2024 Environmental Monitoring Report

Meadowview Landfill, North Kentville, Nova Scotia

Municipality of the County of Kings Final Report

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Municipality of the County of Kings

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Executive Summary

Englobe Corp. (Englobe) was retained by Municipality of the County of Kings (Municipality), to undertake an Environmental Monitoring Program (EMP) for the Meadowview Landfill located in North Kentville, NS. The Industrial Approval Number for the Meadowview Landfill, as issued by the Nova Scotia Department of Environment and Labour in 2001 (now Department of Environment and Climate Change [NSECC]) was #2001-021092. The 2024 EMP was carried out in accordance with NRFP #24-33 (issued on July 25, 2024) and Addenda #1 (dated August 6, 2024) and #2 (dated August 12, 2024), provided by the Municipality. The current scope of work is for three (3) years (starting in Summer 2024) with the option to renew for an additional two (2) years. The EMP includes three main components: Groundwater Monitoring, Surface Water Monitoring, and Landfill Gas Monitoring.

Based on the results of the 2024 Meadowview Landfill EMP, Englobe makes the following conclusions:

<u>Groundwater</u>

Based on the groundwater elevation data measured from the site during September 2024, the groundwater flow direction was estimated to be to the south-southwest toward the Cornwallis River, with an average hydraulic gradient of 0.0158 at the time of sampling.

It should be noted that monitoring well MW31-A was not accessible during the monitoring program, due to Department of National Defence access restrictions.

The groundwater analytical results were compared to two different sets of standards including the NSECC Tier 1 Environmental Quality Standards (EQS) for Groundwater - All Land Uses (Non-potable and Coarse-Grained Soil Type), and the NSECC Tier 1 EQS for Groundwater Discharging to Surface Water (>10m).

Elevated concentrations of arsenic, cobalt, iron, manganese, and low pH in groundwater have been documented at concentrations exceeding or out of range of the NSECC Tier 1 EQS for Groundwater Discharging to Surface Water (>10m) at various monitoring wells located downgradient of the site. These elevated parameters satisfied the same standards at upgradient, background monitoring well locations (MW27-B, MW28-B, MW29-B and MW29-C). The elevated concentrations of arsenic, cobalt, iron, manganese and low pH affecting water quality in down-gradient wells may indicate site impacts related to the landfill.

It should be noted that the NSECC Tier 1 EQS for Groundwater Discharging to Surface Water (>10m) for arsenic, cobalt, iron, manganese and low pH are established for the protection of freshwater aquatic life; therefore, observed exceedances in the groundwater samples do not necessarily indicate a human health hazard.

Surface Water

The surface water analytical results are compared to the NSECC Tier 1 EQS for Surface Water.

Surface water sampling location SW20A was found dry and therefore, no sample could be collected during the 2024 EMP.

Surface water sample location SW24-1, collected from the Cornwallis River, is considered to be upstream of the Meadowview Landfill waste cells and is assumed to reflect the natural background conditions. Concentrations of most surface water metals at SW24-1 satisfied the applicable Provincial standard, with the exception of total aluminum and iron, which are common in these freshwater environments. All remaining metals and general chemistry parameters in the surface water sample SW24-1 were reported at levels that satisfied the applicable standard.

Downgradient surface water sampling locations SW24-2 and SW24-3, also collected along the Cornwallis River, are considered downstream of the landfill and would contain surface water potentially influenced by flow from the site. Surface water sample locations at SW7, SW7A and SW19B are located along the Palmer Brook southwest of the Meadowview Landfill. Abundant iron

precipitate was observed in surface water locations SW7A and SW19B. The field and laboratory data reported elevated levels or concentrations of field pH, aluminum, arsenic, cobalt, iron, and dissolved manganese which may suggest potential leachate impacts. Since aluminum impacts were noted at SW7, SW7A and SW19B, but at lower concentrations than from the upstream "background" location SW24-1, elevated aluminum concentrations are not considered to be a contaminant issue related to surface water runoff from the landfill site. All remaining metals and general chemistry parameters in these surface water samples satisfied the applicable standard.

Again, it should be noted that the NSECC Tier 1 EQS for Surface Water for pH, aluminum, arsenic, cobalt, iron, and dissolved manganese are for the protection of freshwater aquatic life; therefore, observed exceedances in the surface water samples do not necessarily indicate a human health hazard.

<u>Landfill Gas</u>

Using a Landtec GEM 5000 gas monitor, all methane readings were recorded as <0.1 parts per million (ppm) except for a reading of 0.1 ppm observed at MW29-B located on the northern boundary of the former landfill site. No measurements in the % Lower Explosive Limit (LEL) range for methane gas were detected using the equipment operated by Englobe. In general terms, all gas monitoring results satisfied the British Columbia Government Landfill Gas Management Regulations of <5% LEL for methane gas.

Based on the age of the Meadowview Landfill (closed in 1999), the gas monitoring screening data and the relative stability of the pH across the site, the potential risk of methane gas exposure to the residential community located east of the Meadowview landfill is interpreted to low; however, there is the potential for dilution of landfill gases using a handheld gas meter and these 'one-time' sampling results should be treated with caution. Further evaluation of these sampling points should be conducted to ensure the gas monitoring data accurately represent the landfill gas conditions present in the subsurface at each of the existing test locations.

<u>Summary</u>

Based on the results of the 2024 Meadowview Landfill EMP, Englobe make the following recommendations:

- Sampling and monitoring of the existing groundwater wells at the site should continue on an annual basis.
- Select surface water locations should continue to be sampled and monitored at the same locations and frequency.
- Further evaluation of the Gas Survey sampling points should be conducted to ensure the gas
 monitoring data accurately represent the landfill gas conditions present in the subsurface at each of
 the existing test locations.
- Re-assess for possible repairs to the protective covers for monitoring wells MW26-B and MW32-A.
- Monitoring well MW31-A (located on DND property) should be removed from future EMPs due to difficulty in obtaining permission from DND to access the well, and the dedicated sampling proposed at MW31-A be replaced by sampling monitoring well MW20-A or MW20-B (located at the far east of the site). Sampling at MW20-A or MW-20B should be added to the EMP for future years, including collection of groundwater elevations and landfill gas measurements. In addition, sampling of monitoring well MW-21C should be added to the EMP to confirm site conditions in this area (downgradient of MW-4A).
- The Municipality, in consultation with Englobe, should continue its communications with NSECC in order to identify whether a current Approval exists and if annual monitoring of the Meadowview Landfill is a Provincial requirement under such an Approval.
- Due to damage noted by the Municipality to monitoring wells MW19-B and MW7-A in spring 2024, both monitoring wells should be decommissioned in 2025 under the supervision and guidance of a Site Professional (such as Englobe) recognized by the Province of Nova Scotia.

This Executive Summary is a summary of the findings of the Environmental Monitoring Program Report and must be read in conjunction with the entire report. The statements made in the Executive Summary are subject to the same limitations as described in the report.

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1 Introduction

In accordance with NRFP #24-33 (issued on July 25, 2024) and Addenda #1 (dated August 6, 2024) and #2 (dated August 12, 2024), issued by the Municipality of the County of Kings (Municipality), Englobe completed the2024 Environmental Monitoring Program (EMP) and field work for the Meadowview Landfill located in North Kentville, NS. It is our understanding that the work term for the current scope of work is for three (3) years (starting in Summer 2024) with the option to renew for an additional two (2) years. The EMP includes three main components: Groundwater Monitoring, Surface Water Monitoring, and Landfill Gas Monitoring.

This 2024 EMP report provides a brief background of the project, and then details the sampling methodology and results achieved from the environmental monitoring event completed on September 16 and 17, 2024. Assessment of analytical results in conjunction with project-specific Federal and Provincial standards and/or guidelines, in addition to evaluation of data trends based on previous sampling data (including graphs) is provided.

1.1 Site Information

The closed Meadowview Landfill is associated with property parcels identified by Property Identification (PID) number 55553085, 55553093, 55553101, 55553119, 55413207, 55047328, 55047369, 55047351 and 55049035. Additional monitoring wells used to assess groundwater quality adjacent to the site are located on PID Nos. 55058325, 55058010, 55412522 and 55047336. The site is located between Lanzy Road and Brooklyn Street, south of Aldershot and approximately 2 km northwest of Kentville, NS. The UTM coordinates for the site gates to the Landfill are Zone 20T, 4993696N, 380116E.

Analytical results were compared to the most up-to-date online versions of the following:

- Groundwater analytical data are compared to Table 4B Nova Scotia Environment and Climate Change (NSECC) *Tier 1 Environmental Quality Standards* (EQS) for Groundwater and all land uses, non-potable, and coarse-grained soil type.
- Surface water analytical data are compared to Table 3 NSECC *Tier 1 EQS* for Surface Water and Groundwater Discharging to Surface Water.
- Landfill gas monitoring data have been compared to the British Columbia Government Landfill Gas Management Regulations and the proposed Federal Surface Methane Concentration Limits.

1.2 Background and Recent Communications

The Meadowview Landfill (NSECC Approval No. 2001-021092) was initially opened and operated by the Town of Kentville in the late 1960s. The Municipality then took over operations of the landfill until its closure on June 30, 1999. Once closed, the Municipality had reportedly implemented a Closure Plan which included recommendations and specifications outlined in the 1995 Site Closure Report, completed previously by Porter Dillon.

Historically, annual groundwater, surface water monitoring, and fish habitat surveys have previously been conducted at the Meadowview Landfill by ABL Environmental (2011 - 2012), WSP (2013 - 2015) and Stantec (2017). Stantec continued to monitor groundwater and surface water conditions between

2018 - 2020 but recommended that fish habitat surveys not be carried forward since no negative impacts on fish habitat or benthic invertebrates were correlated to the site (Stantec 2017 Monitoring Report). No groundwater or surface water monitoring occurred at the site from 2021 - 2023.

Recent communications between the Municipality and Englobe indicate that:

- The relocation of three surface water sampling locations, including SW24-1, SW24-2 and SW24-3, was found acceptable by the Municipality.
- Access was not granted to groundwater monitoring well at MW31-A by the Department of National Defence (DND). An agreement between the Municipality and DND is required for future access to monitoring well MW31-A.
- Based on communications between the Municipality (in consultation with Englobe) and the NSECC, the Industrial Approval (Approval No. 2001-021092) and Terms and Conditions of the Approval was granted by the Nova Scotia Department of Environment and Labour in 2001. The duration of the Approval was for ten years from the date of issue. At the time of this report, it is unresolved whether a new Approval was granted for the site once the original Approval had expired or whether any further documentation was provided by NSECC to confirm monitoring of the Landfill could be discontinued. It is our understanding that the Municipality will continue to update Englobe on the response from NSECC.

1.3 Purpose and Scope

Based on the NRFP, groundwater elevations were measured at twenty-five (25) groundwater monitoring well locations, fifteen (15) groundwater samples (including one (1) field duplicate) and eight (8) surface water samples (including one (1) field duplicate) were collected for laboratory analysis in 2024. Additionally, a total of twenty-eight (28) groundwater monitoring wells were included in the landfill gas monitoring program in 2024. A site and sampling location plan for the Meadowview Landfill Facility site is provided following the text of this report in Figure 2. Table 1-1 below, summarizes the current analytical program conducted at the Meadowview Landfill Facility:

Monitoring Media	Location IDs	Chemical Parameters Monitored
Groundwater	MW27-B, MW28-B, MW29-B, MW29-C, MW31-A (no access), MW4- A, MW22-A, MW22-B, MW22-C, MW23-A, MW23-B, MW23-C, MW25-B, TH1 and Field Duplicate.	Standard water general chemistry analysis and metals.
Surface Water	SW19B, SW7, SW7A, SW20A (dry), SW24-1, SW24-2, SW24-3 and Field Duplicate.	Standard water general chemistry analysis and metals.
Gas	MW4-A, MW4-C, MW12-A, MW19-A, MW21-C, MW22-A, MW22-B, MW22-C, MW23-A, MW23-B, MW23-C, MW24-A, MW24-B, MW25-B, MW26-B, MW27-B, MW27-C, MW28-B, MW29-B, MW29-C, MW31-A (no access), MW32-A, MW35-A, MW36-A, TH1 and TH2.	Methane, Oxygen and Carbon Dioxide

Table 1-1 - Meadowview Landfill Facility Sampling Locations

Based on the correspondence between the Municipality and NSECC to date, the annual environmental monitoring program at the Meadowview Landfill Facility appears to be completed for due diligence purposes only.

2 Site Description

2.1 Topography and Drainage

Topographical contours retrieved from the Access Nova Scotia website (Nova Scotia Topographic Database, 2006) show that the greatest elevation is 40 metres above sea level (masl) at the northern most location on-site near Brook Street. The lowest elevation is 4 metres above sea level (masl) near the Cornwallis River (south of the closed landfill). Topography at the site generally slopes downwards to the south to southeast (Figure 1: Regional Location Plan following the text of this report).

Based on the topography, surface water run-off and shallow groundwater originating at the Meadowview site are expected to discharge into Palmer Brook which drains into the Cornwallis River to the south) and local drainage ditches along Brooklyn Street (Figure 2). For the purposes of this report, both Palmer Brook and the Cornwallis River (although the Cornwallis River discharges into the saltwater of the tidally influenced Minas Basin approximately 25 km to the east) are both considered to be freshwater receptors.

2.2 Geological and Hydrogeological Conditions

Based on the available surficial geology mapping (NSDNR Map 92-3, 1992), overburden deposits in the sampling area consist of gravel, sand and silt, diamicton layers which are poorly to well bedded with horizontal to angular beds from the Quaternary Period (Wisconsinan Stage). The topography generally includes steep sided mounds or hummocks, pitted terraces on valley sides (kame terraces) and sinuous steep sided ridges (eskers) originating from streams of glacial meltwater.

Based on the available bedrock geology mapping for the area (NSDNR Map 2000-003, 2000), the geological maps indicate that the site is underlain by the Fundy Group, specifically, the Wolfville Formation, which consists of fluvial sandstones and conglomerates, aeolian sandstone and minor deltaic-lacustrine deposits.

3 Environmental Monitoring Program Methodology

The 2024 EMP was completed by Englobe staff at the site between September 16 and 17, 2024.

3.1 Groundwater Monitoring

Field parameters including pH, conductivity, dissolved oxygen, and temperature were measured and recorded at each groundwater monitoring location prior to sampling. Sample observations for colour, clarity, odour, and sheen were collected at all locations where all samples were obtained. Measurements including static water level, well depth, stick up height, and well diameter were taken at all groundwater monitoring wells. Field Sampling Records are presented in Appendix C.

At each groundwater monitoring well location, the static groundwater level was measured using a *Solinst* water level indicator, prior to purging a total of three well volumes. Monitoring wells were sampled using HDPE (high-density polyethylene) tubing and foot valves. Metals samples collected from groundwater monitoring wells were field filtered using disposable 0.45-micron field filters and analyzed for dissolved metals.

A new pair of nitrile gloves was worn at each sampling location. Collected samples were taken in laboratory-supplied containers and preserved on-site, where necessary. All samples were stored in coolers on ice prior to their submission at the ALS Canada Ltd (ALS) in Dartmouth, NS.

Access was not granted to the (DND) property where groundwater monitoring well MW31-A is located. Subsequently, MW31-A was not sampled during the 2024 sampling event.

All groundwater wells were found to be in good condition with the exception of MW32-A and MW26-B. The caps for these wells were broken and could not be properly closed.

3.2 Surface Water Monitoring

Field parameters including pH, conductivity, dissolved oxygen, and temperature were measured and recorded at each surface water monitoring station prior to water sampling. Sample observations for colour, clarity, odour, and sheen were collected at all surface water locations where all samples were obtained. Physical stream data for depth, width and flow velocity were recorded, where safe.

At each surface water station, samples were collected by immersing the container at least 15 centimetres below the water surface and pointing the container upstream. Unfiltered surface water samples were collected for total metals analysis, except for zinc and manganese which require dissolved analysis as per the NSE Tier I standards (referencing CCME guidelines). Stream flow was measured using a portable stream flow water meter. Where safe and sufficient stream depth allowed, water clarity was measured by lowering a secchi disk into the stream, until the disk was no longer visible. Field Sampling Records are presented in Appendix C.

A new pair of nitrile gloves was worn at each sampling location. Collected samples were taken in laboratory-supplied containers and preserved on-site, where necessary. All samples were stored in coolers on ice prior to their submission at the ALS Canada Ltd (ALS) in Dartmouth, NS.

Due to unsafe, swampy conditions, surface water stations at SWA and SW3 were relocated further upstream and further downstream of the site. New surface water locations for the 2024 EMP are identified as SW24-1, SW24-2 and SW24-3; however, physical stream data could not be recorded at SW24-1 or SW24-2 due to safety concerns regarding the depth and flow rate of the Cornwallis River.

Surface water sampling locations SW19B and SW7A had an abundance of iron precipitate noted while sampling the water of Palmer Brook. The precipitate was avoided during sampling of these locations.

Finally, SW20A was dry during the 2024 sampling event.

3.3 Landfill Gas Monitoring

Landfill gas monitoring was completed using a handheld Landfill Gas Monitor (Landtec GEM 5000) to measure gas readings from all monitoring wells onsite. When arriving to a monitoring well, a new pair of nitrile gloves were worn at each sampling location. The cap and/or j-plug were removed with care taken not to dilute gas concentrations present at each well (i.e. no ventilation of the well). The gas probe was then inserted into the PVC pipe and extended downward above the level of groundwater. The probe purged air from well for one minute before readings were taken and recorded on the field observation sheet in Appendix C.

It is understood that although this sampling methodology is followed within the industry for initial screening of a site, the potential for dilution of landfill gases is high.

Note that since the Meadowview Landfill is closed with no permanent structures or workers located at the site, there are currently no provincial or federal criteria in place for landfill gases, including methane; however new regulations have recently been proposed by the Government of Canada (*Regulations Respecting the Reduction in the Release of Methane (Waste Sector)),* which will require certain landfills to control and reduce methane emissions. It is anticipated that monitoring and compliance requirements would not come into effect until 2027 and 2033. Since there are no provincial or federal criteria established in NS, the BC regulations have been applied. In addition, the 1995 Site Closure Report and the Industrial Approval (Approval No. 2001-021092) do not include any limits on gas emissions from the landfill.

Landfill gas monitoring data have been compared to the British Columbia Government Landfill Gas Management Regulations and the proposed Federal Surface Methane Concentration Limits.

3.4 Analytical Laboratory Accreditation

Groundwater and surface water samples collected during the 2024 EMP were submitted to ALS for chemical analysis of those parameters outlined in Table 1-1 (see Page 8).

ALS Canada laboratories are accredited by the Canadian Association for Laboratory Accreditation (CALA) to the ISO 17025 standard. External audits are completed at a frequency determined by CALA while internal audits are also conducted of each laboratory on an internal schedule. The ALS Halifax laboratory is approved as a water testing laboratory by Nova Scotia Environment and Climate Change (NSECC) and no further permits are required for their operations.

4 Environmental Monitoring Results

4.1 Groundwater Quality Results

4.1.1 Assessment of Groundwater Configuration and Flow Direction

In general, the static groundwater table elevations range between 23.10 masl (MW28-B) and 6.62 masl (TH1). Analysis of the groundwater elevation data during this monitoring event indicates a groundwater flow direction towards the south-southwest, with an average hydraulic gradient of 0.0158. Equipotential lines indicating groundwater elevations and the flow direction at the site is presented on Figure 3, a copy of which is appended to this report.

Groundwater elevations measured at nested wells sets (MW4-A and MW4-C, MW22-A, MW22-B and MW22-C, MW23-A, MW23-B and MW23-C, MW27-B and MW27-C and MW29-B and MW29-C) indicate that the vertical gradient is negative, and flow is downward.

Quantitative values of the vertical hydraulic gradient are as follows:

- The hydraulic gradient at set MW4-A and MW4-C is 0.015;
- The hydraulic gradient at set MW22-A, MW22-B and MW22-C is 0.092;

- The hydraulic gradient at set MW23-A, MW23-B and MW23-C is 0.005;
- The hydraulic gradient at set MW24-A and MW24-B is 0.000;
- The hydraulic gradient at set MW27-B and MW27-C is -0.051;
- The hydraulic gradient at set MW29-B and MW29-C is -0.034.

4.1.2 Groundwater Quality Assessment

Field measurements (pH, conductivity, dissolved oxygen and temperature) obtained for the groundwater monitoring wells are presented in conjunction with the laboratory general chemistry results presented in Tables 4A through 4D (following the text of this report). Exceedances of NSE Tier 1 EQS for Groundwater - All Land Uses (Non-potable, and Coarse-Grained Soil Type), and NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m), are highlighted for easy interpretation. Laboratory certificates of analysis are appended in Appendix D.

The field pH measured for groundwater sampled at monitoring wells MW22-A, MW23-A, and MW23-B was lower than the recommended range given by the NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m). Note that the field pH measurements outside the recommended standard may be different from the laboratory reported pH, as the two measurements were not performed at the same time or with the same instruments.

All groundwater quality results analyzed at all sampling locations satisfy the NSE Tier I EQS - All Land Uses (Non-potable, and Coarse-Grained Soil Type).

Groundwater inorganic chemistry and metals exceeding the NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m) from monitoring locations sampled and tested during this program are listed below:

- Dissolved arsenic exceeded at MW4-A and MW22-A.
- Dissolved cobalt exceeded at MW22-A and MW22-B.
- Dissolved iron exceeded at MW4-A, MW22-A, MW22-B, MW23-B, and TH1.
- Dissolved manganese exceeded at MW22-A, MW22-B and MW23-B.

Other than the exceedances noted above, all other groundwater quality results for the remaining parameters analysed at all monitoring well locations satisfy NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m).

Based on a review of the historical data, concentrations of arsenic and iron are above Tier II Pathway Specific Standards for Groundwater from Nova Scotia's *Contaminated Site Regulations* and have historically been reported at levels in excess of these standards in many of the groundwater monitoring wells throughout the site.

Data trend analysis was completed by Stantec (2020) and included plotting groundwater results of certain downgradient sampling locations. The parameters included in the trend analysis are ammonia, chloride and conductivity which are leachate indicators identified in the Site Closure Report (Porter Dillon 1995) and Monitor Plan Evaluation (Stantec 2017). The trend analysis has been continued and includes results accumulated by WSP (2012-2013), Stantec (2016-2020) and Englobe (2024).

The groundwater locations have been divided into the following two separate downgradient areas (outlined by Stantec in 2020):

- Area 1 includes MW25-B, MW4-A, and TH1 (downgradient toward the Cornwallis River).
- Area 2 includes MW22-A, MW22-B, and MW22-C (downgradient toward Palmer Brook).

Groundwater Trend Analysis

Trend analysis for groundwater is summarized below:

- Trends in Area 1 for all parameters have remained stable for all parameters evaluated, with slight increases or decreases in values from year-to-year. Overall parameter values have decreased since 2012.
- Trends in Area 2 for all parameters have remained stable for all parameters evaluated, with slight increases or decreases in values from year-to-year. Overall parameter values have remained stable since 2012.
- Ammonia values are generally higher in Area 1 than in Area 2. MW4-A has had the highest ammonia values since 2012.
- Chloride values are relatively the same between Areas 1 and 2. MW22-B has had the highest chloride values since 2012.
- Conductivity values are relatively the same between Areas 1 and 2. MW22-B has had the highest conductivity values since 2012.

The results of the trend analysis are provided following the text of this report.

4.1.3 Action Level Assessment

Action levels were developed for indicator parameters in the Monitor Evaluation Plan (Stantec 2017). The leachate indicator parameters include ammonia, chloride and. Action levels are concentrations for indicator parameters that are three times the standard deviation of historical data, and indicator parameters above action levels would initiate further investigation. Historical data includes values from 2007-2017 collected by various consulting firms. Action levels calculated by Stantec in 2017 will be used in this report for indicator parameters. Action levels were calculated for monitor wells MW4-A, MW22-A, MW22-B, MW22-C, MW25-B, and TH1. Action levels for indicator parameters are compared to 2024 data in the table below.

	Indicator	Parameters - 20	24 Data	Action Levels		
Well ID	Ammonia (mg/L)	Conductivity (μs/cm)	Dissolved Chloride (mg/L)	Ammonia (mg/L)	Conductivity (μs/cm)	Dissolved Chloride (mg/L)
MW4-A	54.7	1,260	32.9	109	2,463	139
MW22-A	20.7	844	38	48	1,506	204
MW22-B	2.74	1,470	111	3.3	2,251	291
MW22-C	0.122	154	11.2	14	755	51
MW25-B	0.0089	752	78.7	0.5	1,654	178
TH1	30.2	905	17.8	79	1,565	60

Table 4-1 - 2024 Data Compared to Action Level	Is for Indicator Parameters
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Based on the 2024 monitoring results, no indicator parameters were identified exceeded the established action levels for the subject site of any of the three designated parameters.

4.2 Surface Water Quality Results

Field measurements (pH, conductivity, dissolved oxygen, and temperature) obtained for the surface water sampling locations are presented in conjunction with the laboratory metals and general chemistry results at all locations, found in Tables 5A through 5D (found following the text of this report). Exceedances of NSE Tier 1 EQS for Surface Water are highlighted for easy interpretation. Laboratory certificates of analysis are appended in Appendix C.

Field pH readings were lower than the NSE Tier 1 EQS for Surface Water recommended range during the sampling event at SW7, SW7A and SW19B. Note that the field pH measurements that are outside of the recommended guideline may be different to the laboratory reported pH readings in some wells.

Surface water general inorganic chemistry and metals exceeding the NSE Tier 1 EQS for Surface Water from all test locations are summarized below:

- Total aluminum and iron exceeded at all sampled locations (i.e., SW7, SW7A, SW19B, SW24-1, SW24-2 and SW24-3).
- Total arsenic exceeded at sampling location SW7A.
- Total cobalt exceeded at sampling locations SW7A and SW19B.
- Dissolved manganese exceeded at sampling locations SW7, SW7A and SW19B.

Surface water quality for the remaining parameters analysed satisfied NSE Tier 1 EQS for Surface Water.

Based on review of the historical data, concentrations of inorganic parameters (including ammonia and nitrate) and metals (including aluminum, arsenic, barium, calcium, strontium and manganese) above CCME FWAL guidelines have been historically reported in the surface water collected at the Meadowview Landfill Site

Upgradient of the site:

Routine exceedances of nitrite, aluminum, and iron have been observed at the former upgradient site (SWA) and may reflect naturally occurring background conditions.

Downgradient of the site:

Routine exceedances of ammonia, aluminum, arsenic, barium, calcium and strontium have been reported at surface water locations in the Palmer Brook (SW7, SW7A, SW19B). Most recently iron (2020 Stantec Annual Monitoring Program) has exceeded in the Palmer Brook locations at a higher concentration than the upgradient locations. The former downstream location in the Cornwallis River, (SW3), has routinely exceeded aluminum and iron, similar to the upstream location (SWA) in the Cornwallis River. Prior to 2020, SW3 had exceedances in copper, cadmium, lead, vanadium, and zinc but these concentrations have since been reported under their respective guideline exceedances limit. This suggests that the impacts seen in the Palmer Brook are localized (i.e. not impacting the Cornwallis River). The source or cause of the concentrations in the Palmer Brook surface water samples is unknown but may suggest potential impacts from site.

Data trend analysis was completed by Stantec (2020) and included plotting groundwater and surface water results of certain downgradient sampling locations. The parameters included in the trend analysis are ammonia, chloride and conductivity which are leachate indicators identified in the Site Closure Report (Porter Dillon 1995) and Monitor Plan Evaluation (Stantec 2017). The trend analysis has been continued and includes results accumulated by WSP (2012-2013), Stantec (2016-2020), and Englobe (2024).

Surface water locations include the Palmer Brook sampling locations, the former upstream location SWA, the former downstream location SW3, and three new Cornwallis River sampling locations SW24-1, SW24-2, and SW24-3.

Surface Water Trend Analysis

- Ammonia at SW7A peaked at 17 mg/L in 2017 but has since stabilized around 2 mg/L. Remaining ammonia values have remained stable from year to year. Overall ammonia values have been the highest at SW7A among all surface water locations since.
- Conductivity at SW7A peaked in 2017 at 650 µs/cm but has since stabilized around 300 µs/cm. Remaining conductivity values have remained stable from year to year. Conductivity values at the new Cornwallis River surface water locations (SW24-1, SW24-2, and SW24-3) were higher than the conductivity values at the Palmer Brook sampling locations (SW7, SW7A, and SW19B) for 2024. Historically conductivity values have been the highest at SW7A among all surface water locations since 2017.
- Chloride values for all sampling locations have remained stable from year-to-year. Overall values have decreased since 2012. In the 2024 event, lab values show chloride values at the new Cornwallis River surface water locations (SW24-1, SW24-2, and SW24-3) were higher than the chloride values at the Palmer Brook sampling locations (SW7, SW7A and SW19B). Historically chloride values have remained consistent since 2019 and remain between 20 and 35 mg/L with the highest historic value reported at SW19B.

The results of the trend analysis are provided following the text of this report.

4.3 Landfill Gas Monitoring Results

Field parameters including methane (ppm), methane (LEL), Oxygen and Carbon dioxide for were taken from monitor wells to assess ambient landfill gases.

Ambient landfill gas readings are summarized below:

- Oxygen readings ranged from 18.2% (MW32-A) to 21.4% (MW23-C).
- Carbon Dioxide readings ranged from 0% (MW21-C) to 0.8% (TH1).
- Methane readings at all locations were <0.1 ppm except for a reading of 0.1 ppm at MW29-B.
- The methane LEL reading at all locations was 0% LEL.

All gas monitoring results satisfied British Columbia Government Landfill Gas Management Regulations of 5% LEL.

These 'one-time' sampling results should be treated with caution, and for this reason, further evaluation of these sampling points should be conducted to ensure the gas monitoring data accurately represent the landfill gas conditions present in the subsurface.

4.4 QA & QC Results

As part of our QA/QC program, validation criteria were established that required the field collected data to have an acceptable level of precision, accuracy, representativeness, comparability and completeness (the "PARCC" criteria). Precision was evaluated by calculating the RPD (relative percent difference) and comparing the RPD to the acceptable amount of variation. RPD is defined as:

$$RPD = \frac{(\text{sample result} - \text{duplicate result})}{(\text{sample result} + \text{duplicate result})/2} x100$$

It should be noted that RPDs cannot be calculated in instances where the original sample, the duplicate sample, or both were found to contain no detectable concentrations or if results are within 5x

the reportable detection limits. Parameters that have been 'calculated' by the laboratory (e.g. anion sum) are also not included in the comparison.

A summary of RPD results is listed below:

- All RPD values for sample surface water sample SW24-1 and its blind field duplicate were found to be acceptable and below 40% except for Langelier Index (at 20°C) which had an RPD value of 51.8%.
- All RPD values for groundwater sample TH1 and its blind field duplicate were found to be acceptable and below 40% except for Langelier Index (at 4°C) (48.9%) and Total Organic Carbon (60.9%).

Based on field procedures, laboratory methods, sampling program design and field observations, the analytical results are concluded to be representative of the site conditions in general.

A summary of the RPD results is provided in Tables 4C, 4D, 5C and 5D (following the text of this report. Laboratory RPD results can be found in the Laboratory Certificates of Analysis in Appendix D.

5 Conclusions

Based on the recorded field data and analytical results, and their comparison with applicable standards, the following conclusions are made for the 2024 EMP at the Meadowview Landfill.

5.1 Groundwater

Based on the groundwater elevation data measured from the site during September 2024, the groundwater flow direction was estimated to be to the south-southwest toward the Cornwallis River, with a hydraulic gradient of 0.0158 at the time of sampling.

It should be noted that monitoring well MW31-A was not accessible during the monitoring program due to DND-related access restrictions.

The groundwater analytical results were compared to two different sets of standards including the Nova Scotia Environment and Climate Change (NSECC) Tier 1 Environmental Quality Standards (EQS) for Groundwater - All Land Uses (Non-potable and Coarse-Grained Soil Type), and the NSECC Tier 1 EQS for Groundwater Discharging to Surface Water (>10m).

Elevated arsenic, cobalt, iron, manganese and low pH in groundwater have been documented at concentrations exceeding or out of range of the NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m) at various monitoring wells located downgradient of the site (including MW4-A, MW22-A, MW22-B, MW23-B and TH1). These elevated parameters satisfied the same standards at upgradient, background monitoring well locations (MW27-B, MW28-B, MW29-B and MW29-C). The elevated arsenic, cobalt, iron, manganese and low pH affecting water quality in down-gradient wells may indicate site impacts related to the landfill.

It should be noted that the NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m) for arsenic, cobalt, iron, manganese and low pH are established for the protection of freshwater aquatic life; therefore, observed exceedances in the groundwater samples do not necessarily indicate a human health hazard.

Based on the results of the 2024 EMP, groundwater samples collected from downgradient wells at MW4-A, MW22-A, MW22-B, MW23-B and TH1 may be impacted from the Meadowview Landfill.

Exceedances of applied guideline/standard and triggers are summarized in Table 5-1.

Table 5-1 - Groundwater Tier I EQS Exceedances - 2024

	Groundwater Exceedances
-	MW4-A: Arsenic and iron exceedances.
-	MW22-A: Depressed field pH. Arsenic, Cobalt, Iron and Manganese exceedances.
-	MW22-B: Cobalt, iron and manganese exceedances.
-	MW23-A: Depressed field pH.
-	MW23-B: Depressed field pH. Iron and Manganese exceedances.
-	TH1: Iron exceedance.
NSE	Tier 1 EQS for Groundwater Discharging to Surface Water (>10m)
-	Field pH 6.5-9.0
-	Arsenic 50 μg/L
-	Cobalt 7.8-18 µg/L (calculated based on hardness)
-	Iron 3,000 μg/L
-	Manganese 4,300 μ g/L (calculated based hardness and field pH)
Not	es:
1.	Background Wells: MW27-B, MW28-B, MW29-B, MW29-C, and MW31-A.
2.	Downgradient wells: MW4-A, MW22-A, MW22-B, MW22-C, MW23-A, MW23-B, MW23-C, MW25-B, TH1.
3.	NSE Tier 1 EQS for Groundwater Discharging to Surface Water (>10m) for arsenic, cobalt, iron, manganese and low pH are for protection of freshwater aquatic life

5.2 Surface Water

The surface water analytical results are compared to the NSE Tier 1 EQS for Surface Water. For the purpose of this report, the waters of Palmer Brook and of the Cornwallis River are considered to be freshwater.

Palmer Brook

Surface water sample locations at SW20A, SW7, SW7A and SW19B are located along the Palmer Brook southwest of the Facility. Background (Palmer Brook) surface water sampling location SW20A was found dry and therefore, no sample could be collected during the 2024 EMP. Surface water samples were collected from SW19B, SW7 and SW7A and are considered to be downgradient of Meadowview Landfill. Abundant iron precipitate was observed in surface water locations SW7A and SW19B.

The field and laboratory data reported elevated levels or concentrations of field pH, aluminum, arsenic, cobalt, iron, and dissolved manganese which may suggest potential leachate impacts. All remaining metals and general chemistry parameters in the surface water samples collected from the Palmer Brook satisfied the applicable standard.

Cornwallis River

Surface water sample location SW24-1, collected from the Cornwallis River, is considered to be upstream of the Meadowview landfill waste cells and is assumed to reflect the natural background conditions. Concentrations of most surface water metals at SW24-1 satisfied the applicable Provincial standard, with the exception of total aluminum and iron, which are common in these freshwater environments. All remaining metals and general chemistry parameters in the surface water sample SW24-1 were reported at levels that satisfied the applicable standard.

Downgradient surface water sampling locations SW24-2 and SW24-3, also collected along the Cornwallis River, are considered downstream of the landfill, and would contain surface water

potentially influenced by flow from the site. The laboratory data reported elevated concentrations of aluminium and iron for the sample collected at SW24-2 and SW24-3. All remaining metals and general chemistry parameters in surface water samples SW24-2 and SW24-3 were reported at levels that satisfied the applicable standard.

Since aluminum impacts were noted at downstream surface water sample locations SW7, SW7A and SW19B, and at lower concentrations than the upstream "background" location SW24-1, elevated aluminum concentrations are not considered to be a contaminant issue related to surface water runoff from the landfill site.

Based on the results of the 2024 EMP, downstream surface water samples along the Palmer Brook (including SW19A, SW7 and SW7A) maybe influenced by leachate impacts from the Meadowview Landfill. Conversely, downstream surface water samples along the Cornwallis River (including SW24-2 and SW24-3 are not interpreted to be influenced by leachate impacts from the Meadowview Landfill.

Again, it should be noted that the NSE Tier 1 EQS for Surface Water for pH, aluminum, arsenic, cobalt, iron, and dissolved manganese are for the protection of freshwater aquatic life; therefore, observed exceedances in the surface water samples do not necessarily indicate a human health hazard.

The surface water exceedances are summarized in Table 5-2.

Table 5-2 - Surface Water - Tier I EQS exceedances - 2024

Surface Water Exceedances

- SW7: total aluminum, iron, dissolved manganese exceedances and depressed field pH.
- SW7A: total aluminum, arsenic, cobalt, iron, dissolved manganese exceedances and depressed field pH.
- SW19B: total aluminum cobalt, iron, dissolved manganese exceedances and depressed field pH.
- SW24-1: total aluminum and iron.
- SW24-2: total aluminum and iron.
- SW24-4: total aluminum and iron.

NSE Tier 1 EQS for Surface Water

- pH 6.5 9.0 units.
- Aluminium 5 100 µg/L (calculated based on pH).
- Arsenic 5 µa/L.
- Cobalt 0.78 1.8 μg/L (calculated based on hardness).
- Iron 300 μg/L
- Dissolved manganese 90 1500 μg/L (calculated based on hardness and field pH).

Notes:

- 1. Upgradient/background locations include SW24-1.
- 2. SW7, SW7A, and SW19B are located in the Palmer Brook downgradient of the site.
- 3. SW24-2 and SW24-3 are located downstream of the site in the Cornwallis River.

5.3 Landfill Gas

All methane reading were recorded as <0.1 ppm except for a reading of 0.1 ppm observed at MW29-B located on the northern boundary of the former landfill site. No measurements in the % LEL range for methane gas were detected using the equipment operated by Englobe. In general terms, all gas monitoring results satisfied the British Columbia Government Landfill Gas Management Regulations of <5% LEL for methane gas.

Based on the age of the Meadowview landfill (closed in 1999), the gas monitoring screening data and the relative stability of the pH across the site, the potential risk of methane gas exposure to the residential community located east of the Meadowview landfill is interpreted to be low; however, there is the potential for dilution of landfill gases using a handheld gas meter and these 'one-time' sampling results should be treated with caution. Further evaluation of these sampling points should be conducted to ensure the gas monitoring data accurately represent the landfill gas conditions present in the subsurface at each of the existing test locations.

6 Recommendations

Based on the results of the 2024 EMP for the Meadowview Landfill, Englobe has made the following recommendations:

- Sampling and monitoring of the existing groundwater wells at the site should continue on an annual basis.
- Select surface water locations should continue to be sampled and monitored at the same locations and frequency.
- Further evaluation of the Gas Survey sampling points should be conducted to ensure the gas
 monitoring data accurately represent the landfill gas conditions present in the subsurface at each of
 the existing test locations.
- Re-assess for possible repairs to the protective covers for monitoring wells MW26-B and MW32-A.
- Monitoring well MW31-A (located on DND property) should be removed from future EMPs due to difficulty in obtaining permission from DND to access the well, and the dedicated sampling proposed at MW31-A be replaced by sampling monitoring well MW20-A or MW20-B (located at the far east of the site). Sampling at MW20-A or MW-20B should be added to the EMP for future years, including collection of groundwater elevations and landfill gas measurements. In addition, sampling of monitoring well MW-21C should be added to the EMP to confirm site conditions in this area (downgradient of MW-4A).
- The Municipality, in consultation with Englobe, should continue its communications with NSECC in order to identify whether a current Approval exists and if annual monitoring of the Meadowview Landfill is a Provincial requirement under such an Approval.
- Due to damage noted by the Municipality to monitoring wells MW19-B and MW7-A in spring 2024, both monitoring wells should be decommissioned in 2025 under the supervision and guidance of a Site Professional (such as Englobe) recognized by the Province of Nova Scotia.

7 Closing

This report was prepared for the exclusive use of the Municipality of the County of Kings. It is based on data and information obtained during site visits by Englobe Corp. and is based solely upon the condition of the site on the date of such visits, supplemented by information obtained and described herein.

The evaluation and conclusions contained in this report have been prepared in light of the expertise and experience of Englobe. In evaluating the site, Englobe has relied in good faith upon representation

and information furnished by individuals noted in the report with respect to operations and existing site conditions and the historic use of the site to the extent that they have not been contradicted by data obtained by other sources. Accordingly, Englobe accepts no responsibility for any deficiency or inaccuracy in this report as a result of omissions, misstatements or misrepresentations of the persons interviewed. In addition, Englobe will not accept liability for loss, injury, claim or damage arising from any use or reliance on this report as a result of misrepresentation or fraudulent information.

Environmental conditions are dynamic in nature and changing circumstances in the environment and in the use of the site can alter radically the conclusions and information contained herein.

8 References

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9 Tables

Table 1 - Environmental Monitoring Program

Table 1: Environmental Monitoring Program Meadowview Well Observations and Field Data - 2024 Client: Municipality of County of Kings Site: Meadowview Landfill Englobe - Ref No.: 2408035.000



	Test Location ID		Frequency		Paran	neters	
			Ground	water Elevations			
MW4-A	MW4-C	MW12-A			Field Mea	surements	
MW 19-A	MW21-C	MW22-A	Annually				
MW22-B	MW22C	MW23-A					
MW23-B	MW23-C	MW24-A	_				
MW24-B	MW25-B	MW26-B	Summer	Static Water Levels (mbgs and masl)	Borehole Depths (m)	Stick Up Height (mags)	Borehole Diameter (
MW27-B	MW27-C	MW28-B		(mbgs and masi)			
MW 29-B	MW29-C	MW31-A					
MW 32-A	MW35-A	MW36-A	Sept 16 and 17, 2024				
TH1	TH2						
			Ground	lwater Sampling	l		1
MW27-B (background)	MW28-B (background)	MW29-B (background)			General (Chemistry	
MW 29-C	MW31-A	(background) MW4-A		Alkalinity (Bicarbonate)	Alkalinity (Carbonate)	Alkalinity (Total)	Anion Sum
(background)	(background) MW22-B	MW22-C		Cation Sum	Chloride (Dissolved Cl)	Colour	Conductivity
MW22-A	MW23-B	MW23-C	Annually		Ion Balance (%	Langelier Index (@	
MW23-A		MW23-C	, undany	Hardness (CaCO3)	Difference)	20oC)	Langelier Index (@ 4 Nitrogen (Ammoni
MW25-B	TH1			Nitrate (N)	Nitrate + Nitrite (N)	Nitrite (N)	Nitrogen)
				Orthophosphate	pH	Reactive Silica (SiO2)	Saturation pH (@ 20
				Saturation pH (@ 4oC)	Sulphate (Dissolved SO4)	TDS (calc.)	Total Organic Carb (TOC)
				Turbidity			
					Me	tals	
				Aluminum (total)	Antimony (total)	Arsenic (total)	Barium (total)
			Summer	Beryllium (total)	Bismuth (total)	Boron (total)	Cadmium (total)
				Calcium (total)	Chromium (total)	Cobalt (total)	Copper (total)
				Iron (total)	Lead (total)	Magnesium (total)	Manganese (total
				Mercury (total)	Molybdenum (total)	Nickel (total)	Phosphorus (total
				Potassium (total)	Selenium (total)	Silver (total)	Sodium (total)
				Strontium (total)	Thallium (total)	Tin (total)	Titanium (total)
				Uranium (total)	Vanadium (total)	Zinc (total)	
					Field Mea	surements	1
			Sept 16 and 17, 2024				Borehole Diameter (r
				Static Water Level (m)	Borehole Depth (m)		
				Static Water Level (m) Purge Volume Required	Borehole Depth (m) Purge Volume Obtained	Stick-Up (m)	
				Purge Volume Required (L)	Purge Volume Obtained (L)	Temperature (oC)	pH (units)
				Purge Volume Required (L) Conductivity (µS/cm)	Purge Volume Obtained (L) Dissolved Oxygen (mg/L)		
				Purge Volume Required (L) Conductivity (µS/cm) Odour	Purge Volume Obtained (L)	Temperature (oC)	pH (units)
		CMO4.0	Surface	Purge Volume Required (L) Conductivity (µS/cm)	Purge Volume Obtained (L) Dissolved Oxygen (mg/L)	Temperature (oC)	pH (units)
W24-1 (background Cornwallis River)	SW24-2 (midstream Cornwallis River)	SW24-3 (downstream Computing Ruper)	Surface	Purge Volume Required (L) Conductivity (µS/cm) Odour	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen	Temperature (oC)	pH (units)
Cornwallis River)	Cornwallis River)	(downstream Cornwallis River)	Surface	Purge Volume Required (L) Conductivity (µS/cm) Odour Water Sampling	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen General (Temperature (oC) Colour Chemistry	pH (units) Clarity
Cornwallis River) W20A (background Palmer Brook)	SW24-2 (midstream Cornwallis River) SW19B (mid-stream Palmer Brook)	(downstream	Surface	Purge Volume Required (L) Conductivity (µS/cm) Odour	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen	Temperature (oC) Colour	pH (units)
Cornwallis River) W20A (background Palmer Brook)	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required (L) Conductivity (µS/cm) Odour Water Sampling	Purge Volume Oblained (L) Dissolved Oxygen (mg/L) Sheen General (Alkalinity (Carbonate) Chloride (Dissolved Cl)	Temperature (oC) Colour Chemistry Alkalinity (Total) Colour	pH (units) Clarity
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required (L) Conductivity (µS/cm) Odour Water Sampling Alkalinity (Bicarbonate)	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen General (Alkalinity (Carbonate) Chloride (Dissolved Cl) Ion Balance (%	Temperature (oC) Colour Chemistry Alkalinity (Total) Colour Langelier Index (@	pH (units) Clarity Anion Sum Conductivity
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required (L) Conductivity (µS/cm) Odour Water Sampling Alkalinity (Bicarbonate) Cation Sum	Purge Volume Oblained (L) Dissolved Oxygen (mg/L) Sheen General (Alkalinity (Carbonate) Chloride (Dissolved Cl)	Temperature (oC) Colour Chemistry Alkalinity (Total) Colour	pH (units) Clarity Anion Sum Conductivity Langelier Index (@ 4
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required (L) Conductivity (uSkcm) Odour Water Sampling Alkalinity (Bicarbonate) Cation Sum Hardness (CaCO3) Nitrate (N)	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen General (L) Alkalinity (Carbonate) Chloride (Dissolved Ci) Ion Batunce (% Difference) Nitrate + Nitrite (N)	Temperature (oC) Colour Chemistry Alkalinity (Total) Colour Langelier Index (@ 200C) Nitrite (N)	pH (units) Clarity Anion Sum Conductivity Langelier Index (@ Nitrogen (Ammoni Nitrogen (Ammoni
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required (L) Conductivity (uSkcm) Odour Water Sampling Alkalinity (Bicarbonate) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen General (V Alkalinity (Carbonale) Chloride (Dissolved Ci) kon Batance (% Difference) Nitrate + Nitrite (N) pH Scharber (Dissolved	Temperature (cC) Colour Chemistry Alkalinity (Total) Colour Langelier Index (@ 20cC) Nitrite (N) Reactive Silica (SiO2)	pH (units) Clarity Anion Sum Conductivity Langelier Index (@ Annoon Nitrogen) Saturation pH (@ 20 Total Organic Carb
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required (L) Conductivity (uSkcm) Odour Water Sampling Alkalinity (Bicarbonate) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 4oC)	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen General (Alkalinity (Carbonate) Chloride (Dissolved Ci) Ion Balance (% Difference) Nitrate + Nitrite (N)	Temperature (oC) Colour Chemistry Alkalinity (Total) Colour Langelier Index (@ 200C) Nitrite (N)	pH (units) Clarity Anion Sum Conductivity Langelier Index (@ 4 Nitrogen (Ammoni Nitrogen) Saturation pH (@ 20
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream	Annually	Purge Volume Required (L) Conductivity (uSkcm) Odour Water Sampling Alkalinity (Bicarbonate) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate	Purge Volume Obtained (L) Dissolved Oxygen (mgL) Sheen General (I Alkalinity (Carbonate) Chiloride (Dissolved Ci) Ion Balance (% Difference) Nitrate + Nitrite (N) pH Sulphate (Dissolved SO(4)	Temperature (oC) Colour Chemistry Alkalinity (Tota) Colour Langelier Index (@ 20oC) Nitrite (N) Reactive Silica (SiO2) TDS (calc.)	pH (units) Clarity Anion Sum Conductivity Langelier Index (@ Annoon Nitrogen) Saturation pH (@ 20 Total Organic Carb
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream		Purge Volume Required Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonate) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 4oC) Turbidity	Purge Volume Obtained (L) Dissolved Organ (mg/L) Sheen General (Alkalinity (Carbonste) Chloride (Dissolved Cl) Difference) Nitrate + Nitrite (N) PH Sulphate (Dissolved SO4)	Temperature (oC) Colour Colour Chemistry Akalinity (Tota) Colour Langelier Index (@ 20oC) Nibite (N) Reactive Silica (SiO2) TDS (calc.)	PH (units) Clarity Clarity Anion Sum Conductivity Langelier Index (@ 4 Nitrogen (Ammoni Nitrogen) Saturation pH (@ 20 Total Organic Carb (TOC)
Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream	Annually	Purge Volume Required () Conductivity (µSicm) Odour Water Sampling Alkalinity (Bicarbonate) Cation Sum Handness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 40C) Turbidity	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen General (Alkalinity (Carbonate) Chioride (Dissolved Ci) On Batance (% Difference) Nitrate + Nitrite (N) PH Sulphate (Dissolved SO4) SO4 Meta Antimory (dissolved and total)	Temperature (cC) Colour Chemistry Alkalinity (Total) Chemistry Colour Langelier Index (@ 20cC) Nitris (N) Reactive Stica (SiO2) TDS (catc.) TDS (catc.)	PH (units) Clarity Anion Sum Conductivity Langelier Index (@ 4 Nitrogen (Ammoni Nitrogen (Carbo Total Organic Carb (Totc) Total Organic Carb (Totc) Barium (dissolved a tota)
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Cornwallis River) W20A (background Palmer Brook) SW7A (mid-stream	Cornwallis River) SW19B (mid-stream	(downstream Cornwallis River) SW7 (mid-stream	Annually Summer	Purge Volume Required (L) Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonste) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 4oC) Turbidity Aluminum (dissolved and total) Bery(fium (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Thallum (dissolved and total) Thallum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Thallum (dissolved and total) Depth (m) Temperature (aC) Caticum	Purge Volume Obtained (L) Dissolved Oxygen (mgL) Sheen Alkalinity (Carbonale) Choride (Dissolved C) kori Balance (% Differnce) Differnce) Staphate (Dissolved and SO(4) Balanch (dissolved and SO(4) Balanch (dissolved and SO(4) Balanch (dissolved and chai) Differnce) Staphate (Dissolved and chai) Differnce) Staphate (Dissolved and chai) Differnce) Staphate (Dissolved and chai) Differnce) Staphate (Dissolved and chai) Sher (dissolved and chai) Zine (dissolved and chai) Zine (dissolved and chai) Zine (dissolved and chai) Zine (dissolved and chai)	Temperature (oC) Colour Colour Atkalinity (Total) Colour Langelien intext (@ 200C) Nitrie (N) Reactive Silica (SiO2) TDS (calc.) TDS (calc.) TDS (calc.) Arsenic (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Sodium (dissolved and total) Sodium (dissolved and total) Tranum (dissolved and total) Tranum (dissolved and total)	PH (units) Clarity Carity Conductivity Langelier Index (@) Nitrogen (Ammon) Saturation pH (@ 20 Total Organ) Saturation pH (@ 20 Total Organ) Cashium (dissolved a total) Cashium (dissolved a total) Cashium (dissolved a total) Potessium (dissolved a total) Strontium (dissolved a total) Discharge (m3/secc Dissolved Oxygen (m
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Corrwallis River) W20A (background Palmer Brook) W7A (mid-stream Palmer Brook) 	Corrwallis River) SW 198 (mid-stream Palmer Brook)	(downstream Cornwalls River) SW7 (mid-atmam Palmer Brook) I I I I I I I I I I I I I I I I I I I	Annually Summer Sept 16 and 17, 2024	Purge Volume Required (L) Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonste) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 4oC) Turbidity Aluminum (dissolved and total) Bery(fium (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Thallum (dissolved and total) Thallum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Thallum (dissolved and total) Depth (m) Temperature (aC) Caticum	Purge Volume Obtained (L) Dissolved Oxygen (mgL) Sheen Alkalinity (Carbonale) Choride (Dissolved C) kon Batance (% Difference) Difference) Difference) Sulphate (Dissolved and SO(4) SO(4) Batanuth (dissolved and SO(4) Batanuth (dissolved and chai) Chronium (dissolved and chai) Difference) Sulphate (Dissolved and chai) Sher (dissolved and chai) Zine (dissolved and chai) Zine (dissolved and chai)	Temperature (oC) Colour Colour Atkalinity (Total) Colour Langelien intext (@ 200C) Nitrie (N) Reactive Silica (SiO2) TDS (calc.) TDS (calc.) TDS (calc.) Arsenic (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Sodium (dissolved and total) Sodium (dissolved and total) Tranum (dissolved and total) Tranum (dissolved and total)	PH (units) Clarity Anion Sum Conductivity Langelier Index (B) Nitrogen (Ammon Nitrogen) Saturation pH (@ 20 Total Organic (Missolved a (TOC)) Barium (dissolved a (total) Cadmium (dissolved a total) Cadmium (dissolved a total) Potessium (dissolved a total) Potessium (dissolved a total) Discharge (m3/secc Dissolved Oxygen (m
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Corrwallis River) W20A (background Palmer Brook) W7A (mid-stream Palmer Brook) 	Corrwallis River) SW 198 (mid-stream Palmer Brook)	(downstream Cornwalls River) SW7 (mid-atmam Palmer Brook) I I I I I I I I I I I I I I I I I I I	Annually Summer Sept 16 and 17, 2024	Purge Volume Required (L) Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonste) Cation Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 4oC) Turbidity Aluminum (dissolved and total) Bery(fium (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Thallum (dissolved and total) Thallum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Caticum (dissolved and total) Thallum (dissolved and total) Depth (m) Temperature (aC) Caticum	Purge Volume Obtained (L) Dissolved Oxygen (mgL) Sheen Alkalinity (Carbonale) Choride (Dissolved C) kon Batance (% Difference) Difference) Difference) Sulphate (Dissolved and SO(4) SO(4) Batanuth (dissolved and SO(4) Batanuth (dissolved and chai) Chronium (dissolved and chai) Difference) Sulphate (Dissolved and chai) Sher (dissolved and chai) Zine (dissolved and chai) Zine (dissolved and chai)	Temperature (oC) Colour Colour Atkalinity (Total) Colour Langelien intext (@ 200C) Nitrie (N) Reactive Silica (SiO2) TDS (calc.) TDS (calc.) TDS (calc.) Arsenic (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Phosphorus (dissolved and total) Sodium (dissolved and total) Sodium (dissolved and total) Tranum (dissolved and total) Tranum (dissolved and total)	PH (units) Clarity Anion Sum Conductivity Langelier Index (B) Nitrogen (Ammon Nitrogen) Saturation pH (@ 20 Total Organic (Construction) (TOC) Barium (dissolved a total) Cadmium (dissolved a total) Cadmium (dissolved a total) Potessium (dissolved a total) Potessium (dissolved a total) Discharge (m3/secc Dissolved Oxygen (m
Cornwallis River) W20A (background Palmer Brook) W7A (mid-stream Palmer Brook) 	Corrwallis River) SW 198 (mid-stream Palmer Brook)	(downstream Cornwalls River) SW7 (mid-atmam Palmer Brook) I I I I I I I I I I I I I I I I I I I	Annually Summer Sept 16 and 17, 2024 Landfit Annually	Purge Volume Required Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonate) Calcium (Bicarbonate) Atradiness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 40C) Turbicity Atuminum (dissolved and total) Benyfilm (dissolved and total) Calcium (dissolved and t	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen Alkalinity (Carbonale) Chloride (Dissolved Ci) Di Balance (% Difference) Nitrate + Nitrite (N) P H Sulphate (Dissolved and total) Biamuth (dissolved and total) Chronium (dissolved and total) Nicel (dissolved and total) Nicel (dissolved and total) Nicel (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Claraity Clarity Clarity Clarity	Temperature (cC) Colour Colour Alkalinity (Total) Colour Langelier Index (6 200C) Nitria (N) Reactive Stica (SiO2) TDS (calc.) Arsenic (disolved and total) Boron (disolved and total) Phosphorae (disolved and total) Phospho	PH (units) Clarity Conductivity Langelier Index (@4 Nitrogen (Ammoni Nitrogen (Ammoni Nitrogen) Saturation pH (@ 20 Total Organic Carb (Tota) Cadmitum (dissolved total) Cadmitum (dissolved total) Cadmitum (dissolved total) Pottasium (dissolved total) Pottasium (dissolved total) Birontium (dissolved total) Discharge (m3/secc Discharge (m3/secc
Cornwallis River) W20A (baskgores) W2A (initia-stream Palmer Brook) W7A (initi-stream Palmer Brook) W7A (initi-stream Palmer Brook) W7A-1 MW4-A MW19-A MW2-8 MW24-8	Corrwallis River) SW 198 (mid-stream Palmer Brook)	(downstream Cornwalls River) SW7 (mid-stream Palmer Brook) I I I I I I I I I I I I I I I I I I I	Annually Summer Sept 16 and 17, 2024 Landfit Annually	Purge Volume Required Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonate) Calcium Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 40C) Turbicity Aluminum (dissolved and total) Benylium (dissolved and total) Calcium (dissolved and total) Calciu	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen Alkalinity (Carbonale) Chloride (Dissolved Ci) Di Balance (% Difference) Nitrate + Nitrite (N) P H Sulphate (Dissolved and total) Biamuth (dissolved and total) Chronium (dissolved and total) Nicel (dissolved and total) Nicel (dissolved and total) Nicel (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Claraity Clarity Clarity Clarity	Temperature (cC) Colour Colour Alkalinity (Total) Colour Langelier Index (6 200C) Nitria (N) Reactive Stica (SiO2) TDS (calc.) Arsenic (disolved and total) Boron (disolved and total) Phosphorae (disolved and total) Phospho	PH (units) Clarity Conductivity Langelier Index (@4 Nitrogen (Ammoni Nitrogen (Ammoni Nitrogen) Saturation pH (@ 20 Total Organic Carb (Tota) Cadmitum (dissolved total) Cadmitum (dissolved total) Cadmitum (dissolved total) Pottasium (dissolved total) Pottasium (dissolved total) Birontium (dissolved total) Discharge (m3/secc Discharge (m3/secc
Corrwallis Fitver) W20A (basigned) W20A (basigned) W77A (mid-stream Palmer Brook) W77A (mid-stream Palmer Brook) W74. (mid-stream MW4-A MW19-A MW19-A MW22-B MW22-B MW22-B MW22-B	Corrwallis River) SW 198 (mid-stream Palmer Brook)	(downstream Cornwalls River) SW7 (mid-stream Palmer Brook) I I I I I I I I I I I I I I I I I I I	Annually Summer Sept 16 and 17, 2024 Landfit Annually	Purge Volume Required Conductivity (USIcm) Octour Water Sampling Alkalinity (Bicarbonate) Calcium Sum Hardness (CaCO3) Nitrate (N) Orthophosphate Saturation pH (@ 40C) Turbicity Aluminum (dissolved and total) Benylium (dissolved and total) Calcium (dissolved and total) Calciu	Purge Volume Obtained (L) Dissolved Oxygen (mg/L) Sheen Alkalinity (Carbonale) Chloride (Dissolved Ci) Di Balance (% Difference) Nitrate + Nitrite (N) P H Sulphate (Dissolved and total) Biamuth (dissolved and total) Chronium (dissolved and total) Nicel (dissolved and total) Nicel (dissolved and total) Nicel (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Silver (dissolved and total) Claraity Clarity Clarity Clarity	Temperature (cC) Colour Colour Alkalinity (Total) Colour Langelier Index (6 200C) Nitria (N) Reactive Stica (SiO2) TDS (calc.) Arsenic (disolved and total) Boron (disolved and total) Phosphorae (disolved and total) Phospho	PH (units) Clarity Conductivity Langelier Index (@4 Nitrogen (Ammoni Nitrogen (Ammoni Nitrogen) Saturation pH (@ 20 Total Organic Carb (Tota) Cadmitum (dissolved total) Cadmitum (dissolved total) Cadmitum (dissolved total) Pottasium (dissolved total) Pottasium (dissolved total) Birontium (dissolved total) Discharge (m3/secc Discharge (m3/secc

Table 2 - Groundwater Monitoring Well & Surface Water Sampling Station Locations



 Table 2: Groundwater Monitoring Well & Surface Water Sampling Station Locations

 Meadowview Well Observations and Field Data - 2024

 Client: Municipality of the County of Kings

 Site: Meadowview Landfill

Englobe - Ref No. 2408035.000

Test Location ID	Zone	Northing (m N)	Easting (m E)			
MW4-A	20T	4993549.63	380794.79			
MW4-C	20T	4993546.57	380793.98			
MW7-A	20T	4993672.87	380977.54			
MW12-A	20T	4993815.01	379989.01			
MW19-A	20T	4993798.50	380895.43			
MW19-B	20T	4993807.28	380892.40			
MW20-A	20T	4993769.36	380961.75			
MW20-B	20T	4993776.29	380965.70			
MW21-C	20T	4993439.69	380859.98			
MW22-A	20T	4993547.31	380035.98			
MW22-B	20T	4993545.78	380036.53			
MW22-C	20T	4993546.47	380033.93			
MW23-A	20T	4993726.13	379826.71			
MW23-B	20T	4993728.92	379827.68			
MW23-C	20T	4993727.93	379824.20			
MW24-A	20T	4993645.70	380105.66			
MW24-B	20T	4993644.40	380,106.41			
MW25-B	20T	4993536.59	380241.75			
MW26-B	20T	4994047.34	380743.97			
MW27-B	20T	4994150.99	380818.90			
MW27-C	20T	4994151.37	380820.87			
MW28-B	20T	4994165.44	380675.38			
MW29-B	20T	4994102.56	380289.06			
MW29-C	20T	4994101.32	380291.16			
MW32-A	20T	4993826.54	379858.51			
MW35-A	20T	4993457.50	380225.23			
MW36-A	20T	4993466.54	380330.53			
TH1	20T	4993545.73	380611.98			
TH2	20T	4993535.84	380579.72			
SW20A	20T	4993805.23	379399.91			
SW19B	20T	4993666.37	379863.96			
SW7	20T	4993518.73	380015.11			
SW7A	20T	4993442.96	380032.35			
SW24-1	20T	4993295.17	379832.31			
SW24-2	20T	4993420.81	380344.21			
SW24-3	20T	4992897.06	381646.05			

Table 3 - Groundwater Elevations



Table 3: Groundwater Elevations Meadowview Well Observations and Field Data - 2024 Client: Municipality of the County of Kings Site: Meadowview Landfill Englobe - Ref No. 2408035.000

Test Location ID	Ground Surface Elevation (masl)	Groundwater Elevation (masl)	Top of Pipe Elevation (masl)	Stick Up Height (m)	Total Well Depth (m)	Borehole Diametre (mm)
MW4-A	11.73	7.67	11.70	-0.03	10.42	25
MW4-C	11.68	7.58	11.67	-0.01	16.72	25
MW12-A	13.3	10.51	13.54	0.24	4.45	60
MW19-A	28.93	9.83	29.02	0.09	27.20	60
MW21-C	8.98	7.12	9.16	0.18	23.37	60
MW22-A	10.69	8.75	10.91	0.22	8.64	60
MW22-B	10.72	8.10	10.90	0.18	13.23	60
MW22-C	10.73	7.23	10.95	0.22	25.13	60
MW23-A	12.57	10.16	12.74	0.17	4.75	60
MW23-B	12.49	10.09	12.77	0.28	11.44	60
MW23-C	12.5	10.07	12.60	0.10	23.11	60
MW24-A	12.87	9.95	13.25	0.38	3.66	60
MW24-B	12.8	9.95	13.11	0.31	12.00	60
MW25-B	11.05	6.64	11.35	0.30	13.81	60
MW26-B	24.48	20.31	24.88	0.40	13.88	60
MW27-B	23.82	20.46	24.06	0.24	13.60	60
MW27-C	23.7	19.97	23.91	0.21	23.30	60
MW28-B	29.64	23.10	29.91	0.27	15.07	60
MW29-B	22.67	19.20	22.91	0.24	9.61	60
MW29-C	22.75	18.76	23.17	0.42	22.31	60
MW32-A	12.08	10.57	12.57	0.49	3.16	60
MW35-A	9.54	6.88	10.06	0.52	4.00	60
MW36-A	10.46	6.82	10.94	0.48	4.51	60
тн1	13.16	7.58	13.21	0.05	9.12	60
TH2	11.26	6.62	11.83	0.57	16.93	60

Tables 4A-4D - Groundwater Results - Metals and Elements - 2024

Table 4A: Groundwater Results - Metals and Elements - 2024 Client: Municipality of the County of Kings Site: Meadowview Landfill Englobe Ref. No. 2408035.000

	NSECC Tier I EQS	Sample ID														
Parameter	Units	for Non-potable GW (all Land	for GW discharging to SW	MW4-A	MW22-A	MW22-B	MW22-C	MW23-A	MW23-B	MW23-C	MW25-B	MW27-B	MW28-B	MW29-B	MW29-C	TH1
		Uses) ¹	(>10m) ²	17/Sep/24	16/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	18/Sep/24	18/Sep/24	18/Sep/24	18/Sep/24	17/Sep/24
Dissolved Aluminum (AI)	μg/L	-	50 ³	62.5	<10.0	<10.0	10.3	4.9	<1.0	17.6	1.5	9.1	5.5	2.2	9.4	1.2
Dissolved Antimony (Sb)	μg/L	-	90	<1.00	<1.00	<1.00	0.12	<0.10	<0.10	<0.10	<0.10	0.80	<0.10	<0.10	<0.10	<0.10
Dissolved Arsenic (As)	μg/L	-	50	67.6	76.9	17.2	1.40	0.16	11.4	7.31	2.95	12.3	1.12	1.75	4.76	30.5
Dissolved Barium (Ba)	μg/L	-	10,000	2,470	1,150	637	7.59	50.9	242	37.2	10.2	1.83	5.61	10.8	2.75	904
Dissolved Beryllium (Be)	μg/L	-	1.5	<0.200	<0.200	<0.200	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dissolved Bismuth (Bi)	μg/L	-	-	< 0.500	<0.500	<0.500	< 0.050	<0.050	< 0.050	<0.050	<0.050	< 0.050	< 0.050	< 0.050	<0.050	<0.050
Dissolved Boron (B)	μg/L	-	15,000	333	260	380	<10	<10	16	13	75	100	<10	<10	15	144
Dissolved Cadmium (Cd)	μg/L	-	0.9 4	< 0.0500	<0.0500	<0.0500	0.0477	0.0654	0.0769	<0.0050	0.0087	0.0052	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Calcium (Ca)	μg/L	-	-	84,900	74,000	209,000	14,200	16,400	28,700	8,960	92,900	4,840	26,600	28,000	8,220	84,600
Dissoved Cesium (Cs)	μg/L	-	-	<0.100	<0.100	0.236	0.053	<0.010	<0.010	0.034	0.121	0.090	0.031	0.062	0.063	0.072
Dissolved Chromium (Cr)	μg/L	-	89	<5.00	<5.00	<5.00	0.65	<0.50	<0.50	2.18	<0.50	1.15	<0.50	<0.50	<0.50	<0.50
Dissolved Cobalt (Co)	μg/L	-	10 ⁵	10.7	17.1	10.9	<0.10	<0.10	3.50	<0.10	0.25	<0.10	<0.10	<0.10	<0.10	4.37
Dissolved Copper (Cu)	μg/L	-	20 ⁶	<2.00	<2.00	<2.00	0.65	<0.20	<0.20	<0.20	0.29	0.71	0.35	0.36	0.34	<0.20
Dissolved Iron (Fe)	μg/L	-	3.000	19.900	55.400	8.910	22	<10	5.780	25	<10	<10	<10	<10	18	11.600
Dissolved Lead (Pb)	μg/L	-	10 ⁷	<0.500	<0.500	< 0.500	0.382	< 0.050	< 0.050	< 0.050	<0.050	<0.050	<0.050	< 0.050	<0.050	< 0.050
Dissolved Lithium (Li)	μg/L	-	-	12.6	<10.0	33.3	12.1	<1.0	1.1	14	13.8	30.8	<1.0	1.8	11	23.9
Dissolved Magnesium (Mg)	μg/L	-	-	18.300	14.100	27.500	2.500	2.100	4.700	964	14.300	690	2.650	3.900	1.150	15.400
Dissolved Magnesian (Mg)	μg/L	-	4.300 ⁸	972	3,500	4,340	5.79	693	4,700	5.90	26.6	0.37	2,030	0.60	1,130	1.280
Dissolved Marganese (Mir)	μg/L	-	4,300	<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Mercury (Hg)	μg/L	-	0.26	0.0101	<0.0050	<0.0050	0.0050	0.0050	0.0330	<0.0050	<0.0050	0.0052	<0.0050	0.0050	<0.0050	<0.0050
Dissolved Molybdenum (Mo)	μg/L	-	730	1.12	0.844	<0.500	0.242	<0.050	0.0330	0.11	0.087	0.993	<0.0000	0.314	<0.0050	0.555
Dissolved Nickel (Ni)	μg/L		250 ⁹	15.6	13.8	21.3	<0.50	1.29	2.93	<0.50	6.13	<0.50	<0.50	<0.50	<0.000	3.76
Dissolved Phosphorous (P)	μg/L			<500	<500	<500	<50	<50	<50	<50	<50	<50	<0.30 54	<50	<50	63
Dissolved Priosphorous (P) Dissolved Potassium (K)	μg/L	-	-	52.000	19.400	8.060	4.030	1.080	2.530	2,790	<50 7.480	4.280	1.400	3.720	3.760	26.600
Dissolved Potassium (K) Dissolved Rubidium (Rb)	μg/L	-		<u> </u>	8.83	8,060	3.04	1,080	0.84	1.81	6.17	2.68	1,400	3,720	2.88	26,600
Dissolved Rubidium (Rb)	μg/L	-	10	<0.500	<0.500	<0.500	0.052	<0.050	<0.050	0.085	0.059	0.059	<0.050	<0.050	<0.050	0.913
Dissolved Selenidin (Se)	mg/L	-	-	36.6	21	22.2	8.68	11.8	12.4	9.24	13.3	10.3	8.7	10.2	7.21	35.1
Dissolved Silicon (Si)	μg/L	-		17.100	9.830	10.400	4.060	5.500	5.790	4.320	6.210	4.800	4.070	4.790	3.370	16.400
Dissolved Silver (Ag)	μg/L	-	2.5	<0.100	<0.100	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Sodium (Na)	μg/L	-	-	41.600	40,000	73,600	9,770	21.900	24.500	15.000	17.700	29,500	4,380	7,280	18.100	33,200
Dissolved Strontium (Sr)	μg/L	-	210.000	562	387	1810	202	23.3	59.3	75.6	1200	65.7	232	326	111	386
Dissolved Sulfur (S)	μg/L	-	-	<5000	<5000	<5000	<500	3030	5080	<500	<500	<500	1210	750	1240	<500
Dissolved Tellurium (Te)	μg/L	-	-	<2.00	<2.00	<2.00	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dissolved Thallium (TI)	μg/L	-	8	<0.100	<0.100	<0.100	0.021	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dissolved Thorium (Th)	μg/L	-	-	<1.00	<1.00	<1.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dissolved Tin (Sn)	μg/L	-	-	<1.00	<1.00	<1.00	0.4	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	0.18
Dissolved Titanium (Ti)	μg/L	-	-	<3.00	<3.00	<3.00	1.23	< 0.30	<0.30	<2.00	<0.30	< 0.30	< 0.30	< 0.30	0.77	<0.30
Dissolved Tungsten (W)	μg/L	-	-	<1.00	<1.00	<1.00	<0.10	<0.10	<0.10	0.79	0.28	14.8	<0.10	1.37	0.39	<0.10
Dissolved Uranium (U)	μg/L	-	150	<0.100	<0.100	6.21	5.93	0.039	0.026	4.78	17.3	3.03	0.273	2.2	1.01	0.042
Dissolved Vanadium (V)	μg/L	-	1,200	<5.00	<5.00	<5.00	1.62	< 0.50	<0.50	4.91	1.02	4.52	0.92	0.76	4.95	0.6
Dissolved Zinc (Zn)	μg/L	-	70 10	<10.0	<10.0	<10.0	43.5	1.7	1.5	<1.0	1.6	1.6	1.4	<1.0	<1.0	3.3
Dissolved Zirconium (Zr)	μg/L	-	-	<2.00	<2.00	<2.00	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Notes:

 value
 - exceeds NSECC Tier I EQS Non-potable GW

 value
 - exceeds NSECC Tier I EQS GW discharging to SW

- no guideline

¹ 2021 Nova Scotia Environment and Climate Change (NSECC) Tier I Environmental Quality Standards (EQS) for Groundwater - All Land Uses ; Non-potable Ground Water Condition

² 2021 Nova Scotia Tier 1 Environmental Quality Standards (EQS) for Surface Water and Groundwater Discharging to Surface Water

³ Aluminium Guideline for pH < 6.5 = 50 ug/L

Aluminium Guideline for pH \geq 6.5 = 1000 ug/L

⁴ At [CaCO3] = > 0 to < 17 mg/L, cadmium guideline = $0.4 \mu g/L$

At [CaCO3] = \geq 17 to \leq 280 mg/L, cadmium guideline (µg/L) = 10^{(0.83(log[hardness]) - 2.46)}

At [CaCO3] = > 280 mg/L, cadmium guideline = 3.7 µg/L

⁵ At $[CaCO_3] = 0$ to ≤ 52 mg/L, cobalt guideline = 7.8 ug/L

At [CaCO₃] = >52 to \leq 396 mg/L, cobalt guideline = e^{0.414[in(hardness)]-1.887}

At [CaCO₃] = >396 mg/L, cobalt guideline = 18 ug/L

⁶ At $[CaCO_3] = 0$ to 120 mg/L, copper guideline = 20 ug/L.

At [CaCO3] = ≥82 to ≤180 mg/L, copper guideline = 0.2 * e{0.8545[ln(hardness)]-1.465} At [CaCO3] = > 180 mg/L, copper guideline = 40 ug/L.

⁷ At [CaCO₃] = 0 to ≤60 mg/L, lead guideline = 10 ug/L

At [CaCO₃] = >60 to \leq 180 mg/L, lead guideline = $e^{(1.273[ln(hardness)]-4.705)}$

At $[CaCO_3] = >180 \text{ mg/L}$, lead guideline = 70 ug/L

⁸ 2019 CCME Scientific Criteria Document for the Development of

the Canadian Water Quality Guidelines for the Protection of Aquatic Life

Appendix B - Manganese - Canadian Water Quality Guideline and Benchmark Calculator

⁹ At $[CaCO_3] = 0$ to 60 mg/L, nickel guideline = 250 ug/L.

At [CaCO3] = > 60 to \leq 180 mg/L, nickel guideline (µg/L) = e^{0.76[ln(hardness)]+1.06}

At [CaCO3] = > 180 mg/L, nickel guideline = 1500 µg/L

¹⁰ exp^{0.947[in(hardness mg·L-1)] - 0.815[pH] + 0.398[in(DOC mg·L-1)] + 4.625}

When CaCO3 23.4 to 399 mg/L and pH 6.5 to 8.13 Otherwise, zinc guideline = 70 ug/L

englobe



TABLE 4B: Groundwater Results - General Chemistry - 2024 Client: Municipality of the County of Kings Site: Meadowview Landfill Englobe Ref. No. 2408035.000

			NSECC Tier I EQS							Sample ID						
Parameter	Units	for Non-potable GW (all Land	for GW discharging to SW	MW4-A	MW22-A	MW22-B	MW22-C	MW23-A	MW23-B	MW23-C	MW25-B	MW27-B	MW28-B	MW29-B	MW29-C	TH1
		Uses) ¹	(>10m) ²	17/Sep/24	16/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	17/Sep/24	18/Sep/24	18/Sep/24	18/Sep/24	18/Sep/24	17/Sep/24
Field Readings																
Field pH	pH units	-	6.5-9.0	6.98	6.34	6.52	7.31	6.48	6.38	8.48	7.89	8.15	7.95	7.89	8.84	7.35
Field Conductivity	µS/cm	-	-	1,087	855	1,276	139	192.4	292.9	111.9	555	138.3	26	190.2	132.9	850
Field Temperature	°C	-	-	10.5	5.2	5.2	7.9	11.3	4.2	11.3	6.0	9.1	8.1	5.2	5.2	6.0
Physical Tests																
Conductivity	µS/cm	-	-	1,260	844	1,470	154	217	309	128	752	163	187	211	156	905
Alkalinity, bicarbonate (as HCO3)	mg/L	-	-	712	467	791	71.6	74.3	89.9	69.1	330	94	86	111	78.2	546
Alkalinity, carbonate (as CO3)	mg/L	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	1.1	<1.0	<1.0	3	<1.0
Alkalinity, hydroxide (as OH)	mg/L	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	mg/L	-	-	584	382	649	58.7	60.9	73.7	58.7	270	78.8	70.5	90.7	69	448
Colour, apparent	CU	-	-	4,270	1,220	720	72.2	2,780	2,270	23,000	607	1,200	594	5,880	6,280	1,870
Hardness (as CaCO3), dissolved	mg/L	-	-	287	243	635	45.8	49.6	91	26.3	291	14.9	77.3	86	25.3	275
Langelier index (@ 4°C)	-	-	-	-0.088	-0.577	0.323	-1.02	-1.56	-1.46	-0.48	0.312	-0.611	-0.18	-0.081	-0.049	0.136
Solids, total dissolved [TDS]	mg/L	-	-	589	457	875	91	145	173	78	444	122	110	115	99	426
Turbidity	NTU	-	-	1930	232	180	30	696	763	640	250	378	219	2300	3940	864
pH	pH units	-	6.5 - 9.0	6.95	6.68	6.97	7.65	7.05	6.84	8.39	7.62	8.42	8.15	8.12	8.81	7.26
Langelier index (@ 20°C)	-	-	-	0.156	-0.328	0.57	-0.768	-1.31	-1.21	-0.231	0.56	-0.365	0.069	0.168	0.192	0.385
pH, saturation (@ 4°C)	pH units	-	-	7.04	7.26	6.65	8.67	8.62	8.3	8.87	7.31	9.03	8.33	8.2	8.86	7.12
pH, saturation (@ 20°C)	pH units	-	-	6.79	7.01	6.4	8.42	8.36	8.05	8.62	7.06	8.78	8.08	7.95	8.62	6.88
Anions and Nutrients																
Ammonia, total (as N)	mg/L	-	varies 3	54.7	20.7	2.74	0.0122	0.0101	0.412	< 0.0050	0.0089	0.0088	0.0095	0.0068	< 0.0050	30.2
Chloride	mg/L	-	1.200	32.9	38	111	11.2	24.4	42	3.88	78.7	3.36	13.6	9.63	16.6	17.8
Fluoride	mg/L	-	1.2	<0.100	0.048	<0.100	0.029	0.052	0.020	0.047	<0.020	0.202	0.024	0.023	0.040	0.028
Nitrate (as N)	mg/L	-	30 4	<0.100	<0.020	<0.100	0.040	<0.020	0.101	0.170	< 0.020	0.167	< 0.020	0.043	0.160	0.050
Nitrate + Nitrite (as N)	mg/L	-	-	<0.112	<0.0224	<0.112	0.040	< 0.0224	0.259	0.170	<0.0224	0.167	<0.0224	0.043	0.160	0.122
Nitrite (as N)	mg/L	-	0.6	<0.050	<0.010	<0.050	<0.010	<0.0224	0.158	<0.010	<0.0224	<0.010	<0.0224	<0.040	<0.010	0.072
Phosphate, ortho-, dissolved (as P)	mg/L	-	-	<0.0010	<0.0010	<0.0010	0.0075	0.0428	0.0013	0.0163	0.0062	0.0067	0.0548	0.0233	0.0079	< 0.0010
Silicate (as SiO2)	mg/L		-	30.3	21.1	19.4	9.33	11.1	10.8	8.58	13.5	9.31	9.36	8.44	6.97	28.3
Sulfate (as SO4)	mg/L	-	1280 5	<1.50	<0.30	<1.50	1.29	8.10	13.9	1.16	0.52	1.30	3.57	2.27	3.69	2.17
Organic / Inorganic Carbon	IIIy/L	-	1280	×1.50	~0.00	\$1.50	1.23	0.10	13.3	1.10	0.52	1.50	5.57	2.21	3.09	2.11
				16.8	10.2	17.3	4.86	28.5	6.31	<5.00	7.39	4.02	<2.50	<10.0	<10.0	6.61
Carbon, total organic [TOC]	mg/L	-	-	10.0	10.2	17.3	4.00	20.0	0.31	\$5.00	1.39	4.02	<u>~2.30</u>	\$10.0	<u> </u>	0.01
Ion Balance				40.0	8 71	40.4	4.50	0.00	0.07	1.00	7.00	4.70	4.07	0.44	4.04	0.54
Anion sum	meq/L	-	-	12.6	0111	16.1	1.52	2.08	2.97	1.32	7.63	1.72	1.87	2.14	1.94	9.51
Cation sum	meq/L	-	-	13.5	10.7	16.8	1.45	2	3.34	1.25	6.77	1.69	1.77	2.13	1.39	10.2
lon balance (cations/anions)	%	-	-	107	123	104	95.4	96.2	112	94.7	88.7	98.2	94.6	99.5	71.6	107

Notes:



¹ 2021 Nova Scotia Environment and Climate Change (NSECC) Tier I Environmental Quality Standards (EQS) for Groundwater - All Land Uses ; Non-potable Groundwater Condition

² 2021 Nova Scotia Tier 1 Environmental Quality Standards (EQS) for Surface Water and Groundwater Discharging to Surface Water

³ Ammonia - calculations as per http://st-ts.ccme.ca/en/index.html?lang=en&factsheet=5#aql_fresh_concentration.

⁴ Nitrate guideline has been converted from Nitrate (as NH4) to Nitrate (as N)

⁵ At [CaCO3] = 0 to ≤30 mg/L, sulphate guideline = 1280 mg/L At [CaCO3] = >30 to ≤75 mg/L, sulphate guideline = 2180 mg/L

At [CaCO3] = >75 to ≤180 mg/L, sulphate guideline = 3090 mg/L

At [CaCO3] = >180 mg/L, sulphate guideline = 4290 mg/L

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TABLE 4C: Field QA/QC of Groundwater Results - Metals and Elements - 2024 Client: Municipality of the County of Kings Site: Meadowview Landfill Englobe Ref. No. 2408035.000

Parameter	Unite	RDL	RDL x5	ТІ		
	Units			17/Sep/24	GW DUP	RPD (%)
Dissolved Aluminum (AI)	μg/L	1.0	5.0	1.2	<1.0	NC
Dissolved Antimony (Sb)	μg/L	0.10	0.50	<0.10	<0.10	NC
Dissolved Arsenic (As)	μg/L	0.10	0.50	30.5	31.1	1.9
Dissolved Barium (Ba)	μg/L	0.10	0.50	904	899	0.6
Dissolved Beryllium (Be)	μg/L	0.020	0.10	<0.020	<0.020	NC
Dissolved Bismuth (Bi)	μg/L	0.050	0.250	<0.050	<0.050	NC
Dissolved Boron (B)	μg/L	10	50	144	144	0.0
Dissolved Cadmium (Cd)	μg/L	0.0050	0.0250	<0.0050	<0.0050	NC
Dissolved Calcium (Ca)	μg/L	50	250	84,600	85,300	0.8
Dissoved Cesium (Cs)	μg/L	0.010	0.050	0.072	0.07	2.8
Dissolved Chromium (Cr)	μg/L	0.50	2.5	<0.50	<0.50	NC
Dissolved Cobalt (Co)	μg/L	0.10	0.50	4.37	4.34	0.7
Dissolved Copper (Cu)	μg/L	0.20	1.0	<0.20	0.21	NC
Dissolved Iron (Fe)	μg/L	10	50	11,600	11,900	2.6
Dissolved Lead (Pb)	μg/L	0.050	0.250	<0.050	<0.050	NC
Dissolved Lithium (Li)	μg/L	1.0	5.0	23.9	24.1	0.8
Dissolved Magnesium (Mg)	μg/L	5.0	25	15,400	15,700	1.9
Dissolved Manganese (Mn)	μg/L	0.10	0.50	1,280	1,260	1.6
Dissolved Mercury (Hg)	μg/L	0.0050	0.0250	< 0.0050	<0.0050	NC
Total Mercury (Hg)	μg/L	0.0050	0.0250	<0.0050	<0.0050	NC
Dissolved Molybdenum (Mo)	μg/L	0.050	0.250	0.555	0.562	1.3
Dissolved Nickel (Ni)	μg/L	0.50	2.5	3.76	3.73	0.8
Dissolved Phosphorous (P)	μg/L	50	250	63	69	9.1
Dissolved Potassium (K)	μg/L	50	250	26,600	26,800	0.7
Dissolved Rubidium (Rb)	μg/L	0.20	1.0	5.07	5.08	0.2
Dissolved Selenium (Se)	μg/L	0.050	0.250	0.913	1.02	11.1
Dissolved Silicon (as SiO2)	mg/L	0.150	0.750	35.1	35.3	0.6
Dissolved Silicon (Si)	μg/L	50	250	16,400	16,500	0.6
Dissolved Silver (Ag)	μg/L	0.010	0.050	<0.010	<0.010	NC
Dissolved Sodium (Na)	μg/L	50	250	33,200	32,900	0.9
Dissolved Strontium (Sr)	μg/L	0.20	1.0	386	381	1.3
Dissolved Sulfur (S)	μg/L	500	2500	<500	<500	NC
Dissolved Tellurium (Te)	μg/L	0.20	1.0	<0.20	<0.20	NC
Dissolved Thallium (TI)	μg/L	0.010	0.050	<0.010	<0.010	NC
Dissolved Thorium (Th)	μg/L	0.100	0.50	<0.10	<0.10	NC
Dissolved Tin (Sn)	μg/L	0.100	0.50	0.18	0.18	NC
Dissolved Titanium (Ti)	μg/L	0.30	1.5	<0.30	<0.30	NC
Dissolved Tungsten (Ŵ)	μg/L	0.10	0.50	<0.10	<0.10	NC
Dissolved Uranium (U)	μg/L	0.010	0.050	0.042	0.038	NC
Dissolved Vanadium (V)	μg/L	0.50	2.5	0.6	0.59	NC
Dissolved Zinc (Zn)	μg/L	1.0	5.0	3.3	3.4	NC
Dissolved Zirconium (Zr)	μg/L	0.20	1.0	<0.20	<0.20	NC

Notes:

value	-
RDL	-
RPD	-
NC	-

RDP outside of acceptable range
 Reportable Detection Limit
 Relative Percent Difference
 Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit.

RPD results of within 40% are considered to be acceptable.

Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.



TABLE 4D: Field QA/QC of Groundwater Results - General Chemistry - 2024 **Client: Municipality of the County of Kings** Site: Meadowview Landfill Englobe Ref. No. 2408035.000

Parameter	Units	RDL	RDL x5	T		
Farameter	Onits	RDL		17/Sep/24	GW DUP	- RPD (%)
Physical Tests						
Conductivity	μS/cm	1.0	5.0	905	924	2.1
Alkalinity, bicarbonate (as HCO3)	mg/L	1.0	5.0	546	567	3.8
Alkalinity, carbonate (as CO3)	mg/L	1.0	5.0	<1.0	<1.0	NC
Alkalinity, hydroxide (as OH)	mg/L	1.0	5.0	<1.0	<1.0	NC
Alkalinity, total (as CaCO3)	mg/L	1.0	5.0	448	465	3.7
Colour, apparent	CU	2.0	10	1,870	1600	15.6
Hardness (as CaCO3), dissolved	mg/L	0.50	2.5	275	278	1.1
Langelier index (@ 4°C)	-	0.010	0.050	0.136	0.224	48.9
Solids, total dissolved [TDS]	mg/L	10	50	426	434	1.9
Turbidity	NTU	0.10	0.50	864	711	19.4
рН	pH units	0.10	0.50	7.26	7.33	1.0
Langelier index (@ 20°C)	-	0.010	0.050	0.385	0.473	20.5
pH, saturation (@ 4°C)	pH units	0.010	0.050	7.12	7.10	0.3
pH, saturation (@ 20°C)	pH units	0.010	0.050	6.88	6.86	0.3
Anions and Nutrients						
Ammonia, total (as N)	mg/L	0.0050	0.0250	30.2	28.8	4.7
Chloride	mg/L	0.50	2.5	17.8	17.6	1.1
Fluoride	mg/L	0.020	0.10	0.028	0.029	NC
Nitrate (as N)	mg/L	0.020	0.10	0.050	0.052	NC
Nitrate + Nitrite (as N)	mg/L	0.0032	0.0160	0.122	0.098	21.8
Nitrite (as N)	mg/L	0.010	0.050	0.072	0.046	NC
Phosphate, ortho-, dissolved (as P)	mg/L	0.0010	0.0050	<0.0010	<0.0010	NC
Silicate (as SiO2)	mg/L	0.50	2.5	28.3	28.7	1.4
Sulfate (as SO4)	mg/L	0.30	1.5	2.17	1.03	NC
Organic / Inorganic Carbon						
Carbon, total organic [TOC]	mg/L	0.50	2.5	6.61	12.4	60.9
Ion Balance						
Anion sum	meq/L	0.10	0.50	9.51	9.82	3.2
Cation sum	meq/L	0.10	0.50	10.2	10.2	0.0
Ion balance (cations/anions)	%	0.010	0.050	107	104	2.8

Notes:

- RDP outside of acceptable range value Reportable Detection Limit RDL RPD Relative Percent Difference NC - Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit.

RPD results of within 40% are considered to be acceptable.

Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.





Tables 5A-5D - Surface Water Results - Metals and Elements - 2024
TABLE 5A: Surface Water Results - Metals and Elements - 2024 Client: Municipality of the County of Kings Site: Meadowview Landfill Englobe - Ref No. 2408035.000

			Sample ID							
Parameter	Units	NSECC Tier I EQS	SW7	SW7A	SW19B	SW20A	SW24-1	SW24-2	SW24-3	
			16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24	
Total Aluminum (Al)	µg/L	5 ²	<u>14.1</u>	<u>10.3</u>	<u>88.3</u>	-	<u>239</u>	<u>161</u>	<u>122</u>	
Total Antimony (Sb)	µg/L	9	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	
Total Arsenic (As)	µg/L	5	1.95	<u>7.61</u>	1.25	-	1.26	1.45	1.39	
Total Barium (Ba)	µg/L	1,000	159	286	139	-	35.6	39.2	38.8	
Total Beryllium (Be)	µg/L	0.15	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	
Total Bismuth (Bi)	µg/L	-	<0.050	< 0.050	<0.050	-	< 0.050	< 0.050	<0.050	
Total Boron (B)	µg/L	1,500	<10	29	<10	-	16	18	17	
Total Cadmium (Cd)	μg/L	0.04 - 0.37 ³	<0.0050	<0.0050	0.0071	-	0.0075	0.0111	<0.0050	
Total Calcium (Ca)	µg/L	-	20,200	26,600	7,320	-	31,700	31,700	32,100	
Total Cesium (Cs)	µg/L	-	<0.010	<0.010	0.018	-	0.074	0.046	0.038	
Total Chromium (Cr)	µg/L	8.9	0.54	<0.50	<0.50	-	0.68	0.58	<0.50	
Total Cobalt (Co)	µg/L	0.78 - 1.8 4	0.36	<u>1.98</u>	<u>1.26</u>	-	0.25	0.25	0.19	
Total Copper (Cu)	µg/L	2 - 4 5	<0.50	< 0.50	< 0.50	-	0.55	0.87	<0.50	
Total Iron (Fe)	µg/L	300	1,890	7,380	8,710	-	530	571	525	
Total Lead (Pb)	μg/L	1 to 7 ⁶	0.064	0.099	0.388	-	0.233	0.621	0.139	
Total Lithium (Li)	μg/L	-	<1.0	2.0	<1.0	-	2.8	2.3	2.5	
Total Magnesium (Mg)	μg/L	-	2,370	3,720	1,610	-	3.820	3,740	3,890	
Total Manganese (Mn)	μg/L	-	1.440	1.980	4.960	-	121	145	158	
Dissolved Manganese (Mn)	µg/L	90 to 1500 ⁷	1,350	1,860	4,760	-	98	133	145	
Total Mercury (Hg)	µg/L	0.026	< 0.0050	< 0.0050	< 0.0050	-	<0.0050	<0.0050	<0.0050	
Total Molybdenum (Mo)	µg/L	73	< 0.050	0.091	0.079	-	0.449	0.438	0.418	
Total Nickel (Ni)	µg/L	25 - 150 ⁸	<0.50	1.0	<0.50	-	0.51	0.63	<0.50	
Total Potassium (K)	µg/L	-	1.850	3.540	1.350	-	2.570	2.670	2.680	
Total Rubidium (Rb)	µg/L	-	0.99	1.62	2.96	-	1.84	1.71	1.87	
Total Selenium (Se)	µg/L	1	< 0.050	< 0.050	0.051	-	0.072	0.082	0.080	
Total Silicon (as SiO2)	mg/L	-	13.1	14.9	10.3	-	9.54	9.00	8.92	
Total Silicon (Si)	µg/L	-	6,140	6,970	4,810	-	4,460	4,210	4,170	
Total Silver (Ag)	µg/L	0.25	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	
Total Sodium (Na)	µg/L	-	11,700	14,400	21,900	-	17,000	17,200	18,400	
Total Strontium (Sr)	µg/L	21,000	44.1	82.3	25.0	-	119	122	123	
Total Sulfur (S)	µg/L	-	1,210	1,080	980	-	7,980	7,930	7,670	
Total Tellurium (Te)	µg/L	-	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	
Total Thallium (TI)	µg/L	0.8	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	
Total Thorium (Th)	µg/L	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	
Total Tin (Sn)	µg/L	-	<0.10	<0.10	<0.10	-	<0.10	0.13	<0.10	
Total Titanium (Ti)	μg/L	-	<0.30	< 0.30	0.97	-	5.41	3.78	2.96	
Total Tungsten (W)	μg/L	-	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	
Total Uranium (U)	µg/L	15	0.036	0.028	<0.010	-	0.989	0.961	0.918	
Total Vanadium (V)	µg/L	120	<0.50	< 0.50	0.54	-	1.34	1.18	1.07	
Total Zinc (Zn)	µg/L	-	<3.0	<3.0	<3.0	-	<3.0	3.1	<3.0	
Dissolved Zinc (Zn)	µg/L	7 ⁹	<1.0	<1.0	1.0	-	<1.0	1.7	1.6	
Dissolved Zinrconium (Zr)	μg/L	-	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	

Notes:

value - exceeds NSECC Tier I EQS - no guideline

¹ 2021 Nova Scotia Environment & Climate Change (NSECC) Tier I Environmental Quality Standards (EQS) for surface water

² Aluminium Guideline for pH < 6.5 = 5 ug/L

Aluminium Guideline for pH \geq 6.5 = 100 ug/L

- ³ At [CaCO3] = > 0 to < 17 mg/L, cadmium guideline = 0.04 μ g/L
- At [CaCO3] = \geq 17 to \leq 280 mg/L, cadmium guideline (µg/L) = 10^{(0.83(log[hardness]) 2.46}}
- At [CaCO3] = > 280 mg/L, cadmium guideline = 0.37 µg/L
- ⁴ At $[CaCO_3] = 0$ to ≤ 52 mg/L, cobalt guideline = 0.78 ug/L
- At $[CaCO_3] = >52$ to ≤ 396 mg/L, cobalt guideline = $e^{(0.414[ln(hardness)]-1.887)}$
- At $[CaCO_3] = >396 \text{ mg/L}$, cobalt guideline = 1.8 ug/L
- At [CaCO3] = > 180 mg/L, copper guideline = 40 ug/L.

⁵ At $[CaCO_3] = 0$ to 120 mg/L, copper guideline = 2 ug/L. At [CaCO3] = ≥82 to ≤180 mg/L, copper guideline = 0.2 * e{0.8545[ln(hardness)]-1.465} At [CaCO3] = > 180 mg/L, copper guideline = 4 ug/L.

⁶ At $[CaCO_3] = 0$ to ≤ 60 mg/L, lead guideline = 1 ug/L At $[CaCO_3] = >60$ to ≤ 180 mg/L, lead guideline = $e^{\{1.273[ln(hardness)]-4.705\}}$

At [CaCO₃] = >180 mg/L, lead guideline = 7 ug/L

⁸ Nickle Guideline - At [CaCO3] = 0 to 60 mg/L, nickel guideline = 25 ug/L. At [CaCO3] = > 60 to \leq 180 mg/L, nickel guideline (µg/L) = e{0.76[ln(hardness)]+1.06} At [CaCO3] = > 180 mg/L, nickel guideline = 150 µg/L

⁹ Zinc Guideline - 10 exp0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625 When CaCO3 23.4 to 399 mg/L and pH 6.5 to 8.13 Otherwise, zinc guideline = 7 ug/L

⁷ Manganese 2019 CCME Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life Appendix B - Manganese - Canadian Water Quality Guideline and Benchmark Calculator





TABLE 5B: Surface Water Results - Metals and Elements - 2024 Client: Municipality of the County of Kings Site: Meadowview Landfill Englobe - Ref No. 2408035.000

			Sample ID								
Parameter	Units	NSECC Tier I EQS	SW7	SW7A	SW19B	SW20A	SW24-1	SW24-2			
			16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24	16/Sep/24			
Field Readings									1		
Field pH	pH units	6.5-9.0	<u>6.43</u>	<u>6.24</u>	<u>6.47</u>	Dry	7.26	6.91			
Field Conductivity	uS/cm	-	168.5	225.0	157.5	-	254.8	257.9			
Field Temperature	O°	-	7.7	8.1	9.5	-	9.6	9.2			
Physical Tests											
Conductivity	μS/cm	-	190	255	177	-	293	299			
Alkalinity, bicarbonate (as HCO3)	mg/L	-	77.2	117	43.0	-	73.3	71.7			
Alkalinity, carbonate (as CO3)	mg/L	-	<1.0	<1.0	<1.0	-	<1.0	<1.0			
Alkalinity, hydroxide (as OH)	mg/L	-	<1.0	<1.0	<1.0	-	<1.0	<1.0			
Alkalinity, total (as CaCO3)	mg/L	-	63.3	95.9	35.3	-	60.1	58.8			
Colour, apparent	CU	-	68.0	212	505	-	32.3	36.3			
Hardness (as CaCO3), dissolved	mg/L	-	60.2	81.7	24.9	-	94.9	94.6			
Langelier index (@ 4°C)	-	-	-0.944	-0.951	-2.01	-	-0.52	-0.742			
Solids, total dissolved [TDS]	mg/L	-	109	144	117	-	178	180			
Turbidity	NTU	-	5.74	25.9	45.1	-	4.51	5.06			
pH	pH units	6.5 - 9.0	7.55	7.26	7.18	-	7.83	7.62			
Langelier index (@ 20°C)	-	-	-0.693	-0.699	-1.76	-	-0.273	-0.491			
pH, saturation (@ 4°C)	pH units	-	8.49	8.21	9.19	-	8.35	8.36			
pH, saturation (@ 20°C)	pH units	-	8.24	7.96	8.94	-	8.10	8.11			
Anions and Nutrients											
Ammonia, total (as N)	mg/L	varies ³	0.256	1.4	0.264	-	0.0371	0.0829			
Chloride	mg/L	120	17.0	18.6	31.4	-	32.4	33.5			
Fluoride	mg/L	0.12	0.022	0.021	<0.020	-	0.036	0.043	1		
Nitrate (as N)	mg/L	3 ⁴	0.086	0.068	0.051	-	2.27	2.51			
Nitrate + Nitrite (as N)	mg/L	-	0.122	0.068	0.077	-	2.28	2.53			
Nitrite (as N)	mg/L	0.06	0.036	<0.010	0.026	_	0.012	0.017			
Phosphate, ortho-, dissolved (as P)	mg/L	-	0.005	< 0.0010	0.0067	-	0.0469	0.0408			
Total Phosphorous (P)	µg/L	-	10.4	32.2	73.8	-	109	96.4			
Silicate (as SiO2)	mg/L	-	11.0	12.0	8.33	-	7.34	6.90			
Sulfate (as SO4)	mg/L	128 ⁵	2.97	2.44	2.04	-	22.1	22.7			
Organic / Inorganic Carbon	<u> </u>								1		
Carbon, total organic [TOC]	mg/L	_	3.11	3.52	12.2	_	3.09	3.00	1		
Ion Balance									1		
Anion sum	meq/L	_	1.82	2.50	1.64	_	2.74	2.78	1		
Cation sum	meq/L	-	1.90	2.79	2.01	-	2.75	2.76	1		
Ion balance (cations/anions)	%		104	112	122	_	100	99.3	1		

Notes:

 value
 - exceeds NSECC Tier I EQS

 - no guideline

_____- - no guideline

¹ 2021 Nova Scotia Environment & Climate Change (NSECC) Tier I Environmental Quality Standards (EQS) for surface water

² 1999 (Update 2021) Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life.

³ Ammonia - calculations as per http://st-ts.ccme.ca/en/index.html?lang=en&factsheet=5#aql_fresh_concentration.

⁴ Nitrate guideline has been converted from Nitrate (as NH4) to Nitrate (as N)

⁵ At $[CaCO_3] = 0$ to ≤ 30 mg/L, sulphate guideline = 128 mg/L

At [CaCO₃] = >30 to ≤75 mg/L, sulphate guideline = 218 mg/L

At $[CaCO_3] = >75$ to ≤ 180 mg/L, sulphate guideline = 309 mg/L

At [CaCO₃] = >180 mg/L, sulphate guideline = 429 mg/L



SW24-3
16/Sep/24
6.88
262.3
9.2
302
74.7
<1.0
<1.0
61.2
36.2
96.2
-0.642
188
4.23
7.70
-0.391
8.34
8.09
0.0724
35.0
0.037
2.17
2.2
0.034
0.0318
86.2
7.28
21.4
2.99
2.82
2.83
100

TABLE 5C: Surface Water Results - Metals and Elements - 2024Client: Municipality of the County of KingsSite: Meadowview LandfillEnglobe - Ref No. 2408035.000

Duranta		RDL	RDL x5	SW	SW24-1		
Parameter	Units			17/Sep/24	GW DUP	RPD (%)	
Total Aluminum (Al)	μg/L	3.0	15.0	239	176	30.4	
Total Antimony (Sb)	μg/L	0.10	0.50	<0.10	<0.10	NC	
Total Arsenic (As)	μg/L	0.10	0.50	1.26	1.23	2.4	
Total Barium (Ba)	μg/L	0.10	0.50	35.6	34.5	3.1	
Total Beryllium (Be)	μg/L	0.020	0.10	<0.020	<0.020	NC	
Total Bismuth (Bi)	μg/L	0.050	0.3	< 0.050	< 0.050	NC	
Total Boron (B)	μg/L	10	50.0	16	16	NC	
Total Cadmium (Cd)	μg/L	0.0050	0.03	0.0075	<0.0050	NC	
Fotal Calcium (Ca)	μg/L	100	500	31,700	31,800	0.3	
Fotal Cesium (Cs)	μg/L	0.010	0.05	0.074	0.06	20.9	
Total Chromium (Cr)	μg/L	0.50	2.50	0.68	0.54	23.0	
Fotal Cobalt (Co)	μg/L	0.10	0.50	0.25	0.21	NC	
Total Copper (Cu)	μg/L	0.50	2.50	0.55	<0.50	NC	
Fotal Iron (Fe)	μg/L	10	50.0	530	445	17.4	
Fotal Lead (Pb)	μg/L	0.050	0.25	0.233	0.183	NC	
Fotal Lithium (Ĺi)	μg/L	1.0	5.00	2.8	2.5	NC	
Fotal Magnesium (Mg)	μg/L	5.0	25.0	3,820	3,740	2.1	
Dissolved Manganese (Mn)	μg/L	0.1	0.50	121	102	17.0	
Fotal Manganese (Mg)	μg/L	0.10	0.50	121	118	2.5	
Fotal Mercury (Hg)	μg/L	0.005	0.03	< 0.0050	<0.0050	NC	
Fotal Molybdenum (Mo)	μg/L	0.05	0.25	0.449	0.442	1.6	
Fotal Nickel (Ni)	μg/L	0.50	2.50	0.51	<0.50	NC	
Total Phosphorous (P)	μg/L	2	10	109	99.5	9.1	
Fotal Potassium (K)	μg/L	50	250	2,570	2,590	0.8	
Total Rubidium (Rb)	μg/L	0.20	1.00	1.84	1.86	1.1	
Fotal Selenium (Se)	μg/L	0.05	0.25	0.072	0.076	NC	
Γotal Silicon (as SiO2)	mg/L	0.25	1.25	9.54	9	5.8	
Total Silicon (Si)	μg/L	100	500	4,460	4,210	5.8	
Гotal Silver (Ag)	μg/L	0.01	0.05	<0.010	<0.010	NC	
Γotal Sodium (Na)	μg/L	50	250	17,000	16,900	0.6	
Fotal Strontium (Sr)	μg/L	0.20	1.00	119	117	1.7	
otal Sulfur (S)	μg/L	500	2500	7980	7980	0.0	
otal Tellurium (Te)	μg/L	0.20	1.00	<0.20	<0.20	NC	
otal Thallium (TI)	μg/L	0.01	0.05	<0.010	<0.010	NC	
Total Thorium (Th)	μg/L	0.10	0.50	<0.10	<0.10	NC	
otal Tin (Sn)	μg/L	0.10	0.50	<0.10	<0.10	NC	
otal Titanium (Ti)	μg/L	0.30	1.50	5.41	4.19	25.4	
Total Tungsten (W)	μg/L	0.10	0.50	<0.10	<0.10	NC	
Fotal Uranium (U)	μg/L	0.01	0.05	0.989	0.984	0.5	
Fotal Vanadium (V)	μg/L	0.50	2.50	1.34	1.22	NC	
Dissolved Zinc (Zn)	μg/L	1.00	5.00	<1.0	<1.0	NC	
otal Zinc (Zn)	μg/L	3.0	15.0	3.3	<3.0	NC	
Total Zirconium (Zr)	μg/L	0.20	1.00	<0.20	<0.20	NC	

Notes:

value	- RDP (
RDL	- Repoi
RPD	- Relati
NC	- Non-c

RDP outside of acceptable range
 Reportable Detection Limit
 Relative Percent Difference
 Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit.

RPD results of within 40% are considered to be acceptable.

Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.



TABLE 5D: Surface Water Results - Metals and Elements - 2024 **Client: Municipality of the County of Kings** Site: Meadowview Landfill Englobe - Ref No. 2408035.000

Parameter	Units	RDL	RDL x5	SW		
Parameter	Units	RDL		17/Sep/24	GW DUP	- RPD (%)
Physical Tests						
Conductivity	μS/cm	1.0	5.0	293	293 291	
Alkalinity, bicarbonate (as HCO3)	mg/L	1.0	5.0	73.3	71	3.2
Alkalinity, carbonate (as CO3)	mg/L	1.0	5.0	<1.0	<1.0	NC
Alkalinity, hydroxide (as OH)	mg/L	1.0	5.0	<1.0	<1.0	NC
Alkalinity, total (as CaCO3)	mg/L	1.0	5.0	60.1	58.2	3.2
Colour, apparent	CU	2.0	10	32	30.7	5.1
Hardness (as CaCO3), dissolved	mg/L	0.50	2.5	94.9	94.8	0.1
Langelier index (@ 4°C)	-	0.010	0.050	-0.52	-0.715	31.6
Solids, total dissolved [TDS]	mg/L	10	50	178	182	2.2
Turbidity	NTU	0.10	0.50	4.51	4.76	5.4
pH	pH units	0.10	0.50	7.83	7.65	2.3
Langelier index (@ 20°C)	-	0.010	0.050	-0.273	-0.464	51.8
pH, saturation (@ 4°C)	pH units	0.010	0.050	8.35	8.36	0.1
pH, saturation (@ 20°C)	pH units	0.010	0.050	8.1	8.11	0.1
Anions and Nutrients						
Ammonia, total (as N)	mg/L	0.0050	0.0250	0.0371	0.0277	29.0
Chloride	mg/L	0.50	2.5	32.4	33.3	2.7
Fluoride	mg/L	0.020	0.10	0.036	0.045	NC
Nitrate (as N)	mg/L	0.020	0.10	2.270	2.32	2.2
Nitrate + Nitrite (as N)	mg/L	0.0032	0.0160	2.28	2.33	2.2
Nitrite (as N)	mg/L	0.010	0.050	0.012	0.014	NC
Phosphate, ortho-, dissolved (as P)	mg/L	0.0010	0.0050	0.0469	0.0518	NC
Silicate (as SiO2)	mg/L	0.50	2.5	7.34	6.91	6.0
Sulfate (as SO4)	mg/L	0.30	1.5	22.1	22.8	3.1
Organic / Inorganic Carbon						
Carbon, total organic [TOC]	mg/L	0.50	2.5	3.09	2.86	7.7
Ion Balance						
Anion sum	meq/L	0.10	0.50	2.74	2.75	0.4
Cation sum	meq/L	0.10	0.50	2.75	2.74	0.4
Ion balance (cations/anions)	%	0.010	0.050	100	99.6	0.4

Notes:

value	- RDP outside of acceptable range
RDL	- Reportable Detection Limit
RPD	- Relative Percent Difference
NC	- Non-calculable

RPD is considered non-calculable where concentrations are less than five times the laboratory detection limit. RPD results of within 40% are considered to be acceptable. Where RPD is non-calculable, results are considered acceptable where the difference between concentrations is less than the laboratory detection limit.



Table 6 - Landfill Gas Results



Table 6: Landfill Gas ResultsMeadowview Well Observations and Field Data - 2024Client: Municipality of the County of KingsSite: Meadowview LandfillEnglobe - Ref No. 2408035.000

	Gas Monitoring						
MW ID	Methane (ppm)	Methane LEL	Oxygen (%)	Carbon Dioxide (%)			
MW4-A	0	0	21.1	0.3			
MW4-C	0	0	20.9	0.5			
MW12-A	0	0	20.4	0.1			
MW19-A	0	0	20.7	0.1			
MW21-C	0	0	20.5	0			
MW22-A	0	0	21.4	0.1			
MW22-B	0	0	21.3	0.2			
MW22-C	0	0	21.4	0.1			
MW23-A	0	0	21.2	0.1			
MW23-B	0	0	21.2	0.1			
MW23-C	0	0	21.2	0.1			
MW24-A	0	0	21.1	0.2			
MW24-B	0	0	12.2	0.3			
MW25-B	0	0	18.6	0.1			
MW26-B	0	0	20.8	0.1			
MW27-B	0	0	20.6	0.2			
MW27-C	0	0	20.6	0.1			
MW28-B	0	0	21.1	0.1			
MW29-B	0.1	0	21.2	0.1			
MW29-C	0	0	21.1	0.1			
MW32-A	0	0	18.2	0.3			
MW35-A	0	0	20.6	0.2			
MW36-A	0	0	20.4	0.3			
TH1	0	0	20.9	0.8			
TH2	0	0	21	0.1			

Graphs





















Figure 1- Regional Location Plan



Figure 2 - Environmental Monitoring and Property Plan







Т	F	G	F	N	D

and the second	LEGEND							
	۲	TEST HOLE LO	CATIO	ON				
	+	MONITORING	WELL	LOCAT	ION			
		SURFACE WA	TER S	AMPLIN	IG LO	CATIO	N	
	Δ	NEW SURFAC	E WAT	ER SAI	MPLIN	G LOO	CATION	
η		FORMER MEA	DOWV	IEW LA	NDFIL	L SIT	E	
	PROVINCIAL MAPPED WETLAND (APPROXIMATE						Ξ)	
	\bigcirc	PROVINCIAL N	IAPPE	D WAT	ER BC	DY(A	PPROXIM	ATE)
	Municipality of the County of Kings							
	Environmental Monitoring Program Meadowview Landfill, Town of Kentville Kings County, Nova Scotia							
	Figure 2 - Environmental Monitoring and Property Plan							
<u>Dr</u>	Sources: Sampling Locations Plan - Environmental Monitoring - Meadowview Landfill, 2020 Monitoring Program, Dated January 2021, by Stantec Base :							
SW24-3	Mapping : Google Earth Image Downloaded October 2024.							
300M	er	IGLOBE		i.				
200	Project man	ager: DC					Date : Dec.	2024
	Prepared :	NS	Drawn :	11			fied : NS	
1.7 500	Departmen	Project	C	Itp	Disc.	Туре	Drawing n°	Rev.
1:7,500	148	2408035		000				

Figure 3 - Groundwater Table and Flow Direction Plan



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Appendix A Correspondence





Dan Hagan

From: Sent:	Haverstock, Michael <michael.haverstock@novascotia.ca> November 22, 2024 4:25 PM</michael.haverstock@novascotia.ca>
То:	Dan Hagan
Subject:	RE: NSECC Approval for Meadowview Landfill - Municipality of the County of Kings
Attachments:	Kentville Meadowview closure plan tables.pdf; Kentville Meadowview closure plan.pdf

We were able to find a copy of a closure plan.

I don't know if it is the most current though.

Note that this document might not show up in a past FOIPOP because it was just identified in other Department folders.

I don't know if there was any official documented classification of the landfill but will let you know if we find anything. More likely the classification is based on the vintage of the landfill.

Have a good weekend,

Mike Haverstock District Engineer Nova Scotia Department of Environment and Climate Change

From: Dan Hagan <dhagan@countyofkings.ca>
Sent: November 18, 2024 12:16 PM
To: Haverstock, Michael <Michael.Haverstock@novascotia.ca>
Subject: RE: NSECC Approval for Meadowview Landfill - Municipality of the County of Kings

You don't often get email from dhagan@countyofkings.ca. Learn why this is important

** EXTERNAL EMAIL / COURRIEL EXTERNE **

Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

Hi Michael –

Just following up from my email this morning – our environmental consultant (Englobe) has reviewed the documents you provided and were wondering if you could also look into this for us as well?

• Do you know if there was ever a "file closure document" (or equivalent) issued for the site? Perhaps circa 2011/2012 when the Approval was set to expire, per Condition 9 of the Approval?

We acknowledge that it may be hard to find information given the landfill was closed in the mid-late 1990s, but anything that you may be able to share would be very much appreciated as we try and understand some of the historical aspects to the site.

I note that as part of the 2018 Environmental Monitoring Program for the Meadowview Landfill, our environmental consultants at the time (Stantec) noted the following in the 2018 Annual Monitoring Report:

1.2.1 2018 Monitoring Plan Update

The environmental monitoring program for the Site was updated twice during 2017 based on a review of available data and to better align with regulatory requirements. The first update was provided to the Municipality and NSE and focused on reducing the number of sampling locations and adjusting the sampling frequency at some monitoring locations (Stantec Consulting Ltd. (b), 2017). Discussions with NSE further revealed that environmental compliance monitoring for the Site was not required as the Site is considered a Class 1 Landfill. As environmental compliance monitoring is no longer required from a regulatory perspective for Class 1 Landfills (as informed by NSE), the need for an ongoing monitoring program was re-examined from a due diligence perspective and Stantec recommended that the Municipality adjust the ongoing monitoring to focus on areas where potential impacts from the Site have been observed.

The Municipality has proceeded with the understanding that any continued monitoring at the site was a "due diligence effort", based on Stantec noting that discussions with NSECC had confirmed that monitoring was not required as the site is "considered a Class 1 Landfill". It would be great if there was some documentation to that effect from ~ 2017/2018...

Thanks in advance for your time -

Dan Hagan, P.Geo. Municipality of the County of Kings

Strategic Project Specialist t: (902) 690-6170 www.countyofkings.ca

From: Dan Hagan
Sent: November 18, 2024 9:20 AM
To: Haverstock, Michael <<u>Michael.Haverstock@novascotia.ca</u>>
Cc: Levy, Melissa <<u>Melissa.Levy@novascotia.ca</u>>
Subject: RE: NSECC Approval for Meadowview Landfill - Municipality of the County of Kings

Good morning, Michael (& Melissa):

Thank you so much for finding the electronic copies of our Industrial Approval and Terms & Conditions of Approval for our Meadowview Landfill. I will provide these to our environmental consultants for their review and consideration as part of our environmental monitoring program reporting for 2024.

I'll be in touch if we have anything additional questions – hope you both have a great week –

Dan.

Dan Hagan, P.Geo. Municipality of the County of Kings

Strategic Project Specialist t: (902) 690-6170 www.countyofkings.ca From: Haverstock, Michael <<u>Michael.Haverstock@novascotia.ca</u>>
Sent: November 14, 2024 4:52 PM
To: Dan Hagan <<u>dhagan@countyofkings.ca</u>>
Cc: Levy, Melissa <<u>Melissa.Levy@novascotia.ca</u>>
Subject: RE: NSECC Approval for Meadowview Landfill - Municipality of the County of Kings

*** Your attachment(s) were cleaned by Check Point. <u>Click here</u> to restore the original(s) or contact your system administrator. ***

Hi Dan,

As Melissa may have mentioned, typically an Environmental Registry or Freedom of Information and Protection of Privacy Act information access request would be the best methods to request files from the ECC, but I think I can send you the Approval as the Approval Holder.

I understand that the Meadowview file was destroyed in accordance with ECC's record retention policy.

We were able to find an electronic copy of an approval though. See attached.

I've reached out to ECC's Solid Waste Program Lead to confirm the status of ECC's regulatory requirements for closed 1st generation landfills because a province-wide program has yet to be developed. I'll reach out to you after I hear back from him.

Thanks,



Please consider the environment before printing this email 📥

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From: Dan Hagan <<u>dhagan@countyofkings.ca</u>>
 Sent: November 12, 2024 9:10 AM
 To: Haverstock, Michael <<u>Michael.Haverstock@novascotia.ca</u>>
 Subject: NSECC Approval for Meadowview Landfill - Municipality of the County of Kings

You don't often get email from <u>dhagan@countyofkings.ca</u>. Learn why this is important

** EXTERNAL EMAIL / COURRIEL EXTERNE **

Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

Good morning, Mr. Haverstock:

I was chatting with one of your colleagues this morning (Melissa) regarding NSECC Western Regional Office sharing with us a copy of our NSECC Approval for the closed Meadowview Landfill (closed in 1996) in North Kentville.

It seems that a copy of this Approval may not be available for sharing through normal means, and I was wondering if you would be able to chat with me about if there are any other potential sources that we may be able to check to find a copy of the Approval for the closed landfill?

We ask because we have tasked our new environmental consultants, responsible for conducting our Environmental Monitoring Program for the site (groundwater, surface water, landfill gas), to advise us as to whether our continued environmental monitoring efforts for the site are a requirement of any existing Approvals from the Province or whether our efforts are related to due diligence efforts only.

Would you have any time this week to chat with me on this matter?

Many thanks in advance for your time -

www.countyofkings.ca

Dan Hagan, P.Geo. Municipality of the County of Kings Strategic Project Specialist t: (902) 690-6170

Appendix B Photograph Log







Photo 1: Surface water sampling location SW24-1.



Photo 2: Surface water sampling location SW24-2.



Photo 3: Surface water sampling location SW24-3.



Photo 4: Surface water sampling location SW24-3.



Photo 5: Biological metallic sheen close to surface water location SW7A.



Photo 6: Surface water sampling location SW7.



Photo 7: Surface water location SW19B.



Photo 8: Surface water location SW19B.



Photo 9: Surface water location SW20A Note: the location was dry and unable to be sampled.



Photo 10: Monitoring Well MW22-B.



Photo 11: Monitoring Well MW22-C.



Photo 12: Monitoring Wells MW22-A (front, left) and MW22-B.



Photo 13: Monitoring Well MW12-A.



Photo 14: Monitoring Well MW36-A.



Photo 15: Monitoring Well MWTH-1.



Photo 16: Monitoring Well MW4-C.


Photo 17: Monitoring Well MW4-A.



Photo 18: Monitoring Well MW29-C.



Photo 19: Monitoring Well MW29-B.



Photo 20: Monitoring Well MW28-B.



Photo 21: Monitoring Well MW26-B.



Photo 22: Monitoring Well MW27-B.



Photo 23: Monitoring Well MW27-C.



Photo 24: Monitoring Well MW32-A.



Photo 25: Monitoring Well MW25-B.



Photo 26: Field staff measuring surface water flow rates.



Photo 27: Monitoring Well sampling set up after replacing Waterra tubing.

Appendix C Field Sampling Records





Groundwater Monitoring and Low-Flow Sample Collection Form

Lo	catio	on:	Me	adowvi	iew La	ndfill				Date			Septembe	r 16 an	d 17, 2	2024				
Pr	oject	:#:	240	8035.0	000						onnel:		TM and V.	J						
	eathe			າny 25'	°C					Moni	toring l	Equipme	ent: Wate	er Leve	I Mete	r, YSI,	GEM500	0		
De	econt	aminatior											[.] (YSI) Ser							
Pu	ımp (circle one	e): V	Vaterra	a / Pe	ristaltic	/ Geo	o-subm	ersib	le / Bl	adder	Pump I	Descriptio	n:						
	uc				_				Grour	ndwater N	Ionitoring D	ata and Field	Parameters							
Q	ollectio ne	d f ë	epth	ight	(E	L) me	ne (-)			r	â	g	τ		Gas M	onitoring			î	ដ
Well ID	Sample Collection Time	Static Water Level Depth (mbtoc and mbgs)	Borehole Depth (mbgs)	Stick-Up Height (m)	Borehole Diameter (mm)	Purge Volume Required (L)	Purge Volume Obtained (L)	Temp (°C)	Н	EC (µs/m or mS/cm)	DO (mg/L)	Colour and Clarity	Odour and Sheen	Methane (ppm)	Methane (LEL)	Oxygen	Carbon Dioxoide	Photos	Lock (Y or N)	Comments
MW22-A	16:00	2.166 and 1.942	8.635	0.224	60	39	39	5.2	6.34	855	3.09	Clear	Slight sulfur odour, slight metallic sheen	0	0	21.4	0.1	Y	Y	-
MW22-B	10:00	2.798 and 2.623	13.22 5	0.175	60	63	6328 and went dry5.26.521,2764.34Light BrownNo odour, no sheenC						0	0	21.3	0.2	Y	Y	-	
MW22-C	10:15	3.729 and 3.505	25.12 9	0.224	60	128	128	7.9	7.31	139	8.10	Clear	No odour, no sheen	0	0	21.4	0.1	Y	Y	-
MW24-A	8:30	3.295 and 2.917	3.662	0.378	60				·	No Sampl	e			0	0	21.1	0.2	Y	Y	-
MW24-B	8:35	3.162 and 2.850	12.00 3	0.312	60		No Sample 0 0 21.2 0.3								Y	Y	-			
MW23-A	11:00	2.584 and 2.414	4.751	0.170	60	13	13	11.3	6.48	192.4	5.74	Red Brown - Silty	No odour, no sheen	0	0	21.2	0.1	Y	Y	-
MW23-B	11:30	2.678 and 2.403	11.44 4	0.275	60	68	68	4.2	6.38	292.9	4.11	Red Brown - Silty	No odour, no sheen	0	0	21.2	0.1	Y	Y	-

Note: Recommended stabilization criteria: temp ±0.5°C; pH ± 0.1 units; EC ± 3%; DO ± 1 mg/L; ORP ± 10 mV; for at least three successive measurements that are made every 3-5 minutes.

Groundwater Monitoring and Low-Flow Sample Collection Form

Lo	catio	on:	Me	adowvi	iew La	andfill				Date	:		Septemb	per 16 a	and 17	2024				
Pr	oject	:#:	240)8035.0	000					Pers	sonne	el:	TM and	VJ						
We	eathe	er:	Sur	າny 25 ິ	°C					Mor	itorin	g Equi	pment: Wa	ater Le	vel Met	er, YSI	, GEM	5000		
De	cont	aminatio	n Meth	nod:						Wat	er Qu	ality Me	eter (YSI) So	erial N	0.:					
Pu	ımp (circle on	e): V	Vaterra	a / Pe	eristaltio	c / Ge	o-sub	mers	ible / E	Bladde	er Pun	np Descript	ion:						
	u								Gro	oundwater	Monitorii	ng Data and	Field Parameters							
Q	ollectio Ne	er th id	epth	ight	e nm)	me (L)	me (L)			or	(T	p	σ		Gas Mo	onitoring			(N	হা
Well ID	Sample Collection Time	Static Water Level Depth (mbtoc and mbgs)	Borehole Depth (mbgs)	Stick-Up Height (m)	Borehole Diameter (mm)	Purge Volume Required (L)	Purge Volume Obtained (L)	Temp (°C)	Ηd	EC (µs/m or mS/cm)	DO (mg/r)	Colour and Clarity	Odour and Sheen	Methane (ppm)	Methane (LEL)	Oxygen	Carbon Dioxoide	Photos	Lock (Y or N)	Comments
MW23-C	12:15	2.428	23.109	0.10	60	124	4 124 4.3 8.48 111.9 11.8 Red Brown - Silty No odour, no sheen 0							0	21.1	0.1	Y	Y	-	
MW32-A	12:35	2.073 and 1.5083	3.159	0.490	60		No Sample 0 0 18.2							18.2	0.3	Y	Y	Casing cannot close properly		
MW12-A	12:50	3.029 and 2.789	4.446	0.240	60					No Sampl	2			0	0	20.4	0.1	Y	Y	-
MW36-A	13:30	4.114 and 3.639	4.513	0.475	60					No Sampl	9			0	0	20.4	0.3	Y	Y	-
MW35-A	13:50	3.177 and 2.657	4.000	0.520	60		No Sample 0 0 20.6 0.2								0.2	Y	Y	-		
MW25-B	14:40	4.704 and 4.409	13.809	0.295	60	54	54	6.0	7.89	555	5.30	Red- Brown, Silty	No odour, no sheen	0	0	18.6	0.1	Y	Y	-
MW21-C	15:05	1.943 and 1.863	23.370	0.180	60	No Sample 0 0 20.5 0 Y Y Tubing Left							0							

Note: Recommended stabilization criteria: temp ±0.5°C; pH ± 0.1 units; EC ± 3%; DO ± 1 mg/L; ORP ± 10 mV; for at least three successive measurements that are made every 3-5 minutes.

Groundwater Monitoring and Low-Flow Sample Collection Form

Lo	catio	on:	Me	adowv	view La	andfill				Date):		Septembe	er 16 a	and 17,	2024				
Pr	oject	:#:	240	08035.	000					Pers	sonne	l:	TM and V	′J						
We	eathe	er:	Su	nny 25	°C					Mor	itorin	g Equip	oment: Wa	ter Le	vel Met	er, YSI	, GEM5	5000		
De	cont	aminatio	n Metl	hod:									ter (YSI) Se							
Pu	mp (circle on	e): \	Naterr	a / Pe	eristaltio	c / Geo	o-sub	mers	ible / E	Bladde	r Pum	p Description	on:						
	-								Gro	oundwater	Monitorir	ng Data and I	ield Parameters							
Q	ollection ne	d th te	epth	ight	e mm)	(L)	(L)			ŗ	r	q	g		Gas M	onitoring			ĺŹ	ts
Well ID	Sample Collection Time	Static Water Level Depth (mbtoc and mbgs)	Borehole Depth (mbgs)	Stick-Up Height (m)	Borehole Diameter (mm)	Purge Volume Required (L)	Purge Volume Obtained (L)	Temp (°C)	F	EC (μs/m or mS/cm)	DO (mg/l)	Colour and Clarity	Odour and Sheen	Methane (ppm)	Methane (LEL)	Oxygen	Carbon Dioxoide	Photos	Lock (Y or N)	Comments
TH2	15:30	5.217 and 4.644	16.932	0.573	60					No Samp	le			0	0	21.0	0.1	Y	Y	-
TH1	16:00	5.584 and 5.579	9.118	0.05	60	21	21	6.0	7.35	850	4.11	Light Brown	Sewage Odour, slight metallic sheen	0	0	20.9	0.8	Y	Y	Possible septic field near old house
MW4-C	16:30	4.103 and 4.103	16.715	0	25					No Samp	le			0	0	20.9	0.5	-	Y	-
MW4-A	17:05	4.059 and 4.059	10.422	0	25	19	6 and went dry	10.5	6.98	1,087	5.73	Red- Brown	Sewage Odour, no sheen	0	0	21.1	0.3	-	Y	-
MW29-B	9:30	3.713 and 3.473	9.605	0.240	60	35	20 and went dry	5.2	7.89	190.2	8.59	Brown	No odour, no sheen	0.1	0	21.2	0.1	Y	Y	Slow recharge
MW29-C	10:15	4.409 and 3.989	22.307	0.420	60	108	50 and went dry	5.2	8.84	132.9	8.73	Brown	No odour, no sheen	0	0	21.1	0.1	Y	Y	Slow recharge
MW28B	10:45	6.801 and 6.536	15.066	0.265	60	49	44 and went dry	8.1	7.95	26	11.92	Orange- Brown	No odour, no sheen	0	0	21.1	0.1	Y	Y	-

Note: Recommended stabilization criteria: temp ±0.5°C; pH ± 0.1 units; EC ± 3%; DO ± 1 mg/L; ORP ± 10 mV; for at least three successive measurements that are made every 3-5 minutes.

Groundwater Monitoring and Low-Flow Sample Collection Form

Lo	catio	on:	Me	adowv	view La	andfill				Date	:		Septem	ber 16 a	and 17,	2024				
Pr	oject	:#:	240)8035.	.000					Pers	sonne	l:	TM and	VJ						
We	eathe	er:	Sur	nny 25	5°C					Mor	nitorin	g Equip	oment: W	ater Le	vel Met	er, YSI	, GEM5	5000		
De	cont	aminatio	n Meth	nod:						Wat	er Qua	ality Me	eter (YSI) S	erial N	o.:					
Pu	mp (circle on	e): V	Vaterr	a / Pe	eristaltio	c / Ge	o-sub	mers	ible / E	Bladde	r Pun	np Descript	tion:						
	Ľ								Gro	oundwater	Monitorin	ng Data and	Field Parameters							
₽	ollectio Je	ter th br	epth	ight	e nm)	me (L)	me (L)			or	r)	q	p		Gas Mo	nitoring			(z	ts
Well ID	Sample Collection Time	Static Water Level Depth (mbtoc and mbgs)	Borehole Depth (mbgs)	Stick-Up Height (m)	Borehole Diameter (mm)	Purge Volume Required (L)	Required (L) Purge Volume Obtained (L) Obtained (L) Temp (°C) pH FC (μs/m or ms/cm) DO (mg/L) Colour and Carity Colour and Colour and Colour and Colour and Colour and Colour and Charty							Methane (ppm)	Methane (LEL)	Oxygen	Carbon Dioxoide	Photos	Lock (Y or N)	Comments
MW26-B	11:15	4.566 and 4.171	13.883	0.395	60		No Sample							0	0	20.8	0.1	Y	Y	Cap broken. casing closed over well
MW27-B	11:45	3.598 and 3.362	13.604	0.236	60	60	20 and went dry	9.1	8.15	138.3	10.44	Orange	No odour, No Sheen	0	0	20.6	0.2	Y	Y	Slow recharge
MW27-C	11:30	3.949 and 3.735	23.300	0.214	60		No Sample 0 0 20.6 0.1 Y Y -									-				
MW19-A	12:20	19.187 and 19.102	27.195	0.085	60		No Sample 0 0 20.7 0.1 Y Y -													

Appendix D Laboratory Certificates







CERTIFICATE OF ANALYSIS

Amendment	: 2		
Client	Englobe Corp.	Laboratory	: ALS Environmental - Winnipeg
Contact	Nathalie Sahakyan	Account Manager	: Emily Smith
Address	: 97 Troop Avenue	Address	: 1329 Niakwa Road East, Unit 12
	Dartmouth Nova Scotia Canada B3B 2A7		Winnipeg MB Canada R2J 3T4
Telephone	:	Telephone	: +1 204 255 9720
Project	: 2408035.000	Date Samples Received	: 19-Sep-2024 12:05
PO	·	Date Analysis Commenced	: 20-Sep-2024
C-O-C number	:	Issue Date	: 09-Oct-2024 12:35
Sampler			
Site	·		
Quote number	: Meadowview Landfill		
No. of samples received	: 14		
No. of samples analysed	: 14		

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:

HA2402049

- 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

Work Order

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

, , ,	0 0		
Signatories	Position	Laboratory Department	
Greg Pokocky	Manager - Inorganics	Inorganics, Dartmouth, Nova Scotia	
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario	
Jon Fisher	Production Manager, Environmental	Metals, Waterloo, Ontario	
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario	
Jon Fisher	Production Manager, Environmental	Inorganics, Dartmouth, Nova Scotia	
Kelly Fischer	Technical Specialist	Inorganics, Waterloo, Ontario	
Kelly Fischer	Technical Specialist	Metals, Waterloo, Ontario	
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario	
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario	
Oleksandr Busel		Inorganics, Winnipeg, Manitoba	
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.

Unit	Description	
mg/L	milligrams per litre	
NTU	nephelometric turbidity units	
CU	colour units (1 cu = 1 mg/l pt)	
-	no units	
pH units	pH units	
μS/cm	microsiemens per centimetre	
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 (30-SEP-24): This report has been amended to include requested guideline(s). All analysis results are as per the previous report.

Amendment (08/10/2024): This report has been amended following minor LIMS report formatting corrections. All analysis results are as per the previous report. Revised to update metals reporting units.



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).
DLUI	Detection Limit Raised: Unknown interference generated an apparent false positive test result.



Sub-Matrix: Groundwater (Matrix: Water)			Client s a	mple ID	MW27-B	MW28-B	MW29-B	MW29-C	MW4-A
		С	lient sampling date	/ time	18-Sep-2024 11:45	18-Sep-2024 10:45	18-Sep-2024 09:30	18-Sep-2024 10:15	17-Sep-2024 17:05
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-001	HA2402049-002	HA2402049-003	HA2402049-004	HA2402049-006
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.0	mg/L	94.0	86.0	111	78.2	712
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	1.1	<1.0	<1.0	3.0	<1.0
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)		E290/WT	1.0	mg/L	78.8	70.5	90.7	69.0	584
Colour, apparent		E330/WT	2.0	CU	1200	594	5880	6280	4270
Conductivity		E100/WT	1.0	μS/cm	163	187	211	156	1260
Hardness (as CaCO3), dissolved		EC100/WT	0.50	mg/L	14.9	77.3	86.0	25.3	287
Langelier index (@ 20°C)		EC105/WT	0.010	-	-0.365	0.069	0.168	0.192	0.156
Langelier index (@ 4°C)		EC105/WT	0.010	-	-0.611	-0.180	-0.081	-0.049	-0.088
рН		E108/WT	0.10	pH units	8.42	8.15	8.12	8.81	6.95
pH, saturation (@ 20°C)		EC105/WT	0.010	pH units	8.78	8.08	7.95	8.62	6.79
pH, saturation (@ 4°C)		EC105/WT	0.010	pH units	9.03	8.33	8.20	8.86	7.04
Solids, total dissolved [TDS]		E162/HA	10	mg/L	122 DLDS	110 DLDS	115 DLDS	99 DLDS	589 DLDS
Turbidity		E121/WT	0.10	NTU	378	219	2300	3940	1930
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0088	0.0095	0.0068	<0.0050	54.7
Chloride	16887-00-6	E235.CI/WT	0.50	mg/L	3.36	13.6	9.63	16.6	32.9 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.202	0.024	0.023	0.040	<0.100 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.167	<0.020	0.043	0.160	<0.100 DLDS
Nitrate + Nitrite (as N)		EC235.N+N/W	0.0032	mg/L	0.167	<0.0224	0.0430	0.160	<0.112
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.050 DLDS



Sub-Matrix: Groundwater (Matrix: Water)			Client sar	mple ID	MW27-B	MW28-B	MW29-B	MW29-C	MW4-A
		С	lient sampling date	/ time	18-Sep-2024 11:45	18-Sep-2024 10:45	18-Sep-2024 09:30	18-Sep-2024 10:15	17-Sep-2024 17:05
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-001	HA2402049-002	HA2402049-003	HA2402049-004	HA2402049-006
					Result	Result	Result	Result	Result
Anions and Nutrients									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	0.0067	0.0548	0.0233	0.0079	<0.0010
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	9.31	9.36	8.44	6.97	30.3
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	1.30	3.57	2.27	3.69	<1.50 DLDS
Organic / Inorganic Carbon									
Carbon, total organic [TOC]		E355-L/WT	0.50	mg/L	4.02	<2.50 DLM	<10.0 DLM	<10.0 DLM	16.8
Ion Balance									
Anion sum		EC101/WT	0.10	meq/L	1.72	1.87	2.14	1.94	12.6
Cation sum		EC101/WT	0.10	meq/L	1.69	1.77	2.13	1.39	13.5
lon balance (cations/anions)		EC101/WT	0.010	%	98.2	94.6	99.5	71.6	107
Total Metals									
Mercury, total	7439-97-6	E508/WT	0.0050	mg/L	0.0052	<0.0050	0.0062	<0.0050	0.0101
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/WT	1.0	mg/L	9.1	5.5	2.2	9.4	62.5 DLHC
Antimony, dissolved	7440-36-0	E421/WT	0.10	mg/L	0.80	<0.10	<0.10	<0.10	<1.00 DLHC
Arsenic, dissolved	7440-38-2	E421/WT	0.10	mg/L	12.3	1.12	1.75	4.76	67.6 DLHC
Barium, dissolved	7440-39-3	E421/WT	0.10	mg/L	1.83	5.61	10.8	2.75	2470 DLHC
Beryllium, dissolved	7440-41-7	E421/WT	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	<0.200 DLHC
Bismuth, dissolved	7440-69-9	E421/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.500 DLHC
Boron, dissolved	7440-42-8	E421/WT	10	mg/L	100	<10	<10	15	333 DLHC
Cadmium, dissolved	7440-43-9	E421/WT	0.0050	mg/L	0.0052	<0.0050	<0.0050	<0.0050	<0.0500 DLHC
Calcium, dissolved	7440-70-2	E421/WT	50	mg/L	4840	26600	28000	8220	84900 DLHC



Sub-Matrix: Groundwater (Matrix: Water)			Client san	mple ID	MW27-B	MW28-B	MW29-B	MW29-C	MW4-A
		C	lient sampling date	/ time	18-Sep-2024 11:45	18-Sep-2024 10:45	18-Sep-2024 09:30	18-Sep-2024 10:15	17-Sep-2024 17:05
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-001	HA2402049-002	HA2402049-003	HA2402049-004	HA2402049-006
					Result	Result	Result	Result	Result
Dissolved Metals									
Cesium, dissolved	7440-46-2 E	E421/WT	0.010	mg/L	0.090	0.031	0.062	0.063	<0.100 DLHC
Chromium, dissolved	7440-47-3 E	E421/WT	0.50	mg/L	1.15	<0.50	<0.50	<0.50	<5.00 DLHC
Cobalt, dissolved	7440-48-4 E	E421/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	10.7 DLHC
Copper, dissolved	7440-50-8 E	E421/WT	0.20	mg/L	0.71	0.35	0.36	0.34	<2.00 DLHC
Iron, dissolved	7439-89-6 E	E421/WT	10	mg/L	<10	<10	<10	18	19900 DLHC
Lead, dissolved	7439-92-1 E	E421/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.500 DLHC
Lithium, dissolved	7439-93-2 E	E421/WT	1.0	mg/L	30.8	<1.0	1.8	11.0	12.6 DLHC
Magnesium, dissolved	7439-95-4 E	E421/WT	5.0	mg/L	690	2650	3900	1150	18300 DLHC
Manganese, dissolved	7439-96-5 E	E421/WT	0.10	mg/L	0.37	2.15	0.60	1.19	972 DLHC
Mercury, dissolved	7439-97-6 E	509/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum, dissolved	7439-98-7 E	E421/WT	0.050	mg/L	0.993	<0.050	0.314	<0.050	1.12 DLHC
Nickel, dissolved	7440-02-0 E	E421/WT	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	15.6 DLHC
Phosphorus, dissolved	7723-14-0 E	E421/WT	50	mg/L	<50	54	<50	<50	<500 DLHC
Potassium, dissolved	7440-09-7 E	E421/WT	50	mg/L	4280	1400	3720	3760	52000 DLHC
Rubidium, dissolved	7440-17-7 E	E421/WT	0.20	mg/L	2.68	1.64	3.18	2.88	<2.00 DLHC
Selenium, dissolved	7782-49-2 E	E421/WT	0.050	mg/L	0.059	<0.050	<0.050	<0.050	<0.500 DLHC
Silicon (as SiO2), dissolved	7440-21-3 E	EC421.SiO2/ VT	0.15	mg/L	10.3	8.70	10.2	7.21	36.6
Silicon, dissolved	7440-21-3 E		50	mg/L	4800	4070	4790	3370	17100 DLHC
Silver, dissolved	7440-22-4 E	E421/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.100 DLHC
Sodium, dissolved	7440-23-5 E	E421/WT	50	mg/L	29500	4380	7280	18100	41600 DLHC
Strontium, dissolved	7440-24-6 E	421/WT	0.20	mg/L	65.7	232	326	111	562 DLHC



Sub-Matrix: Groundwater (Matrix: Water)			Client sar	mple ID	MW27-B	MW28-B	MW29-B	MW29-C	MW4-A
		C	lient sampling date	/ time	18-Sep-2024 11:45	18-Sep-2024 10:45	18-Sep-2024 09:30	18-Sep-2024 10:15	17-Sep-2024 17:05
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-001	HA2402049-002	HA2402049-003	HA2402049-004	HA2402049-006
					Result	Result	Result	Result	Result
Dissolved Metals									
Sulfur, dissolved	7704-34-9	E421/WT	500	mg/L	<500	1210	750	1240	<5000 DLHC
Tellurium, dissolved	13494-80-9	E421/WT	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<2.00 DLHC
Thallium, dissolved	7440-28-0	E421/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.100 DLHC
Thorium, dissolved	7440-29-1	E421/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<1.00 DLHC
Tin, dissolved	7440-31-5	E421/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<1.00 DLHC
Titanium, dissolved	7440-32-6	E421/WT	0.30	mg/L	<0.30	<0.30	<0.30	0.77	<3.00 DLHC
Tungsten, dissolved	7440-33-7	E421/WT	0.10	mg/L	14.8	<0.10	1.37	0.39	<1.00 DLHC
Uranium, dissolved	7440-61-1	E421/WT	0.010	mg/L	3.03	0.273	2.20	1.01	<0.100 DLHC
Vanadium, dissolved	7440-62-2	E421/WT	0.50	mg/L	4.52	0.92	0.76	4.95	<5.00 DLHC
Zinc, dissolved	7440-66-6	E421/WT	1.0	mg/L	1.6	1.4	<1.0	<1.0	<10.0 DLHC
Zirconium, dissolved	7440-67-7	E421/WT	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<2.00 DLHC
Dissolved mercury filtration location		EP509/WT	-	-	Field	Field	Field	Field	Field
Dissolved metals filtration location		EP421/WT	-	-	Field	Field	Field	Field	Field

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.

Sub-Matrix: Groundwater (Matrix: Water)	Client sample ID				MW22-A	MW22-B	MW22-C	MW23-A	MW23-B
Client sampling date / tir					16-Sep-2024 16:00	17-Sep-2024 10:00	17-Sep-2024 10:45	17-Sep-2024 11:00	17-Sep-2024 11:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-007	HA2402049-008	HA2402049-009	HA2402049-010	HA2402049-011
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.0	mg/L	467	791	71.6	74.3	89.9



Sub-Matrix: Groundwater (Matrix: Water)			Client s a	mple ID	MW22-A	MW22-B	MW22-C	MW23-A	MW23-B
(С	lient sampling date	/ time	16-Sep-2024 16:00	17-Sep-2024 10:00	17-Sep-2024 10:45	17-Sep-2024 11:00	17-Sep-2024 11:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-007	HA2402049-008	HA2402049-009	HA2402049-010	HA2402049-011
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)		E290/WT	1.0	mg/L	382	649	58.7	60.9	73.7
Colour, apparent		E330/WT	2.0	CU	1220	720	72.2	2780	2270
Conductivity		E100/WT	1.0	µS/cm	844	1470	154	217	309
Hardness (as CaCO3), dissolved		EC100/WT	0.50	mg/L	243	635	45.8	49.6	91.0
Langelier index (@ 20°C)		EC105/WT	0.010	-	-0.328	0.570	-0.768	-1.31	-1.21
Langelier index (@ 4°C)		EC105/WT	0.010	-	-0.577	0.323	-1.02	-1.56	-1.46
рН		E108/WT	0.10	pH units	6.68	6.97	7.65	7.05	6.84
pH, saturation (@ 20°C)		EC105/WT	0.010	pH units	7.01	6.40	8.42	8.36	8.05
pH, saturation (@ 4°C)		EC105/WT	0.010	pH units	7.26	6.65	8.67	8.62	8.30
Solids, total dissolved [TDS]		E162/HA	10	mg/L	457 DLDS	875 DLDS	91 DLDS	145 DLDS	173 DLDS
Turbidity		E121/WT	0.10	NTU	232	180	30.0	696	763
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	20.7	2.74	0.0122	0.0101	0.412
Chloride	16887-00-6	E235.CI/WT	0.50	mg/L	38.0	111 DLDS	11.2	24.4	42.0
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.048	<0.100 DLDS	0.029	0.052	0.020
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	<0.020	<0.100 DLDS	0.040	<0.020	0.101
Nitrate + Nitrite (as N)		EC235.N+N/W T	0.0032	mg/L	<0.0224	<0.112	0.0400	<0.0224	0.259
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.050 DLDS	<0.010	<0.010	0.158
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	<0.0010	0.0075	0.0428	0.0013
			l	I.	I	I I		I I	l



Sub-Matrix: Groundwater (Matrix: Water)			Client sar	mple ID	MW22-A	MW22-B	MW22-C	MW23-A	MW23-B
		С	lient sampling date	/ time	16-Sep-2024 16:00	17-Sep-2024 10:00	17-Sep-2024 10:45	17-Sep-2024 11:00	17-Sep-2024 11:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-007	HA2402049-008	HA2402049-009	HA2402049-010	HA2402049-011
					Result	Result	Result	Result	Result
Anions and Nutrients								-	
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	21.1	19.4	9.33	11.1	10.8
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	<0.30	<1.50 DLDS	1.29	8.10	13.9
Organic / Inorganic Carbon									
Carbon, total organic [TOC]		E355-L/WT	0.50	mg/L	10.2	17.3	4.86	28.5	6.31
Ion Balance									
Anion sum		EC101/WT	0.10	meq/L	8.71	16.1	1.52	2.08	2.97
Cation sum		EC101/WT	0.10	meq/L	10.7	16.8	1.45	2.00	3.34
Ion balance (cations/anions)		EC101/WT	0.010	%	123	104	95.4	96.2	112
Total Metals									
Mercury, total	7439-97-6	E508/WT	0.0050	mg/L	<0.0050	<0.0050	0.0071	0.0171	0.0330
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/WT	1.0	mg/L	<10.0 DLHC	<10.0 DLHC	10.3	4.9	<1.0
Antimony, dissolved	7440-36-0	E421/WT	0.10	mg/L	<1.00 DLHC	<1.00 DLHC	0.12	<0.10	<0.10
Arsenic, dissolved	7440-38-2	E421/WT	0.10	mg/L	76.9 DLHC	17.2 DLHC	1.40	0.16	11.4
Barium, dissolved	7440-39-3	E421/WT	0.10	mg/L	1150 DLHC	637 DLHC	7.59	50.9	242
Beryllium, dissolved	7440-41-7	E421/WT	0.020	mg/L	<0.200 DLHC	<0.200 DLHC	<0.020	<0.020	<0.020
Bismuth, dissolved	7440-69-9	E421/WT	0.050	mg/L	<0.500 DLHC	<0.500 DLHC	<0.050	<0.050	<0.050
Boron, dissolved	7440-42-8	E421/WT	10	mg/L	260 DLHC	380 DLHC	<10	<10	16
Cadmium, dissolved	7440-43-9	E421/WT	0.0050	mg/L	<0.0500 DLHC	<0.0500 DLHC	0.0477	0.0654	0.0769
Calcium, dissolved	7440-70-2	E421/WT	50	mg/L	74000 DLHC	209000 DLHC	14200	16400	28700
Cesium, dissolved	7440-46-2	E421/WT	0.010	mg/L	<0.100 DLHC	0.236 DLHC	0.053	<0.010	<0.010



Sub-Matrix: Groundwater (Matrix: Water)			Client san	nple ID	MW22-A	MW22-B	MW22-C	MW23-A	MW23-B
· · ·		С	lient sampling date	/ time	16-Sep-2024 16:00	17-Sep-2024 10:00	17-Sep-2024 10:45	17-Sep-2024 11:00	17-Sep-2024 11:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-007	HA2402049-008	HA2402049-009	HA2402049-010	HA2402049-011
					Result	Result	Result	Result	Result
Dissolved Metals									
Chromium, dissolved	7440-47-3	E421/WT	0.50	mg/L	<5.00 DLHC	<5.00 DLHC	0.65	<0.50	<0.50
Cobalt, dissolved	7440-48-4	E421/WT	0.10	mg/L	17.1 DLHC	10.9 DLHC	<0.10	<0.10	3.50
Copper, dissolved	7440-50-8	E421/WT	0.20	mg/L	<2.00 DLHC	<2.00 DLHC	0.65	<0.20	<0.20
Iron, dissolved	7439-89-6	E421/WT	10	mg/L	55400 DLHC	8910 DLHC	22	<10	5780
Lead, dissolved	7439-92-1	E421/WT	0.050	mg/L	<0.500 DLHC	<0.500 DLHC	0.382	<0.050	<0.050
Lithium, dissolved	7439-93-2	E421/WT	1.0	mg/L	<10.0 DLHC	33.3 DLHC	12.1	<1.0	1.1
Magnesium, dissolved	7439-95-4	E421/WT	5.0	mg/L	14100 DLHC	27500 DLHC	2500	2100	4700
Manganese, dissolved	7439-96-5	E421/WT	0.10	mg/L	3500 DLHC	4340 DLHC	5.79	693	4250 DLHC
Mercury, dissolved	7439-97-6	E509/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum, dissolved	7439-98-7	E421/WT	0.050	mg/L	0.844 DLHC	<0.500 DLHC	0.242	<0.050	0.142
Nickel, dissolved	7440-02-0	E421/WT	0.50	mg/L	13.8 DLHC	21.3 DLHC	<0.50	1.29	2.93
Phosphorus, dissolved	7723-14-0	E421/WT	50	mg/L	<500 DLHC	<500 DLHC	<50	<50	<50
Potassium, dissolved	7440-09-7	E421/WT	50	mg/L	19400 DLHC	8060 DLHC	4030	1080	2530
Rubidium, dissolved	7440-17-7	E421/WT	0.20	mg/L	8.83 DLHC	8.41 DLHC	3.04	1.12	0.84
Selenium, dissolved	7782-49-2	E421/WT	0.050	mg/L	<0.500 DLHC	<0.500 DLHC	0.052	<0.050	<0.050
Silicon (as SiO2), dissolved		EC421.SiO2/ WT	0.15	mg/L	21.0	22.2	8.68	11.8	12.4
Silicon, dissolved	7440-21-3		50	mg/L	9830 DLHC	10400 DLHC	4060	5500	5790
Silver, dissolved	7440-22-4	E421/WT	0.010	mg/L	<0.100 DLHC	<0.100 DLHC	<0.010	<0.010	<0.010
Sodium, dissolved	7440-23-5	E421/WT	50	mg/L	40000 DLHC	73600 DLHC	9770	21900	24500
Strontium, dissolved	7440-24-6	E421/WT	0.20	mg/L	387 DLHC	1810 DLHC	202	23.3	59.3
Sulfur, dissolved	7704-34-9	E421/WT	500	mg/L	<5000 DLHC	<5000 DLHC	<500	3030	5080



Sub-Matrix: Groundwater (Matrix: Water)			Client s an	nple ID	MW22-A	MW22-B	MW22-C	MW23-A	MW23-B
		С	lient sampling date	/ time	16-Sep-2024 16:00	17-Sep-2024 10:00	17-Sep-2024 10:45	17-Sep-2024 11:00	17-Sep-2024 11:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-007	HA2402049-008	HA2402049-009	HA2402049-010	HA2402049-011
					Result	Result	Result	Result	Result
Dissolved Metals									
Tellurium, dissolved	13494-80-9	E421/WT	0.20	mg/L	<2.00 DLHC	<2.00 DLHC	<0.20	<0.20	<0.20
Thallium, dissolved	7440-28-0	E421/WT	0.010	mg/L	<0.100 DLHC	<0.100 DLHC	0.021	<0.010	0.013
Thorium, dissolved	7440-29-1	E421/WT	0.10	mg/L	<1.00 DLHC	<1.00 DLHC	<0.10	<0.10	<0.10
Tin, dissolved	7440-31-5	E421/WT	0.10	mg/L	<1.00 DLHC	<1.00 DLHC	0.40	<0.10	<0.10
Titanium, dissolved	7440-32-6	E421/WT	0.30	mg/L	<3.00 DLHC	<3.00 DLHC	1.23	<0.30	<0.30
Tungsten, dissolved	7440-33-7	E421/WT	0.10	mg/L	<1.00 DLHC	<1.00 DLHC	<0.10	<0.10	<0.10
Uranium, dissolved	7440-61-1	E421/WT	0.010	mg/L	<0.100 DLHC	6.21 DLHC	5.93	0.039	0.026
Vanadium, dissolved	7440-62-2	E421/WT	0.50	mg/L	<5.00 DLHC	<5.00 DLHC	1.62	<0.50	<0.50
Zinc, dissolved	7440-66-6	E421/WT	1.0	mg/L	<10.0 DLHC	<10.0 DLHC	43.5	1.7	1.5
Zirconium, dissolved	7440-67-7	E421/WT	0.20	mg/L	<2.00 DLHC	<2.00 DLHC	<0.20	<0.20	<0.20
Dissolved mercury filtration location		EP509/WT	-	-	Field	Field	Field	Field	Field
Dissolved metals filtration location		EP421/WT	-	-	Field	Field	Field	Field	Field

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.

Sub-Matrix: Groundwater (Matrix: Water)	Client sample ID				MW23-C	MW25-B	TH1	GW DUP	
Client sampling date / time					17-Sep-2024 12:15	17-Sep-2024 14:40	17-Sep-2024 16:00	17-Sep-2024 00:00	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-012	HA2402049-013	HA2402049-014	HA2402049-015	
					Result	Result	Result	Result	
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.0	mg/L	69.1	330	546	567	
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	1.2	<1.0	<1.0	<1.0	



Sub-Matrix: Groundwater (Matrix: Water)			Client s an	mple ID	MW23-C	MW25-B	TH1	GW DUP	
		С	lient sampling date	/ time	17-Sep-2024 12:15	17-Sep-2024 14:40	17-Sep-2024 16:00	17-Sep-2024 00:00	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-012	HA2402049-013	HA2402049-014	HA2402049-015	
					Result	Result	Result	Result	
Physical Tests									
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	
Alkalinity, total (as CaCO3)		E290/WT	1.0	mg/L	58.7	270	448	465	
Colour, apparent		E330/WT	2.0	CU	23000	607	1870	1600	
Conductivity		E100/WT	1.0	µS/cm	128	752	905	924	
Hardness (as CaCO3), dissolved		EC100/WT	0.50	mg/L	26.3	291	275	278	
Langelier index (@ 20°C)		EC105/WT	0.010	-	-0.231	0.560	0.385	0.473	
Langelier index (@ 4°C)		EC105/WT	0.010	-	-0.480	0.312	0.136	0.224	
рН		E108/WT	0.10	pH units	8.39	7.62	7.26	7.33	
pH, saturation (@ 20°C)		EC105/WT	0.010	pH units	8.62	7.06	6.88	6.86	
pH, saturation (@ 4°C)		EC105/WT	0.010	pH units	8.87	7.31	7.12	7.10	
Solids, total dissolved [TDS]		E162/HA	10	mg/L	78 DLDS	444 DLDS	426 DLDS	434 DLDS	
Turbidity		E121/WT	0.10	NTU	640	250	864	711	
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	<0.0050	0.0089	30.2	28.8	
Chloride	16887-00-6	E235.CI/WT	0.50	mg/L	3.88	78.7	17.8	17.6	
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.047	<0.020	0.028	0.029	
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.170	<0.020	0.050	0.052	
Nitrate + Nitrite (as N)		EC235.N+N/W T	0.0032	mg/L	0.170	<0.0224	0.122	0.0980	
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.010	0.072	0.046	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	0.0163	0.0062	<0.0010	<0.0010	
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	8.58	13.5	28.3	28.7	



Sub-Matrix: Groundwater (Matrix: Water)			Client sar	mple ID	MW23-C	MW25-B	TH1	GW DUP	
		С	lient sampling date	/ time	17-Sep-2024 12:15	17-Sep-2024 14:40	17-Sep-2024 16:00	17-Sep-2024 00:00	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-012	HA2402049-013	HA2402049-014	HA2402049-015	
					Result	Result	Result	Result	
Anions and Nutrients									
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	1.16	0.52	2.17	1.03	
Organic / Inorganic Carbon									
Carbon, total organic [TOC]		E355-L/WT	0.50	mg/L	<5.00 DLM	7.39	6.61	12.4	
Ion Balance									
Anion sum		EC101/WT	0.10	meq/L	1.32	7.63	9.51	9.82	
Cation sum		EC101/WT	0.10	meq/L	1.25	6.77	10.2	10.2	
Ion balance (cations/anions)		EC101/WT	0.010	%	94.7	88.7	107	104	
Total Metals									
Mercury, total	7439-97-6	E508/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/WT	1.0	mg/L	17.6	1.5	1.2	<1.0	
Antimony, dissolved	7440-36-0	E421/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	
Arsenic, dissolved	7440-38-2	E421/WT	0.10	mg/L	7.31	2.95	30.5	31.1	
Barium, dissolved	7440-39-3	E421/WT	0.10	mg/L	37.2	10.2	904	899	
Beryllium, dissolved	7440-41-7	E421/WT	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	
Bismuth, dissolved	7440-69-9	E421/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	
Boron, dissolved	7440-42-8	E421/WT	10	mg/L	13	75	144	144	
Cadmium, dissolved	7440-43-9	E421/WT	0.0050	mg/L	<0.0050	0.0087	<0.0050	<0.0050	
Calcium, dissolved	7440-70-2	E421/WT	50	mg/L	8960	92900	84600	85300	
Cesium, dissolved	7440-46-2	E421/WT	0.010	mg/L	0.034	0.121	0.072	0.070	
Chromium, dissolved	7440-47-3	E421/WT	0.50	mg/L	2.18	<0.50	<0.50	<0.50	



Sub-Matrix: Groundwater (Matrix: Water)			Client san	mple ID	MW23-C	MW25-B	TH1	GW DUP	
		С	lient sampling date	/ time	17-Sep-2024 12:15	17-Sep-2024 14:40	17-Sep-2024 16:00	17-Sep-2024 00:00	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-012	HA2402049-013	HA2402049-014	HA2402049-015	
					Result	Result	Result	Result	
Dissolved Metals									
Cobalt, dissolved	7440-48-4	E421/WT	0.10	mg/L	<0.10	0.25	4.37	4.34	
Copper, dissolved	7440-50-8	E421/WT	0.20	mg/L	<0.20	0.29	<0.20	0.21	
Iron, dissolved	7439-89-6	E421/WT	10	mg/L	25	<10	11600	11900	
Lead, dissolved	7439-92-1	E421/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	
Lithium, dissolved	7439-93-2	E421/WT	1.0	mg/L	14.0	13.8	23.9	24.1	
Magnesium, dissolved	7439-95-4	E421/WT	5.0	mg/L	964	14300	15400	15700	
Manganese, dissolved	7439-96-5	E421/WT	0.10	mg/L	5.90	26.6	1280	1260	
Mercury, dissolved	7439-97-6	E509/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	
Molybdenum, dissolved	7439-98-7	E421/WT	0.050	mg/L	0.110	0.087	0.555	0.562	
Nickel, dissolved	7440-02-0	E421/WT	0.50	mg/L	<0.50	6.13	3.76	3.73	
Phosphorus, dissolved	7723-14-0	E421/WT	50	mg/L	<50	<50	63	69	
Potassium, dissolved	7440-09-7	E421/WT	50	mg/L	2790	7480	26600	26800	
Rubidium, dissolved	7440-17-7	E421/WT	0.20	mg/L	1.81	6.17	5.07	5.08	
Selenium, dissolved	7782-49-2	E421/WT	0.050	mg/L	0.085	0.059	0.913	1.02	
Silicon (as SiO2), dissolved	7440-21-3	EC421.SiO2/ WT	0.15	mg/L	9.24	13.3	35.1	35.3	
Silicon, dissolved	7440-21-3		50	mg/L	4320	6210	16400	16500	
Silver, dissolved	7440-22-4	E421/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	
Sodium, dissolved	7440-23-5	E421/WT	50	mg/L	15000	17700	33200	32900	
Strontium, dissolved	7440-24-6	E421/WT	0.20	mg/L	75.6	1200	386	381	
Sulfur, dissolved	7704-34-9	E421/WT	500	mg/L	<500	<500	<500	<500	
Tellurium, dissolved	13494-80-9	E421/WT	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	



Sub-Matrix: Groundwater (Matrix: Water)			Client sar	mple ID	MW23-C	MW25-B	TH1	GW DUP	
		C	lient sampling date	/ time	17-Sep-2024 12:15	17-Sep-2024 14:40	17-Sep-2024 16:00	17-Sep-2024 00:00	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402049-012	HA2402049-013	HA2402049-014	HA2402049-015	
					Result	Result	Result	Result	
Dissolved Metals									
Thallium, dissolved	7440-28-0	E421/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	
Thorium, dissolved	7440-29-1	E421/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	
Tin, dissolved	7440-31-5	E421/WT	0.10	mg/L	<0.10	0.11	0.18	0.18	
Titanium, dissolved	7440-32-6	E421/WT	0.30	mg/L	<2.00 DLUI	<0.30	<0.30	<0.30	
Tungsten, dissolved	7440-33-7	E421/WT	0.10	mg/L	0.79	0.28	<0.10	<0.10	
Uranium, dissolved	7440-61-1	E421/WT	0.010	mg/L	4.78	17.3	0.042	0.038	
Vanadium, dissolved	7440-62-2	E421/WT	0.50	mg/L	4.91	1.02	0.60	0.59	
Zinc, dissolved	7440-66-6	E421/WT	1.0	mg/L	<1.0	1.6	3.3	3.4	
Zirconium, dissolved	7440-67-7	E421/WT	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	
Dissolved mercury filtration location		EP509/WT	-	-	Field	Field	Field	Field	
Dissolved metals filtration location		EP421/WT	-	-	Field	Field	Field	Field	

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.



QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: HA2402049	Page	: 1 of 36
Amendment	:2		
Client	Englobe Corp.	Laboratory	: ALS Environmental - Halifax
Contact	: Nathalie Sahakyan	Account Manager	: Emily Smith
Address	:97 Troop Avenue	Address	: 13-100 Wright Ave
	Dartmouth NS Canada B3B 2A7		Dartmouth, Nova Scotia Canada B3B 1L2
Telephone	:	Telephone	: +1 902 707 4888
Project	: 2408035.000	Date Samples Received	: 19-Sep-2024 12:05
PO	:	Issue Date	: 09-Oct-2024 12:35
C-O-C number			
Sampler			
Site	:		
Quote number	: Meadowview Landfill		
No. of samples received	:14		
No. of samples analysed	:14		

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

• <u>No</u> 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.

/latrix: Water					E١	/aluation: × =	Holding time exce	edance ; 🔹	= Within	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / P	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW27-B	E298	18-Sep-2024	23-Sep-2024	28	5 days	1	23-Sep-2024	28 days	5 days	✓
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW28-B	E298	18-Sep-2024	24-Sep-2024	28	6 days	1	26-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW29-B	E298	18-Sep-2024	24-Sep-2024	28	6 days	1	26-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW29-C	E298	18-Sep-2024	24-Sep-2024	28	6 days	1	26-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
GW DUP	E298	17-Sep-2024	24-Sep-2024	28	7 days	1	26-Sep-2024	28 days	9 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW22-B	E298	17-Sep-2024	24-Sep-2024	28	7 days	1	26-Sep-2024	28 days	9 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW22-C	E298	17-Sep-2024	24-Sep-2024	28	7 days	1	26-Sep-2024	28 days	9 days	1
				days						



Matrix: Water					Ev	aluation: × =	Holding time exce	edance ; •	<pre>< = Within</pre>	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation					Analys	is	
Container / Client Sample ID(s)			Preparation Date	Holding Rec	Times Actual	Eval	Analysis Date	Holding Rec	Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW23-A	E298	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence					I					
Amber glass total (sulfuric acid) MW23-B	E298	17-Sep-2024	24-Sep-2024	28 days	7 days	4	26-Sep-2024	28 days	9 days	~
Anions and Nutrients : Ammonia by Fluorescence				İ						
Amber glass total (sulfuric acid) MW23-C	E298	17-Sep-2024	24-Sep-2024	28 days	7 days	√	26-Sep-2024	28 days	9 days	4
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW25-B	E298	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	9 days	~
Anions and Nutrients : Ammonia by Fluorescence							•			
Amber glass total (sulfuric acid) MW4-A	E298	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	9 days	1
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TH1	E298	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	26-Sep-2024	28 days	9 days	~
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW22-A	E298	16-Sep-2024	24-Sep-2024	28 days	8 days	√	26-Sep-2024	28 days	10 days	~
Anions and Nutrients : Chloride in Water by IC										
HDPE MW27-B	E235.Cl	18-Sep-2024	20-Sep-2024	28 days	2 days	√	24-Sep-2024	28 days	6 days	4
Anions and Nutrients : Chloride in Water by IC										
HDPE MW28-B	E235.Cl	18-Sep-2024	20-Sep-2024	28 days	2 days	4	24-Sep-2024	28 days	6 days	~



Matrix: Water					E١	valuation: × =	Holding time exce	edance ; •	<pre>< = Within</pre>	Holding Tin
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pr	reparation			Analys		
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE										
MW29-B	E235.Cl	18-Sep-2024	20-Sep-2024	28	2 days	1	24-Sep-2024	28 days	6 days	1
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE										
MW29-C	E235.Cl	18-Sep-2024	20-Sep-2024	28	2 days	✓	24-Sep-2024	28 days	6 days	1
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE										
GW DUP	E235.Cl	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE										
MW22-B	E235.Cl	17-Sep-2024	20-Sep-2024	28	3 days	✓	24-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Chloride in Water by IC							•	1		
HDPE										
MW22-C	E235.Cl	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Chloride in Water by IC	1									
HDPE										
MW23-A	E235.Cl	17-Sep-2024	20-Sep-2024	28	3 days	✓	24-Sep-2024	28 days	7 days	1
			·	days	,		·		, i	
Anions and Nutrients : Chloride in Water by IC								1		
HDPE							1			
MW23-B	E235.CI	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	1
WW25-B	LL00.01	11 000 2021	20 000 2021	days	o dayo		21 000 2021	20 dayo	, aayo	
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE MW23-C	E235.Cl	17-Sep-2024	20-Sep-2024	20	3 days	1	24-Sep-2024	28 days	7 dave	1
IVIVZ3-0	E233.01	17-3ep-2024	20-3ep-2024	28	Juays	•	24-3ep-2024	∠o uays	i uays	•
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE	5005 OI	17.0	00 0 000 <i>i</i>							,
MW25-B	E235.Cl	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	1
				days						



							Holding time exce			
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pr				Analys		
Container / Client Sample ID(s)			Preparation Date	Holdin Rec	g Times Actual	Eval	Analysis Date	Holding Rec	g Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC			Date	1100	rocaa			1.00	, lotadi	
HDPE										
MW4-A	E235.Cl	17-Sep-2024	20-Sep-2024	28 days	3 days	1	24-Sep-2024	28 days	7 days	1
Anions and Nutrients : Chloride in Water by IC				1				1	11	
HDPE										
TH1	E235.Cl	17-Sep-2024	20-Sep-2024	28 days	3 days	1	24-Sep-2024	28 days	7 days	~
nions and Nutrients : Chloride in Water by IC				1				1		
HDPE MW22-A	E235.CI	16-Sep-2024	20-Sep-2024	28 days	4 days	~	24-Sep-2024	28 days	8 days	4
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Le	evel 0.001 mg/L)									
HDPE MW27-B	E378-U	18-Sep-2024	20-Sep-2024	3 days	2 days	4	24-Sep-2024	3 days	6 days	¥ EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Le	evel 0.001 mg/L)				<u> </u>			1	I I	
HDPE MW28-B	E378-U	18-Sep-2024	20-Sep-2024	3 days	2 days	1	24-Sep-2024	3 days	6 days	¥ EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Lo	evel 0.001 mg/L)							1	11	
HDPE MW29-B	E378-U	18-Sep-2024	20-Sep-2024	3 days	2 days	4	24-Sep-2024	3 days	6 days	¥ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Le	evel 0.001 mg/L)								I I	
HDPE MW29-C	E378-U	18-Sep-2024	20-Sep-2024	3 days	2 days	4	24-Sep-2024	3 days	6 days	¥ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Lo	evel 0.001 <u>mg/L)</u>						1		1 1	
HDPE GW DUP	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	4	24-Sep-2024	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Le	evel 0.001 mg/ <u>L)</u>								II	
HDPE MW22-B	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	~	24-Sep-2024	3 days	7 days	× EHT



nalyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	, Times	Eval
			Date	Rec	Actual			Rec	Actual	
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)			1	1					
HDPE										
MW22-C	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	x
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)				1				1 1	
HDPE										
MW23-A	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	36
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)			1	1			1	II	
HDPE										
MW23-B	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	×
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)			1						
HDPE										
MW23-C	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	*
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)			1		I				
HDPE										
MW25-B	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	×
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)									
HDPE										
MW4-A	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	*
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)									
HDPE										
TH1	E378-U	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	*
										EHT
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Tra	ace Level 0.001 mg/L)									
HDPE										
MW22-A	E378-U	16-Sep-2024	20-Sep-2024	3 days	4 days	*	24-Sep-2024	3 days	8 days	×
						EHTL				EHTI
nions and Nutrients : Fluoride in Water by IC										
HDPE										-
MW27-B	E235.F	18-Sep-2024	20-Sep-2024	28	2 days	1	24-Sep-2024	28 days	6 days	~
				days						



Matrix: Water					E١	valuation: × =	Holding time exce	edance ; 🔹	= Within	Holding Tin
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pr	reparation			Analys		
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
MW28-B	E235.F	18-Sep-2024	20-Sep-2024	28	2 days	1	24-Sep-2024	28 days	6 days	1
				days						
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
MW29-B	E235.F	18-Sep-2024	20-Sep-2024	28	2 days	1	24-Sep-2024	28 days	6 days	1
				days						
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
MW29-C	E235.F	18-Sep-2024	20-Sep-2024	28	2 days	1	24-Sep-2024	28 days	6 days	1
				days						
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
GW DUP	E235.F	17-Sep-2024	20-Sep-2024	28	3 days	✓	24-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Fluoride in Water by IC				1			•	1		
HDPE										
MW22-B	E235.F	17-Sep-2024	20-Sep-2024	28	3 days	✓	24-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Fluoride in Water by IC					1			1		
HDPE										
MW22-C	E235.F	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	1
				days						
Anions and Nutrients : Fluoride in Water by IC		1		-	1			1		
HDPE										
MW23-A	E235.F	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	1
				days	j -				·,	
Aniono and Nutrianto : Eluorida in Water by IC		1		,5			1			
Anions and Nutrients : Fluoride in Water by IC HDPE										
MW23-B	E235.F	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 davs	1
	2200.1	11 COP-2024	20 00p-2024	20 days	0 days		21000-2024	20 00,0	, aayo	·
				uays						
Anions and Nutrients : Fluoride in Water by IC							1			
HDPE	E235.F	17-Sep-2024	20 500 2024		2 dovo	1	24 500 2024	20 day-	7 dovo	1
MW23-C	E230.F	17-Sep-2024	20-Sep-2024	28	3 days	¥	24-Sep-2024	28 days	/ days	¥
				days						



Centamer (Lisent Samples D(s)) Programmion Date Product Troots Eval Analysis Date Moding Troots Eval NUCCS Base Canadity of December 2000 Base Statu Eval Analysis Date Moding Troots Actual Eval Analysis Date Moding Troots Actual Ker Analysis Date Moding Troots Actual Ker Actual<	Matrix: Water					E	valuation: × =	Holding time exce	edance ; 🔹	= Within	Holding Tir
Image: Image: Rec Actual Image: Actual Image: Actual Name: And Mutrients: Fluoride in Water by IC E235 F 17-Sep-2024 20-Sep-2024 28_{0} $3 days$ Image: $24-Sep-2024$ $28 days$ $7 days$ $7 days$ $I days$ MVC2-B E235 F 17-Sep-2024 $20-Sep-2024$ 28_{0} $3 days$ Image: $I days$	Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pr	reparation			, , , , , , , , , , , , , , , , , , , ,		
Name Line Line <thline< th=""> Line Line</thline<>	Container / Client Sample ID(s)			Preparation			Eval	Analysis Date	-		Eval
HOPE MW25-B E235.F 17-Sep-2024 28 3 days 4'. 24-Sep-2024 28 days 7 days 4'. MW25-B MW4A E235.F 17-Sep-2024 28 3 days 4'. 24-Sep-2024 28 days 7 days 7 days 4'. MW4A E235.F 17-Sep-2024 28 3 days 4'. 24-Sep-2024 28 days 7 days 7 days 4'. MW4A E235.F 17-Sep-2024 28 days 3 days 4'. 24-Sep-2024 28 days 7 days 4'. MW4A E235.F 17-Sep-2024 20-Sep-2024 28 days 3 days 4'. 24-Sep-2024 28 days 7 days 4'. MW22-A E235.F 16-Sep-2024 20-Sep-2024 28 days 4'. 24-Sep-2024 28 days 8 days 6 days E. MW22-A MW27-B E235.NO3 18-Sep-2024 2. 3 days 2. 2. Sep-2024 3 days 6 days E. E. MW				Date	Rec	Actual			Rec	Actual	
MW25-B E235.F 17-Sep-2024 20-Sep-2024 28 days 3 days 4'' 24-Sep-2024 28 days 7 days 4'' MW25-B MW4-A E235.F 17-Sep-2024 20-Sep-2024 28 days 3 days 4'' 24-Sep-2024 28 days 7 days 7 days 4'' MW4-A E235.F 17-Sep-2024 20-Sep-2024 28 days 3 days 4'' 24-Sep-2024 28 days 7 days 4'' MW4-A E235.F 17-Sep-2024 20-Sep-2024 28 days 3 days 4'' 24-Sep-2024 28 days 7 days 4'' MDPE T11 E235.F 17-Sep-2024 20-Sep-2024 28 days 4'' 4'' 2'' 4'' 2'' <td>Anions and Nutrients : Fluoride in Water by IC</td> <td></td>	Anions and Nutrients : Fluoride in Water by IC										
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Nations and Nutrients : Fluoride in Water by IC NM4-A E235.F 17-Sep-2024 28 3 days * 24-Sep-2024 28 days 7 days * NM4-A E235.F 17-Sep-2024 20-Sep-2024 28 3 days * 24-Sep-2024 28 days 7 days * NM1-A E235.F 17-Sep-2024 20-Sep-2024 28 3 days * 24-Sep-2024 28 days 7 days * NM1-A E235.F 17-Sep-2024 20-Sep-2024 28 3 days * 24-Sep-2024 28 days 7 days * NM22-A E235.F 16-Sep-2024 20-Sep-2024 28 4 days * 24-Sep-2024 28 days 8 days * NM22-A E235.NO3 18-Sep-2024 20-Sep-2024 3 days 2 days * 24-Sep-2024 3 days 6 days \$ EHT NM22-B E235.NO3 18-Sep-2024 20-Sep-2024 3 days 2 days * 24-Sep-2024 3 days 6 days \$ EHT NIONS and Nutrients : Nitrate in Water by IC HOPE HOPE	MW25-B	E235.F	17-Sep-2024	20-Sep-2024		3 days	*	24-Sep-2024	28 days	7 days	•
HOPE MW4-A E235.F 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24-Sep-2024 28 days 7 days ·· MM4-A E235.F 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24-Sep-2024 28 days 7 days ··· MM4-A E235.F 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24-Sep-2024 28 days 7 days ··· MM2 F235.F 17.Sep-2024 20.Sep-2024 28 days 4 days ··· 24-Sep-2024 28 days 7 days ··· MM22A E235.F 16-Sep-2024 28 days 4 days ··· 24-Sep-2024 28 days 8 days ··· MM22A E235.F 16-Sep-2024 20.Sep-2024 28 days 4 days ··· 24-Sep-2024 3 days 6 days ··· MM22B E235.F 16-Sep-2024 20.Sep-2024 3 days 2 days ··· 24-Sep-2024 3 days 6 days ·· MM22B E235.F 18-Sep-2024 20.Sep-2024 3 days					days						
MW4.A E235.F 17.Sep-2024 2.8 3 days Image: Mode and Mutrie					1						
Name No. No. No. No. No. No. No. No. No. National Nutrients : Fluoride in Water by IC E235.F 17.Sep-2024 20.Sep-2024 28 3 days Image: Strain Strai			17 Sep 2024	20 5 - 2024		2 days		24 Sep 2024	29 days	7 daya	
Nations and Nutrients : Fluoride in Water by IC HOPE 17.Sep-2024 20.Sep-2024 28 3 days ✓ 24-Sep-2024 28 days 7 days ✓ Nations and Nutrients : Fluoride in Water by IC HOPE 16.Sep-2024 20.Sep-2024 28 3 days ✓ 24-Sep-2024 28 days 8 days ✓ MV22-A E235.F 16-Sep-2024 20.Sep-2024 28 4 days ✓ 24-Sep-2024 28 days 8 days ✓ MV22-A E235.F 16-Sep-2024 20-Sep-2024 3 days 2 days 6 days × MV27-B E235.NO3 18-Sep-2024 20-Sep-2024 3 days 2 days 6 days × MV27-B E235.NO3 18-Sep-2024 20-Sep-2024 3 days 2 days ✓ 24-Sep-2024 3 days 6 days × MV27-B MV28-B E235.NO3 18-Sep-2024 20-Sep-2024 3 days ✓ 24-Sep-2024 3 days 6 days × MV29-B E235.NO3 18-Sep-2024 20-Sep-2024 3 days ✓ 24-Sep-2024 3 days 6 days </td <td>MW4-A</td> <td>E233.F</td> <td>17-Sep-2024</td> <td>20-Sep-2024</td> <td>-</td> <td>5 days</td> <td>•</td> <td>24-Sep-2024</td> <td>zo uays</td> <td>7 days</td> <td>•</td>	MW4-A	E233.F	17-Sep-2024	20-Sep-2024	-	5 days	•	24-Sep-2024	zo uays	7 days	•
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TH1 E235.F 17-Sep-2024 29 20-Sep-2024 29 3 days ✓ 24-Sep-2024 28 days 7 days ✓ HOPE MW22-A E235.F 16-Sep-2024 20-Sep-2024 29 4 days 4 days 4 days 24-Sep-2024 28 days 8 days 4 days <td></td>											
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Anions and Nutrients : Fluoride in Water by ICE235.F16-Sep-202420-Sep-202428 days4 days \checkmark 24-Sep-202428 days8 days \checkmark HOPE MW22-AMW22-AE235.F16-Sep-202420-Sep-202428 days4 days \checkmark 24-Sep-202428 days8 days \checkmark HOPE MW27-BMW27-BE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star HOPE MW28-BMW28-BE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star HOPE MW29-BMW29-BE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star HOPE MW29-BMW29-BE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star HOPE MW29-BE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star HOPE MW29-BE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star HOPE MW29-CE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star MW29-CE235.NO318-Sep-202420-Sep-20243 days2 days \checkmark 24-Sep-20243 days6 days \star </td <td></td> <td>LZJJ.F</td> <td>17-36p-2024</td> <td>20-06p-2024</td> <td></td> <td>Juays</td> <td>•</td> <td>24-06p-2024</td> <td>20 uays</td> <td>i uays</td> <td>•</td>		LZJJ.F	17-36p-2024	20-06p-2024		Juays	•	24-06p-2024	20 uays	i uays	•
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Miller DAndAndAndAndAndAndAndEHTAnions and Nutrients : Nitrate in Water by ICHDPE MW29-BMW29-BMW29-BAnions and Nutrients : Nitrate in Water by ICHDPE MW29-CBMW29-CBMW29-CBAnions and Nutrients : Nitrate in Water by ICHDPE MW29-CBBBMW29-CBBB </td <td></td> <td>E235 NO3</td> <td>18-Sep-2024</td> <td>20-Sen-2024</td> <td>3 days</td> <td>2 days</td> <td>1</td> <td>24-Sep-2024</td> <td>3 days</td> <td>6 days</td> <td>*</td>		E235 NO3	18-Sep-2024	20-Sen-2024	3 days	2 days	1	24-Sep-2024	3 days	6 days	*
Anions and Nutrients : Nitrate in Water by IC HDPE MW29-B Anions and Nutrients : Nitrate in Water by IC HDPE MW29-C MW29	WW20-D	2200.1100	10 000 2021	20-000-2024	0 days	2 duys	, i i i i i i i i i i i i i i i i i i i	24-000-2024	0 ddy5	0 days	
HDPE MW29-BE235.NO318-Sep-202420-Sep-20243 days2 days✓24-Sep-20243 days6 days * EHTAnions and Nutrients : Nitrate in Water by ICHDPE MW29-CMW29-CE235.NO318-Sep-202420-Sep-20243 days2 days✓24-Sep-20243 days6 days * EHTAnions and Nutrients : Nitrate in Water by ICHDPE GW DUPE235.NO317-Sep-202420-Sep-20243 days✓24-Sep-20243 days6 days * EHT											E
MW29-BE235.NO318-Sep-20242 days2 days424-Sep-20243 days6 days# EHTAnions and Nutrients : Nitrate in Water by ICHDPE MW29-CE235.NO318-Sep-202420-Sep-20243 days2 days424-Sep-20243 days6 days# EHTAnions and Nutrients : Nitrate in Water by ICHDPE GW DUPE235.NO317-Sep-202420-Sep-20243 days3 days424-Sep-20243 days6 days# EHT											
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Anions and Nutrients : Nitrate in Water by IC HDPE MW29-C Anions and Nutrients : Nitrate in Water by IC HDPE GW DUP MW29-C MU29	WW25-D	2200.1100	10 000 2021	20 000 2021	o duyo	2 duyo		21 000 2021	o duyo	o dayo	
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MW29-CE235.NO318-Sep-202420-Sep-20243 days2 days24-Sep-20243 days6 days* EHTAnions and Nutrients : Nitrate in Water by ICHDPE GW DUPGW DUPE235.NO317-Sep-202420-Sep-20243 days3 days424-Sep-20243 days7 days*											
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				20 000-2024	C Guys	C days		21000-2024	C days	, aayo	EHT


naluée Creann : Analuéicel Moéheel	A. # - 411	Domalia Det	F	traction / D	oporation			Analys	vio	
nalyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Preparation Date	traction / Pr Holding Rec	g Times Actual	Eval	Analysis Date	· · · ·	g Times Actual	Eval
nions and Nutrients : Nitrate in Water by IC			Duic							
HDPE MW22-B	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	~	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrate in Water by IC				1	1				II	
HDPE MW22-C	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrate in Water by IC					1			1	11	
H DPE MW23-A	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	4	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrate in Water by IC										
IDPE MW23-B	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	¥ EH1
nions and Nutrients : Nitrate in Water by IC					1	<u> </u>			I <u> </u>	
IDPE MW23-C	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	~	24-Sep-2024	3 days	7 days	¥ EH1
nions and Nutrients : Nitrate in Water by IC										
HDPE MW25-B	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	× EHT
nions and Nutrients : Nitrate in Water by IC										
H DPE MW4-A	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	4	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrate in Water by IC									· · · · · ·	
HDPE TH1	E235.NO3	17-Sep-2024	20-Sep-2024	3 days	3 days	4	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrate in Water by IC										
H DPE MW22-A	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	24-Sep-2024	3 days	8 days	پ EHT



							Holding time exce			
nalyte Group : Analytical Method	Method	Sampling Date		traction / Pr				Analys		
Container / Client Sample ID(s)			Preparation		g Times	Eval	Analysis Date		g Times	Eval
			Date	Rec	Actual			Rec	Actual	
nions and Nutrients : Nitrite in Water by IC								-		
HDPE MW27-B	E235.NO2	18-Sep-2024	20-Sep-2024	3 days	2 days	~	24-Sep-2024	3 days	6 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC										
HDPE MW28-B	E235.NO2	18-Sep-2024	20-Sep-2024	3 days	2 days	√	24-Sep-2024	3 days	6 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC					1					
HDPE MW29-B	E235.NO2	18-Sep-2024	20-Sep-2024	3 days	2 days	~	24-Sep-2024	3 days	6 days	× EHT
nions and Nutrients : Nitrite in Water by IC										
HDPE MW29-C	E235.NO2	18-Sep-2024	20-Sep-2024	3 days	2 days	√	24-Sep-2024	3 days	6 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC					1				<u> </u>	
HDPE GW DUP	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC										
HDPE MW22-B	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC				1	1					
HDPE MW22-C	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	4	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC										
HDPE MW23-A	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	√	24-Sep-2024	3 days	7 days	¥ EHT
nions and Nutrients : Nitrite in Water by IC										
HDPE MW23-B	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	¥ EHT



Aatrix: Water						aluation: × =	Holding time exce			Holding Ti
Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Ex Preparation Date	traction / Pr Holding Rec	g Times Actual	Eval	Analysis Date	Analys Holding Rec	ris Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE MW23-C	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC									II	
HDPE MW25-B	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	V	24-Sep-2024	3 days	7 days	¥ EHT
Anions and Nutrients : Nitrite in Water by IC				·						
HDPE MW4-A	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	~	24-Sep-2024	3 days	7 days	¥ EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE TH1	E235.NO2	17-Sep-2024	20-Sep-2024	3 days	3 days	1	24-Sep-2024	3 days	7 days	¥ EHT
Anions and Nutrients : Nitrite in Water by IC								1		
HDPE MW22-A	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE MW27-B	E392	18-Sep-2024					23-Sep-2024	28 days	5 days	*
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE MW28-B	E392	18-Sep-2024					23-Sep-2024	28 days	5 days	~
Anions and Nutrients : Reactive Silica by Colourimetry				1			1	1	I I	
HDPE MW29-B	E392	18-Sep-2024					23-Sep-2024	28 days	5 days	~
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE MW29-C	E392	18-Sep-2024					23-Sep-2024	28 days	5 days	1



nalyte Group : Analytical Method	Method	Sampling Date	Ext	traction / P	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation Date	Holdin Rec	g Times Actual	Eval	Analysis Date	Holding Rec	i Times Actual	Eval
nions and Nutrients : Reactive Silica by Colourimetry										
HDPE GW DUP	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	1
nions and Nutrients : Reactive Silica by Colourimetry										
HDPE MW22-B	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	1
nions and Nutrients : Reactive Silica by Colourimetry					I					
HDPE MW22-C	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	4
nions and Nutrients : Reactive Silica by Colourimetry										
IDPE MW23-A	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	1
nions and Nutrients : Reactive Silica by Colourimetry					1					
H DPE MW23-B	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	~
nions and Nutrients : Reactive Silica by Colourimetry										
HDPE MW23-C	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	1
nions and Nutrients : Reactive Silica by Colourimetry				1	1					
HDPE MW25-B	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	~
nions and Nutrients : Reactive Silica by Colourimetry					I		1			
HDPE MW4-A	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	1
nions and Nutrients : Reactive Silica by Colourimetry				I	I			1		
HDPE TH1	E392	17-Sep-2024					23-Sep-2024	28 days	6 days	~



Matrix: Water					E٧	aluation: × =	Holding time exce	edance ; 🗸	<pre>< = Within</pre>	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pre	eparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding		Eval	Analysis Date	Holding		Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry				1 1						
HDPE MW22-A	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
MW27-B	E235.SO4	18-Sep-2024	20-Sep-2024	28 days	2 days	1	24-Sep-2024	28 days	6 days	1
Anions and Nutrients : Sulfate in Water by IC										
HDPE MW28-B	E235.SO4	18-Sep-2024	20-Sep-2024	28 days	2 days	1	24-Sep-2024	28 days	6 days	4
Anions and Nutrients : Sulfate in Water by IC										
HDPE MW29-B	E235.SO4	18-Sep-2024	20-Sep-2024	28 days	2 days	~	24-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC				1						<u> </u>
HDPE MW29-C	E235.SO4	18-Sep-2024	20-Sep-2024	28 days	2 days	~	24-Sep-2024	28 days	6 days	4
Anions and Nutrients : Sulfate in Water by IC				11						
HDPE GW DUP	E235.SO4	17-Sep-2024	20-Sep-2024	28 days	3 days	4	24-Sep-2024	28 days	7 days	1
Anions and Nutrients : Sulfate in Water by IC										
HDPE MW22-B	E235.SO4	17-Sep-2024	20-Sep-2024	28 days	3 days	1	24-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE MW22-C	E235.SO4	17-Sep-2024	20-Sep-2024	28 days	3 days	1	24-Sep-2024	28 days	7 days	1
Anions and Nutrients : Sulfate in Water by IC										
HDPE MW23-A	E235.SO4	17-Sep-2024	20-Sep-2024	28 days	3 days	~	24-Sep-2024	28 days	7 days	√



Centalizer (Diesit Sample (Di()) Holding Times Page Actual Eval Page Actual Analysis Date Page Holding Times Page	Matrix: Water					E٧	valuation: × =	Holding time exce	edance ; 🔹	= Within	Holding Tir
Index Date Race Actual No. Rec Actual Nations and Nutrionts : Sulfate in Water by IC E235 SO4 17-Sep-2024 28 gas 3 days I 24-Sep-2024 28 days 7 days I NVC2-B E235 SO4 17-Sep-2024 20-Sep-2024 28 days 3 days I 24-Sep-2024 28 days 7 days I NVC2-B E235 SO4 17-Sep-2024 20-Sep-2024 28 days 3 days I 24-Sep-2024 28 days 7 days I I I I Sep-2024 28 days I I I I I Sep-2024 28 days I I I I I Sep-2024 28 days I	Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pi	reparation			Analys	sis	
Nations and Nutrients : Sulfate in Water by IC Conv	Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
HOPE MW23-B E235 SO4 17. Sep-2024 28 3 days Image of the sep-2024 28 days 7 days 7 days Image of the sep-2024 MV23-B MV23-B E235 SO4 17. Sep-2024 28 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days 3 days Image of the sep-2024 28 days 7 days Image of the sep-2024 28 days Image of the sep-2024 28 days Image of the sep-2024 28 days 7 days Image of the sep-2024 2				Date	Rec	Actual			Rec	Actual	
MW23-B E235.804 17.8ep.2024 20.Sep.2024 28 3 days * 24.Sep.2024 28 days 7 days 7 days * MW23-B MW23-B E235.804 17.Sep.2024 20.Sep.2024 28 3 days * 24.Sep.2024 28 days 7 days 7 days * MW23-C E235.804 17.Sep.2024 20.Sep.2024 28 3 days * 24.Sep.2024 28 days 7 days * * MW25-B E235.804 17.Sep.2024 20.Sep.2024 28 3 days * 24.Sep.2024 28 days 7 days * * MW25-B E235.804 17.Sep.2024 20.Sep.2024 28 3 days * 24.Sep.2024 28 days 7 days * * MW2-A E235.804 17.Sep.2024 20.Sep.2024 28 3 days * 24.Sep.2024 28 days 7 days * * * * * * * * * * * * * * * * * * *	Anions and Nutrients : Sulfate in Water by IC										
Thirds of the part	HDPE										
Number	MW23-B	E235.SO4	17-Sep-2024	20-Sep-2024	28	3 days	1	24-Sep-2024	28 days	7 days	1
HOPE MW23-C E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24.Sep-2024 28 days 7 days ··· NMW23-C E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24.Sep-2024 28 days 7 days ··· MVE2-B E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24.Sep-2024 28 days 7 days ··· NVE2-B E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24.Sep-2024 28 days 7 days ··· NVE4-A E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24.Sep-2024 28 days 7 days ··· NVEA-A E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ··· 24.Sep-2024 28 days 7 days ··· NVEA-B E235.SO4 17.Sep-2024 2.8 days 3 days ··· 24.Sep-2024 28 days 8 days ·· NVE2-B MME2-B E235.SO4 16.Sep-2024					days						
MW23-C E235.504 17.Sep-2024 20 3 days Image: Constraint of the const	Anions and Nutrients : Sulfate in Water by IC										
Name	HDPE										
Nations and Nutrients : Sulfate in Water by IC Image: Sulfate in Water by IC Image: Sulfate in Water by IC HDPE MW25-B E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC HDPE MW4-A E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC HDPE MW4-A E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC HDPE MW4-A E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC HDPE TH1 E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC HDPE MM22-A E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC MV22-A E235.SO4 17.Sep-2024 20.Sep-2024 28 3 days Image: Sulfate in Water by IC MV22-A E33.SO4 16.Sep-2024 20.Sep-2024 28 4 days Image: Sulfate in Water by IC MV22-A E33.SO4 16.Sep-2024 28 5 days <td>MW23-C</td> <td>E235.SO4</td> <td>17-Sep-2024</td> <td>20-Sep-2024</td> <td>28</td> <td>3 days</td> <td>✓</td> <td>24-Sep-2024</td> <td>28 days</td> <td>7 days</td> <td>✓</td>	MW23-C	E235.SO4	17-Sep-2024	20-Sep-2024	28	3 days	✓	24-Sep-2024	28 days	7 days	✓
HDPE MW25-B E235.SO4 17-Sep-2024 2.8 days 3 days					days						
HDPE MW25-B E235.SO4 17-Sep-2024 2.8 days 3 days	Anions and Nutrients : Sulfate in Water by IC										
Image: And Dutrients : Sulfate in Water by IC HDPE MV4-A E235.SO4 17.Sep.2024 28 3 days Image: Additional and Strate and	HDPE										
Nnions and Nutrients : Sulfate in Water by ICVVVVVVHDPE MW4-AE235.SO417.Sep-202420.Sep-202428 days3 days✓24-Sep-202428 days7 days✓HDPE TH1E235.SO417.Sep-202420.Sep-202428 days3 days✓24-Sep-202428 days7 days✓MN22-AE235.SO417.Sep-202420.Sep-202428 days3 days✓24-Sep-202428 days7 days✓MW22-AE235.SO416.Sep-202420.Sep-202428 days4 days✓24-Sep-202428 days8 days✓Ibsolved Metals : Dissolved Mercury in Water by CVAASE235.SO416.Sep-202423.Sep-202428 days5 days✓24-Sep-202428 days6 days✓Obsolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423.Sep-202428 days5 days✓24-Sep-202428 days6 days✓Obsolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423.Sep-202428 days5 days✓24-Sep-202428 days6 days✓Obsolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202428 23-Sep-202428 245 days✓24-Sep-202428 days6 days✓Obsolved Metals : Dissolved (hydrochloric acid) MW29-BE50918-Sep-202428 23-Sep-202428 285 days✓24-Sep-202428 days6 days <td>MW25-B</td> <td>E235.SO4</td> <td>17-Sep-2024</td> <td>20-Sep-2024</td> <td>28</td> <td>3 days</td> <td>✓</td> <td>24-Sep-2024</td> <td>28 days</td> <td>7 days</td> <td>✓</td>	MW25-B	E235.SO4	17-Sep-2024	20-Sep-2024	28	3 days	✓	24-Sep-2024	28 days	7 days	✓
HDPE MW4-A E235.SO4 17.Sep-2024 28 days 3 days ·· 24-Sep-2024 28 days 7 days ·· MM4-A Constrained Mutrients : Sulfate in Water by IC E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ·· 24-Sep-2024 28 days 7 days ·· MIORS and Mutrients : Sulfate in Water by IC E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ·· 24-Sep-2024 28 days 7 days ·· MIORS and Mutrients : Sulfate in Water by IC E235.SO4 17.Sep-2024 20.Sep-2024 28 days 4 days ·· 24-Sep-2024 28 days 8 days 6 days ·· MW22-A E235.SO4 16-Sep-2024 20.Sep-2024 28 days 6 days ·· 24-Sep-2024 28 days 6 days ·· NW22-A E509 18-Sep-2024 28 5 days ·· 24-Sep-2024 28 days 6 days ·· NW27-B E509 18-Sep-2024 28 5 days ·· 24-Sep-2024					days						
HDPE MW4-A E235.SO4 17.Sep-2024 28 days 3 days ·· 24-Sep-2024 28 days 7 days ·· MM4-A Constrained Mutrients : Sulfate in Water by IC E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ·· 24-Sep-2024 28 days 7 days ·· MIORS and Mutrients : Sulfate in Water by IC E235.SO4 17.Sep-2024 20.Sep-2024 28 days 3 days ·· 24-Sep-2024 28 days 7 days ·· MIORS and Mutrients : Sulfate in Water by IC E235.SO4 17.Sep-2024 20.Sep-2024 28 days 4 days ·· 24-Sep-2024 28 days 8 days 6 days ·· MW22-A E235.SO4 16-Sep-2024 20.Sep-2024 28 days 6 days ·· 24-Sep-2024 28 days 6 days ·· NW22-A E509 18-Sep-2024 28 5 days ·· 24-Sep-2024 28 days 6 days ·· NW27-B E509 18-Sep-2024 28 5 days ·· 24-Sep-2024	Anions and Nutrients : Sulfate in Water by IC				-				1		
MW4-A E235.SO4 17-Sep-2024 28 days 3 days ✓ 24-Sep-2024 28 days 7 days ✓ Moines and Nutrients : Sulfate in Water by IC HDPE TH1 E235.SO4 17-Sep-2024 28 days 3 days ✓ 24-Sep-2024 28 days 7 days ✓ Moines and Nutrients : Sulfate in Water by IC E235.SO4 17-Sep-2024 20-Sep-2024 28 days 3 days ✓ 24-Sep-2024 28 days 7 days ✓ MW2-A E235.SO4 17-Sep-2024 20-Sep-2024 28 days 4 days ✓ 24-Sep-2024 28 days 8 days ✓											
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Nnions and Nutrients : Sulfate in Water by ICHDPE TH1E235.SO417-Sep-202420-Sep-202428 days3 days \checkmark 24-Sep-202428 days7 days \checkmark Noins and Nutrients : Sulfate in Water by ICHDPE MW22-AE235.SO416-Sep-202420-Sep-202428 days4 days \checkmark 24-Sep-202428 days8 days \checkmark Dissolved Metals : Dissolved Mercury in Water by CVAASE235.SO416-Sep-202420-Sep-202428 days6 days \checkmark 24-Sep-202428 days8 days \checkmark Glass vial dissolved (hydrochloric acid) MW22-BMW27-BE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Obsolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW28-BImage: Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Obsolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW28-BImage: Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Obsolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW28-BImage: Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Obsolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW29-BImage: Sep-202428 days5 days \checkmark 24-Sep-202428 days6						÷					
HDPE TH1 E235.SO4 17-Sep-2024 28 days 3 days ✓ 24-Sep-2024 28 days 7 days ✓ MNIONS and Nutrients : Sulfate in Water by IC E235.SO4 16-Sep-2024 28 4 days ✓ 24-Sep-2024 28 days 8 days ✓ MW22-A E235.SO4 16-Sep-2024 20-Sep-2024 28 4 days ✓ 24-Sep-2024 28 days 8 days ✓ Dissolved Metals : Dissolved Mercury in Water by CVAAS E509 18-Sep-2024 23-Sep-2024 28 5 days ✓ 24-Sep-2024 28 days 6 days ✓ Dissolved Metals : Dissolved Mercury in Water by CVAAS E509 18-Sep-2024 23-Sep-2024 28 5 days ✓ 24-Sep-2024 28 days 6 days ✓ Dissolved Metals : Dissolved Mercury in Water by CVAAS E509 18-Sep-2024 28 23-Sep-2024 28 28 5 days ✓ 24-Sep-2024 28 days 6 days ✓ Dissolved Mercury in Water by CVAAS E509 18-Sep-2024 28 28 5 days ✓ 24-Sep-2024 28 days 6 days ✓	Aniono and Nutrianto : Sulfata in Water by IC				aayo						
TH1 E235.SO4 17-Sep-2024 28 days 3 days * 24-Sep-2024 28 days 7 days * MNOARD HDPE MW22-A E235.SO4 16-Sep-2024 28 days 4 days * 24-Sep-2024 28 days 8 days * * 4 days * 24-Sep-2024 28 days 8 days *								1			
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Nhions and Nutrients : Sulfate in Water by ICHDPE MW22-AE235.SO416-Sep-202420-Sep-202428 days4 days \checkmark 24-Sep-202428 days8 days \checkmark Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days \checkmark 24-Sep-202428 days6 days \checkmark Dissolved Mercury in Water by CVAASE50918-Sep-202428 23-Sep-202428 285 days \checkmark 24-Sep-2024<	1111	L200.004	17-00p-2024	20-000-2024		0 days		24-000-2024	20 00 33	7 duys	•
HDPE MW22-AE235.SO416-Sep-202420-Sep-202428 days4 days4 days4 days24-Sep-202428 days8 days4 daysDissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days4 days4 days4 days4 days6 days </td <td></td> <td></td> <td></td> <td></td> <td>uays</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>					uays						
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Image: constraint of the second sec		F225 804	16 Sep 2024	00.0 0004		4 1 1 1 1 1	1	04.0-= 0004	00 1000	0	
Dissolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW27-B Dissolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW28-B Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW28-B Dissolved Mercury in Water by CVAAS E509 18-Sep-2024 23-Sep-2024 28 23-Sep-2024 28 28 5 days \checkmark 24-Sep-2024 28 days 6 days 6 days \checkmark Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW29-B E509 18-Sep-2024 23-Sep-2024 28 23-Sep-2024 28 5 days \checkmark 24-Sep-2024 28 days 6 days \checkmark 28 days 6 days \checkmark	MVV22-A	E235.504	16-Sep-2024	20-Sep-2024		4 days	v	24-Sep-2024	28 days	8 days	•
Glass vial dissolved (hydrochloric acid) MW27-BE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓MW28-BE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved (hydrochloric acid) MW29-BMuter by CVAASE50918-Sep-202423-Sep-2024285 days✓24-Sep-202428 days6 days✓					days						
MW27-BE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved Mercury in Water by CVAASGlass vial dissolved (hydrochloric acid) MW28-BE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-202428 23-Sep-20245 days✓24-Sep-202428 days6 days✓MW29-BE50918-Sep-202423-Sep-2024285 days✓24-Sep-202428 days6 days✓	Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Image: constraint of the state of the sta	Glass vial dissolved (hydrochloric acid)										,
Dissolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW28-B Dissolved Mercury in Water by CVAAS Glass vial dissolved Mercury in Water by CVAAS Glass vial dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW29-B MW29-B MW29-B	MW27-B	E509	18-Sep-2024	23-Sep-2024		5 days	*	24-Sep-2024	28 days	6 days	✓
Glass vial dissolved (hydrochloric acid) MW28-BE50918-Sep-202423-Sep-202428 days5 days✓24-Sep-202428 days6 days✓Dissolved Metals : Dissolved Mercury in Water by CVAASGlass vial dissolved (hydrochloric acid) MW29-BE50918-Sep-202423-Sep-2024285 days✓24-Sep-202428 days6 days✓					days						
MW28-BE50918-Sep-202423-Sep-202428 days5 days424-Sep-202428 days6 days4Dissolved Metals : Dissolved Mercury in Water by CVAASGlass vial dissolved (hydrochloric acid) MW29-BE50918-Sep-202423-Sep-2024285 days424-Sep-202428 days6 days4	Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Dissolved Metals : Dissolved Mercury in Water by CVAASE50918-Sep-202423-Sep-2024285 days✓24-Sep-202428 days6 days✓	Glass vial dissolved (hydrochloric acid)										
Dissolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid) MW29-B E509 18-Sep-2024 23-Sep-2024 28 5 days 4 24-Sep-2024 28 days 6 days 4 4	MW28-B	E509	18-Sep-2024	23-Sep-2024	28	5 days	1	24-Sep-2024	28 days	6 days	✓
Glass vial dissolved (hydrochloric acid) E509 18-Sep-2024 23-Sep-2024 28 5 days ✓ 24-Sep-2024 28 days 6 days					days						
Glass vial dissolved (hydrochloric acid) E509 18-Sep-2024 23-Sep-2024 28 5 days ✓ 24-Sep-2024 28 days 6 days	Dissolved Metals : Dissolved Mercury in Water by CVAAS										
MW29-B E509 18-Sep-2024 23-Sep-2024 28 days 6 days ✓	Glass vial dissolved (hydrochloric acid)										
days		E509	18-Sep-2024	23-Sep-2024	28	5 days	✓	24-Sep-2024	28 days	6 days	✓
					days						



Matrix: Water					E١	/aluation: × =	Holding time exce	edance ; •	<pre>/ = Withir</pre>	Holding Time
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pro	eparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	, Times	Eval
			Date	Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW29-C	E509	18-Sep-2024	23-Sep-2024	28	5 days	1	24-Sep-2024	28 days	6 days	1
				days						
Dissolved Metals : Dissolved Mercury in Water by CVAAS							1			
Glass vial dissolved (hydrochloric acid)										
GW DUP	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
				days	. ,				,	
				aayo						
Dissolved Metals : Dissolved Mercury in Water by CVAAS Glass vial dissolved (hydrochloric acid)										
MW22-B	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
	2000	17-00p-2024	20-000-2024	20 days	0 days	·	24 000 2024	20 0035	/ duy5	Ť
				uays						
Dissolved Metals : Dissolved Mercury in Water by CVAAS							1			
Glass vial dissolved (hydrochloric acid)	E509	47.0-= 0004	00.0		0.1	1	04.0	00.1	7	1
MW22-C	E909	17-Sep-2024	23-Sep-2024	28	6 days	*	24-Sep-2024	28 days	7 days	*
				days						
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW23-A	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
				days						
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW23-B	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
				days						
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW23-C	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
				days						
Dissolved Metals : Dissolved Mercury in Water by CVAAS				1	1		1		1	
Glass vial dissolved (hydrochloric acid)										
MW25-B	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
			*	days	Í					
Dissolved Metals : Dissolved Mercury in Water by CVAAS				· <i>y</i> =	I		1	1		
Glass vial dissolved (hydrochloric acid)										
MW4-A	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	1
				days	,0				,0	
				uuyo						



Matrix: Water					E١	/aluation: × =	Holding time exce	edance ; •	<pre>< = Within</pre>	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pro	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	, Times	Eval
			Date	Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
TH1	E509	17-Sep-2024	23-Sep-2024	28	6 days	1	24-Sep-2024	28 days	7 days	✓
				days						
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW22-A	E509	16-Sep-2024	23-Sep-2024	28	7 days	1	24-Sep-2024	28 days	8 days	✓
				days						
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW27-B	E421	18-Sep-2024	23-Sep-2024	180	5 days	1	23-Sep-2024	180	5 days	✓
				days				days	-	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS				-						
HDPE dissolved (nitric acid)										
MW28-B	E421	18-Sep-2024	23-Sep-2024	180	5 days	1	23-Sep-2024	180	5 days	1
		· ·		days				days	- J	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS				,-						
HDPE dissolved (nitric acid)										
MW29-B	E421	18-Sep-2024	23-Sep-2024	180	5 days	1	23-Sep-2024	180	5 days	1
				days				days	- J	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS				,				,		
HDPE dissolved (nitric acid)										
MW29-C	E421	18-Sep-2024	23-Sep-2024	180	5 days	1	23-Sep-2024	180	5 days	1
				days	, -			days	,-	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)							1			
MW4-A	E421	17-Sep-2024	23-Sep-2024	180	5 days	1	23-Sep-2024	180	6 days	1
ואועד זי	2121	11 000 2021	20 000 2021	days	ouuyo		20 000 2021	days	o dayo	
				days				uuys		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) GW DUP	E421	17-Sep-2024	23-Sep-2024	180	6 days	1	23-Sep-2024	180	6 days	1
GW DOF		17-0ep-2024	20-069-2024	days	0 days		20-060-2024	days	0 days	•
		1		uays				uays		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW22-B	E421	17-Sep-2024	23-Sep-2024	100	6 days	1	23-Sep-2024	190	6 days	1
		17-06p-2024	20-0 0 p-2024	180	0 uays		20-06p-2024	180	0 uays	•
				days				days		



atrix: Water						uluulon.	Holding time excee	,	- •••	
nalyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pi	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
issolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW22-C	E421	17-Sep-2024	23-Sep-2024	180	6 days	✓	23-Sep-2024	180	6 days	✓
				days				days		
issolved Metals : Dissolved Metals in Water by CRC ICPMS				1	1 1			1		
HDPE dissolved (nitric acid)										
MW23-A	E421	17-Sep-2024	23-Sep-2024	180	6 days	✓	23-Sep-2024	180	6 days	✓
				days				days		
issolved Metals : Dissolved Metals in Water by CRC ICPMS					11		1			
HDPE dissolved (nitric acid)										
MW23-B	E421	17-Sep-2024	23-Sep-2024	180	6 days	1	23-Sep-2024	180	6 days	1
				days	·			days	·	
				dayo				dayo		
issolved Metals : Dissolved Metals in Water by CRC ICPMS					1					
HDPE dissolved (nitric acid) MW23-C	E421	17-Sep-2024	23-Sep-2024	400	6 days	1	23-Sep-2024	100	6 days	1
NIVV23-C	E421	17-3ep-2024	23-3ep-2024	180	o days	•	23-3ep-2024	180	o days	•
				days				days		
issolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW25-B	E421	17-Sep-2024	23-Sep-2024	180	6 days	✓	23-Sep-2024	180	6 days	1
				days				days		
issolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
TH1	E421	17-Sep-2024	23-Sep-2024	180	6 days	1	23-Sep-2024	180	6 days	1
				days				days		
issolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW22-A	E421	16-Sep-2024	23-Sep-2024	180	7 days	✓	23-Sep-2024	180	7 days	1
				days				days		
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustic					11		1			
Amber glass total (sulfuric acid)										
MW27-B	E355-L	18-Sep-2024	23-Sep-2024	28	5 days	1	26-Sep-2024	28 days	8 days	1
				days						
				days						
Irganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustic	on (Low Level)				1					
Amber glass total (sulfuric acid)	E355-L	18-Sep-2024	24 Son 2024		6 devie	1	27 800 2024	20 days	0 devie	1
MW28-B	E300-L	10-3ep-2024	24-Sep-2024	28	6 days	*	27-Sep-2024	28 days	9 days	¥
				days						



nalyte Group : Analytical Method	Method	Sampling Date	Ev	traction / Pro	enaration			Analys	is	Holding ⁻
Container / Client Sample ID(s)	Method	Sampling Date				Firel	Analusia Data	-		Evel
Container / Client Sample D(s)			Preparation		g Times	Eval	Analysis Date		Times	Eval
			Date	Rec	Actual			Rec	Actual	
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	on (Low Level)									
Amber glass total (sulfuric acid)										
MW29-B	E355-L	18-Sep-2024	24-Sep-2024	28	6 days	1	27-Sep-2024	28 days	9 days	~
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	on (Low Level)									
Amber glass total (sulfuric acid)										
MW29-C	E355-L	18-Sep-2024	24-Sep-2024	28	6 days	1	27-Sep-2024	28 days	9 days	✓
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combusti	on (Low Level)							1	1 1	
Amber glass total (sulfuric acid)										
GW DUP	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	1	27-Sep-2024	28 davs	10 days	1
				days	,-					
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	on (Low Level)	1 1					1			
Amber glass total (sulfuric acid)	FOFFI	17.0-= 0004	04.0		7	1	07.0	00	10	1
MW22-B	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	*	27-Sep-2024	28 days	10 days	•
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	on (Low Level)									
Amber glass total (sulfuric acid)										
MW22-C	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	1	27-Sep-2024	28 days	10 days	✓
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustio	on (Low Level)									
Amber glass total (sulfuric acid)										
MW23-A	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	1	27-Sep-2024	28 days	10 days	1
				days	-		· ·		-	
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combusti				,						
		1								
Amber glass total (sulfuric acid) MW23-B	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	1	27-Sep-2024	28 days	10 days	1
WW23-D	L333-L	17-3ep-2024	24-36p-2024		i uays	•	27-3ep-2024	20 uays	10 uays	•
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	on (Low Level)									
Amber glass total (sulfuric acid)										
MW23-C	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	1	27-Sep-2024	28 days	10 days	1
				days						
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	on (Low Level)									
Amber glass total (sulfuric acid)										
	I	47.0 0004		1				1	40.1	
MW25-B	E355-L	17-Sep-2024	24-Sep-2024	28	7 days	✓	27-Sep-2024	28 days	10 days	 ✓



Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pr	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combus	tion (Low Level)						1			
Amber glass total (sulfuric acid)							1			
MW4-A	E355-L	17-Sep-2024	24-Sep-2024	28 days	7 days	✓	27-Sep-2024	28 days	10 days	1
rganic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combus	tion (Low Level)			-						
Amber glass total (sulfuric acid)										
TH1	E355-L	17-Sep-2024	24-Sep-2024	28 days	7 days	1	27-Sep-2024	28 days	10 days	1
organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combus	tion (Low Level)				<u> </u>		1			-
Amber glass total (sulfuric acid) MW22-A	E355-L	16-Sep-2024	24-Sep-2024	28	8 days	4	27-Sep-2024	28 days	11 days	1
WW22-A	LUUU-L	10-000-2024	24 000 2024	days	0 days	•	21-000-2024	20 days	TT duy5	
hysical Tests : Alkalinity Species by Titration					, ,			_		
HDPE MW27-B	E290	18-Sep-2024	20-Sep-2024	14	2 days	1	21-Sep-2024	14 days	3 days	1
				days						ı
hysical Tests : Alkalinity Species by Titration							1			
HDPE MW28-B	E290	18-Sep-2024	20-Sep-2024	14 days	2 days	1	21-Sep-2024	14 days	3 days	~
Physical Tests : Alkalinity Species by Titration								1		
HDPE										
MW29-B	E290	18-Sep-2024	20-Sep-2024	14 days	2 days	✓	21-Sep-2024	14 days	3 days	~
husial Tasta - Alkalinity Chasics by Titustian				duyo			1			
Physical Tests : Alkalinity Species by Titration HDPE							1			
MW29-C	E290	18-Sep-2024	20-Sep-2024	14 days	2 days	1	21-Sep-2024	14 days	3 days	1
Physical Tests : Alkalinity Species by Titration	1				I		1	I		
HDPE										
GW DUP	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	1	21-Sep-2024	14 days	4 days	1
hysical Tests : Alkalinity Species by Titration				-	I			1		
HDPE										
MW22-B	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	✓	21-Sep-2024	14 days	4 days	1



Matrix: Water					E١	aluation: × =	Holding time exce	edance ; 🔹	<pre>< = Within</pre>	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pr	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation Date	Holding Rec	g Times Actual	Eval	Analysis Date	Holding Rec	Times Actual	Eval
Dhusiani Tasta : Alkaliniti: Cuasian hu Titustian			Date	Nec	Actual			Nec	Actual	
Physical Tests : Alkalinity Species by Titration HDPE										
MW22-C	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	1	21-Sep-2024	14 days	4 days	1
Physical Tests : Alkalinity Species by Titration				1				1		
HDPE										
MW23-A	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	*	21-Sep-2024	14 days	4 days	~
Physical Tests : Alkalinity Species by Titration										
HDPE MW23-B	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	4	21-Sep-2024	14 days	4 days	*
Physical Tests : Alkalinity Species by Titration										
HDPE MW23-C	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	~	21-Sep-2024	14 days	4 days	*
Physical Tests : Alkalinity Species by Titration				1						
HDPE MW25-B	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	4	21-Sep-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration								1		
HDPE MW4-A	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	¥	21-Sep-2024	14 days	4 days	*
Physical Tests : Alkalinity Species by Titration										
HDPE TH1	E290	17-Sep-2024	20-Sep-2024	14 days	3 days	√	21-Sep-2024	14 days	4 days	*
Physical Tests : Alkalinity Species by Titration										
HDPE MW22-A	E290	16-Sep-2024	20-Sep-2024	14 days	4 days	V	21-Sep-2024	14 days	5 days	*
Physical Tests : Colour (Apparent) by Spectrometer					1					
HDPE GW DUP	E330	17-Sep-2024					25-Sep-2024	48 hrs	190 hrs	¥ EHTL



Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / P	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation Date	Holdin Rec	g Times Actual	Eval	Analysis Date	Holding Rec	g Times Actual	Eval
hysical Tests : Colour (Apparent) by Spectrometer										
HDPE MW25-B	E330	17-Sep-2024					25-Sep-2024	48 hrs	190 hrs	× EHTL
hysical Tests : Colour (Apparent) by Spectrometer									1 1	
HDPE MW23-C	E330	17-Sep-2024					25-Sep-2024	48 hrs	193 hrs	¥ EHTL
hysical Tests : Colour (Apparent) by Spectrometer							1		1 1	
HDPE MW23-B	E330	17-Sep-2024					25-Sep-2024	48 hrs	193 hrs	¥ Ehtr
hysical Tests : Colour (Apparent) by Spectrometer										
HDPE MW22-C	E330	17-Sep-2024					25-Sep-2024	48 hrs	194 hrs	¥ Ehtf
hysical Tests : Colour (Apparent) by Spectrometer							1	1	1 1	
HDPE MW23-A	E330	17-Sep-2024					25-Sep-2024	48 hrs	194 hrs	¥ Ehte
hysical Tests : Colour (Apparent) by Spectrometer							•	1		
HDPE MW22-B	E330	17-Sep-2024					25-Sep-2024	48 hrs	195 hrs	¥ Ehtf
hysical Tests : Colour (Apparent) by Spectrometer								1		
HDPE MW22-A	E330	16-Sep-2024					25-Sep-2024	48 hrs	213 hrs	¥ EHTF
hysical Tests : Colour (Apparent) by Spectrometer									<u> </u>	
HDPE MW27-B	E330	18-Sep-2024					27-Sep-2024	48 hrs	216 hrs	¥ EHTI
hysical Tests : Colour (Apparent) by Spectrometer										
HDPE MW28-B	E330	18-Sep-2024					27-Sep-2024	48 hrs	217 hrs	× EHTI



Aatrix: Water				tur attaca (D		/aiuation: × =	Holding time exce			notaing 11
Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Preparation Date	traction / Pl Holdin Rec	g Times Actual	Eval	Analysis Date	Analys Holding Rec	g Times Actual	Eval
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE MW29-C	E330	18-Sep-2024					27-Sep-2024	48 hrs	218 hrs	× EHTL
Physical Tests : Colour (Apparent) by Spectrometer								1		
HDPE MW29-B	E330	18-Sep-2024					27-Sep-2024	48 hrs	219 hrs	¥ EHTL
Physical Tests : Colour (Apparent) by Spectrometer								1		
HDPE MW4-A	E330	17-Sep-2024					27-Sep-2024	48 hrs	235 hrs	¥ EHTL
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE TH1	E330	17-Sep-2024					27-Sep-2024	48 hrs	236 hrs	¥ EHTL
Physical Tests : Conductivity in Water						<u> </u>		1		
HDPE MW27-B	E100	18-Sep-2024	20-Sep-2024	28 days	2 days	1	21-Sep-2024	28 days	3 days	1
Physical Tests : Conductivity in Water								1		
HDPE MW28-B	E100	18-Sep-2024	20-Sep-2024	28 days	2 days	4	21-Sep-2024	28 days	3 days	4
Physical Tests : Conductivity in Water										
HDPE MW29-B	E100	18-Sep-2024	20-Sep-2024	28 days	2 days	1	21-Sep-2024	28 days	3 days	~
Physical Tests : Conductivity in Water		·								
HDPE MW29-C	E100	18-Sep-2024	20-Sep-2024	28 days	2 days	4	21-Sep-2024	28 days	3 days	*
Physical Tests : Conductivity in Water								1		
HDPE GW DUP	E100	17-Sep-2024	20-Sep-2024	28 days	3 days	1	21-Sep-2024	28 days	4 days	~
				· ·						



Matrix: Water					E١	aluation: × =	Holding time exce	edance ; 🔹	<pre>/ = Within</pre>	Holding Time
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pre	eparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE										
MW22-B	E100	17-Sep-2024	20-Sep-2024	28	3 days	✓	21-Sep-2024	28 days	4 days	1
				days						
Physical Tests : Conductivity in Water										
HDPE										
MW22-C	E100	17-Sep-2024	20-Sep-2024	28	3 days	✓	21-Sep-2024	28 days	4 days	1
			·	days				-	-	
Physical Tasta - Conductivity in Water				,						
Physical Tests : Conductivity in Water HDPE										
MW23-A	E100	17-Sep-2024	20-Sep-2024	28	3 days	1	21-Sep-2024	28 days	4 days	1
	2100	11 000 2021	20 000 2021	days	o dayo		21 000 2021	20 duyo	1 dayo	· ·
				uays						
Physical Tests : Conductivity in Water				1			1			
HDPE	F100	47.0-= 0004	00.0		0.1	1	04.0	00	4.1	1
MW23-B	E100	17-Sep-2024	20-Sep-2024	28	3 days	*	21-Sep-2024	28 days	4 days	•
				days						
Physical Tests : Conductivity in Water										
HDPE										
MW23-C	E100	17-Sep-2024	20-Sep-2024	28	3 days	✓	21-Sep-2024	28 days	4 days	1
				days						
Physical Tests : Conductivity in Water										
HDPE										
MW25-B	E100	17-Sep-2024	20-Sep-2024	28	3 days	✓	21-Sep-2024	28 days	4 days	1
				days						
Physical Tests : Conductivity in Water										
HDPE										
MW4-A	E100	17-Sep-2024	20-Sep-2024	28	3 days	✓	21-Sep-2024	28 days	4 days	1
				days	-			-	-	
Physical Tests : Conductivity in Water							1			
HDPE										
TH1	E100	17-Sep-2024	20-Sep-2024	28	3 days	1	21-Sep-2024	28 days	4 days	1
			20 000 2021	20 days	2 ago		2. COP 2024			
				uuyo						
Physical Tests : Conductivity in Water										
	E100	16 500 2024	20 5		1	1	01 8 - 0004	00	Edavia	1
MW22-A	E100	16-Sep-2024	20-Sep-2024	28	4 days	¥	21-Sep-2024	28 days	5 days	×
				days						



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Image: Data by Moder Data by Moder Rec Actual Rec Actual Rec Actual Physical Tests : ph by Moder E108 18-Sep-2024 0.25 55 hrs 18 -Sep-2024 0.25 55 hrs 18 -Sep-2024 0.25 56 hrs 18 -Sep-2024 0.25 73 hrs ETRE-PH MV22-B E108 18-Sep-2024 0.25 57 hrs 18 -Sep-2024 0.25 73 hrs ETRE-PH MV22-C E108 18-Sep-2024 0.25 57 hrs 18 -Sep-2024 0.25 74 hrs 18 -Sep-2024 0.25 57 hrs 18 -Sep-2024 0.25 74 hrs 18 -Sep-2024 0.25 57 hrs 18 -Sep-2024 0.25 74 hrs 18 -Sep-2024 0.25 <	Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / P	reparation			Analy	sis	
Physical Tests : ph by Meter Dote <	Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holdin	g Times	Eval
HOPE MW27.B E108 18-Sep-204 0.55 55 hs E1. 21-Sep-204 0.55 N Part Part hysical Tests : pH by Meter E108 18-Sep-204 0.25 0.25 65 hs E1. 21-Sep-204 0.25 N N Part P				Date	Rec	Actual			Rec	Actual	
MM27-8 E108 18-Sep-2024 0.26 55 hrs ** 21-Sep-2024 0.25 57 hrs ** ** MM27-8 E108 18-Sep-2024 0.25 15 hrs 1** 21-Sep-2024 0.25 17 hrs ** FHTR-FM MM28-8 E108 18-Sep-2024 0.25 15 hrs 1** 21-Sep-2024 0.25 17 hrs ** ** 21-Sep-2024 0.25 17 hrs ** ** ** 17 hrs **	Physical Tests : pH by Meter										
Image Image Image Embrage Embrage hypecial Tests : pH by Meter E108 18-Sep-2024 20-Sep-2024 0.25 57 hrs 18-Sep-2024 0.25 73 hrs 18-Sep-2024 0.25 73 hrs 18-Sep-2024 0.25 75 hrs 18-Sep-2024 0.25 17 hrs 18-Sep-2024 0.25 18 hrs 18-Sep-2024	HDPE										
Physical Tests : pH by Meter Properiod Description Descrip	MW27-B	E108	18-Sep-2024	20-Sep-2024	0.25	55 hrs	*	21-Sep-2024	0.25	72 hrs	*
HOPE MW28-B E108 18-Sep-2024 20-Sep-2024 0.25 56 hrs * * 21-Sep-2024 0.25 73 hrs * * Physical Tests : pH by Metar E108 18-Sep-2024 0.25 57 hrs * * 21-Sep-2024 0.25 57 hrs * * 21-Sep-2024 0.25 57 hrs * <td< td=""><td></td><td></td><td></td><td></td><td>hrs</td><td></td><td>EHTR-FM</td><td></td><td>hrs</td><td></td><td>EHTR-FM</td></td<>					hrs		EHTR-FM		hrs		EHTR-FM
HOPE MW28-B E108 18-Sep-2024 20-Sep-2024 0.25 56 hrs * * 21-Sep-2024 0.25 73 hrs * * Physical Tests : pH by Metar E108 18-Sep-2024 0.25 57 hrs * * 21-Sep-2024 0.25 57 hrs * * 21-Sep-2024 0.25 57 hrs * <td< td=""><td>Physical Tests : pH by Meter</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Physical Tests : pH by Meter										
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Image MM220-C B108 18-Sep-2024 0.28 0.28 0.78 0.78 0.28		E108	18-Sep-2024	20-Sep-2024	0.25	56 hrs	*	21-Sep-2024	0.25	73 hrs	*
Physical Tests : pH by Meter Normal Section (Section (Sectic) (Sectic) (Section (Section (Section (Section (Sectic) (Section							EHTR-FM				EHTR-FM
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Image Image <th< td=""><td></td><td>F108</td><td>18-Sen-2024</td><td>20-Sep-2024</td><td>0.25</td><td>57 hrs</td><td><u>*</u></td><td>21-Sen-2024</td><td>0.25</td><td>73 hrs</td><td>*</td></th<>		F108	18-Sen-2024	20-Sep-2024	0.25	57 hrs	<u>*</u>	21-Sen-2024	0.25	73 hrs	*
Physical Tests : ph by Meter E108 18-Sep-2024 20-Sep-2024 0.25 57 hrs * 21-Sep-2024 0.25 frs * EHTR-FM * * * EHTR-FM * * * EHTR-FM * * * EHTR-FM * * * * * * * EHTR-FM * * * * * * *<	1010723-0	E100	10-0ep-2024	20-06p-2024		57 1113		21-06p-2024		75113	
HDPE MW29-B E108 18-Sep-2024 20-Sep-2024 0.25 57 hrs * E17 21-Sep-2024 0.25 74 hrs * * * * * 12-Sep-2024 0.25 74 hrs * * * * * 12-Sep-2024 0.25 74 hrs * <th< td=""><td></td><td></td><td></td><td></td><td>nis</td><td></td><td>EHTR-FIVI</td><td></td><td>nis</td><td></td><td></td></th<>					nis		EHTR-FIVI		nis		
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Physical Tests : pH by Meter Note	MW29-B	E108	18-Sep-2024	20-Sep-2024	0.25	57 hrs		21-Sep-2024	0.25	74 hrs	
HDPE MW4-A E108 17-Sep-2024 20-Sep-2024 0.25 74 hrs * E108 91 hrs * EHTR-FN Physical Tests : pH by Meter HDPE TH1 E108 17-Sep-2024 0.25 hrs 75 hrs * EHTR-FN 21-Sep-2024 0.25 hrs 92 hrs * EHTR-FN Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 hrs * EHTR-FN 21-Sep-2024 0.25 hrs * EHTR-FN * * EHTR-FN * * EHTR-FN * * EHTR-FN *					hrs		EHTR-FM		hrs		EHTR-FM
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Physical Tests : pH by Meter HDPE E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * E17-Sep-2024 0.25 93 hrs * EHTR-FN Physical Tests : pH by Meter Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * EHTR-FN 21-Sep-2024 0.25 hrs 93 hrs * EHTR-FN Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * E E 93 hrs * E EHTR-FN Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * 21-Sep-2024 0.25 93 hrs * E EHTR-FN Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * 21-Sep-2024 0.25 93 hrs * E EHTR-FN Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs * MW23-C MW23-C D2 D							FHTR-FM				FHTR-FM
HDPE GW DUP E108 17-Sep-2024 20-Sep-2024 0.25 hrs 76 hrs * E17-Sep-2024 0.25 hrs 93 hrs * EHTR-FM Physical Tests : pH by Meter HDPE MW25-B E108 17-Sep-2024 20-Sep-2024 0.25 hrs 76 hrs * E17-Sep-2024 0.25 hrs 93 hrs * * EHTR-FM Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 hrs 76 hrs * 21-Sep-2024 0.25 hrs 93 hrs * * EHTR-FM Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 hrs 76 hrs * 21-Sep-2024 0.25 hrs 93 hrs * EHTR-FM Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 hrs 79 hrs * 21-Sep-2024 0.25 hrs 95 hrs * MW23-C E108 17-Sep-2024 20-Sep-2024 0.25 hrs 79 hrs * 21-Sep-2024 0.25 hrs 95 hrs *					1110				1110		
GW DUP E108 17-Sep-2024 0.25 76 hrs * 21-Sep-2024 0.25 93 hrs * EHTR-FN Physical Tests : pH by Meter Physical Tests : pH by Meter <td< td=""><td></td><td></td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>1</td><td></td></td<>					1	1	1	1		1	
Image: bit im		E100	47.0	00.0		70 1		04.0		00.1	
Physical Tests : pH by Meter MW 20-Sep-2024 0.25 76 hrs * 21-Sep-2024 0.25 93 hrs * Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * 21-Sep-2024 0.25 hrs 93 hrs * EHTR-FM Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs * MW23-C E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs *	GW DUP	E108	17-Sep-2024	20-Sep-2024		76 hrs		21-Sep-2024		93 nrs	
HDPE MW25-B E108 17-Sep-2024 20-Sep-2024 0.25 76 hrs * E17-Sep-2024 0.25 93 hrs * EHTR-FM Physical Tests : pH by Meter HDPE B108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 93 hrs * EHTR-FM MW23-C B108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs *					hrs		EHIR-FM		hrs		EHIR-FIV
MW25-B E108 17-Sep-2024 20-Sep-2024 0.5 76 hrs * 21-Sep-2024 0.25 93 hrs * EHTR-FM Participation Physical Tests : pH by Meter HDPE B108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs *	Physical Tests : pH by Meter										
Physical Tests : pH by Meter E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs *	HDPE										
Physical Tests : pH by Meter HDPE MW23-C D.25 79 hrs * 21-Sep-2024 0.25 95 hrs *	MW25-B	E108	17-Sep-2024	20-Sep-2024	0.25	76 hrs	35	21-Sep-2024	0.25	93 hrs	×
HDPE E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs *					hrs		EHTR-FM		hrs		EHTR-FN
HDPE E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs *	Physical Tests : pH by Meter										
MW23-C E108 17-Sep-2024 20-Sep-2024 0.25 79 hrs * 21-Sep-2024 0.25 95 hrs											
		E108	17-Sep-2024	20-Sep-2024	0.25	79 hrs	*	21-Sep-2024	0.25	95 hrs	*
					hrs		EHTR-FM		hrs		EHTR-FM



Matrix: Water					E	valuation: × =	Holding time exce	edance ; 🔹	= Withir	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Exi	traction / Pi	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE										
MW23-B	E108	17-Sep-2024	20-Sep-2024	0.25	79 hrs	*	21-Sep-2024	0.25	96 hrs	*
				hrs		EHTR-FM		hrs		EHTR-FM
Physical Tests : pH by Meter										
HDPE										
MW22-C	E108	17-Sep-2024	20-Sep-2024	0.25	80 hrs	*	21-Sep-2024	0.25	97 hrs	*
				hrs		EHTR-FM		hrs		EHTR-FM
Physical Tests : pH by Meter				I		I	1	1	1	1
HDPE										
MW23-A	E108	17-Sep-2024	20-Sep-2024	0.25	80 hrs	*	21-Sep-2024	0.25	97 hrs	×
				hrs		EHTR-FM	·	hrs		EHTR-FM
Division Tests , will be Mater										
Physical Tests : pH by Meter HDPE										
MW22-B	E108	17-Sep-2024	20-Sep-2024	0.25	81 hrs	*	21-Sep-2024	0.25	98 hrs	×
	Elito	17-00p-2024	20-069-2024	0.25 hrs	011113	EHTR-FM	21-069-2024	0.25 hrs	30 1113	EHTR-FM
				1113		2		1113		Linitation
Physical Tests : pH by Meter	I									
HDPE MW22-A	E108	16-Sep-2024	20-Sep-2024	0.05	99 hrs	×	21-Sep-2024	0.05	116 hrs	×
WIVVZZ-A	E108	10-3ep-2024	20-3ep-2024	0.25	991115	EHTR-FM	21-3ep-2024	0.25	1101115	EHTR-FM
				hrs				hrs		
Physical Tests : TDS by Gravimetry				1	1			1		
HDPE	E 400	17.0								
GW DUP	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
Physical Tests : TDS by Gravimetry										
HDPE										
MW22-B	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
Physical Tests : TDS by Gravimetry										
HDPE										
MW22-C	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
Physical Tests : TDS by Gravimetry										
HDPE										
MW23-A	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1



Matrix: Water						aluation: × =	Holding time excee	edance ; 🗸	<pre>< = Within</pre>	Holding Time
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pr	eparation			Analys	is	
Container / Client Sample ID(s)			Preparation		g Times	Eval	Analysis Date	Holding		Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE	E 100	17.0 0004								,
MW23-B	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
Physical Tests : TDS by Gravimetry				1						
HDPE MW23-C	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
MVV23-C	E102	17-Sep-2024					20-Sep-2024	7 days	5 days	•
Physical Tests : TDS by Gravimetry HDPE										
MW25-B	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
WWZ25-D	2102	11 000 2021					20 000 2021	, dayo	ouuyo	,
Physical Tacta , TDS by Cravimatry		1								
Physical Tests : TDS by Gravimetry HDPE		1								
MW4-A	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	1
		· ·						,	. ,	
Physical Tests : TDS by Gravimetry										
HDPE										
TH1	E162	17-Sep-2024					20-Sep-2024	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
MW22-A	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
MW27-B	E162	18-Sep-2024					24-Sep-2024	7 days	6 days	1
Physical Tests : TDS by Gravimetry		1								
	E160	19 Con 2024					24 San 2024	7 days	6 days	1
MW28-B	E162	18-Sep-2024					24-Sep-2024	7 days	6 days	*
Physical Tests : TDS by Gravimetry HDPE								1		
MW29-B	E162	18-Sep-2024					24-Sep-2024	7 days	6 days	1
		10 000 2021					21 000 2024		Judyo	



latrix: Water						aluation: × =	Holding time excee			Holding Ti
Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pr				Analys		
Container / Client Sample ID(s)			Preparation		g Times	Eval	Analysis Date		g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry				1	1 1					
HDPE	F 100	10.0 0001								
MW29-C	E162	18-Sep-2024					24-Sep-2024	7 days	6 days	1
Physical Tests : Turbidity by Nephelometry		1			T T		1			
HDPE MW27-B	E121	18-Sep-2024					21-Sep-2024	3 days	3 days	1
MWZ7-B	EIZI	16-3ep-2024					21-3ep-2024	5 uays	5 uays	Ť
Physical Tests : Turbidity by Nephelometry HDPE										
MW28-B	E121	18-Sep-2024					21-Sep-2024	3 days	3 days	1
Physical Tests : Turbidity by Nephelometry								I		
HDPE		1								
MW29-B	E121	18-Sep-2024					21-Sep-2024	3 days	3 days	1
Physical Tests : Turbidity by Nephelometry					<u> </u>		1			
HDPE										
MW29-C	E121	18-Sep-2024					21-Sep-2024	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE										
GW DUP	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	*
										EHT
Physical Tests : Turbidity by Nephelometry				1	<u>г г</u>					
HDPE	F101	17.0					04.0	0.1		
MW22-B	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	¥ EHT
Physical Tests : Turbidity by Nephelometry		1					1			
HDPE MW22-C	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	×
100022-0	L121	11-00p-2024					21-000-2024	0 days	4 duy5	EHT
Dhusiaal Taata , Turbidity by Nanhalamatry							I			
Physical Tests : Turbidity by Nephelometry HDPE							1			
MW23-A	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	×
	1			1	1		·		, -	



nalyte Group : Analytical Method	Method	Sampling Date	Ext	raction / P	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation Date	Holdin Rec	g Times Actual	Eval	Analysis Date	Holding Rec	g Times Actual	Eval
hysical Tests : Turbidity by Nephelometry							1			
HDPE MW23-B	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	*
										EHT
hysical Tests : Turbidity by Nephelometry				I			1			
HDPE MW23-C	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	¥ EHT
hysical Tests : Turbidity by Nephelometry								1	<u> </u>	
HDPE MW25-B	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	¥ EHT
hysical Tests : Turbidity by Nephelometry								1	<u> </u>	
HDPE MW4-A	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	¥ EHT
hysical Tests : Turbidity by Nephelometry				1					1 1	
HDPE TH1	E121	17-Sep-2024					21-Sep-2024	3 days	4 days	× EHT
hysical Tests : Turbidity by Nephelometry									II	
HDPE MW22-A	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	¥ EHTL
otal Metals : Total Mercury in Water by CVAAS				1				1	1 1	
Lab Split - Subsample from unpreserved or incorrectly preserved bottle MW27-B	E508	18-Sep-2024	24-Sep-2024	0 hrs	145 hrs	¥ UCP	26-Sep-2024	0 hrs	191 hrs	¥ UCP
otal Metals : Total Mercury in Water by CVAAS				I				1	1 1	
Lab Split - Subsample from unpreserved or incorrectly preserved bottle MW28-B	E508	18-Sep-2024	24-Sep-2024	0 hrs	146 hrs	× UCP	26-Sep-2024	0 hrs	192 hrs	× UCF
otal Metals : Total Mercury in Water by CVAAS								1		
Lab Split - Subsample from unpreserved or incorrectly preserved bottle MW29-C	E508	18-Sep-2024	24-Sep-2024	0 hrs	146 hrs	× UCP	26-Sep-2024	0 hrs	192 hrs	¥ UCF



Aatrix: Water					Ev	valuation: × =	Holding time excee	edance ;	🗸 = Within	Holding Tir
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / P	reparation			Analy	sis	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holdin	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW29-B	E508	18-Sep-2024	24-Sep-2024	0 hrs	147 hrs	*	26-Sep-2024	0 hrs	193 hrs	×
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS					1					
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW4-A	E508	17-Sep-2024	24-Sep-2024	0 hrs	164 hrs	×	26-Sep-2024	0 hrs	209 hrs	*
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS				1	1			1		
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
TH1	E508	17-Sep-2024	24-Sep-2024	0 hrs	165 hrs	*	26-Sep-2024	0 hrs	211 hrs	*
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS										
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
GW DUP	E508	17-Sep-2024	24-Sep-2024	0 hrs	166 hrs	*	26-Sep-2024	0 hrs	212 hrs	*
				-		UCP				UCP
Total Metals : Total Mercury in Water by CVAAS										
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW25-B	E508	17-Sep-2024	24-Sep-2024	0 hrs	166 hrs	*	26-Sep-2024	0 hrs	212 hrs	*
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS								1		
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW23-C	E508	17-Sep-2024	24-Sep-2024	0 hrs	168 hrs	×	26-Sep-2024	0 hrs	214 hrs	×
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS				1						
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW23-B	E508	17-Sep-2024	24-Sep-2024	0 hrs	169 hrs	×	26-Sep-2024	0 hrs	215 hrs	×
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS					I		1	1		
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW22-C	E508	17-Sep-2024	24-Sep-2024	0 hrs	170 hrs	*	26-Sep-2024	0 hrs	216 hrs	×
						UCP				UCP
Total Metals : Total Mercury in Water by CVAAS					1		1			
Lab Split - Subsample from unpreserved or incorrectly preserved bottle										
MW23-A	E508	17-Sep-2024	24-Sep-2024	0 hrs	170 hrs	×	26-Sep-2024	0 hrs	216 hrs	*
	1		*			UCP				UCP



Matrix: Water					Ev	/aluation: × =	Holding time excee	edance ;	🗸 = Within	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pi	reparation			Analy	sis	
Container / Client Sample ID(s)			Preparation	Holdin	ing Times Eval		Analysis Date	Holding Times		Eval
			Date	Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAAS										
Lab Split - Subsample from unpreserved or incorrectly preserved bottle MW22-B	E508	17-Sep-2024	24-Sep-2024	0 hrs	171 hrs	¥ UCP	26-Sep-2024	0 hrs	217 hrs	¥ UCP
Total Metals : Total Mercury in Water by CVAAS										
Lab Split - Subsample from unpreserved or incorrectly preserved bottle MW22-A	E508	16-Sep-2024	24-Sep-2024	0 hrs	189 hrs	¥ UCP	26-Sep-2024	0 hrs	235 hrs	ی UCP

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

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).

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.



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.

Quality Control Sample Type			Co	ount		Frequency (%))
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)				1			
Alkalinity Species by Titration	E290	1664163	1	20	5.0	5.0	1
Ammonia by Fluorescence	E298	1666839	3	60	5.0	5.0	1
Chloride in Water by IC	E235.Cl	1664159	1	20	5.0	5.0	1
Colour (Apparent) by Spectrometer	E330	1671962	2	32	6.2	5.0	✓
Conductivity in Water	E100	1664162	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1666954	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1666609	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1664156	1	20	5.0	5.0	~
Nitrate in Water by IC	E235.NO3	1664157	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1664158	1	20	5.0	5.0	✓
pH by Meter	E108	1664161	1	20	5.0	5.0	~
Reactive Silica by Colourimetry	E392	1667333	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1664160	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	1662588	2	35	5.7	5.2	~
Total Mercury in Water by CVAAS	E508	1669182	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	3	60	5.0	5.0	✓
Turbidity by Nephelometry	E121	1664811	2	37	5.4	5.0	~
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1664163	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1666839	3	60	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1664159	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	1671962	2	32	6.2	5.0	✓
Conductivity in Water	E100	1664162	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1666954	1	20	5.0	5.0	~
Dissolved Metals in Water by CRC ICPMS	E421	1666609	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1664156	1	20	5.0	5.0	~
Nitrate in Water by IC	E235.NO3	1664157	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1664158	1	20	5.0	5.0	✓
pH by Meter	E108	1664161	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	1667333	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1664160	1	20	5.0	5.0	~
TDS by Gravimetry	E162	1662588	2	35	5.7	5.2	✓
Total Mercury in Water by CVAAS	E508	1669182	1	14	7.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	3	60	5.0	5.0	~

Page Work Order	:	33 of 36 HA2402049 Amendment 2
Client	:	Englobe Corp.
Project		2408035.000



Matrix: Water		Evaluati	on: × = QC freque	ency outside sp	ecification; 🗸 =	QC frequency wi	thin specificatio	
Quality Control Sample Type				ount		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation	
Laboratory Control Samples (LCS) - Continued								
Turbidity by Nephelometry	E121	1664811	2	37	5.4	5.0	1	
Method Blanks (MB)								
Alkalinity Species by Titration	E290	1664163	1	20	5.0	5.0	~	
Ammonia by Fluorescence	E298	1666839	3	60	5.0	5.0	~	
Chloride in Water by IC	E235.Cl	1664159	1	20	5.0	5.0	~	
Colour (Apparent) by Spectrometer	E330	1671962	2	32	6.2	5.0	~	
Conductivity in Water	E100	1664162	1	20	5.0	5.0	✓	
Dissolved Mercury in Water by CVAAS	E509	1666954	1	20	5.0	5.0	✓	
Dissolved Metals in Water by CRC ICPMS	E421	1666609	1	20	5.0	5.0	✓	
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	1	20	5.0	5.0	✓	
Fluoride in Water by IC	E235.F	1664156	1	20	5.0	5.0	✓	
Nitrate in Water by IC	E235.NO3	1664157	1	20	5.0	5.0	✓	
Nitrite in Water by IC	E235.NO2	1664158	1	20	5.0	5.0	✓	
Reactive Silica by Colourimetry	E392	1667333	1	20	5.0	5.0	✓	
Sulfate in Water by IC	E235.SO4	1664160	1	20	5.0	5.0	✓	
TDS by Gravimetry	E162	1662588	2	35	5.7	5.2	✓	
Total Mercury in Water by CVAAS	E508	1669182	1	14	7.1	5.0	✓	
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	3	60	5.0	5.0	✓	
Turbidity by Nephelometry	E121	1664811	2	37	5.4	5.0	✓	
Matrix Spikes (MS)								
Ammonia by Fluorescence	E298	1666839	3	60	5.0	5.0	✓	
Chloride in Water by IC	E235.Cl	1664159	1	20	5.0	5.0	✓	
Dissolved Mercury in Water by CVAAS	E509	1666954	1	20	5.0	5.0	✓	
Dissolved Metals in Water by CRC ICPMS	E421	1666609	1	20	5.0	5.0	✓	
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	1	20	5.0	5.0	✓	
Fluoride in Water by IC	E235.F	1664156	1	20	5.0	5.0	✓	
Nitrate in Water by IC	E235.NO3	1664157	1	20	5.0	5.0	✓	
Nitrite in Water by IC	E235.NO2	1664158	1	20	5.0	5.0	✓	
Reactive Silica by Colourimetry	E392	1667333	1	20	5.0	5.0	✓	
Sulfate in Water by IC	E235.SO4	1664160	1	20	5.0	5.0	✓	
Total Mercury in Water by CVAAS	E508	1669182	1	14	7.1	5.0	✓	
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	3	60	5.0	5.0	1	



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	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
	ALS Environmental -			sample. Conductivity measurements are temperature-compensated to 25°C.
	Waterloo			
pH by Meter	E108	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted
				at ambient laboratory temperature (normally 20 \pm 5°C). For high accuracy test results,
	ALS Environmental -			pH should be measured in the field within the recommended 15 minute hold time.
Turkidity by Nanhalamatry	Waterloo	Mator	ADUA 2120 B (mod)	
Turbidity by Nephelometry	E121	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
	ALS Environmental -			
	Waterloo			
TDS by Gravimetry	E162	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 $180 \pm 2^{\circ}$ C for 16 hours or to constant weight,
	ALS Environmental -			with gravimetric measurement of the residue.
	Halifax			
Chloride in Water by IC	E235.Cl	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
	ALS Environmental -			
	Waterloo			
Fluoride in Water by IC	E235.F	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
	ALS Environmental -			
	Waterloo			
Nitrite in Water by IC	E235.NO2	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
	ALS Environmental -			
	Waterloo			
Nitrate in Water by IC	E235.NO3	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
	ALS Environmental -			
	Waterloo			
Sulfate in Water by IC	E235.SO4	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
	ALS Environmental -			
	Waterloo			
Alkalinity Species by Titration	E290	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
	ALS Environmental -			alkalinity values.
	Waterloo			
			I	

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Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	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)
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been 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 total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Winnipeg	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	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
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 HCI, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	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.

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Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ion Balance using Dissolved Metals	EC101 ALS Environmental - Waterloo	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).
Saturation Index using Laboratory pH (Ca-D)	EC105 ALS Environmental - Waterloo	Water	APHA 2330B	Langelier Index provides an indication of scale formation potential at a given pH and temperature, and is calculated as per APHA 2330B Saturation Index. Positive values indicate oversaturation with respect to CaCO3. Negative values indicate undersaturation of CaCO3. This calculation uses laboratory pH measurements and provides estimates of Langelier Index at temperatures of 4, 15, 20, 25, 66, and 77°C. Ryznar Stability Index is an alternative index used for scale formation and corrosion potential. If available, Field pH measurements are recommended for best accuracy (test code EC104).
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Waterloo	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Dissolved Silicon as Silica (Calculation)	EC421.SiO2 ALS Environmental - Waterloo	Water	N/A	Dissolved Silicon (as SiO2) is a calculated parameter. Dissolved Silicon (as SiO2 mg/L) = 2.139 x Dissolved Silicon (mg/L).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
	ALS Environmental -			
	Waterloo			
Preparation for Total Organic Carbon by	EP355	Water		Preparation for Total Organic Carbon by Combustion
Combustion				
	ALS Environmental -			
	Waterloo			
Dissolved Metals Water Filtration	EP421	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
	ALS Environmental -			
	Waterloo			
Dissolved Mercury Water Filtration	EP509	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCI.
	ALS Environmental -			
	Waterloo			

ALS Canada Ltd.



QUALITY CONTROL REPORT Work Order Page : 1 of 14 HA2402049 Amendment :2 Client : Englobe Corp. Laboratory : ALS Environmental - Halifax Contact : Nathalie Sahakyan Account Manager : Emily Smith Address :97 Troop Avenue Address : 13-100 Wright Ave Dartmouth NS Canada B3B 2A7 Dartmouth, Nova Scotia Canada B3B 1L2 Telephone Telephone :----:+1 902 707 4888 Date Samples Received Project :2408035.000 :19-Sep-2024 12:05 PO Date Analysis Commenced :20-Sep-2024 · ____ C-O-C number Issue Date 09-Oct-2024 12:35 :----Sampler · ____ Site Quote number : Meadowview Landfill No. of samples received :14 No. of samples analysed : 14

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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	
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Greg Pokocky	Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario	
Jon Fisher	Production Manager, Environmental	Halifax Inorganics, Dartmouth, Nova Scotia	
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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology 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

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report							
aboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier	
Physical Tests (QC	C Lot: 1662588)											
HA2402049-006	MW4-A	Solids, total dissolved [TDS]		E162	20	mg/L	589	586	0.596%	20%		
Physical Tests (QC	C Lot: 1664161)											
HA2402049-002	MW28-B	рН		E108	0.10	pH units	8.15	8.15	0.00%	4%		
Physical Tests (QC	C Lot: 1664162)											
HA2402049-002	MW28-B	Conductivity		E100	1.0	µS/cm	187	188	0.641%	10%		
Physical Tests (QC	C Lot: 1664163)											
HA2402049-002	MW28-B	Alkalinity, total (as CaCO3)		E290	1.0	mg/L	70.5	70.8	0.425%	20%		
Physical Tests (QC	C Lot: 1664811)											
HA2402049-001	MW27-B	Turbidity		E121	0.10	NTU	378	377	0.265%	15%		
Physical Tests (QC	C Lot: 1665483)											
HA2402049-014	TH1	Turbidity		E121	0.10	NTU	864	862	0.232%	15%		
Physical Tests (QC	C Lot: 1668745)											
HA2402049-001	MW27-B	Solids, total dissolved [TDS]		E162	13	mg/L	122	128	6	Diff <2x LOR		
Physical Tests (QC	C Lot: 1671962)						1					
HA2402049-007	MW22-A	Colour, apparent		E330	20.0	CU	1220	1240	1.11%	20%		
Physical Tests (QC	C Lot: 1677011)											
HA2402049-001	MW27-B	Colour, apparent		E330	20.0	CU	1200	1230	2.41%	20%		
Anions and Nutrier	nts (QC Lot: 1664156)											
HA2402049-001	MW27-B	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.202	0.200	0.625%	20%		
Anions and Nutrier	nts (QC Lot: 1664157)						<u> </u>					
HA2402049-001	MW27-B	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.167	0.168	0.0010	Diff <2x LOR		
Anions and Nutrier	nts (QC Lot: 1664158)											
HA2402049-001	MW27-B	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR		
Anions and Nutrier	nts (QC Lot: 1664159)											
HA2402049-001	MW27-B	Chloride	16887-00-6	E235.Cl	0.50	mg/L	3.36	3.35	0.002	Diff <2x LOR		
Anions and Nutrier	nts (QC Lot: 1664160)											
HA2402049-001	MW27-B	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1.30	1.29	0.01	Diff <2x LOR		
Anions and Nutrier	nts (QC Lot: 1664164)											
	MW27-B	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0067	0.0060	0.0007	Diff <2x LOR		

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Bub-Matrix: Water				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original	Duplicate	RPD(%) or	Duplicate	Qualifier
Anions and Nutrien	ts (QC Lot: 1666839) - c	ontinued					Result	Result	Difference	Limits	
HA2402049-001	MW27-B	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0088	0.0077	0.0011	Diff <2x LOR	
Anions and Nutrien	ts (QC Lot: 1667333)										
HA2402049-001	MW27-B	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	9.31	10.7	14.2%	20%	
Anions and Nutrien	ts (QC Lot: 1669085)										
HA2402049-003	MW29-B	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0068	0.0067	0.0001	Diff <2x LOR	
Anions and Nutrien	ts (QC Lot: 1669113)										
HA2402049-012	MW23-C	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	
Organic / Inorganic	Carbon (QC Lot: 166684	10)									
HA2402050-001	Anonymous	Carbon, total organic [TOC]		E355-L	0.50	mg/L	3.09	2.90	0.19	Diff <2x LOR	
Organic / Inorganic	Carbon (QC Lot: 166908	36)									
HA2402049-002	MW28-B	Carbon, total organic [TOC]		E355-L	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	
Organic / Inorganic	Carbon (QC Lot: 166911	4)									
HA2402049-011	MW23-B	Carbon, total organic [TOC]		E355-L	5.00	mg/L	6.31	6.12	0.19	Diff <2x LOR	
Total Metals (QC Lo	ot: 1669182)										
HA2402049-001	MW27-B	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0052 µg/L	<0.0000050	0.0000002	Diff <2x LOR	
Dissolved Metals(C L of: 1666609)										
HA2402049-001	MW27-B	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	9.1 µg/L	0.0099	0.0008	Diff <2x LOR	
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.80 µg/L	0.00082	0.00002	Diff <2x LOR	
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	12.3 µg/L	0.0123	0.438%	20%	
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	1.83 µg/L	0.00190	3.73%	20%	
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	100 µg/L	0.100	0.191%	20%	
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0052 µg/L	<0.0000050	0.0000002	Diff <2x LOR	
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	4840 µg/L	4.76	1.78%	20%	
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.090 µg/L	0.000088	0.000003	Diff <2x LOR	
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	1.15 µg/L	0.00116	0.000002	Diff <2x LOR	
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.71 µg/L	0.00070	0.000006	Diff <2x LOR	
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<10 µg/L	<0.010	0	Diff <2x LOR	
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	30.8 µg/L	0.0301	2.39%	20%	
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	690 µg/L	0.687	0.466%	20%	
						•					

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Sub-Matrix: Water				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals(Dissolved Metals (QC Lot: 1666609) - continued										
HA2402049-001	MW27-B	Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.993 µg/L	0.00102	2.30%	20%	
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<50 µg/L	<0.050	0	Diff <2x LOR	
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	4280 µg/L	4.10	4.41%	20%	
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	2.68 µg/L	0.00270	0.895%	20%	
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.059 µg/L	0.000066	0.000007	Diff <2x LOR	
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	4800 µg/L	4.78	0.443%	20%	
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.010 µg/L	<0.000010	0	Diff <2x LOR	
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	29500 µg/L	29.9	1.27%	20%	
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	65.7 μg/L	0.0663	0.933%	20%	
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<500 µg/L	<0.50	0	Diff <2x LOR	
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.010 µg/L	<0.000010	0	Diff <2x LOR	
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.30 µg/L	<0.00030	0	Diff <2x LOR	
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	14.8 µg/L	0.0150	1.67%	20%	
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	3.03 µg/L	0.00308	1.52%	20%	
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	4.52 µg/L	0.00459	0.00007	Diff <2x LOR	
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	1.6 µg/L	0.0018	0.0001	Diff <2x LOR	
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	
Dissolved Metals(
HA2402049-001	MW27-B	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0050 µg/L	<0.000050	0	Diff <2x LOR	



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

hypelal Tasts (QCL0: 166258) E82 10 mgL <10	Sub-Matrix: Water					
Solids, bald disolved [T05] E102 10 mgL <10	Analyte	CAS Number Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1664162) 1 jslem 1.1	Physical Tests (QCLot: 1662588)					
Conductivity E100 1 μS/cm 1.1	Solids, total dissolved [TDS]	E162	10	mg/L	<10	
Number of the set (OCL of: 1664163) Image of the set (OCL of: 1664163) Abase of the set (OCL of: 1664163) Image of the set (OCL of: 166481) Turbedity Image of the set (OCL of: 1666483) Image of the set (OCL of: 1666483) Turbedity Image of the set (OCL of: 1666483) Image of the set (OCL of: 1667485) Turbedity Image of the set (OCL of: 1667485) Image of the set (OCL of: 1667485) Typsical Tests (OCL of: 1667486) Image of the set (OCL of: 1667486) Typsical Tests (OCL of: 1667486) Image of the set (OCL of: 1667486) Typsical Tests (OCL of: 1667486) Image of the set (OCL of: 1667486) Test (OCL of: 1667486) Image of the set (OCL of: 1667486) Test (OCL of: 1667486) Image of the set (OCL of: 1667486) Test (OCL of: 1667486) Image of the set (OCL of: 1664186) Test (OCL of: 1664186) Image of the set (OCL of the set (OCL of: 1664186) Test (OCL of: 1664186) Image of the set (OCL of: 1664186) Test (OCL of: 1664186) Image of the set (OCL of: 1664186) Test (OCL of: 1664186) Image of the set (OCL of the set (OCL of: 1664186) Test (OCL of: 1664186) Image of the set (OCL of the set (O	Physical Tests (QCLot: 1664162)					
Alkadinity, total (as CaCO3) E290 1 mgl. 41.0	Conductivity	E100	1	µS/cm	1.1	
hysical Tests (QCLot: 1664811) EI21 0.1 NTU <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0	hysical Tests (QCLot: 1664163)					
Turbelity E121 0.1 NTU <0.00 hysical Tests (QCLot: 1665483) E121 0.1 NTU <0.01	Alkalinity, total (as CaCO3)	E290	1	mg/L	<1.0	
Advance Control Control Control Control Turbidity É121 0.1 NTU <0.10	Physical Tests (QCLot: 1664811)					
Turbidity	Turbidity	E121	0.1	NTU	<0.10	
hysical Tests (QCLot: 1668745) Image: Control of the second	hysical Tests (QCLot: 1665483)					
Solids, total dissolved [TDS] E182 10 mg/L <10 mg/L <10	Turbidity	E121	0.1	NTU	<0.10	
hysical Tosts (QCLot: 1671962) Colour, apparent E330 2 CU <2.0	hysical Tests (QCLot: 1668745)					
Colour, apparent E330 2 CU <2.0 Physical Tests (QCLot: 1677011) E330 2 CU <2.0	Solids, total dissolved [TDS]	E162	10	mg/L	<10	
Physical Tests (QCLot: 1677011) Image: Constraint of the state of the	Physical Tests (QCLot: 1671962)					
Colour, apparent E330 2 CU <2.0 Ninons and Nutrients (QCLot: 1664156) Ifeedatase E235.F 0.02 mg/L <0.020	Colour, apparent	E330	2	CU	<2.0	
Norman Norma Norma Norma <td>Physical Tests (QCLot: 1677011)</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Physical Tests (QCLot: 1677011)					
Fluoride 16984-48-8 E235. F 0.02 mg/L <0.020 Nirane (as N) 14797-55-8 E235.NO3 0.02 mg/L <0.020	Colour, apparent	E330	2	CU	<2.0	
Number of the second	nions and Nutrients (QCLot: 1664156)			1		
Nitrate (as N) 14797-55-8 E235.NO3 0.02 mg/L <0.020 Nitrate (as N) 14797-65-0 E235.NO2 0.01 mg/L <0.010 Nitrite (as N) 14797-65-0 E235.NO2 0.01 mg/L <0.010 Nitrite (as N) 14797-65-0 E235.NO2 0.01 mg/L <0.010 Nitrite (as N) 14797-65-0 E235.NO2 0.05 mg/L <0.010 Nitrite (as N) 14797-65-0 E235.NO2 0.55 mg/L <0.050 Nitrite (as N) 14887-00-6 E235.NO2 0.33 mg/L <0.030 Sulfate (as SO4) 14808-79-8 E235.SO4 0.33 mg/L <0.300 Sulfate (as SO4) 14808-79-8 E35.SO4 0.301 mg/L <0.030 Noinons and Nutrients (QCLot: 1664164) Phosphate, ortho-, dissolved (as P) 14265-44-2 E378-U 0.001 mg/L <0.0050 Ammonia	Fluoride	16984-48-8 E235.F	0.02	mg/L	<0.020	
Nitrie (as N) 14797-65-0 E35.NO2 0.01 mg/L <0.010 Anions and Nutrients (QCLot: 1664159) 0.01 Mg/L <0.00	nions and Nutrients (QCLot: 1664157)			1		
Nitrite (as N) 14797-65-0 E235.NO2 0.01 mg/L <0.010 Anions and Nutrients (QCLot: 1664159) 16887-00-6 E235.Cl 0.5 mg/L <0.50	Nitrate (as N)	14797-55-8 E235.NO3	0.02	mg/L	<0.020	
Initiation of the second of the sec	nions and Nutrients (QCLot: 1664158)			1		
Chloride 16887-00-6 E33.Cl 0.5 mg/L <0.50 Inions and Nutrients (QCLot: 1664160) 5 0.3 mg/L <0.30	Nitrite (as N)	14797-65-0 E235.NO2	0.01	mg/L	<0.010	
Anions and Nutrients (QCLot: 1664160) E335.SO4 0.3 mg/L <0.30 Sulfate (as SO4) 14808-79-8 E335.SO4 0.3 Mg/L <0.30	nions and Nutrients (QCLot: 1664159)			1		
Sulfate (as SO4) 14808-79-8 E335.SO4 0.3 mg/L <0.30 Inions and Nutrients (QCLot: 1664164)	Chloride	16887-00-6 E235.CI	0.5	mg/L	<0.50	
Initial Construction Initial C	nions and Nutrients (QCLot: 1664160)			1		
Phosphate, ortho-, dissolved (as P) 14265-44-2 E378-U 0.001 mg/L <0.0010 Inions and Nutrients (QCLot: 1666839) 0.005 mg/L <0.0050 Ammonia, total (as N) 7664-41-7 E298 0.005 mg/L <0.0050 Inions and Nutrients (QCLot: 1667333) 501 7631-86-9 E392 0.5 mg/L <0.50	Sulfate (as SO4)	14808-79-8 E235.SO4	0.3	mg/L	<0.30	
Inions and Nutrients (QCLot: 1666839) Control of the second	nions and Nutrients (QCLot: 1664164)			1		
Ammonia, total (as N) 7664-41-7 E298 0.005 mg/L <0.0050 Inions and Nutrients (QCLot: 1667333) Silicate (as SiO2) 7631-86-9 E392 0.5 mg/L <0.50		14265-44-2 E378-U	0.001	mg/L	<0.0010	
Ammonia, total (as N) 7664-41-7 E298 0.005 mg/L <0.0050 nions and Nutrients (QCLot: 1667333) Silicate (as SiO2) 7631-86-9 E392 0.5 mg/L <0.50	nions and Nutrients (QCLot: 1666839)				1	
Silicate (as SiO2) 7631-86-9 E392 0.5 mg/L <0.50		7664-41-7 E298	0.005	mg/L	<0.0050	
Silicate (as SiO2) 7631-86-9 E392 0.5 mg/L <0.50	nions and Nutrients (QCLot: 1667333)				1 1	
nions and Nutrients (QCLot: 1669085)		7631-86-9 E392	0.5	mg/L	<0.50	
	nions and Nutrients (QCLot: 1669085)				1	

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Sub-Matrix: Water

Anions and Nutrients (QCLot: 1669085) - continued Ammonia, total (as N) 7664-41-7 E298 Anions and Nutrients (QCLot: 1669113) E298 Ammonia, total (as N) 7664-41-7 E298 Organic / Inorganic Carbon (QCLot: 1666840) E355-L Carbon, total organic (TOC) E355-L Organic / Inorganic Carbon (QCLot: 1669086) E355-L Carbon, total organic (TOC) E355-L Organic / Inorganic Carbon (QCLot: 1669114) E355-L Carbon, total organic (TOC) E355-L Organic / Inorganic Carbon (QCLot: 1669114) E355-L Carbon, total organic (TOC) E355-L Total Metals (QCLot: 1669182) E358 Mercury, total 7439-97-6 E508 Dissolved Metals (QCLot: 1666609) E421 E421 Aluminum, dissolved 7440-38-0 E421 Arsenic, dissolved 7440-38-3 E421 Barium, dissolved 7440-48-9 E421 Bismuth, dissolved 7440-48-9 E421 Cadmium, dis	0.005 0.005 0.5 0.5 0.5 0.5 0.000005 0.000005	mg/L mg/L mg/L mg/L mg/L mg/L	<0.0050 <0.0050 <0.50 <0.50 <0.50 <0.0000050 <0.0010	
Anions and Nutrients (QCLot: 1669113) Armonia, total (as N) 7664-41-7 E298 Organic / Inorganic Carbon (QCLot: 1666840) E355-L E355-L Organic / Inorganic Carbon (QCLot: 1669086) E355-L E355-L Organic / Inorganic Carbon (QCLot: 1669086) E355-L E355-L Organic / Inorganic Carbon (QCLot: 1669114) E355-L E355-L Carbon, total organic [TOC] E355-L Total Metals (QCLot: 1669182) E355-L Mercury, total 7439-97-6 E508 Dissolved Metals (QCLot: 1666609) Aluminum, dissolved 7440-36-0 Aluminum, dissolved 7440-38-2 E421 Arsenic, dissolved 7440-38-3 E421 Barium, dissolved 7440-49-3 E421 Barium, dissolved 7440-49-9 E421 Boron, dissolved 7440-49-9 E421 Boron, dissolved 7440-49-9 E421 Cadmium, dissolved 7440-49-9 E421 Cadmium, dissolved 7440-49-9 E421 Cadmium, dissolved 7440-49-9 <td>0.005 0.5 0.5 0.5 0.000005 0.000005</td> <td>mg/L mg/L mg/L mg/L mg/L</td> <td><0.0050 <0.50 <0.50 <0.50 <0.0000050</td> <td></td>	0.005 0.5 0.5 0.5 0.000005 0.000005	mg/L mg/L mg/L mg/L mg/L	<0.0050 <0.50 <0.50 <0.50 <0.0000050	
Ammonia, total (as N) 7664-41-7 E298 Organic / Inorganic Carbon (QCLot: 1666840) E355-L Organic / Inorganic Carbon (QCLot: 1669086) E355-L Carbon, total organic [TOC] E355-L E355-L Organic / Inorganic Carbon (QCLot: 1669114) E355-L Carbon, total organic [TOC] E355-L Total Metals (QCLot: 1669114) Carbon, total organic [TOC] Total Metals (QCLot: 1669182) Mercury, total Mercury, total 7439-97-6 Dissolved Metals (QCLot: 1666609) E421 Antimony, dissolved 7440-38-2 Antimony, dissolved 7440-38-3 Barium, dissolved 7440-49-3 Beryllium, dissolved 7440-69-9 Boron, dissolved 7440-42-8 Cadmium, dissolved 7440-43-9 Cadmium, dissolved 7440-42-8 Calcium, dissolved	0.5 0.5 0.5 0.000005 0.000005	mg/L mg/L mg/L mg/L	<0.50 <0.50 <0.50 <0.000050	
Organic / Inorganic Carbon (QCLot: 1666840) Carbon, total organic [TOC] E355-L Organic / Inorganic Carbon (QCLot: 1669086) Carbon, total organic [TOC] E355-L Organic / Inorganic Carbon (QCLot: 1669184) Carbon, total organic [TOC] E355-L Organic / Inorganic Carbon (QCLot: 1669114) Carbon, total organic [TOC] E355-L Total Metals (QCLot: 1669182) Mercury, total 7439-97-6 E508 Dissolved Metals (QCLot: 1666609) Aluminum, dissolved 7440-36-0 E421 Arsenic, dissolved 7440-38-2 Barium, dissolved 7440-43-2 Beryllium, dissolved 7440-69-9 E421 E421 Boron, dissolved 7440-69-9 E421 Cadmium, dissolved Calcium, dissolved 7440-70-2 Calcium, dissolved 7440-70-2 E421 Cadmium, dissolved Calcium, dissolved 7440-42-2 E421 Calcium, dissolved Calcium, dissolved	0.5 0.5 0.5 0.000005 0.000005	mg/L mg/L mg/L mg/L	<0.50 <0.50 <0.50 <0.000050	
Carbon, total organic [TOC]E355-LOrganic / Inorganic Carbon (QCLot: 1669086)Carbon, total organic [TOC]E355-LOrganic / Inorganic Carbon (QCLot: 1669114)Carbon, total organic [TOC]E355-LTotal Metals (QCLot: 1669182)Mercury, total7439-97-6E508Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7440-36-0E421Antimony, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-42-8E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-43-9E421Cardmium, dissolved7440-47-2E421Cardmium, dissolved7440-47-2E421Chromium, dissolved7440-47-3E421	0.5 0.5 0.000005 0.001 0.0001	mg/L mg/L mg/L mg/L	<0.50	
Organic / Inorganic Carbon (QCLot: 1669086) Carbon, total organic [TOC] E355-L Organic / Inorganic Carbon (QCLot: 1669114) Carbon, total organic [TOC] E355-L Total Metals (QCLot: 1669182) Mercury, total 7439-97-6 E508 Dissolved Metals (QCLot: 1666609) Aluminum, dissolved 7429-90-5 E421 Antimony, dissolved 7440-36-0 E421 Barium, dissolved 7440-38-2 Beryllium, dissolved 7440-43-3 Beryllium, dissolved 7440-41-7 Bismuth, dissolved 7440-43-9 Gradmum, dissolved 7440-43-9 Ed21 Ed21 Boron, dissolved 7440-43-9 Calcium, dissolved 7440-47-2 E421 Calcium, dissolved <t< td=""><td>0.5 0.5 0.000005 0.001 0.0001</td><td>mg/L mg/L mg/L mg/L</td><td><0.50</td><td></td></t<>	0.5 0.5 0.000005 0.001 0.0001	mg/L mg/L mg/L mg/L	<0.50	
Carbon, total organic [TOC]E355-LOrganic / Inorganic Carbon (QCLot: 1669114)Carbon, total organic [TOC]E355-LTotal Metals (QCLot: 1669182)Mercury, total7439-97-6E508Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7440-36-0E421Artimony, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-41-7E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-46-2E421Calcium, dissolved7440-47-3E421Chromium, dissolved7440-47-3E421	0.5 0.000005 0.001 0.0001	mg/L mg/L	<0.50	
Organic / Inorganic Carbon (QCLot: 1669114)Carbon, total organic [TOC]E355-LTotal Metals (QCLot: 1669182)Mercury, total7439-97-6E508Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7440-36-0E421Antimony, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Barium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-46-2E421Cadmium, dissolved7440-46-2E421Casium, dissolved7440-46-2E421Casium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.5 0.000005 0.001 0.0001	mg/L mg/L	<0.50	
Carbon, total organic [TOC]E355-LTotal Metals (QCLot: 1669182)Mercury, total7439-97-6E508Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7429-90-5E421Antimony, dissolved7440-36-0E421Arsenic, dissolved7440-38-2E421Barium, dissolved7440-40-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-42-8E421Casium, dissolved7440-43-9E421Calcium, dissolved7440-46-2E421Chromium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.000005	mg/L mg/L	<0.0000050	
Total Metals (QCLot: 1669182)Mercury, total7439-97-6E508Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7429-90-5E421Antimony, dissolved7440-36-0E421Arsenic, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-70-2E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.000005	mg/L mg/L	<0.0000050	
Mercury, total7439-97-6E508Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7429-90-5E421Antimony, dissolved7440-36-0E421Arsenic, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-42-8E421Cadmium, dissolved7440-42-8E421Calcium, dissolved7440-42-8E421Calcium, dissolved7440-46-2E421Chromium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.001	mg/L		
Dissolved Metals (QCLot: 1666609)Aluminum, dissolved7429-90-5Autimony, dissolved7440-36-0E421Farsenic, dissolvedArsenic, dissolved7440-38-2Barium, dissolved7440-39-3Beryllium, dissolved7440-41-7Bismuth, dissolved7440-69-9Boron, dissolved7440-42-8Cadmium, dissolved7440-43-9EdziFactorCadmium, dissolved7440-43-9Calcium, dissolved7440-43-9Calcium, dissolved7440-46-2Cesium, dissolved7440-46-2Chromium, dissolved7440-47-3EdziFactorChromium, dissolved7440-47-3Chromium, dissolved7440-47-3Factor </td <td>0.001</td> <td>mg/L</td> <td></td> <td></td>	0.001	mg/L		
Aluminum, dissolved7429-90-5E421Antimony, dissolved7440-36-0E421Arsenic, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.0001	-	<0.0010	
Antimony, dissolved7440-36-0E421Arsenic, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-43-9E421Calcium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.0001	-	<0.0010	
Arsenic, dissolved7440-38-2E421Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-43-9E421Calcium, dissolved7440-43-9E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-46-2E421			50.0010	
Barium, dissolved7440-39-3E421Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.0001	mg/L	<0.00010	
Beryllium, dissolved7440-41-7E421Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421		mg/L	<0.00010	
Bismuth, dissolved7440-69-9E421Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.0001	mg/L	<0.00010	
Boron, dissolved7440-42-8E421Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.00002	mg/L	<0.000020	
Cadmium, dissolved7440-43-9E421Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.00005	mg/L	<0.000050	
Calcium, dissolved7440-70-2E421Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.01	mg/L	<0.010	
Cesium, dissolved7440-46-2E421Chromium, dissolved7440-47-3E421	0.000005	mg/L	<0.000050	
Chromium, dissolved 7440-47-3 E421	0.05	mg/L	<0.050	
	0.00001	mg/L	<0.000010	
Cobalt dissolved 7440-48-4 E421	0.0005	mg/L	<0.00050	
	0.0001	mg/L	<0.00010	
Copper, dissolved 7440-50-8 E421	0.0002	mg/L	<0.00020	
Iron, dissolved 7439-89-6 E421	0.01	mg/L	<0.010	
Lead, dissolved 7439-92-1 E421	0.00005	mg/L	<0.000050	
Lithium, dissolved 7439-93-2 E421	0.001	mg/L	<0.0010	
Magnesium, dissolved 7439-95-4 E421	0.005	mg/L	<0.0050	
Manganese, dissolved 7439-96-5 E421	0.0001	mg/L	<0.00010	
Molybdenum, dissolved 7439-98-7 E421	0.00005	mg/L	<0.000050	
Nickel, dissolved 7440-02-0 E421	0.0005	mg/L	<0.00050	
Phosphorus, dissolved 7723-14-0 E421	0.05	mg/L	<0.050	
Potassium, dissolved 7440-09-7 E421	0.05	mg/L	<0.050	
Rubidium, dissolved 7440-17-7 E421	0.05	mg/L	<0.00020	

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Project	:	2408035.000



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1666609) -	continued					
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	
Dissolved Metals (QCLot: 1666954)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.000050	



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%) Recover		Limits (%)	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1662588)									
Solids, total dissolved [TDS]	E	5162	10	mg/L	1000 mg/L	90.4	85.0	115	
Physical Tests (QCLot: 1664161)	E	-100		n L unite	7 pl lupito	101	08.0	102	
	[100		pH units	7 pH units	101	98.0	102	
Physical Tests (QCLot: 1664162) Conductivity	E	E100	1	µS/cm	1410 µS/cm	100	90.0	110	
Physical Tests (QCLot: 1664163)									
Alkalinity, total (as CaCO3)	E	290	1	mg/L	150 mg/L	98.4	85.0	115	
Physical Tests (QCLot: 1664811)	I.	121	0.1	NTU	200 NTU	95.0	95.0	115	
Turbidity	E		U.1	UTV	200 NTO	90.U	85.0	611	
Physical Tests (QCLot: 1665483) Turbidity	E	121	0.1	NTU	200 NTU	96.5	85.0	115	
Physical Tests (QCLot: 1668745)									
Solids, total dissolved [TDS]	E	5162	10	mg/L	1000 mg/L	94.8	85.0	115	
Physical Tests (QCLot: 1671962)							'		
Colour, apparent	E	E330	2	CU	25 CU	98.3	70.0	130	
Physical Tests (QCLot: 1677011)									
Colour, apparent	E	2330	2	CU	25 CU	99.7	70.0	130	
Anions and Nutrients (QCLot: 1664156)							I		
Fluoride	16984-48-8 E	E235.F	0.02	mg/L	1 mg/L	96.5	90.0	110	
Anions and Nutrients (QCLot: 1664157)									
Nitrate (as N)	14797-55-8 E	E235.NO3	0.02	mg/L	2.5 mg/L	99.4	90.0	110	
Anions and Nutrients (QCLot: 1664158)	14797-65-0 E		0.01	m a /l	0.5 mg/l	101	90.0	110	
Nitrite (as N)	14797-65-0 E	235.NO2	0.01	mg/L	0.5 mg/L	101	90.0	110	
Anions and Nutrients (QCLot: 1664159) Chloride	16887-00-6 E	E235.CI	0.5	mg/L	100 mg/L	100	90.0	110	
Anions and Nutrients (QCLot: 1664160)	I			-	-				
Sulfate (as SO4)	14808-79-8 E	235.804	0.3	mg/L	100 mg/L	99.2	90.0	110	
Anions and Nutrients (QCLot: 1664164)									
Phosphate, ortho-, dissolved (as P)	14265-44-2 E	=378-U	0.001	mg/L	0.05 mg/L	99.8	80.0	120	
Anions and Nutrients (QCLot: 1666839)	7664-41-7 E	-208	0.005	mc/l	0.2 mg/l	101	85.0	115	
Ammonia, total (as N)	/004-41-/E	-230	0.005	mg/L	0.2 mg/L	101	00.0	611	
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ub-Matrix: Water Analyte Anions and Nutrients (QCLot: 1667333)	040 Mumber									
	040 Northan					Spike Recovery (%) Recovery Limits (%)				
nions and Nutrients (QCLot: 1667333)	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifie	
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115		
Anions and Nutrients (QCLot: 1669085)										
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.7	85.0	115		
Anions and Nutrients (QCLot: 1669113)										
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115		
Organic / Inorganic Carbon (QCLot: 1666840)										
Carbon, total organic [TOC]		E355-L	0.5	mg/L	8.57 mg/L	103	80.0	120		
Organic / Inorganic Carbon (QCLot: 1669086)										
Carbon, total organic [TOC]		E355-L	0.5	mg/L	8.57 mg/L	103	80.0	120		
Organic / Inorganic Carbon (QCLot: 1669114)										
Carbon, total organic [TOC]		E355-L	0.5	mg/L	8.57 mg/L	103	80.0	120		
Total Metals (QCLot: 1669182)										
/lercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	95.9	80.0	120		
Dissolved Metals (QCLot: 1666609)	7400.00.5	E 101	0.001	4	0.4 //	00.0	00.0	400		
Aluminum, dissolved	7429-90-5		0.001	mg/L	0.1 mg/L	98.2	80.0	120		
Antimony, dissolved	7440-36-0		0.0001	mg/L	0.05 mg/L	99.3	80.0	120		
Arsenic, dissolved	7440-38-2		0.0001	mg/L	0.05 mg/L	105	80.0	120		
Barium, dissolved	7440-39-3		0.0001 0.00002	mg/L	0.012 mg/L	95.7 96.1	80.0 80.0	120 120		
Beryllium, dissolved	7440-41-7			mg/L	0.005 mg/L					
Bismuth, dissolved	7440-69-9 7440-42-8		0.00005 0.01	mg/L	0.05 mg/L	102 96.2	80.0 80.0	120 120		
Boron, dissolved Cadmium, dissolved	7440-42-8		0.000005	mg/L mg/L	0.05 mg/L 0.005 mg/L	96.2 96.9	80.0 80.0	120		
Calcium, dissolved	7440-43-9		0.000003	mg/L	2.5 mg/L	90.9 96.7	80.0	120		
zaicium, dissolved Cesium, dissolved	7440-70-2		0.0001	mg/L	0.002 mg/L	96.7 99.5	80.0	120		
Chromium, dissolved	7440-46-2		0.0005	mg/L	0.002 mg/L	99.5 100	80.0	120		
Cobalt, dissolved	7440-48-4		0.0001	mg/L	0.012 mg/L	98.9	80.0	120		
Copper, dissolved	7440-50-8		0.0002	mg/L	0.012 mg/L	90.9 99.6	80.0	120		
ron, dissolved	7439-89-6		0.002	mg/L	0.05 mg/L	98.5	80.0	120		
.ead, dissolved	7439-92-1		0.00005	mg/L	0.025 mg/L	102	80.0	120		
.ithium, dissolved	7439-93-2		0.001	mg/L	0.012 mg/L	88.5	80.0	120		
Agnesium, dissolved	7439-95-4		0.005	mg/L	2.5 mg/L	113	80.0	120		
/anganese, dissolved	7439-96-5		0.0001	mg/L	0.012 mg/L	100	80.0	120		
Aolybdenum, dissolved	7439-98-7		0.00005	mg/L	0.012 mg/L	96.7	80.0	120		

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Sub-Matrix: Water				Laboratory Control Sample (LCS) Report					
				Spike	Recovery (%)	Recovery	Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1666609) - co	ntinued								
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	99.7	80.0	120	
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	106	80.0	120	
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	97.6	80.0	120	
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	104	80.0	120	
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	102	80.0	120	
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	101	60.0	140	
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	88.1	80.0	120	
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	105	80.0	120	
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.012 mg/L	98.7	80.0	120	
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	95.4	80.0	120	
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	94.2	80.0	120	
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	103	80.0	120	
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	98.6	80.0	120	
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	98.7	80.0	120	
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.012 mg/L	97.9	80.0	120	
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	100	80.0	120	
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0 mg/L	102	80.0	120	
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	100	80.0	120	
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	98.2	80.0	120	
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	94.7	80.0	120	
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	104	80.0	120	



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water				Matrix Spike (MS) Report						
					Spi	ke	Recovery (%)		Limits (%)	
Laboratory sample l	D Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifie
Anions and Nutr	ients (QCLot: 1664156)						1 1			
HA2402049-001	MW27-B	Fluoride	16984-48-8	E235.F	0.931 mg/L	1 mg/L	93.1	75.0	125	
Anions and Nutr	ients (QCLot: 1664157)					-	<u> </u>			
HA2402049-001	MW27-B	Nitrate (as N)	14797-55-8	E235.NO3	2.48 mg/L	2.5 mg/L	99.4	75.0	125	
Anions and Nutr	ients (QCLot: 1664158)									
HA2402049-001	MW27-B	Nitrite (as N)	14797-65-0	E235.NO2	0.501 mg/L	0.5 mg/L	100	75.0	125	
Anions and Nutr	ients (QCLot: 1664159)									
HA2402049-001	MW27-B	Chloride	16887-00-6	E235.CI	99.8 mg/L	100 mg/L	99.8	75.0	125	
Anions and Nutr	ients (QCLot: 1664160)									
HA2402049-001	MW27-B	Sulfate (as SO4)	14808-79-8	E235.SO4	99.3 mg/L	100 mg/L	99.3	75.0	125	
Anions and <u>Nutr</u>	ients (QCLot: 1664164)									
HA2402049-001	MW27-B	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0194 mg/L	0.02 mg/L	99.2	70.0	130	
Anions and Nutr	ients (QCLot: 1666839)									
HA2402049-001	MW27-B	Ammonia, total (as N)	7664-41-7	E298	0.0998 mg/L	0.1 mg/L	99.8	75.0	125	
Anions and Nutr	ients (QCLot: 1667333)									
HA2402049-002	MW28-B	Silicate (as SiO2)	7631-86-9	E392	8.55 mg/L	10 mg/L	85.5	75.0	125	
Anions and Nutr	ients (QCLot: 1669085)									
HA2402049-003	MW29-B	Ammonia, total (as N)	7664-41-7	E298	0.0992 mg/L	0.1 mg/L	99.2	75.0	125	
Anions and Nutr	ients (QCLot: 1669113)									
HA2402049-012	MW23-C	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	
Organic / Inorga	nic Carbon (QCLot: 166	66840)								
HA2402050-001	Anonymous	Carbon, total organic [TOC]		E355-L	5.37 mg/L	5 mg/L	107	70.0	130	
Organic / Inorga	nic Carbon (QCLot: 166	59086)					· · ·			
HA2402049-002	MW28-B	Carbon, total organic [TOC]		E355-L	25.5 mg/L	25 mg/L	102	70.0	130	
Organic / Inorga	nic Carbon (QCLot: 166	59114)								
HA2402049-011	MW23-B	Carbon, total organic [TOC]		E355-L	ND mg/L		ND	70.0	130	
Total Metals (Q	CLot: 1669182)									
HA2402049-002	MW28-B	Mercury, total	7439-97-6	E508	0.0000921 mg/L	0 mg/L	92.1	70.0	130	
Dissolved Metals	s (QCLot: 1666609)									
HA2402049-002	MW28-B	Aluminum, dissolved	7429-90-5	E421	0.0970 mg/L	0.1 mg/L	97.0	70.0	130	
		Antimony, dissolved	7440-36-0	E421	0.0513 mg/L	0.05 mg/L	102	70.0	130	
		Arsenic, dissolved	7440-38-2	E421	0.0558 mg/L	0.05 mg/L	112	70.0	130	

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Qualifier

High

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Matrix Spike (MS) Report Sub-Matrix: Water Recovery (%) Recovery Limits (%) Spike Laboratory sample ID Client sample ID Analyte **CAS Number** Method Concentration Target MS Low Dissolved Metals (QCLot: 1666609) - continued HA2402049-002 MW28-B 7440-39-3 E421 0.0122 mg/L 0.012 mg/L Barium, dissolved 97.7 70.0 E421 Bervllium, dissolved 7440-41-7 0.00490 mg/L 0.005 mg/L 98.0 70.0 Bismuth, dissolved 7440-69-9 E421 0.0483 ma/L 0.05 ma/L 96.6 70.0 Boron, dissolved 7440-42-8 E421 0.046 mg/L 0.05 mg/L 92.0 70.0 Cadmium, dissolved E421 7440-43-9 0.00520 mg/L 0.005 mg/L 104 70.0 Calcium, dissolved 7440-70-2 E421 ND mg/L ND 70.0 ----Cesium, dissolved 7440-46-2 E421 0.00256 mg/L 0.002 mg/L 102 70.0 Chromium, dissolved 7440-47-3 E421 0.0126 ma/L 0.012 ma/L 101 70.0 Cobalt, dissolved 7440-48-4 E421 0.0124 ma/L 0.012 mg/L 99.6 70.0 Copper, dissolved 7440-50-8 E421 0.0125 mg/L 0.012 mg/L 70.0 99.7 Iron. dissolved 7439-89-6 E421 0.049 mg/L 0.05 mg/L 70.0 98.1 Lead, dissolved E421 0.0251 mg/L 7439-92-1 0.025 mg/L 100 70.0 Lithium, dissolved 7439-93-2 E421 0.0114 mg/L 0.012 mg/L 91.6 70.0 E421 Magnesium, dissolved 7439-95-4 ND mg/L ND 70.0 -----Manganese, dissolved 7439-96-5 E421 0.0122 mg/L 0.012 mg/L 97.4 70.0 Molybdenum, dissolved 7439-98-7 E421 0.0125 mg/L 0.012 mg/L 99.8 70.0 Nickel, dissolved 7440-02-0 E421 0.0248 ma/L 0.025 mg/L 99.4 70.0 Phosphorus, dissolved 7723-14-0 E421 0.549 mg/L 0.5 mg/L 110 70.0 E421 Potassium, dissolved 7440-09-7 2.62 mg/L 2.5 mg/L 105 70.0 Rubidium dissolved 7440-17-7 E421 0.00528 mg/L 0.005 mg/L 70.0 106 Selenium, dissolved 7782-49-2 E421 0.0576 mg/L 0.05 mg/L 115 70.0 Silicon, dissolved 7440-21-3 E421 ND mg/L ----ND 70.0 Silver, dissolved 7440-22-4 E421 0.00446 mg/L 0.005 mg/L 89.2 70.0 Sodium, dissolved 7440-23-5 E421 ND mg/L 70.0 ND ----Strontium, dissolved 7440-24-6 E421 ND mg/L ND 70.0 ----Sulfur, dissolved 7704-34-9 E421 2.61 mg/L 104 70.0 2.5 ma/L Tellurium, dissolved 13494-80-9 E421 0.00549 mg/L 0.005 mg/L 110 70.0 7440-28-0 Thallium, dissolved E421 0.0510 mg/L 0.05 mg/L 102 70.0 Thorium dissolved 7440-29-1 E421 0.00482 mg/L 0.005 mg/L 70.0 96.4 Tin. dissolved 7440-31-5 E421 0.0252 mg/L 0.025 mg/L 101 70.0 Titanium, dissolved 7440-32-6 E421 0.0121 mg/L 0.012 mg/L 96.9 70.0 Tungsten, dissolved 7440-33-7 E421 0.00498 mg/L 0.005 mg/L 99.6 70.0

Uranium, dissolved 7440-61-1 E421 ND mg/L ND 70.0 130 Vanadium, dissolved 7440-62-2 E421 0.0254 ma/L 0.025 ma/L 102 70.0 130 ----Zinc. dissolved 7440-66-6 E421 0.0261 ma/L 0.025 mg/L 104 70.0 130 ----7440-67-7 E421 0.00488 mg/L Zirconium, dissolved 0.005 mg/L 97.5 70.0 130 Dissolved Metals (QCLot: 1666954) HA2402049-002 MW28-B 7439-97-6 E509 0.0000868 mg/L Mercury, dissolved 0 mg/L 86.8 70.0 130 ----

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CERTIFICATE OF ANALYSIS HA2402050 Work Order Amendment : 1 Client Englobe Corp. : ALS Environmental - Winnipeg Laboratory Nathalie Sahakyan Contact Account Manager : Emily Smith Address 97 Troop Avenue Address : 1329 Niakwa Road East, Unit 12 Dartmouth Nova Scotia Canada B3B 2A7 Winnipeg MB Canada R2J 3T4 Telephone ----Telephone : +1 204 255 9720 Project 2408035.000 : 19-Sep-2024 12:05 Date Samples Received PO ----Date Analysis Commenced 20-Sep-2024 C-O-C number Issue Date 09-Oct-2024 12:34 ----Sampler ----Site : -----Quote number : Meadowview Landfill No. of samples received : 7 : 7 No. of samples analysed

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
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Metals, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Inorganics, Dartmouth, Nova Scotia
Melissa Freeman	Metal Analyst	Metals, Waterloo, Ontario
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Oleksandr Busel		Inorganics, Winnipeg, Manitoba



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.

Unit	Description
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
CU	colour units (1 cu = 1 mg/l pt)
-	no units
%	percent
meg/L	milliequivalents per litre

<: 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 (08/10/2024): This report has been amended following minor LIMS report formatting corrections. All analysis results are as per the previous report. Revised to update metals reporting units.



Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.



Sub-Matrix: Surface Water (Matrix: Water)			Client sa	mple ID	SW24-1	SW24-3	SW19B	SW7	SW7A
		С	lient sampling date	/ time	16-Sep-2024 11:55	16-Sep-2024 09:45	16-Sep-2024 13:20	16-Sep-2024 13:00	16-Sep-2024 12:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-001	HA2402050-002	HA2402050-003	HA2402050-004	HA2402050-005
					Result	Result	Result	Result	Result
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.0	mg/L	73.3	74.7	43.0	77.2	117
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)		E290/WT	1.0	mg/L	60.1	61.2	35.3	63.3	95.9
Colour, apparent		E330/WT	2.0	CU	32.3	36.2	505	68.0	212
Conductivity		E100/WT	1.0	µS/cm	293	302	177	190	255
Hardness (as CaCO3), from total Ca/Mg		EC100A/WT	0.50	mg/L	94.9	96.2	24.9	60.2	81.7
Langelier index (@ 20°C)		EC105A/WT	0.010	-	-0.273	-0.391	-1.76	-0.693	-0.699
Langelier index (@ 4°C)		EC105A/WT	0.010	-	-0.520	-0.642	-2.01	-0.944	-0.951
рН		E108/WT	0.10	pH units	7.83	7.70	7.18	7.55	7.26
pH, saturation (@ 20°C)		EC105A/WT	0.010	pH units	8.10	8.09	8.94	8.24	7.96
pH, saturation (@ 4°C)		EC105A/WT	0.010	pH units	8.35	8.34	9.19	8.49	8.21
Solids, total dissolved [TDS]		E162/HA	10	mg/L	178 DLDS	188 DLDS	117 DLDS	109 DLDS	144 DLDS
Turbidity		E121/WT	0.10	NTU	4.51	4.23	45.1	5.74	25.9
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0371	0.0724	0.264	0.256	1.40
Chloride	16887-00-6	E235.CI/WT	0.50	mg/L	32.4	35.0	31.4	17.0	18.6
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.036	0.037	<0.020	0.022	0.021
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	2.27	2.17	0.051	0.086	0.068
Nitrate + Nitrite (as N)		EC235.N+N/W T	0.0032	mg/L	2.28	2.20	0.0770	0.122	0.0680
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	0.012	0.034	0.026	0.036	<0.010



Sub-Matrix: Surface Water (Matrix: Water)			Client san	nple ID	SW24-1	SW24-3	SW19B	SW7	SW7A
		С	lient sampling date	/ time	16-Sep-2024 11:55	16-Sep-2024 09:45	16-Sep-2024 13:20	16-Sep-2024 13:00	16-Sep-2024 12:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-001	HA2402050-002	HA2402050-003	HA2402050-004	HA2402050-005
					Result	Result	Result	Result	Result
Anions and Nutrients									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	0.0469	0.0318	0.0067	0.0050	<0.0010
Phosphorus, total	7723-14-0	E372-U/WT	2.0	mg/L	109	86.2	73.8	10.4	32.2
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	7.34	7.28	8.33	11.0	12.0
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	22.1	21.4	2.04	2.97	2.44
Organic / Inorganic Carbon									
Carbon, total organic [TOC]		E355-L/WT	0.50	mg/L	3.09	2.99	12.2	3.11	3.52
Ion Balance									
Anion sum		EC101A/WT	0.10	meq/L	2.74	2.82	1.64	1.82	2.50
Cation sum (total)		EC101A/WT	0.10	meq/L	2.75	2.83	2.01	1.90	2.79
Ion balance (cations/anions)		EC101A/WT	0.01	%	100	100	122	104	112
Total Metals									
Aluminum, total	7429-90-5	E420/WT	3.0	mg/L	239	122	88.3	14.1	10.3
Antimony, total	7440-36-0	E420/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic, total	7440-38-2	E420/WT	0.10	mg/L	1.26	1.39	1.25	1.95	7.61
Barium, total	7440-39-3	E420/WT	0.10	mg/L	35.6	38.8	139	159	286
Beryllium, total	7440-41-7	E420/WT	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Bismuth, total	7440-69-9	E420/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Boron, total	7440-42-8	E420/WT	10	mg/L	16	17	<10	<10	29
Cadmium, total	7440-43-9	E420/WT	0.0050	mg/L	0.0075	<0.0050	0.0071	<0.0050	<0.0050
Calcium, total	7440-70-2	E420/WT	100	mg/L	31700	32100	7320	20200	26600
Cesium, total	7440-46-2	E420/WT	0.010	mg/L	0.074	0.038	0.018	<0.010	<0.010



Sub-Matrix: Surface Water (Matrix: Water)			Client san	mple ID	SW24-1	SW24-3	SW19B	SW7	SW7A
		С	lient sampling date	/ time	16-Sep-2024 11:55	16-Sep-2024 09:45	16-Sep-2024 13:20	16-Sep-2024 13:00	16-Sep-2024 12:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-001	HA2402050-002	HA2402050-003	HA2402050-004	HA2402050-005
					Result	Result	Result	Result	Result
Total Metals									
Chromium, total	7440-47-3	E420/WT	0.50	mg/L	0.68	<0.50	<0.50	0.54	<0.50
Cobalt, total	7440-48-4	E420/WT	0.10	mg/L	0.25	0.19	1.26	0.36	1.98
Copper, total	7440-50-8	E420/WT	0.50	mg/L	0.55	<0.50	<0.50	<0.50	<0.50
Iron, total	7439-89-6	E420/WT	10	mg/L	530	525	8710	1890	7380
Lead, total	7439-92-1	E420/WT	0.050	mg/L	0.233	0.139	0.388	0.064	0.099
Lithium, total	7439-93-2	E420/WT	1.0	mg/L	2.8	2.5	<1.0	<1.0	2.0
Magnesium, total	7439-95-4	E420/WT	5.0	mg/L	3820	3890	1610	2370	3720
Manganese, total	7439-96-5	E420/WT	0.10	mg/L	121	158	4960	1440	1980
Mercury, total	7439-97-6	E508/WT	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum, total	7439-98-7	E420/WT	0.050	mg/L	0.449	0.418	0.079	<0.050	0.091
Nickel, total	7440-02-0	E420/WT	0.50	mg/L	0.51	<0.50	<0.50	<0.50	1.00
Potassium, total	7440-09-7	E420/WT	50	mg/L	2570	2680	1350	1850	3540
Rubidium, total	7440-17-7	E420/WT	0.20	mg/L	1.84	1.87	2.96	0.99	1.62
Selenium, total	7782-49-2	E420/WT	0.050	mg/L	0.072	0.080	0.051	<0.050	<0.050
Silicon (as SiO2), total	7631-86-9	EC420.SiO2/ WT	0.25	mg/L	9.54	8.92	10.3	13.1	14.9
Silicon, total	7440-21-3		100	mg/L	4460	4170	4810	6140	6970
Silver, total	7440-22-4	E420/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Sodium, total	7440-23-5	E420/WT	50	mg/L	17000	18400	21900	11700	14400
Strontium, total	7440-24-6	E420/WT	0.20	mg/L	119	123	25.0	44.1	82.3
Sulfur, total	7704-34-9	E420/WT	500	mg/L	7980	7670	980	1210	1080
Tellurium, total	13494-80-9	E420/WT	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20



Sub-Matrix: Surface Water (Matrix: Water)			Client sar	nple ID	SW24-1	SW24-3	SW19B	SW7	SW7A
		C	lient sampling date	/ time	16-Sep-2024 11:55	16-Sep-2024 09:45	16-Sep-2024 13:20	16-Sep-2024 13:00	16-Sep-2024 12:30
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-001	HA2402050-002	HA2402050-003	HA2402050-004	HA2402050-005
					Result	Result	Result	Result	Result
Total Metals									
Thallium, total	7440-28-0	E420/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Thorium, total	7440-29-1	E420/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Tin, total	7440-31-5	E420/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium, total	7440-32-6	E420/WT	0.30	mg/L	5.41	2.96	0.97	<0.30	<0.30
Tungsten, total	7440-33-7	E420/WT	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Uranium, total	7440-61-1	E420/WT	0.010	mg/L	0.989	0.918	<0.010	0.036	0.028
Vanadium, total	7440-62-2	E420/WT	0.50	mg/L	1.34	1.07	0.54	<0.50	<0.50
Zinc, total	7440-66-6	E420/WT	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Zirconium, total	7440-67-7	E420/WT	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Dissolved Metals									
Manganese, dissolved	7439-96-5	E421/WT	0.10	mg/L	98.0	145	4760	1350	1860
Zinc, dissolved	7440-66-6	E421/WT	1.0	mg/L	<1.0	1.6	1.0	<1.0	<1.0
Dissolved metals filtration location		EP421/WT	-	-	Field	Field	Field	Field	Field

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.

Sub-Matrix: Surface Water (Matrix: Water)			Client s ai	mple ID	SW24-2	SW DUP	 	
		С	lient sampling date	/ time	16-Sep-2024 10:55	16-Sep-2024 00:00	 	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-007	HA2402050-008	 	
					Result	Result	 	
Physical Tests								
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.0	mg/L	71.7	71.0	 	



Sub-Matrix: Surface Water (Matrix: Water)			Client sa	mple ID	SW24-2	SW DUP	 	
		С	lient sampling date	/ time	16-Sep-2024 10:55	16-Sep-2024 00:00	 	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-007	HA2402050-008	 	
					Result	Result	 	
Physical Tests								
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<1.0	<1.0	 	
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<1.0	<1.0	 	
Alkalinity, total (as CaCO3)		E290/WT	1.0	mg/L	58.8	58.2	 	
Colour, apparent		E330/WT	2.0	CU	36.3	30.7	 	
Conductivity		E100/WT	1.0	µS/cm	299	291	 	
Hardness (as CaCO3), from total Ca/Mg		EC100A/WT	0.50	mg/L	94.6	94.8	 	
Langelier index (@ 20°C)		EC105A/WT	0.010	-	-0.491	-0.464	 	
Langelier index (@ 4°C)		EC105A/WT	0.010	-	-0.742	-0.715	 	
рН		E108/WT	0.10	pH units	7.62	7.65	 	
pH, saturation (@ 20°C)		EC105A/WT	0.010	pH units	8.11	8.11	 	
pH, saturation (@ 4°C)		EC105A/WT	0.010	pH units	8.36	8.36	 	
Solids, total dissolved [TDS]		E162/HA	10	mg/L	180 DLDS	182 DLDS	 	
Turbidity		E121/WT	0.10	NTU	5.06	4.76	 	
Anions and Nutrients								
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0829	0.0277	 	
Chloride	16887-00-6	E235.CI/WT	0.50	mg/L	33.5	33.3	 	
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.043	0.045	 	
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	2.51	2.32	 	
Nitrate + Nitrite (as N)		EC235.N+N/W T	0.0032	mg/L	2.53	2.33	 	
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	0.017	0.014	 	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	0.0408	0.0518	 	



Sub-Matrix: Surface Water (Matrix: Water)		Client sa	mple ID	SW24-2	SW DUP	 	
	C	Client sampling date	/ time	16-Sep-2024 10:55	16-Sep-2024 00:00	 	
Analyte CAS Nun	per Method/Lab/Accreditation	LOR	Unit	HA2402050-007	HA2402050-008	 	
				Result	Result	 	
Anions and Nutrients							
Phosphorus, total 7723-	I-0 E372-U/WT	2.0	mg/L	96.4	99.5	 	
Silicate (as SiO2) 7631-8	6-9 E392/WP	0.50	mg/L	6.90	6.91	 	
Sulfate (as SO4) 14808-1	9-8 E235.SO4/WT	0.30	mg/L	22.7	22.8	 	
Organic / Inorganic Carbon							
Carbon, total organic [TOC]	E355-L/WT	0.50	mg/L	3.00	2.86	 	
Ion Balance							
Anion sum	EC101A/WT	0.10	meq/L	2.78	2.75	 	
Cation sum (total)	EC101A/WT	0.10	meq/L	2.76	2.74	 	
Ion balance (cations/anions)	EC101A/WT	0.01	%	99.3	99.6	 	
Total Metals							
Aluminum, total 7429-5	0-5 E420/WT	3.0	mg/L	161	176	 	
Antimony, total 7440-3	6-0 E420/WT	0.10	mg/L	<0.10	<0.10	 	
Arsenic, total 7440-3	3-2 E420/WT	0.10	mg/L	1.45	1.23	 	
Barium, total 7440-3	9-3 E420/WT	0.10	mg/L	39.2	34.5	 	
Beryllium, total 7440-4	-7 E420/WT	0.020	mg/L	<0.020	<0.020	 	
Bismuth, total 7440-6	9-9 E420/WT	0.050	mg/L	<0.050	<0.050	 	
Boron, total 7440-4	2-8 E420/WT	10	mg/L	18	16	 	
Cadmium, total 7440-4	3-9 E420/WT	0.0050	mg/L	0.0111	<0.0050	 	
Calcium, total 7440-	0-2 E420/WT	100	mg/L	31700	31800	 	
Cesium, total 7440-4	5-2 E420/WT	0.010	mg/L	0.046	0.060	 	
Chromium, total 7440-4	7-3 E420/WT	0.50	mg/L	0.58	0.54	 	



Sub-Matrix: Surface Water (Matrix: Water)			Client sar	nple ID	SW24-2	SW DUP	 	
		С	lient sampling date	/ time	16-Sep-2024 10:55	16-Sep-2024 00:00	 	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-007	HA2402050-008	 	
					Result	Result	 	
Total Metals								
Cobalt, total	7440-48-4	E420/WT	0.10	mg/L	0.25	0.21	 	
Copper, total	7440-50-8	E420/WT	0.50	mg/L	0.87	<0.50	 	
Iron, total	7439-89-6	E420/WT	10	mg/L	571	445	 	
Lead, total	7439-92-1	E420/WT	0.050	mg/L	0.621	0.183	 	
Lithium, total	7439-93-2	E420/WT	1.0	mg/L	2.3	2.5	 	
Magnesium, total	7439-95-4	E420/WT	5.0	mg/L	3740	3740	 	
Manganese, total	7439-96-5	E420/WT	0.10	mg/L	145	118	 	
Mercury, total	7439-97-6	E508/WT	0.0050	mg/L	<0.0050	<0.0050	 	
Molybdenum, total	7439-98-7	E420/WT	0.050	mg/L	0.438	0.442	 	
Nickel, total	7440-02-0	E420/WT	0.50	mg/L	0.63	<0.50	 	
Potassium, total	7440-09-7	E420/WT	50	mg/L	2670	2590	 	
Rubidium, total	7440-17-7	E420/WT	0.20	mg/L	1.71	1.86	 	
Selenium, total	7782-49-2	E420/WT	0.050	mg/L	0.082	0.076	 	
Silicon (as SiO2), total	7631-86-9	EC420.SiO2/ WT	0.25	mg/L	9.00	9.00	 	
Silicon, total	7440-21-3		100	mg/L	4210	4210	 	
Silver, total	7440-22-4	E420/WT	0.010	mg/L	<0.010	<0.010	 	
Sodium, total	7440-23-5	E420/WT	50	mg/L	17200	16900	 	
Strontium, total	7440-24-6	E420/WT	0.20	mg/L	122	117	 	
Sulfur, total	7704-34-9	E420/WT	500	mg/L	7930	7980	 	
Tellurium, total	13494-80-9	E420/WT	0.20	mg/L	<0.20	<0.20	 	
Thallium, total	7440-28-0	E420/WT	0.010	mg/L	<0.010	<0.010	 	



Sub-Matrix: Surface Water (Matrix: Water)			Client s an	mple ID	SW24-2	SW DUP	 	
		С	lient sampling date	/ time	16-Sep-2024 10:55	16-Sep-2024 00:00	 	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	HA2402050-007	HA2402050-008	 	
					Result	Result	 	
Total Metals								
Thorium, total	7440-29-1	E420/WT	0.10	mg/L	<0.10	<0.10	 	
Tin, total	7440-31-5	E420/WT	0.10	mg/L	0.13	<0.10	 	
Titanium, total	7440-32-6	E420/WT	0.30	mg/L	3.78	4.19	 	
Tungsten, total	7440-33-7	E420/WT	0.10	mg/L	<0.10	<0.10	 	
Uranium, total	7440-61-1	E420/WT	0.010	mg/L	0.961	0.984	 	
Vanadium, total	7440-62-2	E420/WT	0.50	mg/L	1.18	1.22	 	
Zinc, total	7440-66-6	E420/WT	3.0	mg/L	3.1	<3.0	 	
Zirconium, total	7440-67-7	E420/WT	0.20	mg/L	<0.20	<0.20	 	
Dissolved Metals								
Manganese, dissolved	7439-96-5	E421/WT	0.10	mg/L	133	102	 	
Zinc, dissolved	7440-66-6	E421/WT	1.0	mg/L	1.7	<1.0	 	
Dissolved metals filtration location		EP421/WT	-	-	Field	Field	 	

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.



QUALITY CONTROL INTERPRETIVE REPORT :HA2402050 Work Order Page : 1 of 23 :1 Amendment Client Englobe Corp. Laboratory : ALS Environmental - Halifax Contact : Nathalie Sahakyan Account Manager : Emily Smith Address Address :97 Troop Avenue : 13-100 Wright Ave Dartmouth NS Canada B3B 2A7 Dartmouth, Nova Scotia Canada B3B 1L2 Telephone Telephone :----:+1 902 707 4888 **Date Samples Received** Project :2408035.000 : 19-Sep-2024 12:05 PO Issue Date : 09-Oct-2024 12:34 ----C-O-C number ----Sampler · ____ Site Quote number : Meadowview Landfill

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

No. of samples received

No. of samples analysed

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).

·7

:7

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.
- <u>No</u> Duplicate outliers occur.
- <u>No</u> 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

• <u>No</u> 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.

/latrix: Water	Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time									
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / P	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW DUP	E298	16-Sep-2024	23-Sep-2024	28	7 days	✓	23-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW19B	E298	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW24-1	E298	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW24-2	E298	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW24-3	E298	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW7	E298	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	✓
				days						
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SW7A	E298	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days						



Matrix: Water					E	valuation: × =	Holding time exce	edance ; 🔹	<pre>< = Withir</pre>	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pr	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SW DUP	E235.Cl	16-Sep-2024	20-Sep-2024	28	4 days	1	23-Sep-2024	28 days	7 days	1
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE										
SW24-2	E235.Cl	16-Sep-2024	20-Sep-2024	28	4 days	1	23-Sep-2024	28 days	7 days	1
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE	5005 01	10.0	00.0				04.0	00.1	0.1	
SW19B	E235.Cl	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Chloride in Water by IC				1	-			-		
HDPE	5005.01	40.0								,
SW24-1	E235.Cl	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Chloride in Water by IC					1	1				
HDPE	5005.01	40.0	00.0		4.1	1	04.0	00.1	0.1	1
SW24-3	E235.Cl	16-Sep-2024	20-Sep-2024	28	4 days	×	24-Sep-2024	28 days	8 days	*
				days						
Anions and Nutrients : Chloride in Water by IC				1	1					
HDPE	F 225 O	40.0 0004	00.0		4.1		04.0	00.1	0.1	,
SW7	E235.Cl	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Chloride in Water by IC										
HDPE	E235.CI	16-Sep-2024	20-Sep-2024		1 dour	1	24-Sep-2024	20 days	0 dava	1
SW7A	E235.01	16-Sep-2024	20-Sep-2024	28	4 days	•	24-Sep-2024	28 days	8 days	×
				days						
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra	Trace Level 0.001 mg/L)				1					
HDPE	E378-U	16-Sep-2024	20-Sep-2024	2 days	4 days	×	24-Sep-2024	3 days	8 days	×
SW DUP	E3/0-U	10-3ep-2024	20-3ep-2024	3 days	4 uays	EHTL	24-3ep-2024	5 uays	ouays	EHTL
						ENIL				ENIL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra	Trace Level 0.001 mg/L)				1					
HDPE SW19B	E378-U	16-Sep-2024	20-Sep-2024	3 dava	1 days	×	24-Sep-2024	3 dava	8 dava	×
244 190	E370-U	10-3ep-2024	20-3ep-2024	3 days	4 days	EHTL	24-Sep-2024	3 days	8 days	EHTL
						ENIL				EHIL



latrix: Water						diddion.	Holding time exce			i ioiuing i
Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pr				Analys		
Container / Client Sample ID(s)			Preparation		g Times	Eval	Analysis Date		g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trac	e Level 0.001 mg/L)			1				1		
HDPE	E070 II	40.0								
SW24-1	E378-U	16-Sep-2024	20-Sep-2024	3 days	4 days	*	24-Sep-2024	3 days	8 days	*
						EHTL				EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trac	e Level 0.001 mg/L)									
HDPE										
SW24-2	E378-U	16-Sep-2024	20-Sep-2024	3 days	4 days	*	24-Sep-2024	3 days	8 days	*
						EHTL				EHTI
nions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trac	e Level 0.001 mg/L)									
HDPE										
SW24-3	E378-U	16-Sep-2024	20-Sep-2024	3 days	4 days	*	24-Sep-2024	3 days	8 days	36
						EHTL				EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trac	e Level 0.001 mg/L)									
HDPE										
SW7	E378-U	16-Sep-2024	20-Sep-2024	3 days	4 days	×	24-Sep-2024	3 days	8 days	×
						EHTL				EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trac	e Level 0.001 mg/L)				<u> </u>					
HDPE										
SW7A	E378-U	16-Sep-2024	20-Sep-2024	3 days	4 days	*	24-Sep-2024	3 days	8 days	30
						EHTL				EHT
Anions and Nutrients : Fluoride in Water by IC					<u> </u>				1 1	
HDPE										
SW DUP	E235.F	16-Sep-2024	20-Sep-2024	28	4 days	1	23-Sep-2024	28 days	7 days	1
				days				,	,	
nions and Nutrients : Fluoride in Water by IC				,						
HDPE							1			
SW24-2	E235.F	16-Sep-2024	20-Sep-2024	28	4 days	1	23-Sep-2024	28 days	7 days	1
5W2+2	L200.1	10-00p-2024	20-000-2024	20 days	4 days		20-000-2024	20 00 00	7 days	
				uays						
nions and Nutrients : Fluoride in Water by IC										
HDPE SW19B	E235.F	16-Sep-2024	20-Sep-2024		4 days	1	24-Sep-2024	28 days	8 days	1
OW IAD	E230.F	10-3ep-2024	20-3ep-2024	28 dava	4 uays	•	24-3ep-2024	20 uays	ouays	•
				days						
nions and Nutrients : Fluoride in Water by IC										
HDPE	FORFE	40.0.0001	00 0 000 ·							
SW24-1	E235.F	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	~
				days						



		1					Holding time exce			Tiolaing T
Analyte Group : Analytical Method	Method	Sampling Date		traction / Pr				Analys		
Container / Client Sample ID(s)			Preparation		g Times	Eval	Analysis Date		g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC					1					
SW24-3	E235.F	16-Sep-2024	20-Sep-2024	28	4 days	~	24-Sep-2024	28 days	8 days	✓
				days						
nions and Nutrients : Fluoride in Water by IC				1	-			1		
HDPE SW7	E235.F	16-Sep-2024	20-Sep-2024	28 days	4 days	1	24-Sep-2024	28 days	8 days	~
nions and Nutrients : Fluoride in Water by IC					1			1		
HDPE SW7A	E235.F	16-Sep-2024	20-Sep-2024	28 days	4 days	✓	24-Sep-2024	28 days	8 days	1
nions and Nutrients : Nitrate in Water by IC										
HDPE SW DUP	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	23-Sep-2024	3 days	7 days	¥ EHTL
nions and Nutrients : Nitrate in Water by IC					1					
HDPE SW24-2	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	23-Sep-2024	3 days	7 days	¥ EHTL
nions and Nutrients : Nitrate in Water by IC					1					
HDPE SW19B	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
nions and Nutrients : Nitrate in Water by IC				1	1					
HDPE SW24-1	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
nions and Nutrients : Nitrate in Water by IC					I					
HDPE SW24-3	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
nions and Nutrients : Nitrate in Water by IC					·					
HDPE SW7	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL



Matrix: Water					E٧	valuation: × =	Holding time exce	edance ; 🔹	= Within	Holding Time
Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Ex Preparation Date	traction / Pi Holdin Rec	reparation g Times Actual	Eval	Analysis Date	Analys Holding Rec	sis g Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE SW7A	E235.NO3	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC				1				1	1	1
HDPE SW DUP	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	23-Sep-2024	3 days	7 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE SW24-2	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	23-Sep-2024	3 days	7 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE SW19B	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC				1				1		
HDPE SW24-1	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE SW24-3	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC				-				1		
HDPE SW7	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	× EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE SW7A	E235.NO2	16-Sep-2024	20-Sep-2024	3 days	4 days	¥ EHTL	24-Sep-2024	3 days	8 days	¥ EHTL
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE SW DUP	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	*



Matrix: Water					E١	aluation: × =	Holding time exce	edance ; •	<pre>/ = Withir</pre>	Holding Time
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pr	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE										
SW19B	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
Anions and Nutrients : Reactive Silica by Colourimetry				1	1					
HDPE										
SW24-1	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
Anions and Nutrients : Reactive Silica by Colourimetry					1					
HDPE										
SW24-2	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
Anions and Nutrients : Reactive Silica by Colourimetry					1					
HDPE										
SW24-3	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
								. ,	,	
Anions and Nutrients : Reactive Silica by Colourimetry					<u> </u>					
HDPE										
SW7	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
								j _	,.	
Anione and Nutriante - Depative Silias hy Colourington										
Anions and Nutrients : Reactive Silica by Colourimetry HDPE										
SW7A	E392	16-Sep-2024					23-Sep-2024	28 days	7 days	1
SWIA	2002	10 000 2021					20-000-2024	20 0033	7 duys	, ,
A views and Nutriente - Cullete in Meter Inc.					I					
Anions and Nutrients : Sulfate in Water by IC					1					
HDPE SW DUP	E235.SO4	16-Sep-2024	20-Sep-2024		4 days	1	23-Sep-2024	28 days	7 days	1
SWDOP	L233.304	10-3ep-2024	20-3ep-2024	28	4 uays	•	20-0ep-2024	20 uays	1 uays	•
				days						
Anions and Nutrients : Sulfate in Water by IC										
HDPE SW24-2	E235.SO4	16 500 2024	20 San 2024		1 days	1	22 500 2024	20 days	7 dovr	1
3VVZ4-Z	E200.004	16-Sep-2024	20-Sep-2024	28	4 days	*	23-Sep-2024	28 days	7 days	*
				days						
Anions and Nutrients : Sulfate in Water by IC					1					
HDPE	F005 00 /	10.0	00 0 000 i							
SW19B	E235.SO4	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	1
				days						



Aatrix: Water					E١	valuation: × =	Holding time exce	edance ; 🔹	= Within	Holding Ti
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pr	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation	-	g Times	Eval	Analysis Date	-	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SW24-1	E235.SO4	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SW24-3	E235.SO4	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	1
				days						
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SW7	E235.SO4	16-Sep-2024	20-Sep-2024	28	4 days	1	24-Sep-2024	28 days	8 days	✓
				days						
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SW7A	E235.SO4	16-Sep-2024	20-Sep-2024	28	4 days	✓	24-Sep-2024	28 days	8 days	✓
				days						
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SW DUP	E372-U	16-Sep-2024	24-Sep-2024	28	8 days	1	25-Sep-2024	28 days	9 days	✓
				days						
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SW19B	E372-U	16-Sep-2024	24-Sep-2024	28	8 days	1	25-Sep-2024	28 days	9 days	1
			-	days	-					
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)							1	1		
Amber glass total (sulfuric acid)										
SW24-1	E372-U	16-Sep-2024	24-Sep-2024	28	8 days	1	25-Sep-2024	28 days	9 days	1
				days	, -				·, -	
Anione and Nutriente - Total Dhaanhamia hu Calaurinatin (0.000 mail.)				,5						
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) SW24-2	E372-U	16-Sep-2024	24-Sep-2024	28	8 days	1	25-Sep-2024	28 days	9 davs	1
	2072-0	10-00p-2024	21-000-2024	∠o days	5 44 95		20-000-2024	20 00/3	5 4495	·
				uays						
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)							1			
Amber glass total (sulfuric acid)	E372-U	16-Sep-2024	24 San 2024		9 dava	1	25 800 2024	20 day-	0 dava	1
SW24-3	E3/2-U	10-3ep-2024	24-Sep-2024	28	8 days	*	25-Sep-2024	28 days	9 days	¥
				days						



Matrix: Water					E١	/aluation: × =	Holding time exce	edance ; •	= Within	Holding Tim
Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pr	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SW7	E372-U	16-Sep-2024	24-Sep-2024	28	8 days	1	25-Sep-2024	28 days	9 days	1
				days	,		·	, , , , , , , , , , , , , , , , , , ,		
							1			
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)							1			
Amber glass total (sulfuric acid) SW7A	E372-U	16-Sep-2024	24-Sep-2024	28	8 days	1	25-Sep-2024	28 days	9 days	1
SWIA	L372-0	10-069-2024	24-06p-2024	-	0 uays	Ť	20-06p-2024	20 uays	5 uays	•
				days						
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SW DUP	E421	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	1
				days				days		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS		İ								
HDPE dissolved (nitric acid)										
SW19B	E421	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	✓
				days	-		·	days		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS								,		
HDPE dissolved (nitric acid)										
SW24-1	E421	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	1
011211		10 000 2021	20 000 2021	days	. aajo		20 000 2021	days	. aayo	
				uuys				days		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS					1		1		1	
HDPE dissolved (nitric acid)	E 404	10.0 0004	00.0		7	1	00.0		7	1
SW24-2	E421	16-Sep-2024	23-Sep-2024	180	7 days	*	23-Sep-2024	180	7 days	•
				days				days		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SW24-3	E421	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	✓
				days				days		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS	·									
HDPE dissolved (nitric acid)										
SW7	E421	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	1
				days	-			days		
Disastual Matela - Disastual Matela in Materatus CRC (CRMC							1			
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS							I			
HDPE dissolved (nitric acid)	E421	16-Sep-2024	23-Sep-2024	400	7 days	1	23-Sep-2024	400	7 dove	1
SW7A	⊑4∠1	10-3ep-2024	20-0ep-2024	180	/ uays	*	20-0ep-2024	180	7 days	¥
				days				days		



Note of the second s	atrix: Water						/aiuation: × =	Holding time exce			Holaing I
Note of the second s	nalyte Group : Analytical Method	Method	Sampling Date	Exi	traction / Pr	reparation			Analys	sis	
Anone giass total (suffure acid)Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Sign (Low Lavel)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)Amber giass total (suffure acid)Carbon : Total Organic Carbon : Total Organic Carbon (Non-Purgeable) by Combus	Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date	Holding	g Times	Eval
Amber glass total (sulfurt acid) E385-L 18-Sep-2024 23-Sep-2024 28 7 days ✓ 26-Sep-2024 28 days 10 days ✓ rgance (unorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) Intergass total (sulfurt acid) 7 days ✓ 26-Sep-2024 28 days 10 days ✓ rgance (unorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) Intergass total (sulfurt acid) ✓ 26-Sep-2024 28 days 10 days ✓ rgance / inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) Intergass total (sulfurt acid) ✓ 28-Sep-2024 28 days 7 days ✓ 26-Sep-2024 28 days 10 days ✓ rganic / inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level) Intergass total (sulfurt acid) ✓ 26-Sep-2024 28 days 10 days ✓ SW24-2 E385-L 16-Sep-2024 23-Sep-2024 28 days 7 days ✓ 26-Sep-2024 28 days 10 days ✓ SW24-3 E385-L 16-Sep-2024 23-Sep-2024 28 days 7 days ✓ 26-Sep-2024 28 days 10 days ✓<				Date	Rec	Actual			Rec	Actual	
SW DUP E38-L 16-Sep-2024 28-gr 7 days ✓ 26-Sep-2024 28 days 10 days ✓ rgane/ Inorganic Carbon (Yon-Purgeable) by Combuston (Low Level) Indesep 2024 23-Sep-2024 28-gr 7 days ✓ 26-Sep-2024 28 days 10 days ✓ rgane/ Inorganic Carbon (Yon-Purgeable) by Combuston (Low Level) Indesep 2024 23-Sep-2024 28-gr 7 days ✓ 26-Sep-2024 28 days 10 days ✓ rgane/ Inorganic Carbon (Yon-Purgeable) by Combuston (Low Level) Indesep 2024 23-Sep-2024 28-sep-2024 28-sep-2024 28 days 10 days ✓ rgane/ Inorganic Carbon (Yon-Purgeable) by Combuston (Low Level) Indesep 2024 23-Sep-2024 28-sep-2024 28-sep	Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Comb	ustion (Low Level)									
Chroson Contract Contract <thc< td=""><td>Amber glass total (sulfuric acid)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thc<>	Amber glass total (sulfuric acid)										
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HDPE SW24-2	E290	16-Sep-2024	20-Sep-2024	14 days	4 days	✓	21-Sep-2024	14 days	5 days	*
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HDPE SW24-3	E290	16-Sep-2024	20-Sep-2024	14 days	4 days	✓	21-Sep-2024	14 days	5 days	4
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HDPE SW7A	E290	16-Sep-2024	20-Sep-2024	14 days	4 days	✓	21-Sep-2024	14 days	5 days	*
Physical Tests : Colour (Apparent) by Spectrometer								1		
HDPE SW DUP	E330	16-Sep-2024					23-Sep-2024	48 hrs	167 hrs	¥ EHTR
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE SW19B	E330	16-Sep-2024					23-Sep-2024	48 hrs	168 hrs	¥ EHTR
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SW24-1	E330	10-3ep-2024					23-3ep-2024	40 115	170 ms	EHTR
										LIIII
Physical Tests : Colour (Apparent) by Spectrometer HDPE										
SW24-2	E330	16-Sep-2024					23-Sep-2024	48 hrs	171 hrs	×
										EHTR
Physical Tests : Colour (Apparent) by Spectrometer								1		
HDPE										
SW24-3	E330	16-Sep-2024					23-Sep-2024	48 hrs	172 hrs	×
										EHTR
Physical Tests : Conductivity in Water										
HDPE										
SW DUP	E100	16-Sep-2024	20-Sep-2024	28	4 days	1	21-Sep-2024	28 days	5 days	~
				days						
Physical Tests : Conductivity in Water										
HDPE	- /					,				,
SW19B	E100	16-Sep-2024	20-Sep-2024	28	4 days	1	21-Sep-2024	28 days	5 days	1
				days						
Physical Tests : Conductivity in Water				1						
HDPE SW24-1	E100	16-Sep-2024	20-Sep-2024	20	4 days	1	21-Sep-2024	28 days	5 days	1
51124-1	2100	10-06p-2024	20-36p-2024	28 days	4 uays		21-3ep-2024	20 uays	Juays	•
Physical Tests : Conductivity in Water				duyo						
HDPE										
SW24-2	E100	16-Sep-2024	20-Sep-2024	28	4 days	1	21-Sep-2024	28 days	5 days	~
		·	·	days			· ·		· ·	
Physical Tests : Conductivity in Water							1	<u> </u>	<u> </u>	
HDPE										
SW24-3	E100	16-Sep-2024	20-Sep-2024	28	4 days	✓	21-Sep-2024	28 days	5 days	1
				days						
Physical Tests : Conductivity in Water							•			
HDPE										
SW7	E100	16-Sep-2024	20-Sep-2024	28	4 days	✓	21-Sep-2024	28 days	5 days	1
		1		days	1		1	1		



Matrix: Water					Ev	/aluation: × =	Holding time exce	edance ; •	= Withir	Holding Time
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / Pi	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation Date	Holdin Rec	g Times Actual	Eval	Analysis Date	Holding Rec	g Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SW7A	E100	16-Sep-2024	20-Sep-2024	28 days	4 days	1	21-Sep-2024	28 days	5 days	1
Physical Tests : pH by Meter										
HDPE SW19B	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	102 hrs	≭ EHTR-FM	21-Sep-2024	0.25 hrs	118 hrs	¥ EHTR-FM
Physical Tests : pH by Meter					1					
HDPE SW7	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	102 hrs	¥ EHTR-FM	21-Sep-2024	0.25 hrs	119 hrs	¥ EHTR-FM
Physical Tests : pH by Meter										
HDPE SW7A	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	102 hrs	¥ EHTR-FM	21-Sep-2024	0.25 hrs	119 hrs	¥ EHTR-FM
Physical Tests : pH by Meter					1					
HDPE SW DUP	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	103 hrs	¥ EHTR-FM	21-Sep-2024	0.25 hrs	116 hrs	¥ EHTR-FM
Physical Tests : pH by Meter										
HDPE SW24-1	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	103 hrs	¥ EHTR-FM	21-Sep-2024	0.25 hrs	120 hrs	¥ EHTR-FM
Physical Tests : pH by Meter										
HDPE SW24-3	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	105 hrs	¥ EHTR-FM	21-Sep-2024	0.25 hrs	122 hrs	¥ EHTR-FM
Physical Tests : pH by Meter										
HDPE SW24-2	E108	16-Sep-2024	20-Sep-2024	0.25 hrs	107 hrs	¥ EHTR-FM	21-Sep-2024	0.25 hrs	120 hrs	¥ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SW DUP	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	~



Matrix: Water					Ev	aluation: × =	Holding time excee	edance ; 🔹	= Within	Holding Time
Analyte Group : Analytical Method	Method	Sampling Date	Ext	raction / Pr	eparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holding	g Times	Eval	Analysis Date		Times	Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE										
SW19B	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SW24-1	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	✓
Physical Tests : TDS by Gravimetry				1						
HDPE										
SW24-2	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	1
Physical Tests : TDS by Gravimetry	1									
HDPE										
SW24-3	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	1
	-							, -		
Physical Tests : TDS by Gravimetry										
HDPE										
SW7	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	1
0111	2102	10 000 2021					20 000 2021	/ duyo	1 dayo	
Physical Tests : TDS by Gravimetry										
HDPE SW7A	E162	16-Sep-2024					20-Sep-2024	7 days	4 days	1
SWIA	L 102	10-3ep-2024					20-3ep-2024	7 uays	4 uays	•
Physical Tests : Turbidity by Nephelometry										
HDPE	E404	10.0-= 0004					04 6 0004	0 dava	C davia	×
SW DUP	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	EHTL
										CHIL
Physical Tests : Turbidity by Nephelometry										
HDPE	E (S)	10.0								
SW19B	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	*
										EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE										
SW24-1	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	×
										EHTL



Matrix: Water					Ev	valuation: × =	Holding time exce	edance ; •	= Within	Holding Tir
Analyte Group : Analytical Method	Method	Sampling Date	Ext	traction / P	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE										
SW24-2	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	¥ EHTL
										EHIL
Physical Tests : Turbidity by Nephelometry		1					1			
HDPE SW24-3	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	×
01124-0	L121	10-000-2024					21-000-2024	0 days	0 days	EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE										
SW7	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	
										EHTL
Physical Tests : Turbidity by Nephelometry				1	1		1	1		
HDPE										
SW7A	E121	16-Sep-2024					21-Sep-2024	3 days	5 days	*
										EHTL
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SW DUP	E508	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days						
Total Metals : Total Mercury in Water by CVAAS					1					
Glass vial total (hydrochloric acid)	E508	40.0-= 0004	00.0.0004		7	1	00.0	00.1	7	1
SW19B	E208	16-Sep-2024	23-Sep-2024	28	7 days	*	23-Sep-2024	28 days	7 days	•
				days						
Total Metals : Total Mercury in Water by CVAAS		1					1	1		
Glass vial total (hydrochloric acid) SW24-1	E508	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 davs	1
01124-1	2000	10 000 2021	20 000 2021	days	, duyo		20 000 2021	20 duyo	, dayo	·
Total Metals : Total Mercury in Water by CVAAS				uajo						
Glass vial total (hydrochloric acid)							1			
SW24-2	E508	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days	-				-	
Total Metals : Total Mercury in Water by CVAAS					1	I				
Glass vial total (hydrochloric acid)										
SW24-3	E508	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	✓
				days						
					1					



							Holding time excee			riolaling i
Analyte Group : Analytical Method	Method	Sampling Date	Ex	traction / Pr	reparation			Analys		
Container / Client Sample ID(s)			Preparation	-	g Times	Eval	Analysis Date		g Times	Eval
			Date	Rec	Actual			Rec	Actual	
otal Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SW7	E508	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
				days						
otal Metals : Total Mercury in Water by CVAAS						I				
Glass vial total (hydrochloric acid)										
SW7A	E508	16-Sep-2024	23-Sep-2024	28	7 days	1	23-Sep-2024	28 days	7 days	1
			-	days	-			-	-	
otal Metals : Total Metals in Water by CRC ICPMS				,					<u> </u>	
HDPE total (nitric acid)										
SW DUP	E420	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	1
	2.20	10 000 2021	20 000 2021	days	, aaje		20 000 202 .	days		
				uuys				uuys		
otal Metals : Total Metals in Water by CRC ICPMS							1			
HDPE total (nitric acid)	E420	16 San 2024	00.0-= 0004		7	1	00.0-= 0004	100	7	1
SW19B	E420	16-Sep-2024	23-Sep-2024	180	7 days	*	23-Sep-2024	180	7 days	•
				days				days		
otal Metals : Total Metals in Water by CRC ICPMS						_				
HDPE total (nitric acid)										
SW24-1	E420	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	1
				days				days		
otal Metals : Total Metals in Water by CRC ICPMS									· · · · ·	
HDPE total (nitric acid)										
SW24-2	E420	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	✓
				days				days		
otal Metals : Total Metals in Water by CRC ICPMS				1				1	II	
HDPE total (nitric acid)										
SW24-3	E420	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	1
5.12.10				days				days	·	
				aayo				uuyo		
otal Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)	E420	16 5 2024	22 500 2024	400	7 dovo	1	22 500 2024	400	7 dovo	1
SW7	E420	16-Sep-2024	23-Sep-2024	180	7 days	*	23-Sep-2024	180	7 days	•
				days				days		
otal Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SW7A	E420	16-Sep-2024	23-Sep-2024	180	7 days	1	23-Sep-2024	180	7 days	~
				days				days		

Legend & Qualifier Definitions

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EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

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.

Quality Control Sample Type			Co	ount		Frequency (%)	
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)				1			
Alkalinity Species by Titration	E290	1664163	2	23	8.7	5.0	✓
Ammonia by Fluorescence	E298	1666839	1	20	5.0	5.0	1
Chloride in Water by IC	E235.Cl	1664159	2	29	6.9	5.0	✓
Colour (Apparent) by Spectrometer	E330	1667340	1	20	5.0	5.0	1
Conductivity in Water	E100	1664162	2	22	9.0	5.0	~
Dissolved Metals in Water by CRC ICPMS	E421	1667512	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	2	22	9.0	5.0	1
Fluoride in Water by IC	E235.F	1664156	2	22	9.0	5.0	✓
Nitrate in Water by IC	E235.NO3	1664157	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	1664158	2	34	5.8	5.0	✓
pH by Meter	E108	1664161	2	38	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1667333	2	26	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1664160	2	22	9.0	5.0	✓
TDS by Gravimetry	E162	1662588	1	19	5.2	5.2	✓
Total Mercury in Water by CVAAS	E508	1666730	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1666553	1	19	5.2	5.0	~
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	1	20	5.0	5.0	~
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666838	1	20	5.0	5.0	~
Turbidity by Nephelometry	E121	1664811	1	20	5.0	5.0	~
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1664163	2	23	8.7	5.0	1
Ammonia by Fluorescence	E298	1666839	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1664159	2	29	6.9	5.0	1
Colour (Apparent) by Spectrometer	E330	1667340	1	20	5.0	5.0	✓
Conductivity in Water	E100	1664162	2	22	9.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1667512	1	19	5.2	5.0	~
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	2	22	9.0	5.0	~
Fluoride in Water by IC	E235.F	1664156	2	22	9.0	5.0	~
Nitrate in Water by IC	E235.NO3	1664157	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	1664158	2	34	5.8	5.0	~
pH by Meter	E108	1664161	2	38	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	1667333	2	26	7.6	5.0	~
Sulfate in Water by IC	E235.SO4	1664160	2	22	9.0	5.0	✓
TDS by Gravimetry	E162	1662588	1	19	5.2	5.2	✓
Total Mercury in Water by CVAAS	E508	1666730	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1666553	1	19	5.2	5.0	1



Matrix: Water Evaluation: ★ = QC frequency outside specification; ✓ = QC frequency within specificat							
Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	1	20	5.0	5.0	1
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666838	1	20	5.0	5.0	
Turbidity by Nephelometry	E121	1664811	1	20	5.0	5.0	<u> </u>
Method Blanks (MB)							_
Alkalinity Species by Titration	E290	1664163	2	23	8.7	5.0	1
Ammonia by Fluorescence	E298	1666839	1	20	5.0	5.0	
Chloride in Water by IC	E235.Cl	1664159	2	29	6.9	5.0	
Colour (Apparent) by Spectrometer	E330	1667340	1	20	5.0	5.0	
Conductivity in Water	E100	1664162	2	22	9.0	5.0	
Dissolved Metals in Water by CRC ICPMS	E421	1667512	1	19	5.2	5.0	
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	2	22	9.0	5.0	
Fluoride in Water by IC	E235.F	1664156	2	22	9.0	5.0	
Nitrate in Water by IC	E235.NO3	1664157	2	34	5.8	5.0	
Nitrite in Water by IC	E235.NO2	1664158	2	34	5.8	5.0	
Reactive Silica by Colourimetry	E392	1667333	2	26	7.6	5.0	
Sulfate in Water by IC	E235.SO4	1664160	2	22	9.0	5.0	
TDS by Gravimetry	E162	1662588	1	19	5.2	5.2	
Total Mercury in Water by CVAAS	E508	1666730	1	18	5.5	5.0	
Total Metals in Water by CRC ICPMS	E420	1666553	1	19	5.2	5.0	
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	1	20	5.0	5.0	
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666838	1	20	5.0	5.0	
Turbidity by Nephelometry	E121	1664811	1	20	5.0	5.0	
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1666839	1	20	5.0	5.0	1
Chloride in Water by IC	E235.Cl	1664159	2	29	6.9	5.0	
Dissolved Metals in Water by CRC ICPMS	E421	1667512	1	19	5.2	5.0	
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1664164	2	22	9.0	5.0	
Fluoride in Water by IC	E235.F	1664156	2	22	9.0	5.0	
Nitrate in Water by IC	E235.NO3	1664157	2	34	5.8	5.0	
Nitrite in Water by IC	E235.NO2	1664158	2	34	5.8	5.0	
Reactive Silica by Colourimetry	E392	1667333	2	26	7.6	5.0	
Sulfate in Water by IC	E235.SO4	1664160	2	22	9.0	5.0	 ✓
Total Mercury in Water by CVAAS	E508	1666730	1	18	5.5	5.0	 ✓
Total Metals in Water by CRC ICPMS	E420	1666553	1	19	5.2	5.0	 ✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1666840	1	20	5.0	5.0	 ✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1666838	1	20	5.0	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	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
	ALS Environmental -			sample. Conductivity measurements are temperature-compensated to 25°C.
	Waterloo			
pH by Meter	E108	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted
				at ambient laboratory temperature (normally 20 \pm 5°C). For high accuracy test results,
	ALS Environmental -			pH should be measured in the field within the recommended 15 minute hold time.
	Waterloo			
Turbidity by Nephelometry	E121	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light
				scatter under defined conditions.
	ALS Environmental -			
	Waterloo			
TDS by Gravimetry	E162	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,
	ALS Environmental -			with gravimetric measurement of the residue.
	Halifax			
Chloride in Water by IC	E235.Cl	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV
				detection.
	ALS Environmental -			
	Waterloo			
Fluoride in Water by IC	E235.F	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
	ALS Environmental -			
	Waterloo			
Nitrite in Water by IC	E235.NO2	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV
,				detection.
	ALS Environmental -			
	Waterloo			
Nitrate in Water by IC	E235.NO3	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV
,	2200.1100			detection.
	ALS Environmental -			
	Waterloo			
Sulfate in Water by IC	E235.SO4	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV
	2200.004			detection.
	ALS Environmental -			
	Waterloo			
Alkalinity Species by Titration	E290	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate,
,	2200			carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total
	ALS Environmental -			alkalinity values.
	Waterloo			anaimity values.
	VValenou			

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Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	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)
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been 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 total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Waterloo	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 ALS Environmental - Winnipeg	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	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 - Waterloo	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

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Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total 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. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Ion Balance using Total Metals	EC101A ALS Environmental - Waterloo	Water	APHA 1030E	Cation Sum (using total metals), Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Saturation Index using Laboratory pH (Ca-T)	EC105A ALS Environmental - Waterloo	Water	APHA 2330B	Langelier Index provides an indication of scale formation potential at a given pH and temperature, and is calculated as per APHA 2330B Saturation Index. Positive values indicate oversaturation with respect to CaCO3. Negative values indicate undersaturation of CaCO3. This calculation uses laboratory pH measurements and provides estimates of Langelier Index at temperatures of 4, 15, 20, 25, 66, and 77°C. Ryznar Stability Index is an alternative index used for scale formation and corrosion potential.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Waterloo	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Total Silicon as Silica (Calculation)	EC420.SiO2 ALS Environmental - Waterloo	Water	N/A	Total Silicon (as SiO2) is a calculated parameter. Total Silicon (as SiO2 mg/L) = 2.139 x Total Silicon (mg/L).
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Waterloo	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Waterloo	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

ALS Canada Ltd.



QUALITY CONTROL REPORT Work Order Page : 1 of 14 HA2402050 Amendment :1 Client : Englobe Corp. Laboratory : ALS Environmental - Halifax Contact : Nathalie Sahakyan Account Manager : Emily Smith Address Address :97 Troop Avenue : 13-100 Wright Ave Dartmouth NS Canada B3B 2A7 Dartmouth, Nova Scotia Canada B3B 1L2 Telephone Telephone :----:+1 902 707 4888 Date Samples Received Project :2408035.000 :19-Sep-2024 12:05 PO Date Analysis Commenced :20-Sep-2024 · ____ C-O-C number Issue Date 09-Oct-2024 12:34 :----Sampler · ____ Site Quote number : Meadowview Landfill No. of samples received :7 No. of samples analysed :7

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

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
Greg Pokocky	Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Halifax Inorganics, Dartmouth, Nova Scotia
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Waterloo Metals, Waterloo, Ontario
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Nik Perkio	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
Oleksandr Busel		Winnipeg Inorganics, Winnipeg, Manitoba



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology 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

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

ub-Matrix: Water						Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifie	
Physical Tests (QC	: Lot: 1662588)											
HA2402049-006	Anonymous	Solids, total dissolved [TDS]		E162	20	mg/L	589	586	0.596%	20%		
Physical Tests (QC	Lot: 1664161)											
HA2402049-002	Anonymous	рН		E108	0.10	pH units	8.15	8.15	0.00%	4%		
Physical Tests (QC	Lot: 1664162)											
HA2402049-002	Anonymous	Conductivity		E100	1.0	µS/cm	187	188	0.641%	10%		
Physical Tests (QC	Lot: 1664163)											
HA2402049-002	Anonymous	Alkalinity, total (as CaCO3)		E290	1.0	mg/L	70.5	70.8	0.425%	20%		
Physical Tests (QC	Lot: 1664381)											
HA2402050-008	SW DUP	Alkalinity, total (as CaCO3)		E290	1.0	mg/L	58.2	58.2	0.0343%	20%		
Physical Tests (QC	Lot: 1664382)											
HA2402050-008	SW DUP	рН		E108	0.10	pH units	7.65	7.62	0.393%	4%		
Physical Tests (QC	Lot: 1664383)											
HA2402050-008	SW DUP	Conductivity		E100	1.0	μS/cm	291	292	0.343%	10%		
Physical Tests (QC	Lot: 1664811)						1		1		1	
HA2402049-001	Anonymous	Turbidity		E121	0.10	NTU	378	377	0.265%	15%		
Physical Tests (QC	Lot: 1667340)										1	
HA2402050-001	SW24-1	Colour, apparent		E330	2.0	CU	32.3	31.9	1.41%	20%		
Anions and Nutrien	ts (QC Lot: 1664156)											
HA2402049-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.202	0.200	0.625%	20%		
Anions and Nutrien	ts (QC Lot: 1664157)											
HA2402049-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.167	0.168	0.0010	Diff <2x LOR		
Anions and Nutrien	ts (QC Lot: 1664158)											
HA2402049-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR		
Anions and Nutrien	ts (QC Lot: 1664159)											
HA2402049-001	Anonymous	Chloride	16887-00-6	E235.CI	0.50	mg/L	3.36	3.35	0.002	Diff <2x LOR		
Anions and Nutrien	ts (QC Lot: 1664160)											
HA2402049-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1.30	1.29	0.01	Diff <2x LOR		
Anions and Nutrien	ts (QC Lot: 1664164)											
	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0067	0.0060	0.0007	Diff <2x LOR		

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Sub-Matrix: Water							Labora	tory Duplicate (D	UP) Report		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrient	ts (QC Lot: 1664384) - (continued									
HA2402050-007	SW24-2	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	22.7	22.6	0.571%	20%	
Anions and Nutrient	ts (QC Lot: 1664385)										
HA2402050-007	SW24-2	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	2.51	2.52	0.367%	20%	
Anions and Nutrient	ts (QC Lot: 1664386)										
HA2402050-007	SW24-2	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	0.017	0.016	0.0009	Diff <2x LOR	
Anions and Nutrient	ts (QC Lot: 1664387)										
HA2402050-007	SW24-2	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.043	0.040	0.002	Diff <2x LOR	
Anions and Nutrient	ts (QC Lot: 1664388)										
HA2402050-007	SW24-2	Chloride	16887-00-6	E235.CI	0.50	mg/L	33.5	33.5	0.0492%	20%	
Anions an <u>d Nutrien</u> t	ts (QC Lot: 1664389)										
HA2402050-007	SW24-2	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0408	0.0406	0.565%	20%	
Anions and Nutrient	ts (QC Lot: 1666838)										
BF2400346-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0090	0.0095	0.0005	Diff <2x LOR	
Anions and Nutrien	ts (QC Lot: 1666839)										
HA2402049-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0088	0.0077	0.0011	Diff <2x LOR	
Anions and Nutrient	ts (QC Lot: 1667333)										
HA2402049-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	9.31	10.7	14.2%	20%	
Anions and Nutrient	ts (QC Lot: 1667334)										
HA2402050-008	SW DUP	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	6.91	7.14	3.24%	20%	
Organic / Inorganic	Carbon (QC Lot: 16668	40)									
HA2402050-001	SW24-1	Carbon, total organic [TOC]		E355-L	0.50	mg/L	3.09	2.90	0.19	Diff <2x LOR	
Total Metals (QC Lo	ot: 1666553)										
HA2402050-001	SW24-1	Aluminum, total	7429-90-5	E420	0.0030	mg/L	239 µg/L	0.230	4.10%	20%	
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	1.26 µg/L	0.00129	2.47%	20%	
		Barium, total	7440-39-3	E420	0.00010	mg/L	35.6 µg/L	0.0355	0.423%	20%	
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	
		Boron, total	7440-42-8	E420	0.010	mg/L	16 µg/L	0.016	0.0002	Diff <2x LOR	
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0075 µg/L	0.0000069	0.0000006	Diff <2x LOR	
	1			F 400	0.100	mg/L	31700 µg/L	31.5	0.652%	20%	
		Calcium, total	7440-70-2	E420	0.100	ing/L					
		Calcium, total Cesium, total	7440-70-2 7440-46-2	E420	0.100	mg/L	0.074 µg/L	0.000070	0.000004	Diff <2x LOR	
									0.000004	Diff <2x LOR Diff <2x LOR	

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Sub-Matrix: Water			Laboratory Duplicate (DUP) Report								
aboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
	ot: 1666553) - continue	ed									
HA2402050-001	SW24-1	Copper, total	7440-50-8	E420	0.00050	mg/L	0.55 µg/L	0.00054	0.00001	Diff <2x LOR	
		Iron, total	7439-89-6	E420	0.010	mg/L	530 µg/L	0.517	2.55%	20%	
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.233 µg/L	0.000228	0.000005	Diff <2x LOR	
		Lithium, total	7439-93-2	E420	0.0010	mg/L	2.8 µg/L	0.0026	0.0002	Diff <2x LOR	
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3820 µg/L	3.76	1.34%	20%	
		Manganese, total	7439-96-5	E420	0.00010	mg/L	121 µg/L	0.122	0.220%	20%	
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.449 µg/L	0.000447	0.000002	Diff <2x LOR	
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.51 µg/L	0.00056	0.00005	Diff <2x LOR	
		Potassium, total	7440-09-7	E420	0.050	mg/L	2570 µg/L	2.57	0.243%	20%	
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	1.84 µg/L	0.00188	0.00004	Diff <2x LOR	
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.072 µg/L	0.000082	0.000010	Diff <2x LOR	
		Silicon, total	7440-21-3	E420	0.10	mg/L	4460 µg/L	4.34	2.93%	20%	
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.010 µg/L	<0.000010	0	Diff <2x LOR	
		Sodium, total	7440-23-5	E420	0.050	mg/L	17000 µg/L	17.0	0.398%	20%	
		Strontium, total	7440-24-6	E420	0.00020	mg/L	119 µg/L	0.120	0.987%	20%	
		Sulfur, total	7704-34-9	E420	0.50	mg/L	7980 µg/L	7.74	3.05%	20%	
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.010 µg/L	<0.000010	0	Diff <2x LOR	
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Titanium, total	7440-32-6	E420	0.00030	mg/L	5.41 µg/L	0.00542	0.0369%	20%	
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.989 µg/L	0.000977	1.19%	20%	
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	1.34 µg/L	0.00131	0.00003	Diff <2x LOR	
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<3.0 µg/L	<0.0030	0	Diff <2x LOR	
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	
otal Metals (QC L											
IA2402050-001	SW24-1	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	
issolved Metals(
IA2402050-001	SW24-1	Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	98.0 µg/L	0.0977	0.318%	20%	
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<1.0 µg/L	<0.0010	0	Diff <2x LOR	



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Analyte	CAS Number Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1662588)			onne	Result	quanter
Solids, total dissolved [TDS]	E162	10	mg/L	<10	
· · ·					
Physical Tests (QCLot: 1664162) Conductivity	E100	1	µS/cm	1.1	
	2100		μογοιτί		
Physical Tests (QCLot: 1664163) Alkalinity, total (as CaCO3)	E290	1	mg/L	<1.0	
· · · · ·	[230		iiig/L	<1.0	
Physical Tests (QCLot: 1664381) Alkalinity, total (as CaCO3)	E290	1	mg/L	<1.0	
	2230		IIIg/L	<1.0	
Physical Tests (QCLot: 1664383)	F100	1	u C / am	1.5	
Conductivity	E100	1	μS/cm	1.5	
Physical Tests (QCLot: 1664811)					
Turbidity	E121	0.1	NTU	<0.10	
Physical Tests (QCLot: 1667340)					
Colour, apparent	E330	2	CU	<2.0	
Anions and Nutrients (QCLot: 1664156)					
Fluoride	16984-48-8 E235.F	0.02	mg/L	<0.020	
Anions and Nutrients (QCLot: 1664157)					
Nitrate (as N)	14797-55-8 E235.NO3	0.02	mg/L	<0.020	
Anions and Nutrients (QCLot: 1664158)					
Nitrite (as N)	14797-65-0 E235.NO2	0.01	mg/L	<0.010	
Anions and Nutrients (QCLot: 1664159)					
Chloride	16887-00-6 E235.CI	0.5	mg/L	<0.50	
Anions and Nutrients (QCLot: 1664160)					
Sulfate (as SO4)	14808-79-8 E235.SO4	0.3	mg/L	<0.30	
Anions and Nutrients (QCLot: 1664164)				1 1	
Phosphate, ortho-, dissolved (as P)	14265-44-2 E378-U	0.001	mg/L	<0.0010	
Anions and Nutrients (QCLot: 1664384)				1 1	
Sulfate (as SO4)	14808-79-8 E235.SO4	0.3	mg/L	<0.30	
Anions and Nutrients (QCLot: 1664385)				1	
Nitrate (as N)	14797-55-8 E235.NO3	0.02	mg/L	<0.020	
Anions and Nutrients (QCLot: 1664386)				1	
Nitrite (as N)	14797-65-0 E235.NO2	0.01	mg/L	<0.010	

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Sub-Matrix: Water

Analyte	CAS Number Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1664387)					
Fluoride	16984-48-8 E235.F	0.02	mg/L	<0.020	
Anions and Nutrients (QCLot: 1664388)					
Chloride	16887-00-6 E235.CI	0.5	mg/L	<0.50	
Anions and Nutrients (QCLot: 1664389)					
Phosphate, ortho-, dissolved (as P)	14265-44-2 E378-U	0.001	mg/L	<0.0010	
Anions and Nutrients (QCLot: 1666838)					
Phosphorus, total	7723-14-0 E372-U	0.002	mg/L	<0.0020	
Anions and Nutrients (QCLot: 1666839)					
Ammonia, total (as N)	7664-41-7 E298	0.005	mg/L	<0.0050	
Anions and Nutrients (QCLot: 1667333)					
Silicate (as SiO2)	7631-86-9 E392	0.5	mg/L	<0.50	
Anions and Nutrients (QCLot: 1667334)					
Silicate (as SiO2)	7631-86-9 E392	0.5	mg/L	<0.50	
Organic / Inorganic Carbon (QCLot: 166	6840)				
Carbon, total organic [TOC]	E355-L	0.5	mg/L	<0.50	
Total Metals (QCLot: 1666553)					
Aluminum, total	7429-90-5 E420	0.003	mg/L	<0.0030	
Antimony, total	7440-36-0 E420	0.0001	mg/L	<0.00010	
Arsenic, total	7440-38-2 E420	0.0001	mg/L	<0.00010	
Barium, total	7440-39-3 E420	0.0001	mg/L	<0.00010	
Beryllium, total	7440-41-7 E420	0.00002	mg/L	<0.000020	
Bismuth, total	7440-69-9 E420	0.00005	mg/L	<0.000050	
Boron, total	7440-42-8 E420	0.01	mg/L	<0.010	
Cadmium, total	7440-43-9 E420	0.000005	mg/L	<0.000050	
Calcium, total	7440-70-2 E420	0.05	mg/L	<0.050	
Cesium, total	7440-46-2 E420	0.00001	mg/L	<0.000010	
Chromium, total	7440-47-3 E420	0.0005	mg/L	<0.00050	
Cobalt, total	7440-48-4 E420	0.0001	mg/L	<0.00010	
Copper, total	7440-50-8 E420	0.0005	mg/L	<0.00050	
Iron, total	7439-89-6 E420	0.01	mg/L	<0.010	
Lead, total	7439-92-1 E420	0.00005	mg/L	<0.000050	
Lithium, total	7439-93-2 E420	0.001	mg/L	<0.0010	
Magnesium, total	7439-95-4 E420	0.005	mg/L	<0.0050	
Manganese, total	7439-96-5 E420	0.0001	mg/L	<0.00010	
Molybdenum, total	7439-98-7 E420	0.00005	mg/L	<0.000050	

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Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1666553) - co	ntinued					
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	
Total Metals (QCLot: 1666730)					1	
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.000050	
Dissolved Metals (QCLot: 1667512)						
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water					Laboratory Co	ntrol Sample (LCS)	Report	
				Spike	Recovery (%)	Recovery	Limits (%)	
Analyte C	CAS Number Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1662588)								
Solids, total dissolved [TDS]	E162	10	mg/L	1000 mg/L	90.4	85.0	115	
Physical Tests (QCLot: 1664161)					101		100	
pH	E108		pH units	7 pH units	101	98.0	102	
Physical Tests (QCLot: 1664162) Conductivity	E100	1	μS/cm	1410 µS/cm	100	90.0	110	
Physical Tests (QCLot: 1664163)								
Alkalinity, total (as CaCO3)	E290	1	mg/L	150 mg/L	98.4	85.0	115	
Physical Tests (QCLot: 1664381)								
Alkalinity, total (as CaCO3)	E290	1	mg/L	150 mg/L	98.2	85.0	115	
Physical Tests (QCLot: 1664382)	E108		n Li unite	7 pl Lupite	101	08.0	102	
рн	E108		pH units	7 pH units	101	98.0	102	
Physical Tests (QCLot: 1664383) Conductivity	E100	1	µS/cm	1410 µS/cm	101	90.0	110	
Physical Tests (QCLot: 1664811)								
Turbidity	E121	0.1	NTU	200 NTU	95.0	85.0	115	
Physical Tests (QCLot: 1667340)								
Colour, apparent	E330	2	CU	25 CU	103	70.0	130	
Anions and Nutrients (QCLot: 1664156) Fluoride	16984-48-8 E235.F	0.02	mg/L	1 mg/L	96.5	90.0	110	
		0.02	iiig/E	l ing/c	00.0	00.0	110	
Anions and Nutrients (QCLot: 1664157) Nitrate (as N)	14797-55-8 E235.NO3	0.02	mg/L	2.5 mg/L	99.4	90.0	110	
Anions and Nutrients (QCLot: 1664158)								1
Nitrite (as N)	14797-65-0 E235.NO2	0.01	mg/L	0.5 mg/L	101	90.0	110	
Anions and Nutrients (QCLot: 1664159)								
Chloride	16887-00-6 E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	
Anions and Nutrients (QCLot: 1664160)	14909 70 9 5325 004	0.0	ma /1	100//	00.0	00.0	140	
Sulfate (as SO4)	14808-79-8 E235.SO4	0.3	mg/L	100 mg/L	99.2	90.0	110	
Anions and Nutrients (QCLot: 1664164) Phosphate, ortho-, dissolved (as P)	14265-44-2 E378-U	0.001	mg/L	0.05 mg/L	99.8	80.0	120	
							.20	
Anions and Nutrients (QCLot: 1664384) Sulfate (as SO4)	14808-79-8 E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	
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Project :	2408035.000



Sub-Matrix: Water				Laboratory Control Sample (LCS) Report					
				Spike	· Limits (%)				
Analyte	CAS Number Method	1 LOF	R Unit	Target Concentration	LCS	Low	High	Qualifier	
Anions and Nutrients (QCLot: 1664385)									
Nitrate (as N)	14797-55-8 E235.N	03 0.02	2 mg/L	2.5 mg/L	100	90.0	110		
Anions and Nutrients (QCLot: 1664386)									
Nitrite (as N)	14797-65-0 E235.N	02 0.0	mg/L	0.5 mg/L	101	90.0	110		
Anions and Nutrients (QCLot: 1664387)									
Fluoride	16984-48-8 E235.F	0.02	2 mg/L	1 mg/L	102	90.0	110		
Anions and Nutrients (QCLot: 1664388)									
Chloride	16887-00-6 E235.C	0.5	mg/L	100 mg/L	100	90.0	110		
Anions and Nutrients (QCLot: 1664389)							100		
Phosphate, ortho-, dissolved (as P)	14265-44-2 E378-U	0.00	1 mg/L	0.05 mg/L	101	80.0	120		
Anions and Nutrients (QCLot: 1666838)	7700 44 0 5070 1		0	0.222//	00.0	80.0	100		
Phosphorus, total	7723-14-0 E372-L	0.00	2 mg/L	0.333 mg/L	98.0	80.0	120		
Anions and Nutrients (QCLot: 1666839) Ammonia, total (as N)	7664-41-7 E298	0.00	5 mg/l	0.2 mg/L	101	85.0	115		
	7004-41-7 2298	0.00	5 mg/L	0.2 mg/L	101	65.0	115		
Anions and Nutrients (QCLot: 1667333) Silicate (as SiO2)	7631-86-9 E392	0.5	mg/L	10 mg/L	103	85.0	115		
	1001-00-0 2002	0.0	ing/L	To mg/L	100	00.0	113		
Anions and Nutrients (QCLot: 1667334) Silicate (as SiO2)	7631-86-9 E392	0.5	mg/L	10 mg/L	99.6	85.0	115		
		0.0	g/ _	10	0010	00.0			
Organic / Inorganic Carbon (QCLot: 1666840)									
Carbon, total organic [TOC]	E355-L	0.5	mg/L	8.57 mg/L	103	80.0	120		
Total Metals (QCLot: 1666553)			,						
Aluminum, total	7429-90-5 E420	0.00	3 mg/L	0.1 mg/L	97.9	80.0	120		
Antimony, total	7440-36-0 E420	0.000)1 mg/L	0.05 mg/L	99.5	80.0	120		
Arsenic, total	7440-38-2 E420	0.000)1 mg/L	0.05 mg/L	107	80.0	120		
Barium, total	7440-39-3 E420	0.000	01 mg/L	0.012 mg/L	102	80.0	120		
Beryllium, total	7440-41-7 E420	0.000	, i i i i i i i i i i i i i i i i i i i	0.005 mg/L	99.6	80.0	120		
Bismuth, total	7440-69-9 E420	0.000	Ŭ,	0.05 mg/L	99.7	80.0	120		
Boron, total	7440-42-8 E420	0.01	Ũ	0.05 mg/L	98.0	80.0	120		
Cadmium, total	7440-43-9 E420	0.0000	Ū	0.005 mg/L	101	80.0	120		
Calcium, total	7440-70-2 E420	0.0	Ũ	2.5 mg/L	98.9	80.0	120		
Cesium, total	7440-46-2 E420	0.000	Ŭ	0.002 mg/L	103	80.0	120		
Chromium, total	7440-47-3 E420	0.000	Ũ	0.012 mg/L	103	80.0	120		
Cobalt, total	7440-48-4 E420	0.000	Ū	0.012 mg/L	102	80.0	120		
Copper, total	7440-50-8 E420	0.000	Ū	0.012 mg/L	102	80.0	120		
Iron, total	7439-89-6 E420	0.01	mg/L	0.05 mg/L	102	80.0	120		

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Sub-Matrix: Water						Laboratory Control Sample (LCS) Report					
					Spike	Recovery (%)	Recovery	Limits (%)			
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier		
Total Metals (QCLot: 1666553) - continued											
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	98.2	80.0	120			
Lithium, total	7439-93-2	E420	0.001	mg/L	0.012 mg/L	98.0	80.0	120			
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	107	80.0	120			
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.012 mg/L	102	80.0	120			
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.012 mg/L	99.6	80.0	120			
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	100.0	80.0	120			
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	103	80.0	120			
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	103	80.0	120			
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	103	80.0	120			
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	105	80.0	120			
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	94.0	80.0	120			
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	104	80.0	120			
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.012 mg/L	99.4	80.0	120			
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	106	80.0	120			
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	100	80.0	120			
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	96.8	80.0	120			
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	101	80.0	120			
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	101	80.0	120			
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.012 mg/L	99.8	80.0	120			
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	101	80.0	120			
Uranium, total	7440-61-1	E420	0.00001	mg/L	0 mg/L	104	80.0	120			
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	104	80.0	120			
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	100	80.0	120			
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	94.9	80.0	120			
Total Metals (QCLot: 1666730)											
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	108	80.0	120			
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	100.0	80.0	120			
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	99.5	80.0	120			



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water								e (MS) Report		
					Spi	ke	Recovery (%)	Recovery	Limits (%)	
aboratory sample	ID Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifie
Anions and Nut	rients (QCLot: 1664156)								
HA2402049-001	Anonymous	Fluoride	16984-48-8	E235.F	0.931 mg/L	1 mg/L	93.1	75.0	125	
Anions and Nut	rients (QCLot: 1664157)								
HA2402049-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.48 mg/L	2.5 mg/L	99.4	75.0	125	
Anions and Nut	rients (QCLot: 1664158)								
HA2402049-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.501 mg/L	0.5 mg/L	100	75.0	125	
Anions and Nut	rients (QCLot: 1664159)								
HA2402049-001	Anonymous	Chloride	16887-00-6	E235.Cl	99.8 mg/L	100 mg/L	99.8	75.0	125	
Anions and Nut	rients (QCLot: 1664160)								
HA2402049-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	99.3 mg/L	100 mg/L	99.3	75.0	125	
Anions and Nut	rients (QCLot: 1664164)								
HA2402049-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0194 mg/L	0.02 mg/L	99.2	70.0	130	
Anions and Nut	rients (QCLot: 1664384)								
HA2402050-007	SW24-2	Sulfate (as SO4)	14808-79-8	E235.SO4	106 mg/L	100 mg/L	106	75.0	125	
Anions and Nut	rients (QCLot: 1664385)								
HA2402050-007	SW24-2	Nitrate (as N)	14797-55-8	E235.NO3	ND mg/L		ND	75.0	125	
Anions and Nut	rients (QCLot: 1664386)								
HA2402050-007	SW24-2	Nitrite (as N)	14797-65-0	E235.NO2	0.508 mg/L	0.5 mg/L	102	75.0	125	
Anions and Nut	rients (QCLot: 1664387)								
HA2402050-007	SW24-2	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	
Anions and Nut	rients (QCLot: 1664388)								
HA2402050-007	SW24-2	Chloride	16887-00-6	E235.Cl	104 mg/L	100 mg/L	104	75.0	125	
Anions and Nut	rients (QCLot: 1664389)								
HA2402050-007	SW24-2	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	ND mg/L		ND	70.0	130	
Anions and Nut	rients (QCLot: 1666838)								
BF2400346-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0950 mg/L	0.1 mg/L	95.0	70.0	130	
Anions and Nut	rients (QCLot: 1666839)								
HA2402049-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0998 mg/L	0.1 mg/L	99.8	75.0	125	
Anions and Nut	rients (QCLot: 1667333)								
HA2402049-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	8.55 mg/L	10 mg/L	85.5	75.0	125	

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Sub-Matrix: Water							Matrix Spik	e (MS) Report		
					Spi	ike	Recovery (%)	Recovery	Limits (%)	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrie	ents (QCLot: 1667334) - continued					<u> </u>			
HA2402150-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	9.80 mg/L	10 mg/L	98.0	75.0	125	
	ic Carbon (QCLot: 16	, ,								
HA2402050-001	SW24-1	Carbon, total organic [TOC]		E355-L	5.37 mg/L	5 mg/L	107	70.0	130	
Fotal Metals (QC				2000 2	0.07 mg/L	0 mg/E	101	10.0	100	
	SW24-3		7400.00.5	E 400	ND m m/l		ND	70.0	100	
HA2402050-002	31124-3	Aluminum, total	7429-90-5	E420	ND mg/L		ND	70.0	130	
		Antimony, total	7440-36-0	E420	0.0503 mg/L	0.05 mg/L	101	70.0	130	
		Arsenic, total	7440-38-2	E420	0.0527 mg/L	0.05 mg/L	105	70.0	130	
	Barium, total	7440-39-3	E420	ND mg/L		ND	70.0	130		
		Beryllium, total	7440-41-7	E420	0.00478 mg/L	0.005 mg/L	95.6	70.0	130	
		Bismuth, total	7440-69-9	E420	0.0487 mg/L	0.05 mg/L	97.3	70.0	130	
		Boron, total	7440-42-8	E420	0.049 mg/L	0.05 mg/L	97.4	70.0	130	
		Cadmium, total	7440-43-9	E420	0.00497 mg/L	0.005 mg/L	99.4	70.0	130	
		Calcium, total	7440-70-2	E420	ND mg/L		ND	70.0	130	
		Cesium, total	7440-46-2	E420	0.00260 mg/L	0.002 mg/L	104	70.0	130	
		Chromium, total	7440-47-3	E420	0.0127 mg/L	0.012 mg/L	102	70.0	130	
		Cobalt, total	7440-48-4	E420	0.0124 mg/L	0.012 mg/L	99.6	70.0	130	
		Copper, total	7440-50-8	E420	0.0122 mg/L	0.012 mg/L	97.6	70.0	130	
		Iron, total	7439-89-6	E420	-		ND	70.0	130	
					ND mg/L					
		Lead, total	7439-92-1	E420	0.0241 mg/L	0.025 mg/L	96.4	70.0	130	
		Lithium, total	7439-93-2	E420	0.0114 mg/L	0.012 mg/L	91.6	70.0	130	
		Magnesium, total	7439-95-4	E420	ND mg/L		ND	70.0	130	
		Manganese, total	7439-96-5	E420	ND mg/L		ND	70.0	130	
		Molybdenum, total	7439-98-7	E420	0.0128 mg/L	0.012 mg/L	102	70.0	130	
		Nickel, total	7440-02-0	E420	0.0240 mg/L	0.025 mg/L	96.2	70.0	130	
		Potassium, total	7440-09-7	E420	ND mg/L		ND	70.0	130	
		Rubidium, total	7440-17-7	E420	0.00507 mg/L	0.005 mg/L	101	70.0	130	
		Selenium, total	7782-49-2	E420	0.0518 mg/L	0.05 mg/L	104	70.0	130	
		Silicon, total	7440-21-3	E420	ND mg/L		ND	70.0	130	
		Silver, total	7440-22-4	E420	0.00464 mg/L	0.005 mg/L	92.8	70.0	130	
		Sodium, total	7440-23-5	E420	ND mg/L		ND	70.0	130	
		Strontium, total	7440-24-6	E420	ND mg/L		ND	70.0	130	
			7704-34-9	E420	•		ND	70.0		
		Sulfur, total			ND mg/L				130	
		Tellurium, total	13494-80-9	E420	0.00485 mg/L	0.005 mg/L	97.0	70.0	130	
		Thallium, total	7440-28-0	E420	0.0480 mg/L	0.05 mg/L	95.9	70.0	130	
		Thorium, total	7440-29-1	E420	0.00498 mg/L	0.005 mg/L	99.7	70.0	130	
		Tin, total	7440-31-5	E420	0.0256 mg/L	0.025 mg/L	102	70.0	130	
		Titanium, total	7440-32-6	E420	0.0129 mg/L	0.012 mg/L	103	70.0	130	
		Tungsten, total	7440-33-7	E420	0.00508 mg/L	0.005 mg/L	102	70.0	130	
		Uranium, total	7440-61-1	E420	ND mg/L		ND	70.0	130	
		Vanadium, total	7440-62-2	E420	0.0257 mg/L	0.025 mg/L	103	70.0	130	
		Zinc, total	7440-66-6	E420	0.0237 mg/L	0.025 mg/L	94.8	70.0	130	
		,	7440-67-7	E420	0.00449 mg/L	0.005 mg/L	89.9	70.0	130	1



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	overy (%) Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QC	Lot: 1666730) - continu	ed								
HA2402050-002	SW24-3	Mercury, total	7439-97-6	E508	0.000102 mg/L	0 mg/L	102	70.0	130	
Dissolved Metals	(QCLot: 1667512)									
HA2402050-002	SW24-3	Manganese, dissolved	7439-96-5	E421	ND mg/L		ND	70.0	130	
		Zinc, dissolved	7440-66-6	E421	0.0256 mg/L	0.025 mg/L	102	70.0	130	

Appendix E Service Provider Statement





STATEMENT OF LIMITATIONS

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The assessment should not be considered a comprehensive audit that covers and eliminates all present, past and future risks. The information presented in this Report is based on data collected during the completion of the monitoring conducted. The overall site/subsurface/groundwater conditions were extrapolated based on information collected at specific sampling locations. Professional judgement was exercised in gathering and analyzing data; however, no monitoring method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Consequently, the actual site/subsurface/groundwater conditions between the sampling points may vary. In addition, analysis has been carried out only for the chemical and physical parameters identified, and it should not be inferred that other chemical species or physical conditions are not present.]

It is recommended practice that the Company be retained during subsequent phases of the project, to confirm that the conditions throughout the site do not deviate materially from those encountered throughout the sampling program.]

Any description of the site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader a better understanding of the site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

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