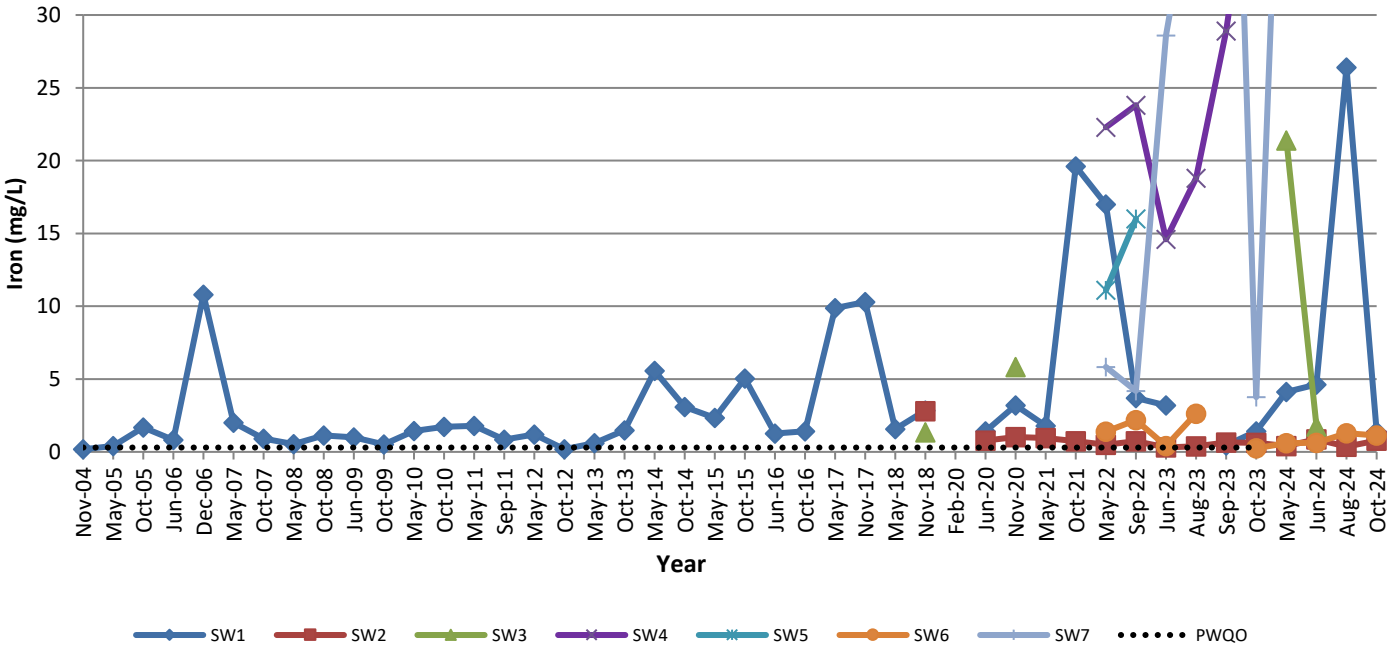


Chart H.8
Town of Blind River Municipal Landfill Site
Phenols Concentration Trending

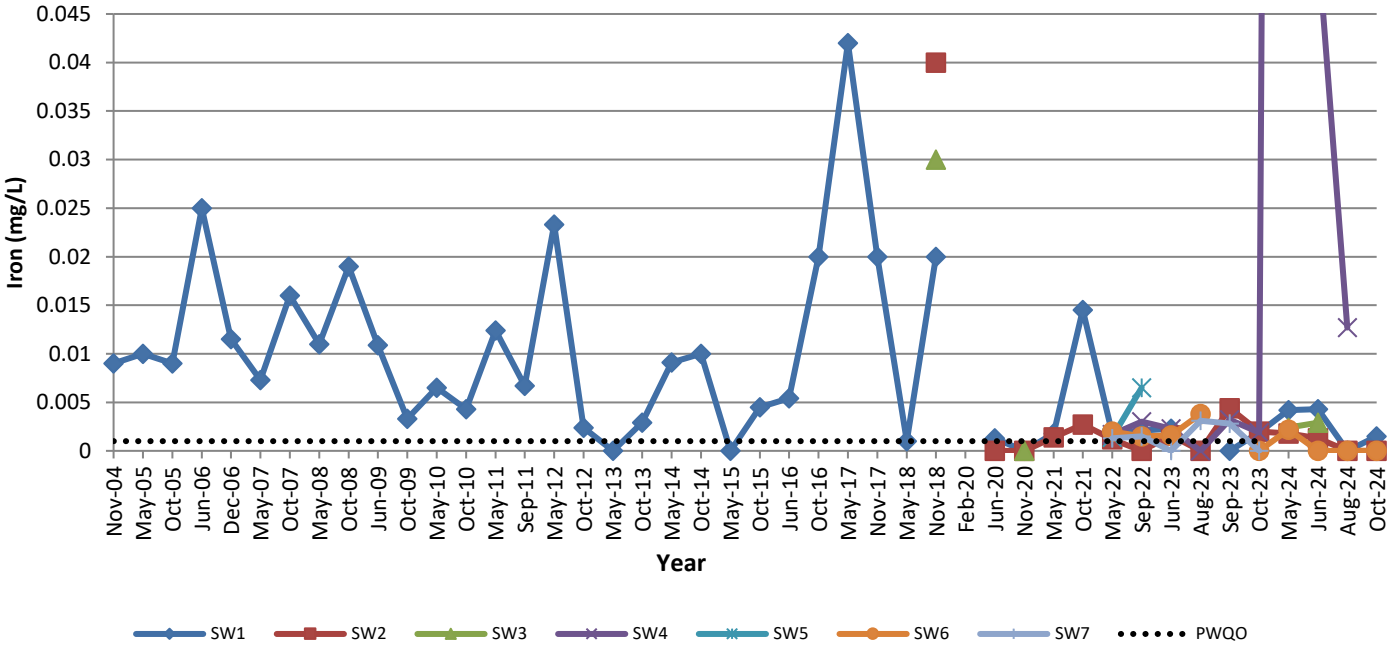


Chart H.9
Town of Blind River Municipal Landfill Site
Chloride Concentration Trending

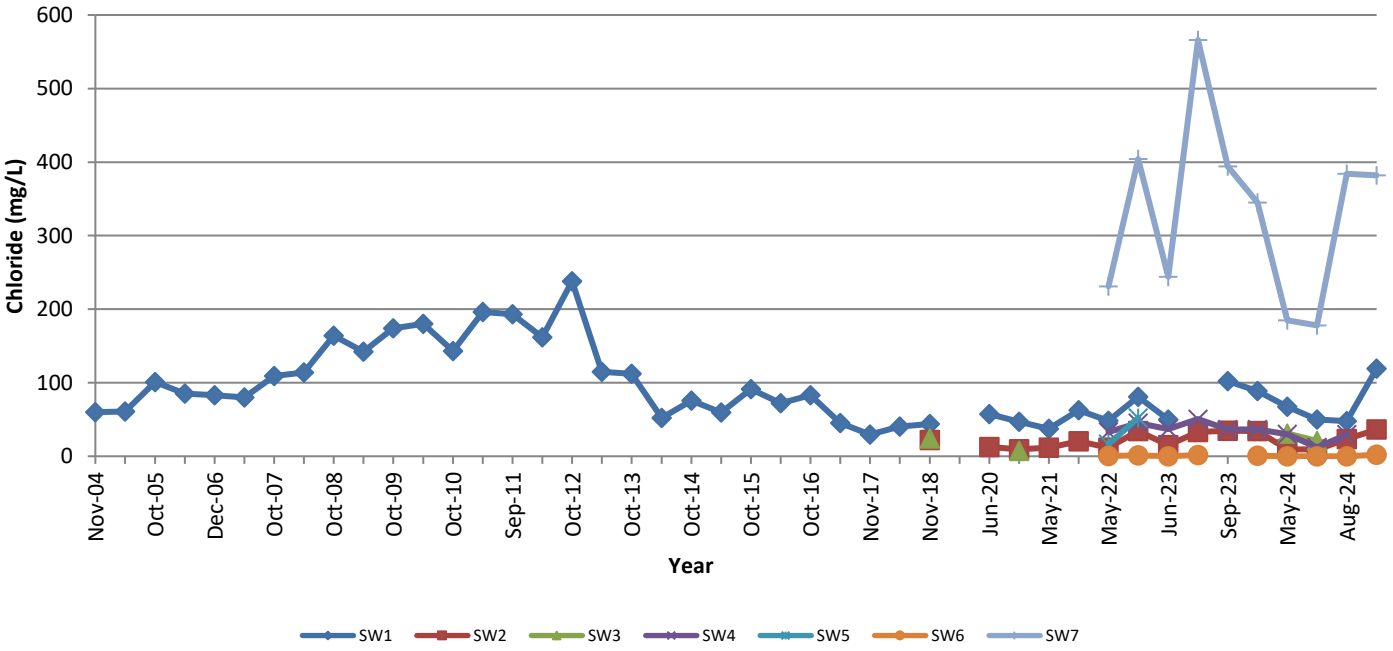
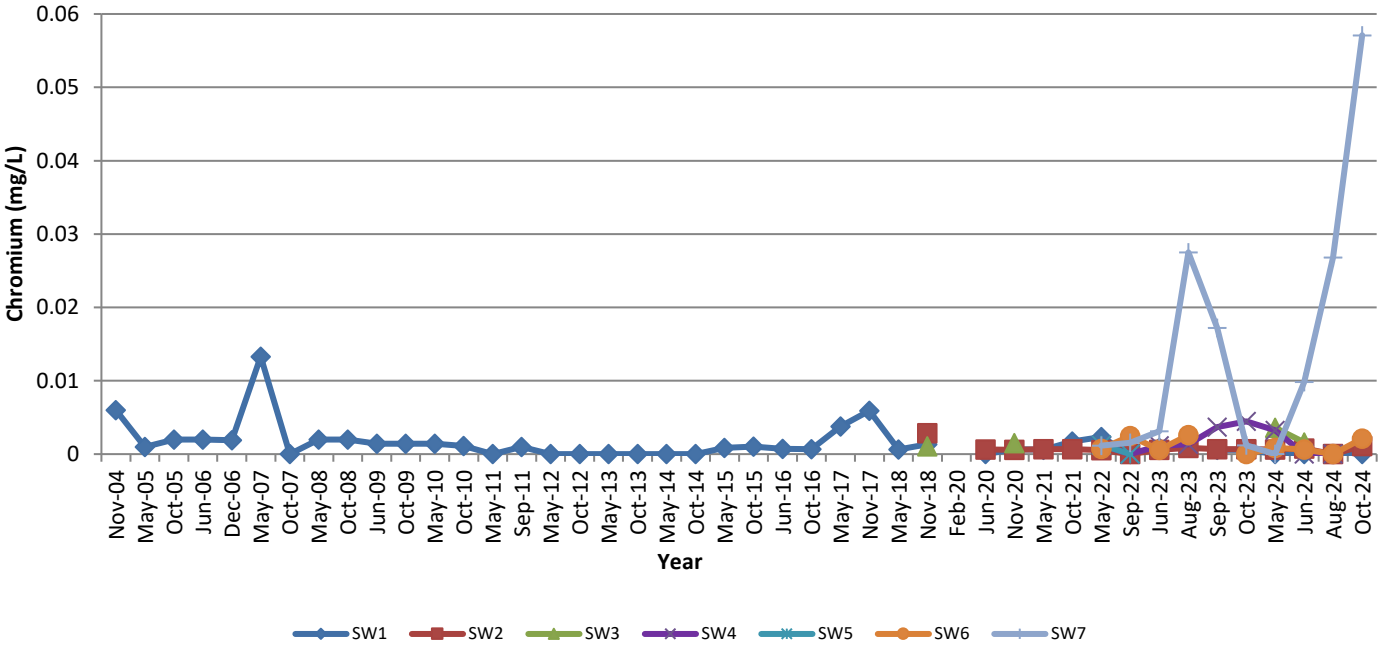


Chart H.10
Town of Blind River Municipal Landfill Site
Chromium Concentration Trending



Appendix I
Monitoring and Screening Checklist

Appendix D-Monitoring and Screening Checklist
General Information and Instructions

General Information: The checklist is to be completed, and submitted with the Monitoring Report.
Instructions: A complete checklist consists of:
(a) a completed and signed checklist, including any additional pages of information which can be attached as needed to provide further details where indicated.
(b) completed contact information for the Competent Environmental Practitioner (CEP)
(c) self-declaration that CEP(s) meet(s) the qualifications as set out below and in Section 1.2 of the Technical Guidance Document.

Definition of Groundwater CEP:
For groundwater, the CEP must have expertise in hydrogeology and meet one of the following:
(a) the person holds a licence, limited licence or temporary licence under the *Professional Engineers Act*; or
(b) the person holds a certificate of registration under the *Professional Geoscientists Act, 2000* and is a practicing member, temporary, member or limited member of the Association of Professional Geoscientists of Ontario. O. Reg. 66/08, s. 2..
Definition of Surface water CEP:
A CEP for surface water assessments is a scientist, professional engineer or professional geoscientist as described in (a) and (b) above with demonstrated experience and post-secondary education, either a diploma or degree, in hydrology, aquatic ecology, limnology, aquatic biology, physical geography with specialization in surface water, and/or water resource management.

The type of scientific work that a CEP performs must be consistent with that person's education and experience. If an individual has appropriate training and credentials in both groundwater and surface water and is responsible for both areas of expertise, the CEP may then complete and validate both sections of the checklist.

Monitoring Report and Site Information	
Waste Disposal Site (WDS) Name	Town of Blind River Municipal Landfill Site
Location (e.g. street address, lot, concession)	Highway 17, South 1/2 of Lot 7, Concession 1 of Striker Township, District of Algoma
GPS Location (taken within the property boundary at front gate/ front entry)	N 5116641.907 m E 354605.951 m Zone: 17T Lat. 46.187825 Long. -82.884092
Municipality	Blind River
Client and/or Site Owner	Town of Blind River
Monitoring Period (Year)	2024
This Monitoring Report is being submitted under the following:	
Environmental Compliance Approval (ECA) Number (formerly "Certificate of Approval" (C of A)) :	A713870 dated Nov. 26, 1980
Director's Order No.:	N/A
Provincial Officer's Order No.:	N/A

Other:	N/A		
Report Submission Frequency	◉ **Annual** ○ **Other**	Regulation 232/98 "Landfilling Sites" states "(a) within three months after each anniversary of the date on which waste was first accepted at the site, an annual report is prepared respecting the operation of the landfilling site...".	
The site is: **(Operation Status)**	◉ **Open** ○ **Inactive** ○ **Closed**		
Is there an active waste transfer station at the site?	○ **Yes** ◉ **No**		
Does this WDS have a Closure Plan?	◉ **Not yet submitted** ○ **Submitted and under review** ○ **Submitted and approved**		
Total Approved Capacity	N/A	*Units*	Cubic Metres
Maximum Approved Fill Rate		*Units*	
Total Waste Received within Monitoring Period (Year)	5,500	*Units*	Cubic Metres
Total Waste Received within Monitoring Period (Year) *Describe the methodology used to determine this quantity*	Estimated		
Estimated Remaining Capacity	0	*Units*	Cubic Metres
Estimated Remaining Capacity *Describe the methodology used to determine this quantity*	Direct Survey (GPS/Total Station)		
Estimated Remaining Capacity *Date Last Determined*	25-Sep-2024		
Non-Hazardous Approved Waste Types	☒ Domestic ☒ Industrial, Commercial & Institutional (IC&I) ☐ Source Separated Organics (Green Bin) ☒ Tires	☐ Contaminated Soil ☐ Wood Waste ☒ Blue Box Material ☐ Processed Organics ☐ Leaf and Yard Waste	☐ Food Processing/Preparation Operations Waste ☐ Hauled Sewage Other:
Subject Waste Approved Waste Classes: Hazardous & Liquid Industrial *(separate waste classes by comma)*	N/A		

Year Site Opened *(enter the Calendar Year only)*	1970	**Current ECA Issue Date**	26-Nov-1980
Is your Site required to submit Financial Assurance?		○ **Yes** ◉ **No**	
Describe how your WDS is designed.		◉ Natural Attenuation only ○ Fully engineered Facility ○ Partially engineered Facility	
Does your Site have an approved Contaminant Attenuation Zone?		○ **Yes** ◉ **No**	
If closed, specify ECA, control or authorizing document closure date:		N/A	
Has the nature of the operations at the site changed during this monitoring period?	○ **Yes** ◉ **No**		
If yes, provide details:			

Have any measurements been taken since the last reporting period that indicate landfill gas volumes have exceeded the MOE limits for subsurface or adjacent buildings? (i.e. exceeded the LEL for methane)	○ Yes ◉ No

Groundwater WDS Verification:

Based on all available information about the site and site knowledge, it is my opinion that:

Sampling and Monitoring Program Status:

1) The monitoring program continues to effectively characterize site conditions and any groundwater discharges from the site. All monitoring wells are confirmed to be in good condition and are secure:	◉ **Yes** ○ **No**	The Town is currently undergoing consultation with the MECP regarding the Site's Trigger Mechanisms Plan that may result in changes to the current monitoring program.
2) All groundwater, leachate and landfill gas sampling and monitoring for the monitoring period being reported on was successfully completed as required by ECA or other relevant authorizing/ control document(s):	◉ **Yes** ○ **No** ○ **Not Applicable**	If no, list exceptions below or attach information.

Groundwater Sampling Location	**Description/Explanation for change (change in name or location, additions, deletions)**	**Date**
Type Here	Type Here	Select Date

Type Here	Type Here	Select Date
Type Here	Type Here	Select Date

3) a) Some or all groundwater, leachate and landfill gas sampling and monitoring requirements have been established or defined outside of a ministry ECA, authorizing, or control document.	◉ **Yes** ○ **No** ○ **Not Applicable**	
b) If yes, the sampling and monitoring identified under 3(a) for the monitoring period being reported on was successfully completed in accordance with established protocols, frequencies, locations, and parameters developed as per the Technical Guidance Document:	◉ **Yes** ○ **No** ○ **Not Applicable**	If no, list exceptions below or attach additional information.

Groundwater Sampling Location	**Description/Explanation for change (change in name or location, additions, deletions)**	**Date**
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date

4) All field work for groundwater investigations was done in accordance with Standard Operating Procedures (SOP) as established/outlined per the Technical Guidance Document (including internal/external QA/QC requirements) (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):	◉ **Yes** ○ **No**	
Sampling and Monitoring Program Results/WDS Conditions and Assessment:		
5) The site has an adequate buffer, Contaminant Attenuation Zone (CAZ) and/ or contingency plan in place. Design and operational measures, including the size and configuration of any CAZ, are adequate to prevent potential human health impacts and impairment of the environment.	○ **Yes** ◉ **No**	In accordance with direction from the MECP, the Town is in the process of formally establishishing a contaminant attenuation zone (CAZ).
6) The site meets compliance and assessment criteria.	○ **Yes** ◉ **No**	
7) The site continues to perform as anticipated. There have been no unusual trends/ changes in measured leachate and groundwater levels or concentrations.	◉ **Yes** ○ **No**	

1) Is one or more of the following risk reduction practices in place at the site: ***(a)*** **There is minimal reliance on natural attenuation of leachate due to the presence of an effective waste liner and active leachate collection/ treatment; or** ***(b)*** **There is a predictive monitoring program in-place (modeled indicator concentrations projected over time for key locations); or** ***(c)*** **The site meets the following two conditions (typically achieved after 15 years or longer of site operation):** ***i.*** **The site has developed stable leachate mound(s) and stable leachate plume geometry/ concentrations; and** ***ii.*** **Seasonal and annual water levels and water quality fluctuations are well understood.**	◉ **Yes** ○ **No**	**Note which practice(s):**	☐ **(a)** ☒ **(b)** ☐ **(c)**
9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):	◉ **Yes** ○ **No** ○ **Not Applicable**	Trigger parameters and concentrations were determined for the 2024 monitoring period. See Section 5.6.1 of the annual report.	

Groundwater CEP Declaration:

I am a licensed professional Engineer or a registered professional geoscientist in Ontario with expertise in hydrogeology, as defined in Appendix D under Instructions. Where additional expertise was needed to evaluate the site monitoring data, I have relied on individuals who I believe to be experts in the relevant discipline, who have co-signed the compliance monitoring report or monitoring program status report, and who have provided evidence to me of their credentials.

I have examined the applicable Environmental Compliance Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended), and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to *ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories,* or as amended from time to time by the ministry.

If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature and will be rectified for the next monitoring/reporting period. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Annual Report submitted to MECP District in July 2025

Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

◉ **No changes to the monitoring program are recommended**	The Town is currently undergoing consultation with the MECP regarding the Site's trigger Mechanisms Plan that may result in changes to the current monitoring program.
○ **The following change(s) to the monitoring program is/ are recommended:**	
◉ **No Changes to site design and operation are recommended**	
○ **The following change(s) to the site design and operation is/are recommended:**	
Name:	Chris Kresin
Seal:	Add Image 

Signature:		**Date:**	July 10/25
CEP Contact Information:	Chris Kresin		
Company:	Kresin Engineering Corporation		
Address:	536 Fourth Line East, Sault Ste. Marie, ON P6A 6J8		
Telephone No.:	705-949-4900	Fax No. :	705-949-9965
E-mail Address:	Chris@kresinengineering.ca		
Co-signers for additional expertise provided:			
Signature:		**Date:**	Select Date
Signature:		**Date:**	Select Date

Surface Water WDS Verification:

Provide the name of surface water body/bodies potentially receiving the WDS effluent and the approximate distance to the waterbody (including the nearest surface water body/bodies to the site):

Name (s)	Ponding water (southwest of landfill), Lake Huron

Distance(s)	Ponding water (SW1, SW2, SW3, SW5) = approx. 180m, 330m, 440m, 100m respectively, southwest of current fill area Ponding water (SW4) = approx. 90m southeast of current fill area Ponded water/Westland (SW7) = approx. 1km southwest of fill area access road Lake Huron = approx. 1.25 km directly south of the landfill site

Based on all available information and site knowledge, it is my opinion that:

Sampling and Monitoring Program Status:

1) The current surface water monitoring program continues to effectively characterize the surface water conditions, and includes data that relates upstream/background and downstream receiving water conditions:	◉ **Yes** ○ **No**	
2) All surface water sampling for the monitoring period being reported was successfully completed in accordance with the ECA or relevant authorizing/control document(s) (if applicable):	◉ **Yes** ○ **No** ○ **Not applicable**	If no, specify below or provide details in an attachment.

Surface Water Sampling Location	**Description/Explanation for change (change in name or location, additions, deletions)**	**Date**
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date

3) a) Some or all surface water sampling and monitoring program requirements for the monitoring period have been established outside of a ministry ECA or authorizing/control document.	○ **Yes** ◉ **No** ○ **Not Applicable**	
b) If yes, all surface water sampling and monitoring identified under 3 (a) was successfully completed in accordance with the established program from the site, including sampling protocols, frequencies, locations and parameters) as developed per the Technical Guidance Document:	○ **Yes** ○ **No** ◉ **Not Applicable**	If no, specify below or provide details in an attachment.

Surface Water Sampling Location	Description/Explanation for change (change in name or location, additions, deletions)	Date

4) All field work for surface water investigations was done in accordance with SOP, including internal/external QA/QC requirements, as established/outlined as per the Technical Guidance Document, MOE 2010, or as amended. (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):	◉ Yes ○ No	N/A

Sampling and Monitoring Program Results/WDS Conditions and Assessment:

5) The receiving water body meets surface water-related compliance criteria and assessment criteria: i.e., there are no exceedances of criteria, based on MOE legislation, regulations, Water Management Policies, Guidelines and Provincial Water Quality Objectives and other assessment criteria (e.g., CWQGs, APVs), as noted in Table A or Table B in the Technical Guidance Document (Section 4.6):	○ Yes ◉ No

If no, list parameters that exceed criteria outlined above and the amount/percentage of the exceedance as per the table on the following page or provide details in an attachment:

Parameter	Compliance or Assessment Criteria or Background	Amount by which Compliance or Assessment Criteria or Background Exceeded
e.g. Nickel	e.g. ECA limit, PWQO, background	e.g. X% above PWQO
Boron	PWQO	SW1(313%/232%/255%/244%-May/Jun/Aug/Oct); SW2(32%/85%/81%-Jun/Aug/Oct); SW4(24%/81%-May/Aug)
Cadmium	PWQO	SW1(40%-Aug);I SW7(634%-Oct)
Copper	PWQO	SW1(38%-Aug);SW3(24%-May);SW4(0.2%-May);SW7(25%/418%/476%/1076%-May/Jun/Aug/Oct)
Iron	PWQO	SW1(1273%/1440%/8700%/363%-May/Jun/Aug/Oct);
Total Phosphorus	PWQO	SW2(33%/187%/18%/158%-May/Jun/Aug/Oct);SW3(7033%/483%-May/Jun);SW4(46233%/11300%/12733%-May/Jun/Aug);SW6(101%/111%/327%/273%);SW7(18900%/29600%/12533%/25967% May/Jun/Aug/Oct) SW1(277%/265%/5310%/272%-May/June/Aug/Oct);SW2(57%/132%/1%/98%-May/June/Aug/Oct);SW3(3120%/323%-May/Jun);
Zinc	PWQO	SW4(6960%/3140%/3170%-May/Jun/Aug);SW6(313%/260%/1470%/791%-May/June/Aug/Oct);SW7(20700%/6440%/31300%-May/Jun/Aug/Oct) SW1(107%.Aug);SW4(1330%/166%/364%-May/Jun/Aug); SW7(255%/1120%/840%/1650%-May/Jun/Aug/Oct)
Phenols	PWQO	SW1(320%/330%/50%-May/Jun/Oct); SW2(80%/30%-May/Jun); SW3(140%/190%-May/Jun); SW4(50400%/5100%/1170% - May/June/Aug); SW6(120%-May); SW7(180%/240%-Jun/Oct)
Lead	PWQO	SW4(18%/52%/233%-May//Jun/Oct); SW6(37%-Oct)
6) In my opinion, any exceedances listed in Question 5 are the result of non-WDS related influences (such as background, road salting, sampling site conditions)?	○ **Yes** ◉ **No**	Previous surface water quality assessments have stated that leachate appears to be effecting water quality in the ponding water locations just south and southwest of the landfill site.

7) All monitoring program surface water parameter concentrations fall within a stable or decreasing trend. The site is not characterized by historical ranges of concentrations above assessment and compliance criteria.	○ **Yes** ◉ **No**	Since the surface water sampling program began at the Blind River Municipal landfill site in November of 2004, boron, iron, total phosphorus and phenols have consistently exceeded PWQO criteria.
8) For the monitoring program parameters, does the water quality in the groundwater zones adjacent to surface water receivers exceed assessment or compliance criteria (e.g., PWQOs, CWQGs, or toxicity values for aquatic biota (APVs)):	◉ Yes ○ No ○ Not Known ○ Not Applicable	MW1-20 failed to meet the following criteria: -AAC/CWQG for chloride during the spring and fall -PWQO for total phosphorus and phenols during the spring -PWQO/CWQG arsenic, cadmium,copper, iron, lead and zinc during the spring and fall -AAC for cadmium, chromium, copper, iron, lead and zinc during the spring and fall -CWQO for dissolved manganese during the spring and fall MW1-03 failed to meet the following criteria: -AAC/CWQG for chloride during the spring and fall -PWQO for total phosphorus and cadmium during the spring -PWQO for boron and lead during the spring and fall -PWQO/AAC/CWQG for copper, iron and lead during the spring -AAC for iron, CWQG for dissolved manganese during the spring and fall
9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):	◉ **Yes** ○ **No** ○ **Not Applicable**	Trigger parameters and concentrations were determined for the 2024 monitoring period. See Sections 5.6.1 and 5.6.2 of the annual report.

Surface Water CEP Declaration:

I, the undersigned hereby declare that I am a Competent Environmental Practitioner as defined in Appendix D under Instructions, holding the necessary level of experience and education to design surface water monitoring and sampling programs, conduct appropriate surface water investigations and interpret the related data as it pertains to the site for this monitoring period.

I have examined the applicable Environmental Compliance Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended) and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to *ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories*, or as amended from time to time by the ministry.

If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature or will be rectified for future monitoring events. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Annual Report submitted to MECP District in July 2025.

Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

◉ **No Changes to the monitoring program are recommended**	
○ **The following change(s) to the monitoring program is/are recommended:**	
◉ **No changes to the site design and operation are recommended**	
○ **The following change(s) to the site design and operation is/ are recommended:**	

CEP Signature	
Relevant Discipline	B. Sc. (Eng.) - Environmental Engineering, M. Sc. (Eng.) - Water Resources Engineering
Date:	July 10/25
CEP Contact Information:	Chris Kresin
Company:	Kresin Engineering Corporation
Address:	536 Fourth Line East, Sault Ste. Marie, ON P6A 6J8
Telephone No.:	705-949-4900
Fax No. :	705-949-9965
E-mail Address:	Chris@kresinengineering.ca

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