PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT

343 WATERLOO AVENUE,
GUELPH, ONTARIO

For:

2448987 ONT. INC.
343 WATERLOO AVENUE,
GUELPH, ON. N1H 3K1
ATTN: MR. MORGAN ADAMS

BLUEWATER GEOSCIENCE
CONSULTANTS INC.
42 SHADYRIDGE PLACE
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Project No.: BG-915

January 2025

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January 22, 2025

2248987 Ont. Inc.,
343 Waterloo Avenue,
Guelph, ON. N1H 3K1

Attention: Mr. Morgan Adams

Dear Mr. Adams:

Re: **Phase Two Environmental Site Assessment (ESA),**
343 Waterloo Avenue, Guelph, ON

Bluewater Geoscience Consultants Inc. (Bluewater) is pleased to submit this report for the Phase Two Environmental Site Assessment (ESA) recently completed for the above captioned property. Bluewater Geoscience Consultants Inc. (Bluewater) was retained by Mr. Morgan Adams of 2448987 Ont. Inc. (the Client and RSC property owner) to complete a Phase Two Environmental Site Assessment (ESA) for a commercial-use property located at 343 Waterloo Avenue in Guelph, Ontario (the Site and RSC property). The client is considering redeveloping the property for mixed commercial and residential land use and requires a Record of Site Condition for this purpose.

The following report outlines the assessment procedures. This assessment was conducted in accordance with the requirements of the Ontario Ministry of the Environment (MOE) Ontario Regulation 153/04, as amended by O.R 511/09; and CSA Standard Z769-00 for Phase Two ESAs. The investigation of the subject property was completed between December 16, 2024 and January 8, 2025. The investigation completed for this Phase Two ESA and the findings and conclusions are briefly summarized in the Executive Summary in Section 1.0, and discussed in greater detail in the body of this report.

We trust that this report is complete within our terms of reference and suitable for your present requirements. If you have any questions or require further information, please do not hesitate to contact our office.

Sincerely,
BLUEWATER GEOSCIENCE CONSULTANTS INC.

Breton J. Lemieux, M. Sc., P. Geo., QP_{ESA}
President

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1.0 EXECUTIVE SUMMARY

Bluewater Geoscience Consultants Inc. (Bluewater) was retained by Mr. Morgan Adams of 2448987 Ont. Inc. (the client and RSC property owner) to conduct a Phase Two Environmental Site Assessment (Phase Two ESA) of a commercial-use property located at 343 Waterloo Avenue in Guelph, Ontario (hereafter referred to in this report as the "Site" or the "RSC property"). Bluewater understands that the Site consists one legal property and is owned by 2448987 Ont. Inc. The Site is currently and historically in commercial use as an office building. The property had been in agricultural/pastoral use until 1966 when it was initially developed with the construction of the existing, single-storey commercial building.

The completed Phase One ESA identified one on-site non-defined PCA and fourteen off-site PCA identified within the Phase One Study Area. This resulted in the identification of ten on-site APEC related to the on-site and off-site historic activities. The portions of the Phase One property potentially affected by each PCA were determined and a Sampling and Analysis Plan developed to address these.

The purpose of the Phase Two ESA was to determine current environmental conditions of the RSC property. The client is considering residential re-use of the Site, and requires a Record of Site Condition (RSC) for the proposed re-use. The Phase Two ESA involved a drilling investigation at the Site with soil and groundwater sampling and lab analysis and the preparation of a report summarizing Bluewater's findings and recommendations. A total of five (5) boreholes were advanced on the RSC property to address the ten determined APEC and general site stratigraphy. All of the boreholes were advanced within determined APEC areas of the RSC property. Four of the boreholes were developed as groundwater monitoring wells.

Selected soil samples from the boreholes were submitted for laboratory analysis of the VOC/PHC/PAH/Metals and pH parameters. Additionally, one field duplicate soil sample was submitted for analysis of these same parameters as a QA/QC procedure. One VOC/F1 PHC trip blank was also submitted for QA/QC purposes.

The installed groundwater monitoring wells were developed according to accepted MECP protocols prior to initiation of groundwater sampling. Groundwater samples were obtained from each of the installed wells and submitted for analysis of the VOC, PHC, PAH and Metals parameters. Additionally, one field duplicate groundwater sample was submitted for analysis the VOC, PHC, PAH and Metals parameter groups as a QA/QC procedure. One VOC/F1 PHC trip blank was submitted as QA/QC.

The groundwater monitoring wells were surveyed relative to the geodetic datum as established on site by an OLS. The groundwater level in each the wells was measured and the resulting

groundwater flow direction determined. Based on the groundwater levels measured on December 18, 2024, the shallow groundwater was determined to flow towards the east on the RSC property.

The results of the completed soil sample analyses were compared to the applicable Table 2 SCS for residential land use and coarse-textured soil and indicated that all samples met the SCS for all parameters analyzed. No detectable concentrations of any VOC or PHC parameters were determined from any of the site soil samples analyzed. All Metals and PAH parameter concentrations met the Table 2 SCS.

The results of the completed groundwater analyses were compared to the applicable Table 2 SCS and indicated that all samples met the SCS for all parameters analyzed. Elevated chloroform concentrations were determined at all four monitoring well locations but these were discounted as being the result of leakage from the municipal water supply system.

Based on the Phase Two ESA completed, it appears that all soil and groundwater at the RSC property meet the applicable Ont. Reg. 153/04 Table 2 SCS for residential land use.

2.0 INTRODUCTION

2.1 Site Description

Bluewater Geoscience Consultants Inc. (Bluewater) was retained by Mr. Morgan Adams of 2448987 Ont. Inc. (the client and RSC property owner) to conduct a Phase Two Environmental Site Assessment (Phase Two ESA) of a commercial-use property located at 343 Waterloo Avenue in Guelph, Ontario (hereafter referred to in this report as the "Site" or the "RSC property"). Bluewater understands that the Site consists one legal property and is owned by 2448987 Ont. Inc. The Site is currently and historically in commercial use as an office building. The property had been in agricultural/pastoral use until 1969 when it was initially developed with the construction of the existing, single-storey commercial building. As shown on the appended Figure 1, Site Location Plan, the Site is located in an area of mixed commercial and residential land use.

As shown in Figure 3, Aerial Site Plan, the RSC property consists of an irregular shaped parcel approximately 0.09 ha (0.223 acres) in total area. The RSC property is bordered by residential properties to the north, by Beechwood Avenue to the west with residential and (vacant) industrial/commercial properties beyond, by a commercial auto repair garage to the east with residential and commercial properties beyond, and by Waterloo Avenue to the south with residential and commercial properties beyond.

The RSC property is legally described as "Part Lots 11 and 12, Registered Plan 274, as in ROS 629146, City of Guelph, County of Wellington". A copy of the legal survey plan is shown in Figure 3, and enclosed in Appendix E. Based on this information the Municipal Assessment Roll Numbers, the Property Identification Number (PIN) and ownership for the RSC property are as follows:

- Municipal Address: 343 Waterloo Avenue
- Roll Number: 2308 050 014 17500 0000
- PIN: 71280-0013 (LT)
- Owner: 2448987 Ontario Inc.

The geo-referencing coordinates for the approximate centre of the RSC property are as follows:

- Latitude: 43.53241 North
- Longitude: -80.2598254 West
- UTM: Zone 17T 4820207N - 559807E

Bluewater was retained by Mr. Morgan Adams, of 2448987 Ontario Inc, to conduct the Phase One ESA. At the time of the Phase One ESA, the contact information for the project sponsor is as follows:

2448987 Ontario Inc.
67 Hazelwood Drive
Guelph, ON. N1C 1A4
Attn: Mr. Morgan Adams

2.2 Property Ownership

Bluewater was retained by Mr. Morgan Adams of 2448987 Ont. Inc., to conduct the Phase Two ESA. At the time of the Phase Two ESA, the contact information for the project sponsor is as follows:

2448987 Ontario Inc.
343 Waterloo Avenue,
Guelph, ON. N1H 3K1
Attn: Mr. Morgan Adams

2.3 Current and Proposed Future Uses

The site is currently in commercial land use as an office building. The first developed use of the property was in 1966 with the construction of the existing, one-storey office building. The RSC property formerly was in agricultural/pastoral land use prior to 1966. One non-defined MECP PCA (de-icing salt application) had been undertaken historically on the RSC property. Details of past use are expanded in the Phase One ESA. The Client is considering redeveloping the RSC property for residential use. Based on this proposed land use, a Record of Site Condition is required. The City of Guelph is also requiring that the RSC be completed.

2.4 Applicable Site Condition Standards

Based on the conditions encountered, and the proposed future use, the applicable Site Condition Standard (SCS) is Table 2 SCS for residential land use using the coarse-textured soil standard. The following rationale was used to determine the applicable SCS;

The analytical results obtained from the laboratory testing were compared to Ont. Reg. 153/04 (as amended), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition using the residential land use Standards for a coarse-textured soil. The following rationale was used to determine the applicable site restoration criteria for use at this site:

Site Sensitivity: There were no sensitive environmental sites identified in the vicinity of the Site. Based on the information gathered during the investigation, there is greater than 2 m of overburden at the Site. A total of four (4) soil samples were analyzed for pH level. This included samples of the surface soil (0-1.5 m below grade) and subsurface soil (>1.5 m below grade). Lab analysis of site soil pH levels confirm that the soil is within the range of 5 to 9 for surface soil (measured pH = 7.55 and 8.05) and 5 to 11 for subsurface soil (measured pH = 8.08 and 8.09) as required by the Regulation to determine possible site sensitivity and application of Generic SCS. The Site is not located within 30 m of a surface water body as defined by the Regulation. Based on these conditions, the site is not considered to be a potentially sensitive site.

Land Use: The Site is zoned for mixed commercial and residential land use. Surrounding land use is a mix of residential and commercial use within the Phase One ESA Study Area. A change in land use to residential is being considered for the subject site therefore the site condition standards for residential land use will be applied.

Groundwater Use: The Site and surrounding areas obtain their potable water supply from a municipal supply derived from groundwater sources. Based on this condition, the potable groundwater site condition standards are applicable.

Depth and Soil Texture Criteria Selection: The native soils at the Site consist predominantly of clayey Silt with some sand. A particle size distribution analyses of native site soil was completed and the sample was determined to contain only 67.1% fine grained particles. Based on this condition, the coarse-textured soil classification will be used for comparison of analytical data.

Based on the above information, the SCS for this Site corresponds to residential land use Standard for coarse-textured soil using the full-depth approach in a potable groundwater condition (Ont. Reg. 153/04 (as amended), Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The RSC property is an irregular-shaped parcel, approximately 0.09 ha (0.223 acres) in total area. A Site Plan showing the general layout of the RSC property is presented in Figures 3 and 4 and the Plan of Survey in Appendix E. The property consists of the building envelope, with a paved driveway from Beechwood Avenue, providing access to the concrete surface parking lot and building. The Site contains one commercial building which is currently vacant awaiting the proposed redevelopment. The perimeter of the property is landscaped with grass and shrubs. The building at the RSC property comprises an approximately 280 m^2 (3,000 ft^2) single storey structure with a concrete/block foundation, slab-on-grade floor with no basement, wood framing, sloped shingled roof, and exterior brick veneer finish. The building contains office space, utility/storage room and washrooms. Heating is provided by a natural gas-fired furnace.

Based on data collected during this assessment; the RSC property was first developed for commercial use in 1966 with construction of the current commercial office building. Bluewater determined this first developed use from a review of aerial photographs, historical maps, municipal records, interviews, and title search data for the RSC property. Based on information from the above noted sources, the historical chronology of the RSC property development is briefly summarized below:

- The site and surrounding land were historically in agricultural/pastoral land use since Guelph was first settled in the early 1800's. The RSC property was part of an original larger parcel of agricultural land, which was subsequently severed into smaller parcels. Crown Grant to the Canada Land Company occurred in 1829, and the current RSC property was severed from the original parcel and the Plan of Subdivision was registered in 1878. The property was subsequently owned by a series of individuals or families from 1878 until first developed use in 1966.
- The RSC property was first developed in 1966 with the construction of an office building for The Guelph & District Association for Retarded Children Inc. (operating as ARC Industries).
- From 1966 to present day, the RSC property has been owned and/or occupied by a series of commercial businesses for their own and/or tenant office space, including but not limited to: ARC, The Canadian Jersey Cattle Club Association of Canada, law offices, real estate agents, mortgage consultants, and financial advisors.
- The current owner, 2448987 Ontario Inc. acquired the RSC property in 2015, and the building continues to be used for commercial office space by the owner and tenants.

The RSC property is relatively flat, with an approximate Site elevation of 314.5 masl, and the UTM coordinates are 4820207N / 559807E. The regional topographic gradient and inferred direction of groundwater flow is generally to the south, towards the Speed River, located approximately 260m south of the Site.

According to Chapman and Putnam in the Physiography of Southern Ontario, the City of Guelph (which includes the Site) is situated in the physiographic region known as the Guelph Drumlin Field. Surficial geology mapping published by the Geological Survey of Canada indicates that the surface geology in the area is primarily fluvial and glacio-fluvial outwash deposits consisting of silts, sands, and gravels. In the area of the Site, bedrock is reported to consist primarily of Paleozoic Era limestone and dolostone of the Guelph and Amabel Formations, which is generally encountered at shallow depths of 2 to 3 m below ground surface, according to off-site well records in the Study Area. Regional groundwater flow in the area is assumed to follow the regional topographic gradient to the south, towards the Speed River.

3.2 Past Investigations

A Phase One ESA was conducted by Bluewater dated December 20, 2024 which identified nine areas of potential environmental concern (APEC) in association with historical activities on-site and off-site (Figure 6, Appendix A). Based on the Phase One ESA completed, it was Bluewater's opinion that there are potential environmental concerns at the Site; including Potentially Contaminating Activities (PCA) and Areas of Potential Environmental Concern (APEC) associated with historical on-site and off-site activities. The findings, observations and conclusions are briefly summarized below. The PCA identified during this assessment include the following:

APEC 1 – On-Site PCA: Application of de-icing agents for winter safety (Not defined as PCA by MECP) – de-icing salt has been applied to the on-site parking lot for the purpose of winter safety, creating an APEC related to the parking area in western portion of RSC property (referred to as APEC 1). As such, salt-related parameters such as Sodium, SAR and Electrical Conductivity may potentially be present at the RSC property. Based on the findings of the Phase One ESA, no other sources were identified on or off-site, and the potential presence of salt-related parameters can be attributed to de-icing activities at the RSC property (and adjacent municipal roadways and sidewalks), and are therefore being discounted as potential Contaminants of Concern per exemptions set out in paragraphs 1 and 2 of section 49.1 of OR 153/04, as amended. As such, no further investigation of this APEC is required under the regulations.

APEC 2 – Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – three underground storage tanks (UST) for gasoline were reportedly located at 335 Waterloo Avenue, adjacent to the east of the RSC property, related to the historical operation of an off-

site gasoline service station. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to off-site gas station operations at 335 Waterloo Avenue (APEC 2). This off-site PCA creates the potential that soil and groundwater may be impacted from BTEX, PHC and PAH parameters. Impacts associated with this APEC could be expected to be potentially found within shallow, near-surface soils or at deeper, near water table elevations. This APEC applies to the area of the eastern property boundary of the RSC property. BH/MW-1, BH/MW-4 and BH-5 (see Figure 7) were completed to assess this APEC.

APEC 3 – Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – a vehicle repair garage is located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to the off-site garage at 335 Waterloo Avenue (APEC 3). This off-site PCA creates the potential that soil and groundwater may be impacted from VOC, PHC, PAH and Metals/Hydride-forming Metals (As, Sb, Se) parameters. PAH and Metals/Hydride-forming Metals were included in the COPC due to the potential presence of waste oil which can include PAH and Metals/Hydride-Forming Metals. Impacts associated with this APEC could be expected to be potentially found within shallow, near-surface soils or at deeper, near water table elevations. BH/MW-1, BH/MW-4 and BH – 5 (see Figure 7) were completed to assess this APEC.

APEC 4 – Off-Site PCA: Commercial Autobody Shops (PCA 10) – an historic auto body repair business was formerly located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to former off-site auto body repair shop at 335 Waterloo Avenue (referred to as APEC 4). This off-site PCA creates the potential that soil and groundwater may be impacted should leakage or spillage of liquid or solid contaminants associated with the body shop have occurred. The soil and/or groundwater in this area may have been impacted from VOC, PHC and Metals/Hydride-Forming Metals parameters. This APEC applies to the area of the eastern property boundary of the RSC property. BH/MW-1, BH/MW-4 and BH – 5 (see Figure 7) were completed to assess this APEC.

APEC 5 – Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – two underground fuel storage tanks (UST) were reportedly located at 371 Waterloo Avenue, to the west of the RSC property, related to the historical operation of a former bus garage and transit facility. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the underground fuel storage tanks at 371 Waterloo Avenue (APEC 5). This off-site PCA creates the potential that groundwater may be impacted from BTEX, PHC and PAH parameters. This APEC applies to the area of the western property boundary of the RSC property. BH/MW-2 and BH/MW-3 (see Figure 7) were completed to assess this APEC.

APEC 6 – Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – an historic municipal bus garage was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the former bus garage at 371 Waterloo Avenue (APEC 6). This off-site PCA creates the potential that groundwater may be impacted from VOC, PHC, PAH and Metals/Hydride-Forming Metals parameters. PAH and Metals/Hydride-Forming Metals were included in the COPC due to the potential presence of waste oil which can include PAH and Metals/Hydride-Forming Metals. BH/MW-2 and BH/MW-3 (see Figure 7) were completed to assess this APEC.

APEC 7 – Off-Site PCA: Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52) – the Guelph Transit Commission facility was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the historic transit facility at 371 Waterloo Avenue (APEC 7). This off-site PCA creates the potential to impact groundwater along the western property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with VOC, PHC, PAH and Metals/Hydride-Forming Metals parameters along the western property boundary. BH/MW-2 and BH/MW-3 (Figure 7) were completed to assess this APEC.

APEC 8 - Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45) – an historic paper manufacturing facility was formerly located at 103 Beechwood Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the former paper manufacturing facility at 103 Beechwood Avenue (APEC 8). This off-site PCA creates the potential to impact groundwater along the western property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with VOC and Metals/Hydride-Forming Metals parameters along the western property boundary. BH/MW-2 and BH/MW-3 (Figure 7) were completed to assess this APEC.

APEC 9 - Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – two underground storage tanks (UST) for gasoline were reportedly located at 338 Waterloo Avenue, across Waterloo Avenue to the south of the RSC property, related to the historical operation of an off-site gasoline station. This off-site PCA creates an APEC for the southern boundary of RSC property, across Waterloo Avenue from the off-site underground fuel storage tanks at 338 Waterloo Avenue (APEC 9). This off-site PCA creates the potential to impact groundwater along the southern property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential

for impact to groundwater with BTEX, PHC and PAH parameters along the southern property boundary. BH/MW-1 and BH/MW-2 (Figure 7) were completed to assess this APEC.

APEC 10 - Leakage of Municipally Treated Water containing Trihalomethanes (THM): Non-defined PCA - Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Based on this, there is potential for elevated concentrations of Chloroform and other THM to be present in site groundwater, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of THM, possibly in excess of MECP Table 2 RPI SCS for coarse-textured soils may be present in groundwater at the RSC property. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform or other THM were identified within the ESA Study Area. Therefore, THM is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document 'Guidance for Addressing Chloroform at a Record of Site Condition Property".

Five other PCA were identified at off-Site properties within the Phase One Study Area that are not considered to represent an APEC for the RSC property based on the distance from the RSC property and the inferred downgradient location relative to the RSC property. The identified off-Site, non-APEC PCA include:

- Off-Site PCA: Chemical Manufacturing, Processing and Bulk Storage (PCA 8) – the former Sterling Rubber factory was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Rubber Manufacturing and Processing (PCA 47) – the former Sterling Rubber factory was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Solvent Manufacturing, Processing and Bulk Storage (PCA 51) – the former Sterling Rubber factory was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Waste Disposal and Waste Management, including thermal treatment, landfilling & transfer of waste, other than use of biosoils as soil conditioners (PCA 58) –

the former Sterling Rubber factory and associated landfill was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.

- Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – a former vehicle repair garage was historically located at 268 Waterloo Ave., approx. 200 m to east and cross grade of RSC property.

Based on the Phase One ESA completed, it is Bluewater's opinion that there are potential environmental concerns at the Site; including Potentially Contaminating Activities (PCA) and Areas of Potential Environmental Concern (APEC) associated with historical on-Site and off-site land uses. The findings, observations and conclusions are briefly summarized below. The APEC identified during this assessment include the following:

APEC 1 – On-Site PCA: Application of de-icing agents for winter safety (Not defined as PCA by MECP) – de-icing salt has been applied to the on-site parking lot for the purpose of winter safety, creating an APEC related to the parking area in western portion of RSC property (referred to as APEC 1). As such, salt-related parameters such as Sodium, SAR and Electrical Conductivity may potentially be present at the RSC property. Based on the findings of the Phase One ESA, no other sources were identified on or off-site, and the potential presence of salt-related parameters can be attributed to de-icing activities at the RSC property (and adjacent municipal roadways), and are therefore being discounted as potential Contaminants of Concern per exemptions set out in paragraphs 1 and 2 of section 49.1 of OR 153/04, as amended.

APEC 2 – Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – three underground storage tanks (UST) for gasoline were reportedly located at 335 Waterloo Avenue, adjacent to the east of the RSC property, related to the historical operation of an off-site gasoline service station. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to off-site underground fuel storage tanks at 335 Waterloo Avenue (APEC 2). This off-site PCA creates the potential that soil and groundwater may be impacted from BTEX, PHC and PAH parameters. Impacted soil associated with this APEC could be expected to be potentially found within shallow, near-surface soils or at deeper, near water table elevations. This APEC applies to the area of the eastern property boundary of the RSC property. BH/MW-1, BH/MW-4 and BH-5 (see Figure 7) were completed to assess this APEC.

APEC 3 – Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – a vehicle repair garage is located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to off-site garage at 335 Waterloo Avenue (APEC 3). This off-site PCA creates the potential that soil and groundwater may be impacted from VOC, PHC, PAH and Metals parameters. PAH and Metals were included in the COPC due to the potential presence of waste oil which can include PAH and Metals. Impacted soil associated with this

APEC could be expected to be potentially found within shallow, near-surface soils or at deeper, near water table elevations. BH/MW-1, BH/MW-4 and BH – 5 (see Figure 7) were completed to assess this APEC.

APEC 4 – Off-Site PCA: Commercial Autobody Shops (PCA 10) – an historic auto body repair business was formerly located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to former off-site auto body repair shop at 335 Waterloo Avenue (referred to as APEC 4). This off-site PCA creates the potential that soil and groundwater may be impacted should leakage or spillage of liquid or solid associated with the body shop have occurred. The soil and/or groundwater in this area may have been impacted from VOC, PHC and Metals parameters. This APEC applies to the area of the eastern property boundary of the RSC property. BH/MW-1, BH/MW-4 and BH – 5 (see Figure 7) were completed to assess this APEC.

APEC 5 – Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – two underground fuel storage tanks (UST) were reportedly located at 371 Waterloo Avenue, to the west of the RSC property, related to the historical operation of a former bus garage and transit facility. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the underground fuel storage tanks at 371 Waterloo Avenue (APEC 5). This off-site PCA creates the potential that groundwater may be impacted from BTEX, PHC and PAH parameters. The groundwater in this area may have been impacted from BTEX, PHC and PAH parameters. This APEC applies to the area of the western property boundary of the RSC property. BH/MW-2 and BH/MW-3 (see Figure 7) were completed to assess this APEC.

APEC 6 – Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – an historic municipal bus garage was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the former bus garage at 371 Waterloo Avenue (APEC 6). This off-site PCA creates the potential that groundwater may be impacted from VOC, PHC, PAH and Metals parameters. PAH and Metals were included in the COPC due to the potential presence of waste oil which can include PAH and Metals. BH/MW-2 and BH/MW-3 (see Figure 7) were completed to assess this APEC.

APEC 7 – Off-Site PCA: Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52) – the Guelph Transit Commission facility was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the historic transit facility at 371 Waterloo Avenue (APEC 7). This off-site PCA creates the potential to impact groundwater along the western property boundary should any releases have occurred and migrated with groundwater flow onto the RSC

property. The off-site PCA creates the potential for impact to groundwater with VOC, PHC, PAH and Metals parameters along the western property boundary (Figure 7). BH/MW-2 and BH/MW-3 (Figure 7) were completed to assess this APEC.

APEC 8 - Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45) – an historic paper manufacturing facility was formerly located at 103 Beechwood Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the former paper manufacturing facility at 103 Beechwood Avenue (APEC 8). This off-site PCA creates the potential to impact groundwater along the western property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with VOC and Metals parameters along the western property boundary (Figure 7). BH/MW-2 and BH/MW-3 (Figure 7) were completed to assess this APEC.

APEC 9 - Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – two underground storage tanks (UST) for gasoline were reportedly located at 338 Waterloo Avenue, across Waterloo Avenue to the south of the RSC property, related to the historical operation of an off-site gasoline service station. This off-site PCA creates an APEC for the southern boundary of RSC property, adjacent to off-site underground fuel storage tanks at 338 Waterloo Avenue (APEC 9). This off-site PCA creates the potential to impact groundwater along the southern property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with BTEX, PHC and PAH parameters along the western property boundary (Figure 7). BH/MW-1 and BH/MW-2 (Figure 7) were completed to assess this APEC.

APEC 10 - Leakage of Municipally Treated Water containing Trihalomethanes (THM): Non-defined PCA - Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Based on this, there is potential for elevated concentrations of Chloroform and other THM to be present in site groundwater, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of THM, possibly in excess of MECP Table 2 RPI SCS for coarse-textured soils may be present in groundwater at the RSC property. This is considered to be attributed to the release of municipally treated water via sewer and water main

leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform or other THM were identified within the ESA Study Area. Therefore, THM is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document 'Guidance for Addressing Chloroform at a Record of Site Condition Property".

4.0 SCOPE OF INVESTIGATION

4.1 Overview of Site Investigation

Bluewater understands that the Client is considering redeveloping the Site for residential land use and requires a Record of Site Condition (RSC) for the Site as per Ontario Regulation 153/04 (i.e., Records of Site Condition – Part XV.1 of the Act, made under the Ontario Environmental Protection Act, R.S.O. 1990) (hereafter referred to as the "RSC Regulation"), as amended by Ontario Regulation 511/09. As such, the purpose of Bluewater's Phase Two ESA was to determine whether PCA and APEC identified in the Phase One ESA had resulted in actual impacts to soil and groundwater at concentrations in excess of the residential SCS.

As such, Bluewater's scope of work for the Phase Two ESA involved the following:

- Developing a Sampling and Analysis Plan for the Phase Two ESA;
- Clearing underground services at the property with representatives of the various utility companies as well as a privately-retained locator;
- Advancing five (5) boreholes at locations around the RSC property and within the defined APEC areas to ascertain soil, bedrock and groundwater conditions;
- Installing groundwater monitoring wells at four borehole locations to enable determination of groundwater elevations, flow directions and gradients and allow samples of the groundwater to be obtained and submitted for lab analysis;
- Complete soil vapour screening on the recovered soil samples from the boreholes to determine whether indications of environmental impairment were present and guide selection of lab samples;
- Selecting representative soil samples from the boreholes (plus applicable duplicate soil samples and trip blanks) and submitting for analysis of the Potential Contaminants of Concern including VOC, PHC, PAH and Metals and pH parameters;
- Developing the groundwater monitoring wells according to MECP protocols in anticipation of sampling. Monitoring of the groundwater monitoring wells for the potential presence of DNAPL/LNAPL utilizing an interface probe;
- Determining the groundwater elevations at the subject property and determining groundwater flow direction and hydraulic gradient;
- Obtaining representative groundwater samples (plus applicable field duplicates and trip blanks for QA/QC purposes) and submit for lab analysis of the VOC, PHC, PAH and Metals parameters;

- Survey the location and elevations of the installed boreholes and groundwater monitoring wells relative to the geodetic datum;
- Comparing the results of the completed soil and groundwater analyses to the Table 2 RPI SCS to determine compliance;
- Determining the required remedial actions, if any;
- Preparing a report summarizing Bluewater's findings and recommendations; and
- Submitting the Phase Two ESA report to the owner of the Site.

The scope of work for the Phase Two ESA did not include:

- An assessment of biological features or related aspects of the natural environment; or
- An assessment of permits or licenses that may be required for re-development of the Site.

4.2 Media Investigated

The Phase Two investigations included sampling and lab analysis of soil and groundwater from the property for the identified Potential Contaminants of Concern (PCOC) based on the completed Phase One ESA. No sediment is present on the Phase Two property. The rationale for drilling locations was based upon investigating APEC's 1 - 10 from the Phase One ESA and in consideration of buried utilities, property boundaries and Site access. Boreholes were located as follows (Figure 7, Appendix A):

BH/MW - 1 – located is the southeast corner of the RSC property to address APEC 2, 3, 4 and 9;

BH/MW - 2 – located near the southwest corner of the RSC property to address to address APEC 5, 6, 7, 8 and 9;

BH/MW - 3 – located near the northwest corner of the RSC property APEC 5, 6, 7 and 8;

BH/MW - 4 – located near the northeast corner of the RSC property to address APEC 2, 3 and 4;

BH - 5 – located in the central portion of the eastern property boundary to address APEC 2, 3 and 4;

The results for all soil and groundwater samples submitted for analysis were used in the Phase Two ESA. The analytical laboratory has reviewed the results of soil and groundwater analysis and determined that all results meet the QA/QC protocols for Ont. Reg. 153/04.

4.3 Phase One Conceptual Site Model

A conceptual site model was developed for the RSC property in general accordance with the ASTM International Standard E1689-95 (Reapproved 2008) document, *Standard Guide for Developing Conceptual Site Models for Contaminated Sites*. Based on the available information and data contained in this Phase One ESA report, including our understanding of Site conditions and building construction, Bluewater has developed the following conceptual site model to provide an understanding of the potential sources of contamination, the migration pathways for contamination, and potential receptors as a result of the potential environmental concerns identified in Sections 8.2 and 8.3. The Phase One Conceptual Model is also illustrated graphically in the attached Figures, including:

- Figure 1, Location Plan, shows the location and limits of the RSC property and Study Area,
- Figure 2, Plan of Study Area – Land Use and PCA, shows land use and the locations and distribution of the PCA identified in the Study Area during the Phase One ESA;
- Figure 3, Aerial Site Plan, shows the layout and boundaries of the RSC Property with an aerial photographic background;
- Figure 4, Site Plan, shows the layout and boundaries of the RSC Property;
- Figure 6, Site Plan of APEC, shows the major components of the Phase One CSM for the RSC property, including the locations, distribution and limits of APEC at the RSC property.

A description and summary of the Phase One CSM is provided in the text below:

Phase One Conceptual Site Model
Potential Sources: *Site:* One PCA was identified on-Site that is considered to represent an APEC for the western parking lot at the site, specifically: the application of de-icing salt which is considered to be exempt from further investigation, by Regulation (see sections 8.2 and 8.3 for detailed descriptions of the identified PCA and APEC). *Phase One Study Area*: Eight PCA were identified at four off-Site properties within the

Phase One ESA Study Area, that are considered to represent APEC for the RSC property, including: historical fuel storage and dispensing, current and historical automotive/vehicle and equipment repairs, historical auto-body repair, and historical paper manufacturing.

Potential Release Mechanisms:

Potential release mechanisms could include spills, leaks, planned or accidental discharges of possible hazardous products during historical and/or current on-site activities (fuel storage and dispensing, automotive/vehicle/equipment and auto-body repairs, industrial activities). Based on the identified PCA and APEC, potential Contaminants of Concern (COC) at the RSC property could include heavy metals, inorganic parameters (EC/SAR, Na, Cl); Petroleum Hydrocarbons (PHC); Volatile Organic Compounds (VOC); Benzene, Toluene, Ethylbenzene and Xylenes (BTEX); and Polycyclic Aromatic Hydrocarbons (PAH);

Potential Pathway and Receptors:

At the RSC property, potential pathways/receptors for contamination were identified as follows:

- Soil: No evidence of actual soil contamination was identified during the Phase One ESA.; however, undiscovered impacts to soil (PHC, VOC/BTEX, metals & inorganics, PAH,) could potentially be present at the RSC property in relation to the identified PCA and APEC.
- Groundwater: No evidence of actual groundwater contamination was identified at the RSC property; however, undiscovered impacts to groundwater (PHC, VOC/ BTEX, metals, PAH,) could potentially be present at the RSC property in relation to the identified PCA and APEC.
- Vapour Migration: Although no current soil or groundwater impacts have been identified at the RSC property; vapour migration could be possible, if impacted soil or groundwater from volatile contaminants related to potential off-site contamination were to be present and if vapour migration were to occur.
- Surface Water: No natural surface water bodies or other Potentially Environmentally Sensitive areas were identified at the RSC property or within 30 m of the RSC property.
- Preferential Migration Pathways: Utility services at the RSC property could provide a potential migration pathway, if soil or groundwater impacts are confirmed to be present.

4.4 Deviations from the Sampling & Analysis Plan

All groundwater monitoring wells were purged of a minimum of 3-5 casing volumes prior to sampling. Therefore, measurement and stabilization of water quality parameters prior to groundwater sampling were not obtained. The QP_{ESA} has determined that this deviation does not limit the investigation or findings of the overall Phase Two ESA. There were no other deviations from the SAP.

4.5 Impediments

No impediments to the Phase Two investigation were encountered. The available locations for drilling were adequate for assessment of on-site soil, bedrock and groundwater conditions.

5.0 INVESTIGATION METHOD

5.1 General

The Phase Two ESA took the form of a drilling program with soil and groundwater assessment. Utility services were located and marked by the utility provider through Ontario One Call prior to drilling. This was supplemented by a private utility locator retained by Bluewater that marked on-site utility lines and cleared borehole locations.

5.2 Drilling & Excavating

The Site drilling activities were completed on December 16, 2024 and consisted of advancing five (5) boreholes to assess the determined APEC for the Site and general soil, bedrock and groundwater conditions around the Site. Four of these boreholes were developed as groundwater monitoring wells (Figure 6, Appendix A). Drilling was completed utilizing two drill rigs including a track-mounted Geoprobe 6620 drill rig and a truck-mounted CME 75 drill rig operated by Arrow Drilling of London, Ontario. Advancement of boreholes was accomplished using hollow stem augers with standard penetration test sampling. The bedrock was drilled for monitoring well installation using rotary percussion techniques with air. No liquid drilling fluids were used.

In order to minimize the potential for cross contamination, the samplers and associated tooling were decontaminated after each sample using soap and rinse water. Augers and rods used to install the groundwater monitoring wells was decontaminated between each borehole.

5.3 Soil Sampling

Soil sampling was completed using standard penetrations testing (SPT) sampling techniques producing 50 mm diameter soil samples of 0.6 m length. Each recovered soil sample was opened and inspected for visual and olfactory evidence of environmental impact. A portion of each recovered soil sample was placed into a plastic, zip-loc bag for vapour screening while another portion was placed into laboratory-supplied soil jars for potential lab analysis. Soil samples for VOC/F 1 PHC analysis were obtained using dedicated terracore samplers and placed into 10 ml of methanol preservative. Other soil samples were placed into the appropriate, laboratory-supplied glass sample jars.

Selected soil samples from each borehole were submitted for laboratory analysis based on the nature of the APEC that borehole was assessing. Soil samples from the assessment were analyzed for the VOC/PHC/PAH/Metals and pH parameters. Additionally, one field duplicate soil samples was analyzed for the VOC/PHC/PAH and Metals parameters. One VOC/F1 PHC trip blank was submitted for lab analysis as a QA/QC procedure.

5.4 Field Screening Measurements

Each recovered soil sample was inspected for visual and olfactory evidence of impact. A portion of each soil sample placed into zip-loc bags was screened for organic vapour concentration using a Minirae 3000 photo-ionization detector (PID) calibrated against isobutylene. The Minirae 2000 provides a detection range of 0 – 10,000 ppm with a resolution of 0.1 ppm. The Minirae 3000 was recalibrated according to manufacturer's specifications prior to each field day. The Minirae 3000 can measure organic vapour concentrations from VOC parameters (including BTEX parameters) with an accuracy of 0.1 ppm. The Minirae pump has a flow rate of 400 cc/minute. Samples for analysis of VOC and PHC were selected based on field screening and physical properties.

5.5 Ground Water Monitoring Well Installation

Groundwater monitoring wells were installed at four borehole locations (BH/MW's 1 -4). Groundwater monitoring wells were created using new, 38 mm PVC pre-packed screens (0.01" slot size) and riser pipes. A 3.1 m long screened section was placed in the base of the borehole with blank riser pipe above. A silica sand pack was placed around, and slightly above, the screened section. A bentonite seal was placed above the sand pack and was installed to seal the upper portion of the borehole to surface to prevent surficial water infiltration. The top of each PVC well pipe was fitted with a j-plug and pad lock and provided with a steel flushmounted or monument protective casings.

5.6 Ground Water: Field Measurements of Water Quality Parameters

After installation of the groundwater monitoring wells, a period of ~one week was allowed for groundwater conditions to achieve equilibrium. Each well was checked for the potential presence of free phase DNAPL and LNAPL product utilizing a Heron interface probe. The depth to groundwater in each well was also measured using the probe. Each well was purged of a minimum of three - five casing volumes of water prior to initiating groundwater sampling. As no drilling fluid or water was used to drill the holes, and the purged water had become low in sediment, it was determined that this procedure would provide adequate well development for sampling.

Each groundwater monitoring well was probed for the potential presence of DNAPL/LNAPL utilizing a Heron interface probe. No DNAPL/LNAPL presence was determined at any location.

5.7 Ground Water: Sampling

Groundwater monitoring well development and sampling was undertaken on December 18, 2024. After proper development of the wells utilizing waterra tubing and foot valves,

groundwater samples were collected using dedicated bailers. Recovered groundwater samples were placed into the appropriate, laboratory-supplied sample containers and then placed within an ice-filled cooler until delivery to the lab. Groundwater sample containers for VOC, PHC, PAH and Metals analysis were supplied with appropriate preservative. Metals samples were field filtered using dedicated, in-line 45 micron filters prior to placement into the nitric acid preservative-containing bottles.

5.8 Sediment Sampling

No sediment is present on-site; therefore no sampling was conducted, nor considered necessary for this investigation, based on the findings of Phase One ESA.

5.9 Analytical Testing

All soil and groundwater sample analysis was completed by ALS Laboratories of Waterloo, Ontario. ALS Laboratories is accredited by Canadian Association for Laboratory Accreditation Inc. (CALA). The laboratory has confirmed that all samples were received in good condition. All samples submitted to the laboratory were analyzed. Laboratory Certificates of Analysis (C of A) are included in Appendix D. Selected soil samples were analyzed for the PCOC's parameter suites identified in the Phase One ESA including: VOC, PHC, PAH, and Metals. Groundwater samples were analyzed for VOC, PHC, PAH, Metals. Soil samples for determination of pH and particle size distribution were also completed as part of the Phase Two ESA.

5.10 Residue Management Procedures

Excess soil cuttings, wash water and purged groundwater were stored on-site in steel, 45-gallon drums to await the results of completed lab analyses.

5.11 Elevation Surveying

The collar elevation and top of well pipe elevation for each borehole/monitoring well was surveyed relative to geodetic datum by surveyors retained by the Client. The borehole and monitoring well elevation data is provided in Table 1, Appendix C.

5.12 Quality Assurance & Quality Control Measures

Quality Assurance/Quality Control (QA/QC) was maintained during the field program through equipment decontamination and sampling procedures, as outlined in the MOECC Guidance on Sampling and Analytical Methods (MOE, 1996). The interface probe and sampling trowel were decontaminated between sampling locations.

All samples were placed into pre-cleaned laboratory-supplied bottles then labeled with project and sample number, sample parameter required and date. The samples were stored in insulated coolers with ice packs to initiate cooling for transportation to the lab the same day. All samples were submitted with a completed chain of custody listing the sample identification, sample date and time, sample matrix, the number of sample containers submitted and analytical parameters requested.

Field QA&QC measures included the provision and analysis of field duplicate soil samples for VOC, PHC, PAH and Metals parameters and field duplicate groundwater samples for VOC, PHC, PAH and Metals parameters at a rate of one duplicate for every ten samples. As well, trip blanks for VOC and F1 PHC in soil and groundwater were completed for each submission. Soil and groundwater samples were placed into the appropriate laboratory-supplied sample containers for each analysis. The lab has confirmed that all samples were received in good condition and cooling was initiated. All sample holding times were met. Extensive QA/QC procedures were performed by the analytical laboratory including: lab blanks, spikes, matrix blanks and instrument tuning and performance assessment. Based on communication between Bluewater and ALS, the QP_{ESA} has confirmed that field sampling and lab protocols were satisfactory and in compliance with the SAP.

Lab QA&QC measures are consistent with requirements of The Regulation and are detailed in the Laboratory Certificates of Analysis contained in Appendix D of this report.

6.0 REVIEW AND EVALUATION

6.1 Geology

A total of five boreholes were advanced within APEC areas determined on the RSC property to assess soil and groundwater conditions. These are BH/MW-1, BH/MW - 2, BH/MW – 3, BH/MW-4 and BH – 5 (Figure 7). Groundwater monitoring wells were installed at BH/MW-1, BH/MW-2, BH/MW-3 and BH/MW-4. The Stratigraphy and groundwater conditions encountered in the boreholes were documented in the field by Bluewater personnel. This consisted of surficial concrete slab (BH/MW-3) or topsoil (BH/MW-1, BH/MW-2 and BH/MW-3 and BH – 5). Beneath the concrete at BH/MW-3 was a thin layer (0.1m) of sand and gravel fill. Beneath this fill and beneath the topsoil was encountered native clayey Silt with some sand and trace gravel. The Silt extended to depths of 2.1 – 2.4 m below grade, Underlying the Silt at all locations was dolostone bedrock which extended to the maximum depth investigated of 6.7 m below grade. A representative sample of the native Silt soil was analyzed for grain size distribution. The sample taken from BH-5 at 1.5 – 2.1 m below grade was found to contain 67.1% silt and clay sized particles. Based on the grain size analysis completed containing less than 70% fine grained particles and the groundwater being contained within bedrock, the soil may be considered as coarse textured as per the Regulation. The maximum depth investigated was 6.7 m (22 feet) below existing grade at BH/MW-4. Organic vapour screening was completed on all samples obtained from all of the boreholes and no elevated vapour concentrations were determined at any location.

The native dolostone bedrock encountered in the subsurface of the RSC property is considered to be an aquifer due to the groundwater contained in it. No groundwater was noted within the Silt overburden at the RSC property.

Borehole logs containing detailed stratigraphic information, soil vapour screening results and groundwater monitoring well installation details for each borehole are provided in Appendix B. Figure 9 provides geologic cross sections through the Phase Two property in directions parallel and perpendicular to the determined groundwater flow direction.

6.2 Ground Water: Elevations and Flow Direction

The screened section of each well was placed in the base of each hole within the dolostone bedrock unit. The screened section of each monitoring well was placed to straddle the water table. The ground surface elevation and top of well pipe elevations for each of the installed groundwater monitoring wells were surveyed relative to geodetic. The depth to groundwater and resulting inferred groundwater flow directions were determined on two separate occasions roughly 2 weeks apart. Figure 8, Appendix A presents the groundwater elevation data and

inferred groundwater flow direction. Based on the determined groundwater elevations, an easterly groundwater flow direction was determined for the Site. Tables 1 and 2, Appendix C provide the monitoring well installation data and determined groundwater elevations for the wells. It is not expected that significant temporal deviation in groundwater flow direction is present. Groundwater levels are well below the depth of any buried utilities at the Site and these are not expected to influence groundwater flow characteristics. The presence of free phase DNAPL or LNAPL product was not determined during the Phase Two ESA.

6.3 Ground Water: Hydraulic Gradient

Based on the determined groundwater contours a maximum horizontal hydraulic gradient of 0.33 and minimum horizontal hydraulic gradient of 0.05 were determined for the surficial aquifer. The average horizontal hydraulic gradient was determined to be 0.19. Figure 8, Appendix A shows the determined flow direction and groundwater elevation contours for the December 18, 2024 groundwater monitoring event.

6.4 Soil: Texture

A representative sample of the native Silt soil was analyzed for grain size distribution. The sample taken from BH-5 at 1.5 – 2.1 m below grade was found to contain 67.1% silt and clay sized particles. Based on the grain size analysis completed containing less than 70% fine grained particles and the groundwater being contained within bedrock, the soil may be considered as coarse textured as per the Regulation. The grain size analysis results are provided in Appendix B.

6.5 Soil: Field Screening

None of the recovered soil samples were determined to contain measurable organic vapour concentrations above background. The results of the completed field vapour screening are presented on the Field Borehole Logs provided in Appendix B.

6.6 Soil Quality

The locations and depths of soil samples selected for lab analysis is provided on the Borehole Logs contained in Appendix B and in Table 2 of Appendix C. Laboratory Results Tables with comparison the SCS are provided in Appendix C. All analyzed soil samples meet the applicable Table 2 RPI SCS for the analyzed VOC, PHC, PAH and Metals parameters.

Tables 3 - 7 in Appendix C provide the soil sample results with comparison to the Table 2 SCS. These concentrations do not represent a source of contaminant mass contributing to

groundwater or sediment impact. These results do not indicate the presence of LNAPL or DNAPL. No detectable VOC or PHC concentrations were determined for the soil sample analyzed.

6.7 Ground Water Quality

The completed groundwater analyses indicated that none of the groundwater samples (or duplicates) contained concentrations of the VOC, PHC, PAH or Metals parameters in excess of the Table 2 SCS with the exception of chloroform. Chloroform was found in all four monitoring wells at concentrations (ranging from 13.1 – 18.7 ug/L) in excess of the Table 2 RPI SCS for coarse grained soils but below the Table 2 RPI SCS for fine to medium textured soils. Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Elevated concentrations of Chloroform were detected in groundwater samples from all site wells, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of Chloroform were recorded in all groundwater samples, slightly in excess of MECP Table 2 SCS. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. Therefore, Chloroform is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document 'Guidance for Addressing Chloroform at a Record of Site Condition Property". Tables 7 - 11 in Appendix C provide the groundwater analysis results with comparison to the Table 2 SCS. These groundwater results do not indicate that the soil serves as a source of contaminant mass contributing to groundwater or sediment. The groundwater results do not indicate the potential presence of LNAPL or DNAPL.

6.8 Sediment Quality

No sediment sampling was conducted for this investigation, therefore no comments are provided regarding sediment quality.

6.9 Quality Assurance & Quality Control Results

The findings of the completed QA&QC program indicated that none of the soil or groundwater trip blanks were found to contain any detectable VOC or F1 PHC concentrations confirming that

lab handling and site conditions have not affected results. The USEPA provides a Relative Percent Difference (RPD) criterion of 40% or less for acceptance of soil and groundwater data. For fill soils, due to the inherent heterogeneity of these soils, an RPD of 80% is considered acceptable. The duplicate soil and groundwater samples completed for VOC, PHC, PAH and Metals parameters were found to be within 40% RPD. The results confirmed that all samples met the Table 2 SCS and were within the desired 40% RPD. Based on this finding, the soil samples are considered to meet the Table 2 SCS. Table 9, Appendix C provides the QA/QC %RPD for soil.

All Certificates of Analysis received pursuant to clause 47 (2) (b) of the Regulation comply with subsection 47 (3). A certificate of Analysis has been received for each sample submitted for lab analysis. Copies of all Certificates of Analysis are provided in Appendix D of this Phase Two ESA report. The overall quality of the field data was determined to be acceptable and decision making was not affected due to QA&QC concerns. The overall objectives of the investigation were met.

Representativeness of the data was determined through sample preservation, storage and holding time compliance. Accuracy of the data was determined through review of laboratory internal control samples. The results indicate that field sampling and lab protocols were satisfactory. No samples were rejected and no analyte results were qualified as biased. The QP_{ESA} is satisfied that the overall objectives of the investigation were met and that the data set has allowed appropriate decisions to be made regarding the environmental conditions at the Site.

6.10 Phase Two Conceptual Site Model

Bluewater Geoscience Consultants Inc. (Bluewater) was retained by the owner of the Record of Site Condition (RSC) Property, 2448987 Ontario Inc. (a Corporation), to complete a Phase Two Environmental Site Assessment (ESA). Bluewater has conducted a Phase One Environmental Site Assessment (Phase One ESA) of the commercial-use RSC property with the municipal address of 343 Waterloo Avenue, Guelph, Ontario. The legal description of the RSC property is “Part Lots 11 and 12, Registered Plan 274, as in ROS 629146, City of Guelph, County of Wellington”. This Phase Two Conceptual Site Model (CSM) is developed as part of the Phase Two ESA and updates the Phase One CSM.

Bluewater completed a Phase One ESA dated December 20, 2024. During the Phase One ESA, one non-defined Potentially Contaminating Activity (PCA) was identified on site, and fourteen PCA were identified off-site within the Phase One ESA Study Area. This consisted of one on-site PCA and nine of the fourteen off-site PCA that contributed to the identification of ten

(10) APEC for the RSC property. Based on this, it was determined that a Phase Two ESA with soil and groundwater sampling was required.

The Phase Two CSM is detailed below and is supported by the following Figures appended:

Figure 1 –Site Location Plan: Shows the relative location of the RSC property and the Phase One ESA Study Area within the City of Guelph;

Figure 2: Plan of Study Area and PCA: Shows the RSC property, the land use within the Phase One ESA Study Area (a 250 m radius around the RSC property boundaries) and the location of on-site and off-site PCA identified during completion of the Phase One ESA;

Figure 3 – Aerial Site Plan: Shows an aerial view of the current site plan configuration;

Figure 4: - Site Plan: Shows a plan view of the current site plan configuration;

Figure 5 - Utility Location Plan: Shows the location of subsurface and above ground utilities currently present on the RSC property;

Figure 6: APEC Location Plan: Shows the areas of the RSC property that the nine identified APEC may have affected:

Figure 7: Borehole/Monitoring Well Location Plan: Shows the locations of the nine APEC and the boreholes and groundwater monitoring well locations completed to address each APEC.

Figure 8: Groundwater Flow Plan: Shows the location of the groundwater monitoring wells, the measured groundwater elevations on specific date(s), the groundwater elevation contours and the determined groundwater flow direction for the RSC property. Also shows the cross section lines used to illustrate subsurface conditions and soil and groundwater sample locations and depths;

Figure 9: Cross Sections A-A’ and B-B’ - Provides cross sections across the RSC property in directions roughly parallel to the determined groundwater flow direction and roughly perpendicular to the determined groundwater flow direction as well as the determined site stratigraphy and the location and depth of soil and groundwater samples completed during the Phase Two ESA;

Figure 10: Soil Parameter Plan: Provides a plan view of the RSC property showing the location of soil samples and the parameters analyzed during the Phase Two ESA and indicating whether

they met or exceeded the applicable Table 2 Residential/Parkland/Institutional Site Condition Standards (Table 2 RPI SCS);

Figure 11: Groundwater Parameter Plan: Provides a plan view of the RSC property showing the location of groundwater samples and the parameters analyzed during the Phase Two ESA and indicating whether they met or exceeded the applicable Table 2 RPI SCS; and,

Figure 12: Plan of Survey showing the current configuration and conditions of the RSC property.

As shown on the appended Figure 1, Site Location Plan, the Site is located in an area of mixed residential and commercial land uses within the City of Guelph. *Note – for the purposes of this report and as illustrated in the appended figures, Waterloo Avenue in the vicinity of the RSC property is considered to run in a west to east direction (relative to 'Project North'), however, its actual orientation is more southwest to northeast (relative to 'True North').*

The RSC property is one legal property with one municipal address assigned. The Site is legally described as "Part Lots 11 and 12, Registered Plan 274, as in ROS 629146, City of Guelph, County of Wellington". The municipal address assigned to the RSC property is 343 Waterloo Avenue, Guelph, Ontario, N1H 3K1. The Municipal Assessment Roll Number for the RSC property is 2308 050 014 17500 0000 and the Property Identification Number (PIN) is 71280-0013 (LT).
The geo-referencing coordinates for the approximate centre of the RSC property are as follows:

- Latitude: 43.53241 North
- Longitude: -80.2598254 West
- UTM: Zone 17T 4820207N - 559807E

Bluewater was retained by the current Site owner, 2448987 Ont. Inc, to conduct the Phase Two ESA. 2448987 Ont. Inc. is an Ontario Corporation. At the time of the RSC filing, the contact information for the project sponsor is as follows:

2448987 Ont. Inc.
343 Waterloo Avenue,
Guelph, ON, N1H 3K1
Attn: Mr. Morgan Adams

The areas of the RSC property and the Phase One ESA study area where PCA have occurred are shown on Figure 2. Based on the results of the findings of the Phase One ESA, a total of 13 MECP-defined, and two non-defined Potentially Contaminating Activities (PCA) have been identified; including one non-defined PCA on the RSC property and 14 PCA off-site. The property owner representative, Mr. Morgan Adams was able to provide a first-hand account of the locations of all current and historic site features. The identified PCA include the following:

On-Site PCA: Application of de-icing agents for winter safety (Not defined as PCA by MECP) – de-icing salt has been applied to the on-site parking lot for the purpose of winter safety, creating an APEC related to the parking area in the western portion of RSC property (referred to as APEC 1). As such, salt-related parameters such as Sodium, SAR and Electrical Conductivity may potentially be present at the RSC property. Based on the findings of the Phase One ESA, no other sources were identified on or off-site, and the potential presence of salt-related parameters can be attributed to de-icing activities at the RSC property (and adjacent municipal roadways and sidewalks), and are therefore being discounted as potential Contaminants of Concern per exemptions set out in paragraphs 1 and 2 of section 49.1 of OR 153/04, as amended.

Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – Three underground storage tanks (UST) for gasoline were reportedly located on the east side of 335 Waterloo Avenue, adjacent to the east of the RSC property, related to the historical operation of an off-site gasoline service station. This off-site PCA creates an APEC for the eastern boundary of the RSC property, adjacent to the former gas station property at 335 Waterloo Avenue (APEC 2).

Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – A vehicle repair garage is located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of the RSC property, adjacent to the off-site garage at 335 Waterloo Avenue (APEC 3).

Off-Site PCA: Commercial Autobody Shops (PCA 10) – An historic auto body repair business was formerly located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of the RSC property, adjacent to the former off-site auto body repair shop at 335 Waterloo Avenue (referred to as APEC 4)

Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – Two underground fuel storage tanks (UST) were reportedly located at 371 Waterloo Avenue, to the west of the RSC property, related to the historical operation of a former bus garage and transit facility. This off-site PCA creates an APEC for the western boundary of the RSC property, across Beechwood Avenue from the reported location of the underground fuel storage tanks at 371 Waterloo Avenue (APEC 5).

Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – An historic municipal bus garage was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of the RSC property, across Beechwood Avenue from the reported location of the former bus garage at 371 Waterloo Avenue (APEC 6).

Off-Site PCA: Storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52) – The Guelph Transit Commission facility was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of the RSC property, across Beechwood Avenue from the reported location of the historic transit facility at 371 Waterloo Avenue (APEC 7).

Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45) – an historic paper manufacturing facility was formerly located at 103 Beechwood Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of the RSC property, across Beechwood Avenue from the reported location of the former paper manufacturing facility at 103 Beechwood Avenue (APEC 8).

Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – Two underground storage tanks (UST) for gasoline were reportedly located at 338 Waterloo Avenue, across Waterloo Avenue to the south of the RSC property, related to the historical operation of an off-site gasoline service station. This off-site PCA creates an APEC for the southern boundary of the RSC property, across Waterloo Avenue from the off-site underground fuel storage tanks at 338 Waterloo Avenue (APEC 9).

Off-Site PCA: Leakage of Municipally Treated Water containing Trihalomethanes (THM): Non-defined PCA - Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Based on this, there is potential for elevated concentrations of Chloroform and other THM to be present in site groundwater, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of THM, possibly in excess of MECP Table 2 RPI SCS for coarse-textured soils may be present in groundwater at the RSC property. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform or other THM were identified within the ESA Study Area. Therefore, THM is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document ‘Guidance for Addressing Chloroform at a Record of Site Condition Property”.

Five other PCA were identified at off-Site properties within the Phase One Study Area that are not considered to represent an APEC for the RSC property based on the distance from the RSC property and the inferred downgradient location relative to the RSC property. The identified off-Site, non-APEC PCA include:

- Off-Site PCA: Chemical Manufacturing, Processing and Bulk Storage (PCA 8) – the former Sterling Rubber factory was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Rubber Manufacturing and Processing (PCA 47) – the former Sterling Rubber factory was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Solvent Manufacturing, Processing and Bulk Storage (PCA 51) – the former Sterling Rubber factory was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Waste Disposal and Waste Management, including thermal treatment, landfilling & transfer of waste, other than use of biosoils as soil conditioners (PCA 58) – the former Sterling Rubber factory and associated landfill was historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property.
- Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – a former vehicle repair garage was historically located at 268 Waterloo Ave., approx. 200 m to east and cross grade of RSC property.

Due to the historic Agricultural or Other land use in the Phase One Study Area, PCA 40 – Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Application was considered but discounted as both a PCA and APEC based on the following rationale. There was no evidence from the background research that the area of the RSC property was in actual crop production and therefore would not have been subject to Manufacturing, Processing, Bulk Storage or particularly 'Large-Scale' Application of these materials. In fact, there is no indication of even 'small-scale' use of these products. Further, the RSC property was first developed in the 1960's prior to the advent and widespread use of modern organo-chlorine (OC) pesticides and herbicides so it is highly unlikely they have been used on site.

Based on the Phase One ESA completed, it is Bluewater's opinion that there are potential environmental concerns at the Site; including Potentially Contaminating Activities (PCA) and Areas of Potential Environmental Concern (APEC) associated with on-Site and off-site activities. The findings, observations and conclusions are briefly summarized below. The APEC identified during this assessment include the following:

APEC 1 – On-Site PCA: Application of de-icing agents for winter safety (Not defined as PCA by MECP) – de-icing salt has been applied to the on-site parking lot for the purpose of winter safety, creating an APEC related to the parking area in western portion of RSC property (referred to as APEC 1). As such, salt-related parameters such as Sodium, SAR and Electrical Conductivity may potentially be present at the RSC property. Based on the findings of the Phase One ESA, no other sources were identified on or off-site, and the potential presence of salt-related parameters can be attributed to de-icing activities at the RSC property (and adjacent municipal roadways and sidewalks), and are therefore being discounted as potential Contaminants of Concern per exemptions set out in paragraphs 1 and 2 of section 49.1 of OR 153/04, as amended. As such, no further investigation of this APEC is required under the regulations.

APEC 2 – Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – three underground storage tanks (UST) for gasoline were reportedly located at 335 Waterloo Avenue, adjacent to the east of the RSC property, related to the historical operation of an off-site gasoline service station. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to off-site gas station operations at 335 Waterloo Avenue (APEC 2). This off-site PCA creates the potential that soil and groundwater may be impacted from BTEX, PHC and PAH parameters. Impacts associated with this APEC could be expected to be potentially found within shallow, near-surface soils or at deeper, near water table elevations. This APEC applies to the area of the eastern property boundary of the RSC property. BH/MW-1, BH/MW-4 and BH-5 (see Figure 7) were completed to assess this APEC.

APEC 3 – Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – a vehicle repair garage is located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to the off-site garage at 335 Waterloo Avenue (APEC 3). This off-site PCA creates the potential that soil and groundwater may be impacted from VOC, PHC, PAH and Metals/Hydride-forming Metals (As, Sb, Se) parameters. PAH and Metals/Hydride-forming Metals were included in the COPC due to the potential presence of waste oil which can include PAH and Metals/Hydride-Forming Metals. Impacts associated with this APEC could be expected to be potentially found within shallow, near-surface soils or at deeper, near water table elevations. BH/MW-1, BH/MW-4 and BH – 5 (see Figure 7) were completed to assess this APEC.

APEC 4 – Off-Site PCA: Commercial Autobody Shops (PCA 10) – an historic auto body repair business was formerly located at 335 Waterloo Avenue, adjacent to the east of the RSC property. This off-site PCA creates an APEC for the eastern boundary of RSC property, adjacent to former off-site auto body repair shop at 335 Waterloo Avenue (referred to as APEC 4). This off-site PCA creates the potential that soil and groundwater may be impacted should leakage or spillage of liquid or solid contaminants associated with the body shop have occurred.

The soil and/or groundwater in this area may have been impacted from VOC, PHC and Metals/Hydride-Forming Metals parameters. This APEC applies to the area of the eastern property boundary of the RSC property. BH/MW-1, BH/MW-4 and BH – 5 (see Figure 7) were completed to assess this APEC.

APEC 5 – Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – two underground fuel storage tanks (UST) were reportedly located at 371 Waterloo Avenue, to the west of the RSC property, related to the historical operation of a former bus garage and transit facility. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the underground fuel storage tanks at 371 Waterloo Avenue (APEC 5). This off-site PCA creates the potential that groundwater may be impacted from BTEX, PHC and PAH parameters. This APEC applies to the area of the western property boundary of the RSC property. BH/MW-2 and BH/MW-3 (see Figure 7) were completed to assess this APEC.

APEC 6 – Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27) – an historic municipal bus garage was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the former bus garage at 371 Waterloo Avenue (APEC 6). This off-site PCA creates the potential that groundwater may be impacted from VOC, PHC, PAH and Metals/Hydride-Forming Metals parameters. PAH and Metals/Hydride-Forming Metals were included in the COPC due to the potential presence of waste oil which can include PAH and Metals/Hydride-Forming Metals. BH/MW-2 and BH/MW-3 (see Figure 7) were completed to assess this APEC.

APEC 7 – Off-Site PCA: Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52) – the Guelph Transit Commission facility was formerly located at 371 Waterloo Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the historic transit facility at 371 Waterloo Avenue (APEC 7). This off-site PCA creates the potential to impact groundwater along the western property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with VOC, PHC, PAH and Metals/Hydride-Forming Metals parameters along the western property boundary. BH/MW-2 and BH/MW-3 (Figure 7) were completed to assess this APEC.

APEC 8 - Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45) – an historic paper manufacturing facility was formerly located at 103 Beechwood Avenue, to the west of the RSC property. This off-site PCA creates an APEC for the western boundary of RSC property, across Beechwood Avenue from the reported location of the former paper

manufacturing facility at 103 Beechwood Avenue (APEC 8). This off-site PCA creates the potential to impact groundwater along the western property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with VOC and Metals/Hydride-Forming Metals parameters along the western property boundary. BH/MW-2 and BH/MW-3 (Figure 7) were completed to assess this APEC.

APEC 9 - Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28) – two underground storage tanks (UST) for gasoline were reportedly located at 338 Waterloo Avenue, across Waterloo Avenue to the south of the RSC property, related to the historical operation of an off-site gasoline station. This off-site PCA creates an APEC for the southern boundary of RSC property, across Waterloo Avenue from the off-site underground fuel storage tanks at 338 Waterloo Avenue (APEC 9). This off-site PCA creates the potential to impact groundwater along the southern property boundary should any releases have occurred and migrated with groundwater flow onto the RSC property. The off-site PCA creates the potential for impact to groundwater with BTEX, PHC and PAH parameters along the southern property boundary. BH/MW-1 and BH/MW-2 (Figure 7) were completed to assess this APEC.

APEC 10 - Leakage of Municipally Treated Water containing Trihalomethanes (THM): Non-defined PCA - Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Based on this, there is potential for elevated concentrations of Chloroform and other THM to be present in site groundwater, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of THM, possibly in excess of MECP Table 2 RPI SCS for coarse-textured soils may be present in groundwater at the RSC property. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform or other THM were identified within the ESA Study Area. Therefore, THM is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document ‘Guidance for Addressing Chloroform at a Record of Site Condition Property”.

There is one, single-storey commercial (office) building currently on the RSC property. The existing building is serviced by overhead hydro and communications lines as well as underground natural gas, water and sanitary sewer services as shown on Figure 5.

Subsurface structures and utilities are not considered to have potential to affect contaminant distribution or transport due to the deeper groundwater levels within the bedrock (i.e. below the inferred depth of the site services).

The RSC property is a roughly rectangular-shaped parcel, approximately 0.09 ha (0.223 acres) in total area. A Site Plan showing the general layout of the RSC property is presented in Figures 3 and 4 and the Plan of Survey. The property consists of the building envelope, with a paved driveway from Beechwood Avenue, providing access to the concrete and asphalt surface parking lot and building. The Site contains one commercial office building that is currently unoccupied while awaiting redevelopment. The perimeter of the property is landscaped with grass and shrubs. The building at the RSC property comprises an approximately 280 m^2 (3,000 ft^2) single storey structure with a concrete/block foundation, slab-on-grade floor with no basement, wood framing, sloped shingled roof, and exterior brick veneer finish. The building contains office space, utility/storage room and washrooms. Heating is provided by a natural gas-fired furnace.

Based on data collected during this assessment; the RSC property was first developed for commercial use in 1966 with construction of the current commercial office building. Bluewater determined this first developed use from a review of aerial photographs, historical maps, municipal records, interviews, and title search data for the RSC property. Based on information from the above noted sources, the historical chronology of the RSC property development is briefly summarized below:

- The site and surrounding land were historically in agricultural/pastoral land use since Guelph was first settled in the early 1800's. The RSC property was part of an original larger parcel of agricultural land, which was subsequently severed into smaller parcels. Crown Grant to the Canada Land Company occurred in 1829, and the current RSC property was severed from the original parcel and the Plan of Subdivision was registered in 1878. The property was subsequently owned by a series of individuals or families from 1878 until first developed use in 1966.
- The RSC property was first developed in 1966 with the construction of the existing office building for The Guelph & District Association for Retarded Children Inc. (operating as ARC Industries).
- From 1966 to present day, the RSC property has been owned and/or occupied by a series of commercial businesses for their own and/or tenant office space, including but

not limited to: ARC, The Canadian Jersey Cattle Club Association of Canada, law offices, real estate agents, mortgage consultants, and financial advisors.
- The current owner, 2448987 Ontario Inc. acquired the RSC property in 2015, and the building continued to be used for commercial office space by the owner and tenants.

Bluewater reviewed Natural Heritage Area mapping for the Study Area on the Ontario Ministry of Natural Resources (MNR) website for information on areas of natural significance that may be located within the Phase One ESA Study Area. The MNR mapping indicated there are no provincially significant wetlands (PSW), Areas of Natural Scientific Interest (ANSI) or other potentially sensitive areas on or adjacent to the RSC property, or within the Phase One Study Area. According to the Grand River Conservation Authority (GRCA), there are no designated wetlands, regulated areas or other potentially environmentally sensitive lands on, or adjacent to the RSC property. The following potentially environmentally sensitive areas were identified by GRCA mapping within the Study Area:

- the GRCA regulated floodplain of the Speed River and Special Policy Area are located ~55 m to the southeast of the RSC property,
- the Estimated Floodplain of Howitt Creek is located ~78 m to the west,
- Howitt Creek is located ~82 m to the west,
- The Speed River is located ~260 m to the south.

The RSC property is relatively flat, with an approximate Site elevation of 314.5 masl, and the UTM coordinates are 4820207N / 559807E. The regional topographic gradient and inferred direction of groundwater flow is generally to the south, towards the Speed River, located approximately 260m south of the Site.

According to Chapman and Putnam in the Physiography of Southern Ontario, the City of Guelph (which includes the Site) is situated in the physiographic region known as the Guelph Drumlin Field. Surficial geology mapping published by the Geological Survey of Canada indicates that the surface geology in the area is primarily fluvial and glacio-fluvial outwash deposits consisting of silts, sands, and gravels. In the area of the Site, bedrock is reported to consist primarily of Paleozoic Era limestone and dolostone of the Guelph and Amabel Formations, which is generally encountered at shallow depths of 2 to 3 m below ground surface, according to off-site well records in the Study Area. Regional groundwater flow in the area is assumed to follow the regional topographic gradient to the south, towards the Speed River.

A total of five boreholes were advanced within APEC areas determined on the RSC property to assess soil and groundwater conditions. These are BH/MW-1, BH/MW - 2, BH/MW – 3, BH/MW-4 and BH – 5 (Figure 7). Groundwater monitoring wells were installed at BH/MW-1, BH/MW-2, BH/MW-3 and BH/MW-4. The Stratigraphy and groundwater conditions encountered

in the boreholes were documented in the field by Bluewater personnel. This consisted of surficial concrete slab (BH/MW-3) or topsoil (BH/MW-1, BH/MW-2, BH/MW-3 and BH – 5). Beneath the concrete at BH/MW-3 was a thin layer (0.1m) of sand and gravel fill. Beneath this fill and beneath the topsoil at the other locations was encountered native clayey Silt with some sand and trace gravel. The Silt extended to depths of 2.1 – 2.4 m below grade. Underlying the Silt at all locations was dolostone bedrock which extended to the maximum depth investigated of 6.7 m below grade. A representative sample of the native Silt soil was analyzed for grain size distribution. The sample taken from BH-5 at 1.5 – 2.1 m below grade was found to contain 67.1% silt and clay sized particles. Based on the grain size analysis completed containing less than 70% fine grained particles and the groundwater being contained within bedrock, the coarse textured soil standards were applied as per the Regulation. The maximum depth investigated was 6.7 m (22 feet) below existing grade at BH/MW-4. Organic vapour screening was completed on all samples obtained from all of the boreholes and no elevated vapour concentrations were determined at any location.

The native dolostone bedrock encountered in the subsurface of the RSC property is considered to be an aquifer due to the groundwater contained in it. No groundwater was noted within the Silt overburden at the RSC property.

Groundwater was encountered within the dolostone bedrock unit at depths of between ~3.0 – 5.3 m below grade. The screened section of each well was placed in the base of each borehole, sealed within the bedrock aquifer. The screened section of wells installed within APEC areas were placed to straddle the water table. All wells within defined APEC areas were confirmed to have screened sections that straddle the determined water table level. The ground surface elevation and top of well pipe elevations for each of the installed groundwater monitoring wells were surveyed relative to geodetic datum. The depth to groundwater and resulting inferred groundwater flow direction was determined on two separate occasions roughly 3 weeks apart. Figure 8 presents the groundwater elevation data and inferred groundwater flow direction. Based on the determined groundwater elevations, an easterly (relative to true north) groundwater flow direction was determined for the bedrock aquifer. It is not expected that significant temporal deviation in groundwater flow direction is present. No free phase product, odours or sheen were determined during well development and groundwater sampling during the Phase Two ESA.

Based on the determined groundwater contours a maximum horizontal hydraulic gradient of 0.33 and minimum horizontal hydraulic gradient of 0.05 were determined for the surficial aquifer. The average horizontal hydraulic gradient was determined to be 0.19.

The monitoring wells were monitored with an interface probe and no LNAPL’s or DNAPL’s were detected in groundwater in any of the wells. The installed monitoring wells were developed

according to accepted MECP protocols by purging a minimum of five casing volumes from each well. Well development was completed using LDPE Waterra tubing equipped with inertial foot valves. Groundwater sampling was completed using dedicated bailers. After well development, one groundwater sample from each of the four installed groundwater monitoring wells, plus one duplicate groundwater sample, were obtained and submitted for analyses of the VOC, PHC, PAH and Metals/Hydride-Forming Metals parameters. Further, a groundwater Trip Blank for QA/QC purposes was analyzed for the VOC/F1 PHC parameters. The completed groundwater analyses indicated that none of the groundwater samples (or duplicates) contained concentrations of the VOC, PHC, PAH or Metals/Hydride-Forming Metals parameters in excess of the Table 2 SCS with the exception of chloroform. Chloroform was detected in all four monitoring wells, plus the duplicate, at concentrations (ranging from 13.1 – 18.7 ug/L) in excess of the Table 2 RPI SCS for coarse grained soils but below the Table 2 RPI SCS for fine to medium textured soils. Trace concentrations of related trihalomethanes (THM) such as bromoform and bromodichloromethane related to municipally treated water were also detected at concentrations meeting the Table 2 SCS. Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Elevated concentrations of Chloroform were detected in groundwater samples from all site wells, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of Chloroform were recorded in all groundwater samples, slightly in excess of MECP Table 2 RPI SCS for coarse-textured soils. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform were identified within the ESA Study Area. Therefore, Chloroform is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document 'Guidance for Addressing Chloroform at a Record of Site Condition Property".

Based on the soil and groundwater sampling and laboratory analyses completed during this Phase Two ESA, and considering the previously noted MECP-prescribed exemption for elevated Chloroform in groundwater, there were no soil or groundwater Contaminants of Concern (COC) recorded at concentrations in excess of the Table 2 SCS. These groundwater results do not indicate that the soil serves as a source of contaminant mass contributing to groundwater or sediment.

Bedrock was encountered at depths of 2.1 – 2.4 m below grade during the drilling of the boreholes at the Phase Two property. The maximum depth investigated at the Phase Two property is 6.7 m below grade. Groundwater was found to be contained within the bedrock at depths of >3 m. Based on this information, there is greater than 2 m of overburden on the RSC property.

A total of four groundwater monitoring wells were installed at the Phase Two property. Each well intercepted groundwater contained within the bedrock aquifer. Groundwater was intercepted at depths ranging from 3.0 m below grade (BH/MW-3) to 5.3 m (BH/MW-4) below ground surface. This corresponds to groundwater elevations ranging from a high of 309.79 m-amsl (BH/MW-3) to a low of 307.01 m –amsl (BH/MW-1).

There are no portions of the site to which Sections 41 or 43.1 apply. The Phase Two property is not located in close proximity to any ANSI, environmentally sensitive areas and does not contain shallow bedrock (< 2m). There are no natural surface water bodies as defined by the Regulation located on or within 30 m of the Phase Two property. A total of four (4) soil samples were analyzed for pH level. This included samples of the surface soil (0-1.5 m below grade) and subsurface soil (>1.5 m below grade). Lab analysis of site soil pH levels confirm that the soil is within the range of 5 to 9 for surface soil (measured pH = 7.55 and 8.05) and 5 to 11 for subsurface soil (measured pH = 8.08 and 8.09) as required by the Regulation to determine possible site sensitivity and application of Generic SCS.

Based on the above considerations, the analytical results from this investigation were assessed using the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", July, 2011, specifically *Table 2 Generic Site Condition Standards in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use, with coarse textured soils,* herein referred to as the Table 2 RPI Site Condition Standards (SCS).

There are no indications or reports of excess soil being brought from another property and placed on, in or under the Phase Two property. There were no indications of significant fill placement at the RSC property.

There are no plans showing what any proposed residential redevelopment of the RSC property would entail. It is likely that any redevelopment would consist of a multi-unit low-rise type building with first floor commercial and upper floor residential units.

Apart from elevated chloroform concentrations in groundwater related to leaks from the municipal water system as detailed above, no soil or groundwater parameters are present at concentrations greater than the Table 2 RPI SCS. The following section provides a summary of the investigations, soil and groundwater sampling and parameters analyzed to address each of

the ten (10) identified APEC on the RSC property. Soil and groundwater sampling locations and depths are shown on the cross-sections provided on Figure 9. A summary of soil and groundwater sampling parameters and results (confirming all analytical results meet the applicable SCS) are illustrated on Figures 10 and 11.

APEC #1 – On Site Non-defined PCA - Application of De-icing salts for winter safety.
The on-site parking lots and walkways, and adjacent municipal roadways and sidewalks are subject to the application of de-icing agents (salt) for winter safety. As such, salt-related parameters such as Sodium, SAR and Electrical Conductivity (EC) may be present at the RSC property. Based on the findings of the Phase One ESA, no other sources of salt-related parameters were identified on or off-site, and the presence of salt-related parameters is attributed to de-icing activities at the RSC property and adjacent municipal roadways, and are therefore being discounted as potential Contaminants of Concern per exemptions set out if paragraphs 1 and 2 of section 49.1 of O.R. 153/04 (as amended). As such, no further investigation of this APEC is required under the regulations.

APEC #2 – Off Site PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks

BH/MW-1, BH/MW-4 and BH-5 were utilized to assess this APEC. Investigatory boreholes were advanced at three locations along the eastern property boundary. Based on the nature of this PCA there are two areas most likely to become impacted being near ground surface and near the water table elevation. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. The investigations for this APEC included soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #2:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-4, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-4, 1.5 – 2.1 m below grade - VOC/PHC;
- BH-5, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH-5, 1.5 – 2.1 m below grade – VOC/PHC

The following groundwater samples were analyzed to assess APEC #2:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-4 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.), and a determined groundwater flow direction to the east and away from the RSC property this APEC is considered adequately investigated.

APEC #3 – Off Site PCA 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles

BH/MW-1, BH/MW-4 and BH-5 were utilized to assess this APEC. Investigatory boreholes were advanced at three locations along the eastern property boundary. Based on the nature of this PCA there are two areas most likely to become impacted being near ground surface and near the water table elevation. Due to the relatively high permeability of the bedrock aquifer (i.e. fractured dolostone bedrock encountered at the water table), liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #3:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-4, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-4, 1.5 – 2.1 m below grade - VOC/PHC;
- BH-5, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH-5, 1.5 – 2.1 m below grade – VOC/PHC

The following groundwater samples were analyzed to assess APEC #3:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-4 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.), and a determined groundwater flow direction away from the RSC property this APEC is considered adequately investigated.

APEC #4 – Off Site PCA 10 – Commercial Autobody Shops

BH/MW-1, BH/MW-4 and BH-5 were utilized to assess this APEC. Investigatory boreholes were advanced at three locations along the eastern property boundary. Based on the nature of this PCA there are two areas most likely to become impacted being near ground surface and near

the water table elevation. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #4:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-4, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-4, 1.5 – 2.1 m below grade - VOC/PHC;
- BH-5, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH-5, 1.5 – 2.1 m below grade – VOC/PHC

The following groundwater samples were analyzed to assess APEC #4:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-4 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.), and a determined groundwater flow direction away from the RSC property this APEC is considered adequately investigated.

APEC #5 – Off Site PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks.
BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #5:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #5:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #6 – Off Site PCA 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles

BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #6:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #6:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #7 – Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52)

BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #7:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #7:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #8 - Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45)

BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #8:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;

- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #8:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #9 – Off Site PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks

BH/MW-1 and BH/MW-2 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the southern property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #9:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-2, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #2:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

APEC #10- Leakage of Municipally Treated Water containing Trihalomethanes (THM): Non-defined PCA

Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic

leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Based on this, there is potential for elevated concentrations of Chloroform and other THM to be present in site groundwater, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of THM, possibly in excess of MECP Table 2 RPI SCS for coarse-textured soils may be present in groundwater at the RSC property. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform or other THM were identified within the ESA Study Area. Therefore, THM is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document 'Guidance for Addressing Chloroform at a Record of Site Condition Property".

Apart from elevated THM (chloroform) concentrations in groundwater, which have been discounted as a Contaminant of Concern, as detailed above, there are no areas of the RSC property containing soil or groundwater with contaminant concentrations above the Table 2 RPI SCS.

As there are no areas of impacted soil or groundwater present, there are no contaminants or medium affected.

There are no impacted areas and therefore no description or assessment of such is necessary.

As there are no soil and/or groundwater impacts present, there is no contaminant distribution to discuss.

As there are no soil and/or groundwater impacts present, there is no reason for discharge to discuss.

As there are no soil and/or groundwater impacts present, there is no potential for migration of contaminants.

As there are no soil and/or groundwater impacts present, climatic or meteorological conditions are highly unlikely to influence contaminant distribution or migration.

As there are no soil and/or groundwater impacts present, soil vapour intrusion is not a concern on the RSC property.

As there are no soil and/or groundwater impacts present, there are no release mechanisms to discuss.

As there are no soil and/or groundwater impacts present, there are no contaminant transport pathways to discuss.

7.0 CONCLUSIONS

The Phase One ESA identified ten (10) APEC for the subject property related to on-site and off-site PCA as detailed in Section 3.2 of this report. The results of the investigation of each of the APEC are discussed below based on the findings of the Phase Two ESA:

APEC #1 – On Site Non-defined PCA - Application of De-icing salts for winter safety.
The on-site parking lots and walkways, and adjacent municipal roadways and sidewalks are subject to the application of de-icing agents (salt) for winter safety. As such, salt-related parameters such as Sodium, SAR and Electrical Conductivity (EC) may be present at the RSC property. Based on the findings of the Phase One ESA, no other sources of salt-related parameters were identified on or off-site, and the presence of salt-related parameters is attributed to de-icing activities at the RSC property and adjacent municipal roadways, and are therefore being discounted as potential Contaminants of Concern per exemptions set out if paragraphs 1 and 2 of section 49.1 of O.R. 153/04 (as amended). As such, no further investigation of this APEC is required under the regulations.

APEC #2 – Off Site PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks

BH/MW-1, BH/MW-4 and BH-5 were utilized to assess this APEC. Investigatory boreholes were advanced at three locations along the eastern property boundary. Based on the nature of this PCA there are two areas most likely to become impacted being near ground surface and near the water table elevation. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. The investigations for this APEC included soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #2:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-4, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-4, 1.5 – 2.1 m below grade - VOC/PHC;
- BH-5, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH-5, 1.5 – 2.1 m below grade – VOC/PHC

The following groundwater samples were analyzed to assess APEC #2:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-4 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.), and a determined groundwater flow direction to the east and away from the RSC property this APEC is considered adequately investigated.

APEC #3 – Off Site PCA 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles

BH/MW-1, BH/MW-4 and BH-5 were utilized to assess this APEC. Investigatory boreholes were advanced at three locations along the eastern property boundary. Based on the nature of this PCA there are two areas most likely to become impacted being near ground surface and near the water table elevation. Due to the relatively high permeability of the bedrock aquifer (i.e. fractured dolostone bedrock encountered at the water table), liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #3:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-4, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-4, 1.5 – 2.1 m below grade - VOC/PHC;
- BH-5, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH-5, 1.5 – 2.1 m below grade – VOC/PHC

The following groundwater samples were analyzed to assess APEC #3:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-4 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.), and a determined groundwater flow direction away from the RSC property this APEC is considered adequately investigated.

APEC #4 – Off Site PCA 10 – Commercial Autobody Shops

BH/MW-1, BH/MW-4 and BH-5 were utilized to assess this APEC. Investigatory boreholes were advanced at three locations along the eastern property boundary. Based on the nature of this

PCA there are two areas most likely to become impacted being near ground surface and near the water table elevation. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #4:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-4, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-4, 1.5 – 2.1 m below grade - VOC/PHC;
- BH-5, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH-5, 1.5 – 2.1 m below grade – VOC/PHC

The following groundwater samples were analyzed to assess APEC #4:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-4 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.), and a determined groundwater flow direction away from the RSC property this APEC is considered adequately investigated.

APEC #5 – Off Site PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks.
BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #5:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #5:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #6 – Off Site PCA 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles

BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #6:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #6:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #7 – Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52)

BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #7:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #7:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #8 - Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45)

BH/MW-2 and BH/MW-3 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the western property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #8:

- BH/MW-2, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;

- BH/MW-2, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-3, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-3, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #8:

- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-3 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

Based on the determined soil and groundwater results, the lack of indicators of potential impairment (no elevated vapours, staining odours etc.) this APEC is considered adequately investigated.

APEC #9 – Off Site PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks

BH/MW-1 and BH/MW-2 were utilized to assess this APEC. Investigatory boreholes were advanced at two locations along the southern property boundary. Based on the nature of this PCA impacts to groundwater may be present on the RSC property. Due to the relatively high permeability of the bedrock aquifer, liquid escaping from off-site sources could infiltrate the overburden soils until it reached the water table where it would spread atop the water. While this is a groundwater APEC, soil sampling and analysis was also undertaken for completeness of the investigation. The investigations for this APEC included shallow soil samples within the overburden in addition to two groundwater samples within the APEC.

The following soil samples were analyzed to assess APEC #9:

- BH/MW-1, 0.0 – 0.6 m below grade – PAH/Metals/Hydride-Forming Metals;
- BH/MW-1, 1.5 – 2.1 m below grade – VOC/PHC;
- BH/MW-2, 0.0 – 0.6 m below grade - PAH/Metals/Hydride-Forming Metals;
- BH/MW-2, 1.5 – 2.1 m below grade - VOC/PHC;

The following groundwater samples were analyzed to assess APEC #2:

- BH/MW-1 – VOC/PHC/PAH/Metals/Hydride-Forming Metals
- BH/MW-2 – VOC/PHC/PAH/Metals/Hydride-Forming Metals

APEC #10- Leakage of Municipally Treated Water containing Trihalomethanes (THM): Non-defined PCA

Bluewater contacted the City of Guelph Water Services Division who indicated that the RSC property is in an older part of the City with very old water infrastructure subject to chronic leakage. They further indicated that several water main breaks have been reported within close proximity of the RSC property including a large break beneath Waterloo Avenue near the property in 2023 that leaked for over two days. They also indicated that it is also possible that many private water services in the area are also leaking. Water quality sampling for the municipal supply indicates elevated chloroform concentrations up to and above 25 ug/L are relatively common. Based on this, there is potential for elevated concentrations of Chloroform and other THM to be present in site groundwater, however, based on MECP-accepted protocols, this parameter has been discounted as a Contaminant of Concern, as described below. Elevated concentrations of THM, possibly in excess of MECP Table 2 RPI SCS for coarse-textured soils may be present in groundwater at the RSC property. This is considered to be attributed to the release of municipally treated water via sewer and water main leaks in the adjacent municipal roadways. No industrial or natural sources of Chloroform or other THM were identified within the ESA Study Area. Therefore, THM is not considered as a Contaminant of Concern for the RSC property, per the exemptions set out in section 49.1, paragraphs 1 and 2 of OR 153/04, (as amended), and in accordance with MECP document 'Guidance for Addressing Chloroform at a Record of Site Condition Property".

The applicable Table 2 RPI SCS were met for all soil parameters as of the Certification date. The applicable Table 2 SCS for all groundwater parameters were met as of the certification date of January 8, 2025.

7.1 Signature

I hereby certify that I have completed the Phase Two ESA and that the findings and conclusions offered are based upon the completion of the Phase Two ESA.

Prepared by:

Breton Lemieux, M.Sc., P.Geo., QP_{ESA}

8.0 REFERENCES

- Barnett, P.J. 1992 Quaternary Geology of Ontario; in Geology of Ontario, Special Volume 4, Part 2, p. 1009-1088.
- Brownfields Environmental Site Registry
- Canadian Standards Association Phase One ESA Standard CSA Z768-01
- Chapman, L.J., Putman, D.F., 1984. The Physiography of Southern Ontario, Third Edition;
- ERIS database report, November 1, 2024
- Google Earth mapping
- Grand River Conservation Authority
- Johnson, M.D., Armstrong, D.K., Sanford, B.V., Telford, P.G., Rutka, M.A., 1992. Paleozoic and Mesozoic Geology in Ontario; in Geology of Ontario, Special Volume 4, Part 2, p.907-1008
- Ministry of the Environment (MOE), June 1991, Waste Disposal Site Inventory
- Ministry of the Environment (MOE), May 1987, Inventory of Coal Gasification Plant Waste Sites in Ontario.
- MNDM Map 2554, “Bedrock Geology of Ontario, Southern Sheet”, 1991
- Natural Resources Canada (NRCAN), Toporama, NTS Topographic Map
- National Pollutant Release Inventory, 2015
- Ontario Geological Survey, Special Volume 2
- Ontario Ministry of Natural Resources, Natural Heritage Mapping
- Ontario Regulation 153/04, and 511/096, as amended

9.0 STATEMENT OF LIMITATIONS

The use of this report is subject to the Statement of Limitations presented below. The reader's attention is specifically drawn to the Statement of Limitations as it is considered essential that they be followed for the proper use and interpretation of this report.

This report was prepared for the exclusive use of 2448987 Ontario Inc. This report is based on information and data collected during the completion of an environmental investigation of the Site carried out by Bluewater Geoscience Consultants Inc., and is based solely on the site conditions encountered at the time of the assessment and the applicable guidelines in place at the time of this investigation. This report is not to be reproduced or released to any other party, in whole or in part, without the express written consent of Bluewater Geoscience Consultants Inc.

It should be noted that the observations and recommendations presented in this report are limited to the actual locations explored and laboratory parameters analyzed. The information presented in terms of the thickness and types of the sub-soils encountered, groundwater levels and chemical testing results, etc., are only applicable to the actual locations explored. Variations may be present between these locations. Should significant variation become apparent during later investigations, it may be necessary to re-evaluate the recommendations of this report. The results of an investigation of this nature should, in no way, be construed as a warranty that the site is free from any and all contamination from past or current practices since conditions may be different from the locations tested. This assessment was carried out using existing historical information as available from various agencies and no assurance is made regarding the accuracy or completeness of this information.

This assessment is subject to any restrictions placed by physical obstructions, precipitation, denied access, inaccessible areas, time constraints, cost constraints, readily available documentation, safety considerations, confidentiality, and availability of knowledgeable individuals for interview purposes. A reasonable site evaluation may not identify latent or hidden contamination. Information in this assessment may also change with time and thus only be accurate on the collection date. This site assessment is a compilation and assessment of available data regarding the subject site and in no way should be considered as a recommendation or rejection of a potential property purchase.

If new information is discovered during future work, including excavation, borings or other studies, Bluewater Geoscience Consultants Inc. should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required. The analytical test results are assumed to be correct and performed according to all current regulations. No audit of the laboratory's methods or procedures was performed. This assessment does not

include, nor is it intended to include, any option regarding the suitability of any structure on the site for any particular function, the integrity of the on-site buildings or the geotechnical conditions on the site. Inspections of buildings do not include compliance with building, gas, electrical or boiler codes, or any other federal, provincial or municipal codes not associated with environmental concerns. Should concerns regarding any issue other than environmental matters arise as a result of our investigations, appropriately qualified professionals should address them.

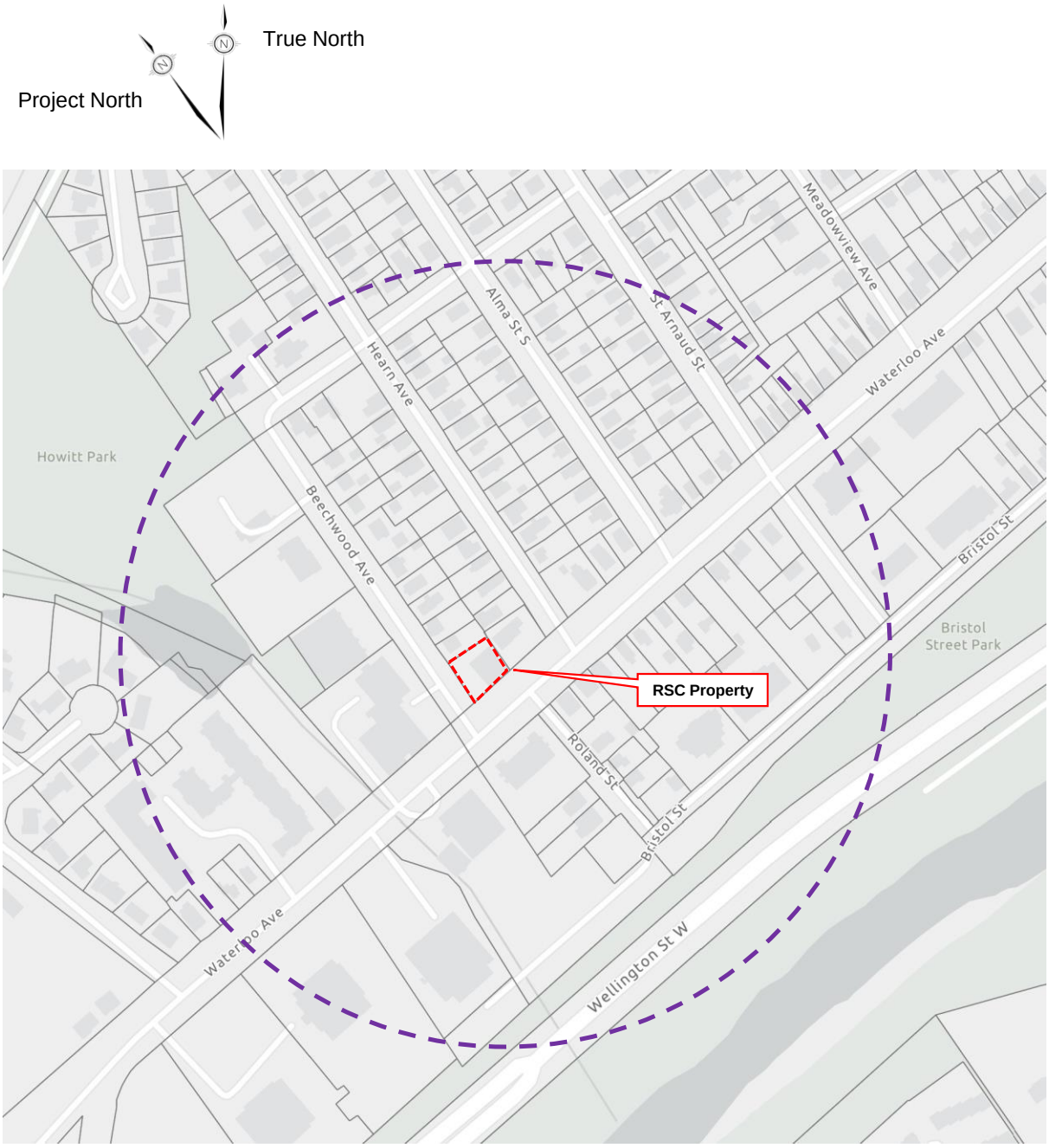
10.0 QUALIFICATIONS OF SITE ASSESSOR

Bluewater Geoscience Consultants Inc. operates under a Certificate of Authorization from The Association of Professional Geoscientists of Ontario (APGO).

Breton Lemieux is a licensed Professional Geoscientist with over thirty-five years of international environmental consulting experience and is registered as a Qualified Person (QP_{ESA}) with MECP in accordance with Ontario Regulation 153/04 (as amended). Mr. Lemieux has a Geologic Technologist Diploma from Fleming College in Lindsay, Ontario, an Honours Bachelor of Science degree in Geology from the University of the West Indies in Kingston, Jamaica and a Master of Science degree from the University of Waterloo. His experience includes conducting Phase II, II and III ESAs at a wide variety of contaminated sites, underground storage tank removal supervision, water supply development, environmental building science and other environmental monitoring projects.

APPENDIX A

FIGURES



LEGEND

RSC Property Boundaries

Phase One ESA Study Area (250m radius from Site Boundary)

Base Plan from City of Guelph GIS Mapping

Scale:

0 100 200m

BLUEWATER
GEOSCIENCE CONSULTANTS INC

42 Shadyridge Place
Kitchener, Ontario
N2N 3J1

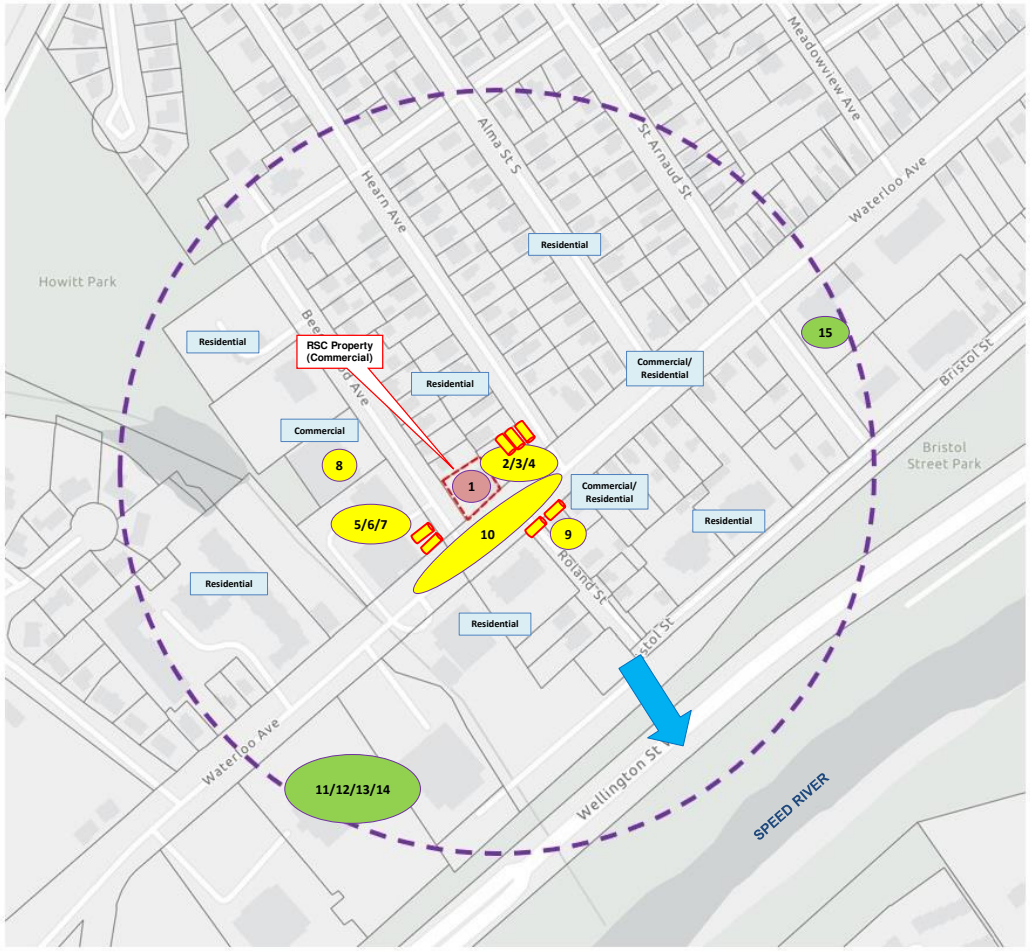
Ph: (519) 502-8947
www.bluewatergeoscience.ca

Location Plan

343 Waterloo Avenue
Guelph, Ontario

Project No. BG-915 Figure 1

Date:	Dwn By:	Chkd. By:	Scale:
12/11/2024	WL	BJL	As Shown



LEGEND

RSC Property Boundaries

Phase One ESA Study Area (250m radius from Site Boundary)

Base Plan from City of Guelph GIS Mapping

Scale: 0 100 200m

Project North / True North

LEGEND

Summary of Potentially Contaminating Activities

On-Site PCA Which Result in APEC (refer to Figure 5 - Site Plan of APEC)

1 **On-Site PCA: Non-Defined PCA** Application of de-icing salts for winter safety
Western parking lot of RSC Property - Exempt from further investigation

Off-Site PCA Which Result in APEC (refer to Figure 5 - Site Plan of APEC)

2 **Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28)**
Eastern boundary of RSC Property, adjacent to 335 Waterloo Ave. with reported USTs

3 **Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27)** Eastern boundary of RSC property, adjacent to 335 Waterloo Ave. with vehicle repair garage

4 **Off-Site PCA: Commercial Autobody Shops (PCA 10)** Eastern boundary of RSC property, adjacent to 335 Waterloo Ave. with former autobody shop

5 **Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28)**
Western boundary of RSC Property, across from 371 Waterloo Ave. with historical USTs

6 **Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles (PCA 27)** Western boundary of RSC Property, across from 371 Waterloo Ave. with historical bus garage

7 **Off-Site PCA: Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52)** Western boundary of RSC Property, across from 371 Waterloo Ave. with historical transit facility

8 **Off-Site PCA: Pulp, Paper and Paperboard Manufacturing and Processing (PCA 45)**
Western boundary of RSC Property, across from 103 Beechwood Ave. with historical paper manufacturing facility

9 **Off-Site PCA: Gasoline and Associated Products Storage in Fixed Tanks (PCA 28)**
Southern boundary of RSC property, across from 338 Waterloo Ave. with historical gasoline service station and USTs

10 **Off-Site PCA: Non-Defined PCA - Potential Presence of Chloroform in Groundwater via release of Municipally Treated Water**
Entire RSC Property - Exempt from further investigation

Off-Site Potentially Contaminating Activities
(that do not result in APEC at the RSC Property)
Denotes Off-Site PCA that is discounted as contributing to APEC at the Site due to distance, topographic gradient and/or low risk nature of operations.

11 **Off-Site PCA: Chemical Manufacturing, Processing and Bulk Storage (PCA 8)**
Former Sterling Rubber factory, historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property

12 **Off-Site PCA: Rubber Manufacturing and Processing (PCA 47)**
Former Sterling Rubber factory, historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property

13 **Off-Site PCA: Solvent Manufacturing, Processing and Bulk Storage (PCA 51)**
Former Sterling Rubber factory, historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property

14 **Off-Site PCA: Waste Disposal and Waste Management, including thermal treatment, landfilling & transfer of waste, other than use of biosoils as soil conditioners (PCA 58)**
Former Sterling Rubber factory & landfill, historically located at 264-274 Waterloo Ave., approx. 180 m to southwest and downgrade of RSC property

15 **Off-Site PCA: Garages and Maintenance and Repair of Railcars, Marine Vehicles (PCA 27)**
Former vehicle repair garage, historically located at 268 Waterloo Ave., approx. 200 m to east and cross grade of RSC property

Commercial — Identified Land Use

Inferred Groundwater Flow Direction

Reported UST Location

BLUEWATER GEOSCIENCE CONSULTANTS INC
42 Shadyridge Place
Kitchener, Ontario
N2N 3J1
Ph: (519) 744-4123
www.bluewatergeoscience.ca

Plan of Study Area - Land Use and PCA

343 Waterloo Avenue
Guelph, ON

Project No. BG-915 Figure 2

Date:	Dwn By:	Chkd. By:	Scale:
2024-12-11	WL	BJL	As shown

SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

TRUE NORTH

SITE NORTH

LEGEND:

RSC PROPERTY BOUNDARY

NOTE:

SITE IS LOCATED AT PART LOTS 11 AND 12, PLAN NO. 274; CITY OF GUELPH, COUNTY OF WELLINGTON.

SCALE BAR (1 : 200)

0 5m 10m 15m

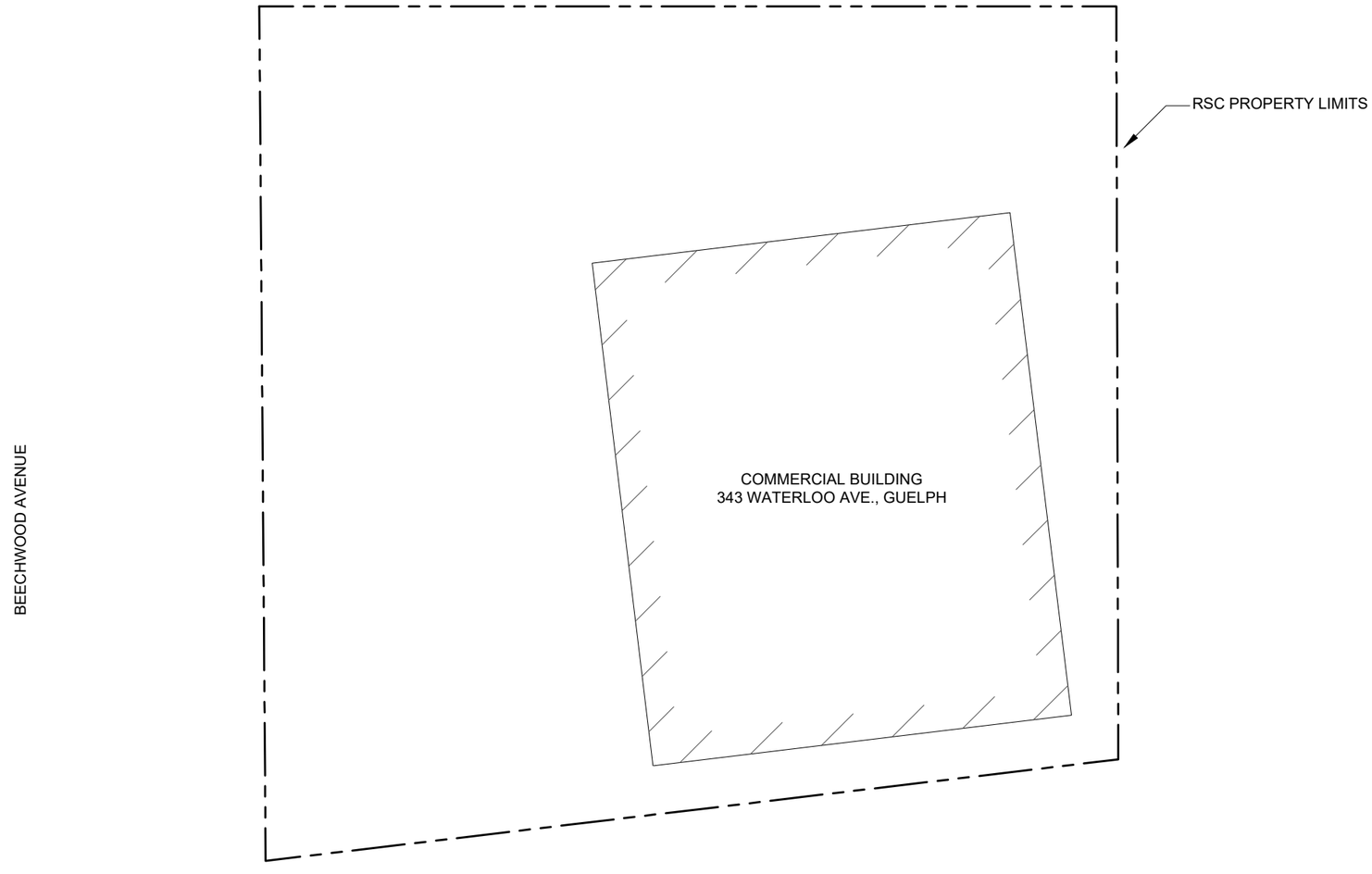
BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

AERIAL SITE PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	3
DESIGNED BY:	DATE:	SCALE:	
BL	JAN 10/25	1 : 200	



SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

TRUE NORTH

SITE NORTH

LEGEND:

RSC PROPERTY BOUNDARY

NOTE:

SITE IS LOCATED AT PART LOTS 11 AND 12, PLAN NO. 274; CITY OF GUELPH, COUNTY OF WELLINGTON.

SCALE BAR (1 : 200)

0 5m 10m 15m

BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

SITE PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	4
DESIGNED BY:	DATE:	SCALE:	
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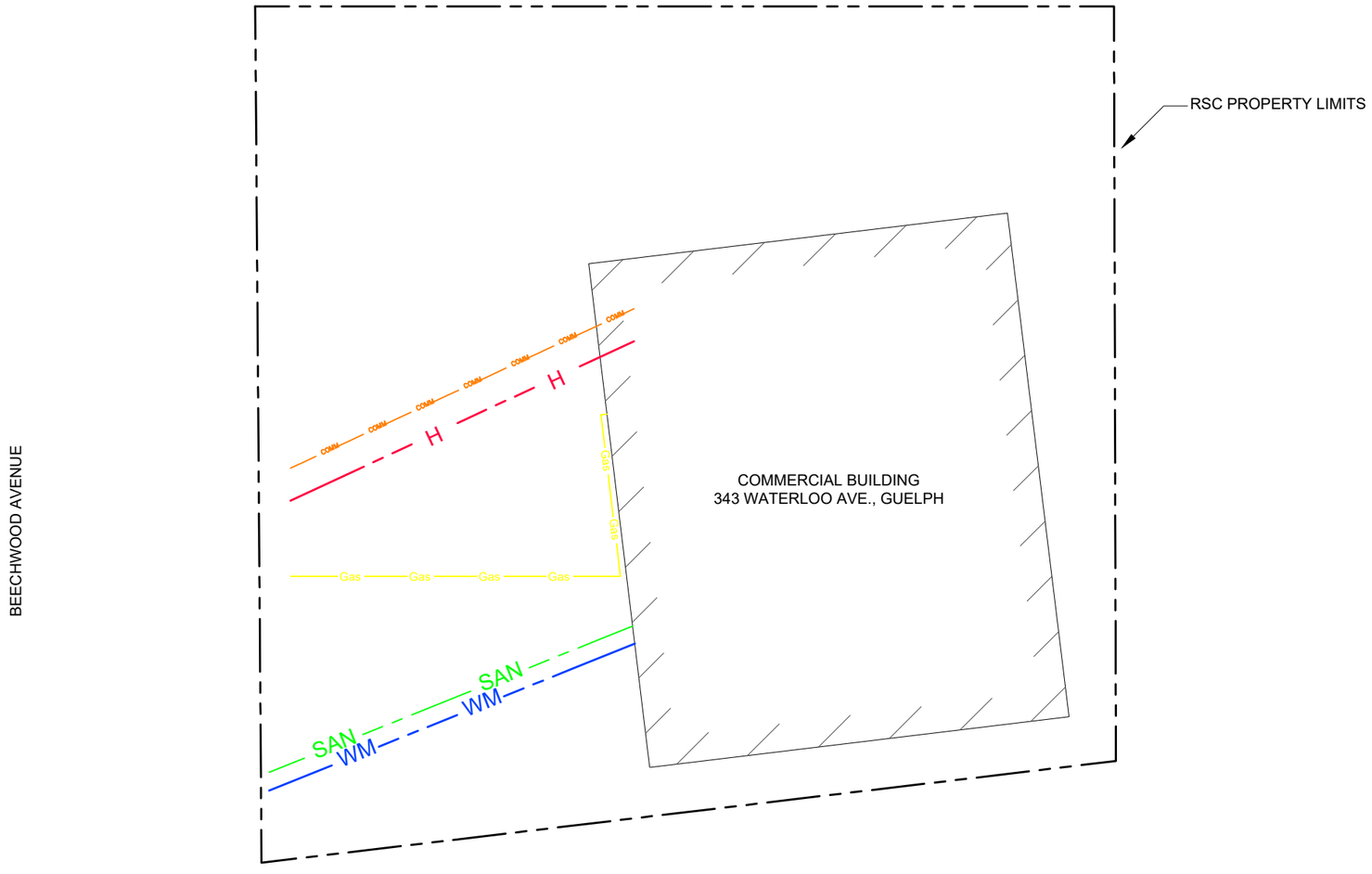

SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

TRUE NORTH

SITE NORTH

LEGEND:

- RSC PROPERTY BOUNDARY
- H — OVERHEAD HYDRO
- WM — U/G WATER LINE
- Gas — U/G GAS LINE
- SAN — U/G SANITARY LINE
- COMM — OVERHEAD COMMUNICATION LINE

NOTE:

SITE IS LOCATED AT PART LOTS 11 AND 12, PLAN NO. 274; CITY OF GUELPH, COUNTY OF WELLINGTON.

SCALE BAR (1 : 200)

0 5m 10m 15m

BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

UTILITY PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	5
DESIGNED BY:	DATE:	SCALE:	
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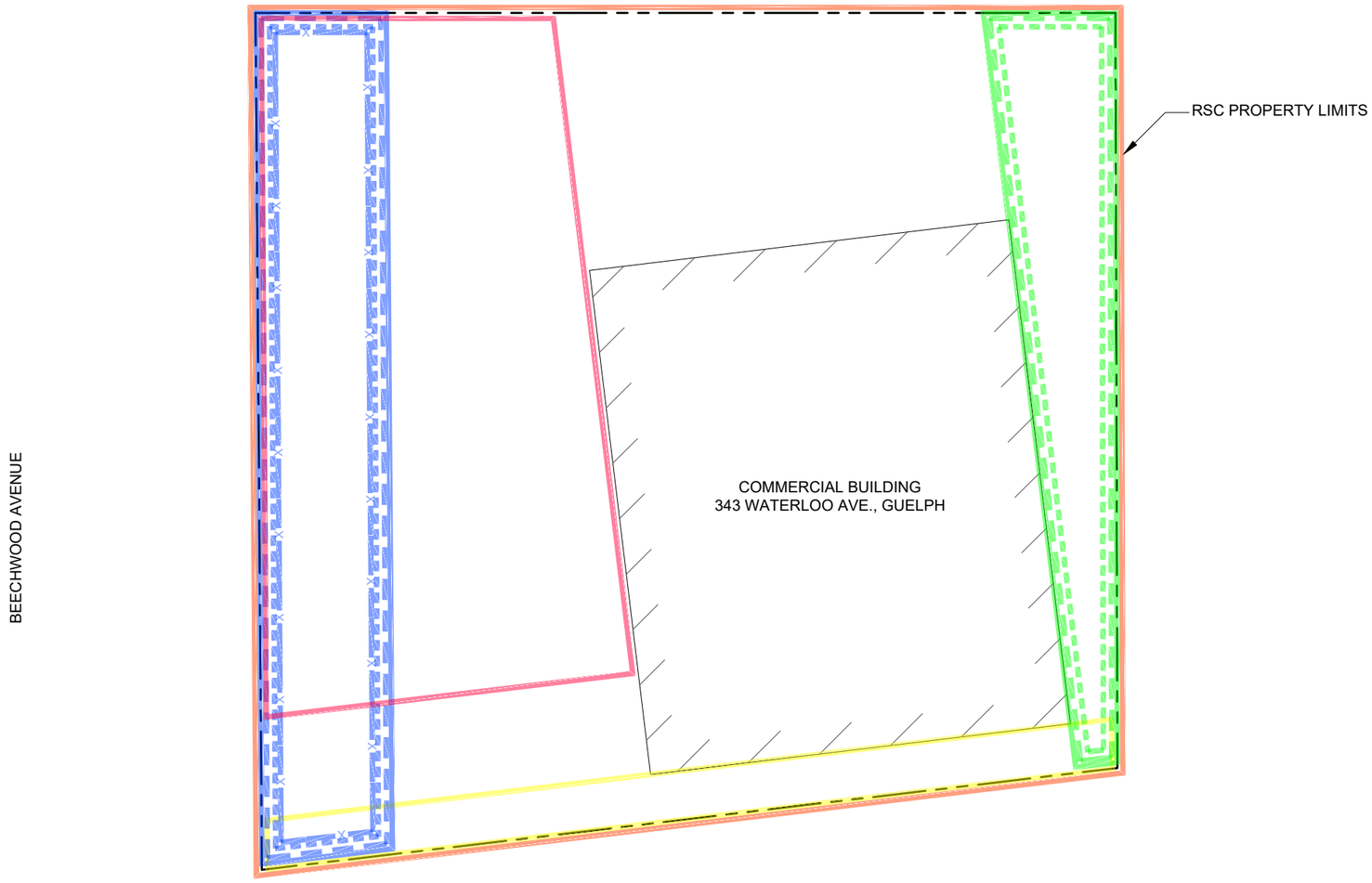

TRUE NORTH

SITE NORTH

LEGEND:

- RSC PROPERTY BOUNDARY
- APEC #1 - ON-SITE PCA (NON-DEFINED) - PARKING AREA IN WESTERN PORTION OF RSC PROPERTY
- APEC #2 - OFF-SITE PCA #28 - GASOLINE & ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC #3 - OFF-SITE PCA #27 - GARAGES & MAINTENANCE & REPAIR OF RAILCARS, MARINE VEHICLES AND AVIATION VEHICLES
- APEC #4 - OFF-SITE PCA #10 - COMMERCIAL AUTO BODY SHOPS
- APEC #5 - OFF-SITE PCA #28 - GASOLINE & ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC #6 - OFF-SITE PCA #27 - GARAGES & MAINTENANCE & REPAIR OF RAILCARS, MARINE VEHICLES AND AVIATION VEHICLES
- APEC #7 - OFF-SITE PCA #52 - STORAGE, MAINTENANCE, FUELING & REPAIR OF EQUIPMENT, VEHICLES AND MATERIAL USED TO MAINTAIN TRANSPORTATION SYSTEMS
- APEC #8 - OFF-SITE PCA #45 - PAPER AND PAPERBOARD MANUFACTURING AND PROCESSING
- APEC #9 - OFF-SITE PCA #28 - GASOLINE & ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC #10 - OFF-SITE PCA (NON-DEFINED) - THM IN GW FROM LEAKAGE OF MUNICIPAL WATER SYSTEM

SCALE BAR (1 : 200)

0 5m 10m 15m

SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

APEC PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	6
DESIGNED BY:	DATE:	SCALE:	
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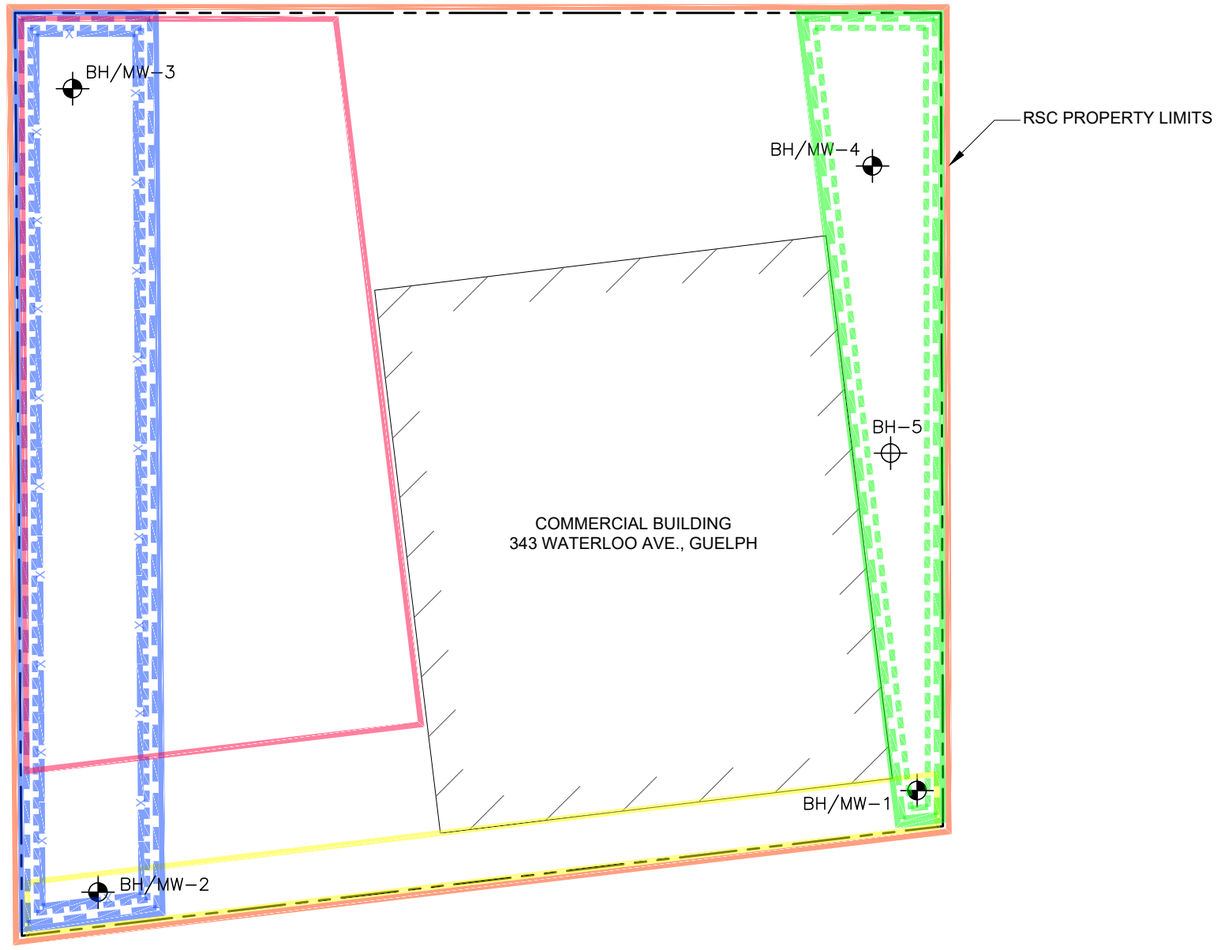

TRUE NORTH

SITE NORTH

LEGEND:

RSC PROPERTY BOUNDARY

BH/MW–1 BLUEWATER BOREHOLE/MONITORING WELL

BH–5 BLUEWATER BOREHOLE

SCALE BAR (1 : 200)

0 5m 10m 15m

SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

BOREHOLE/MONITORING WELL LOCATION PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	7
DESIGNED BY:	DATE:	SCALE:	
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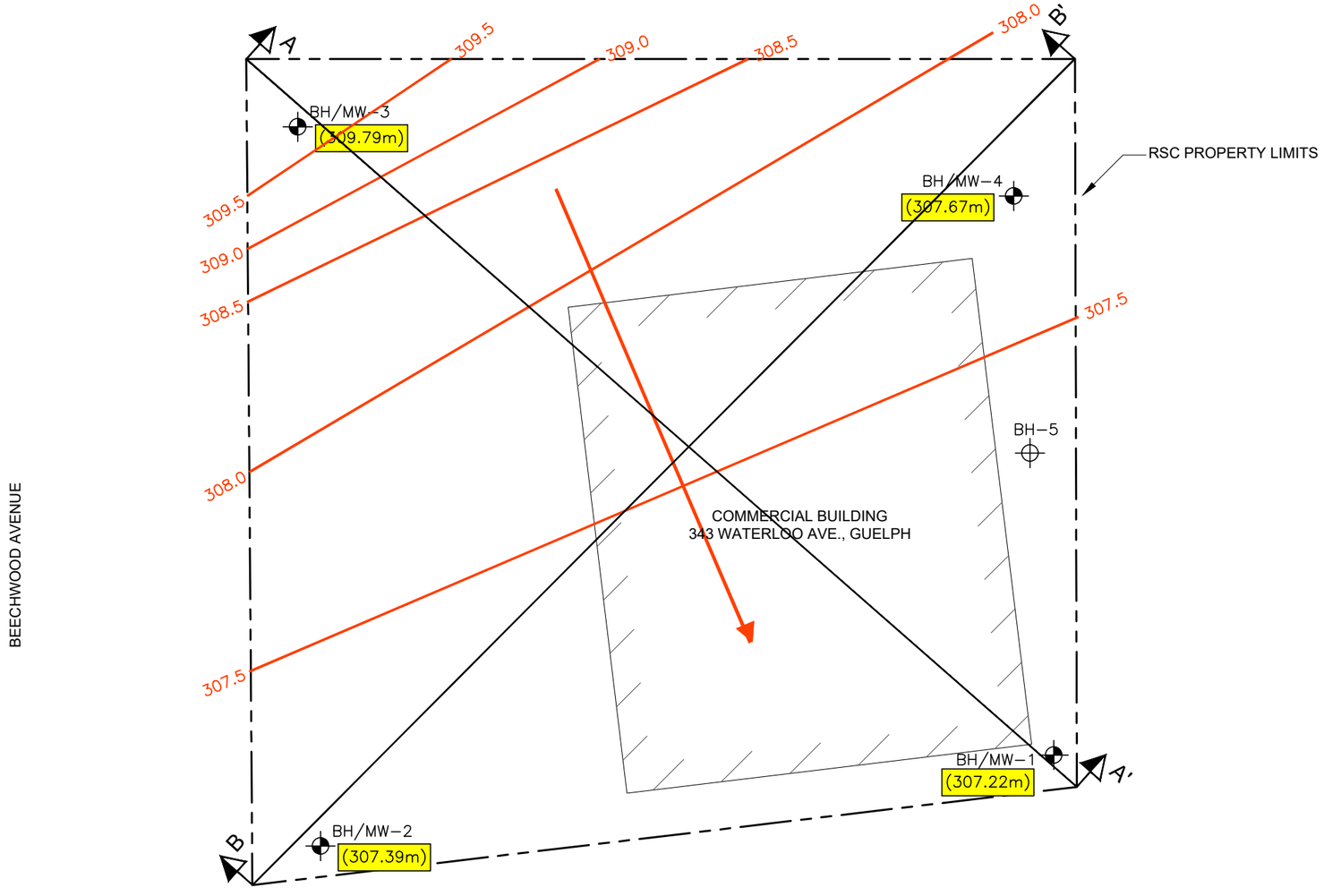

TRUE NORTH

SITE NORTH

LEGEND:

- RSC PROPERTY BOUNDARY
- BH/MW-1 — BLUEWATER BOREHOLE/MONITORING WELL
- BH-5 — BLUEWATER BOREHOLE
- (307.22m) — GROUNDWATER ELEVATION (DECEMBER 18, 2024)
- 309.0 — GROUNDWATER CONTOUR
- INFERRED GROUNDWATER FLOW DIRECTION
- A A' — CROSS-SECTION LINE

SCALE BAR (1 : 200)

0 5m 10m 15m

SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

GROUNDWATER FLOW PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
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DESIGNED BY:	DATE:	SCALE:	
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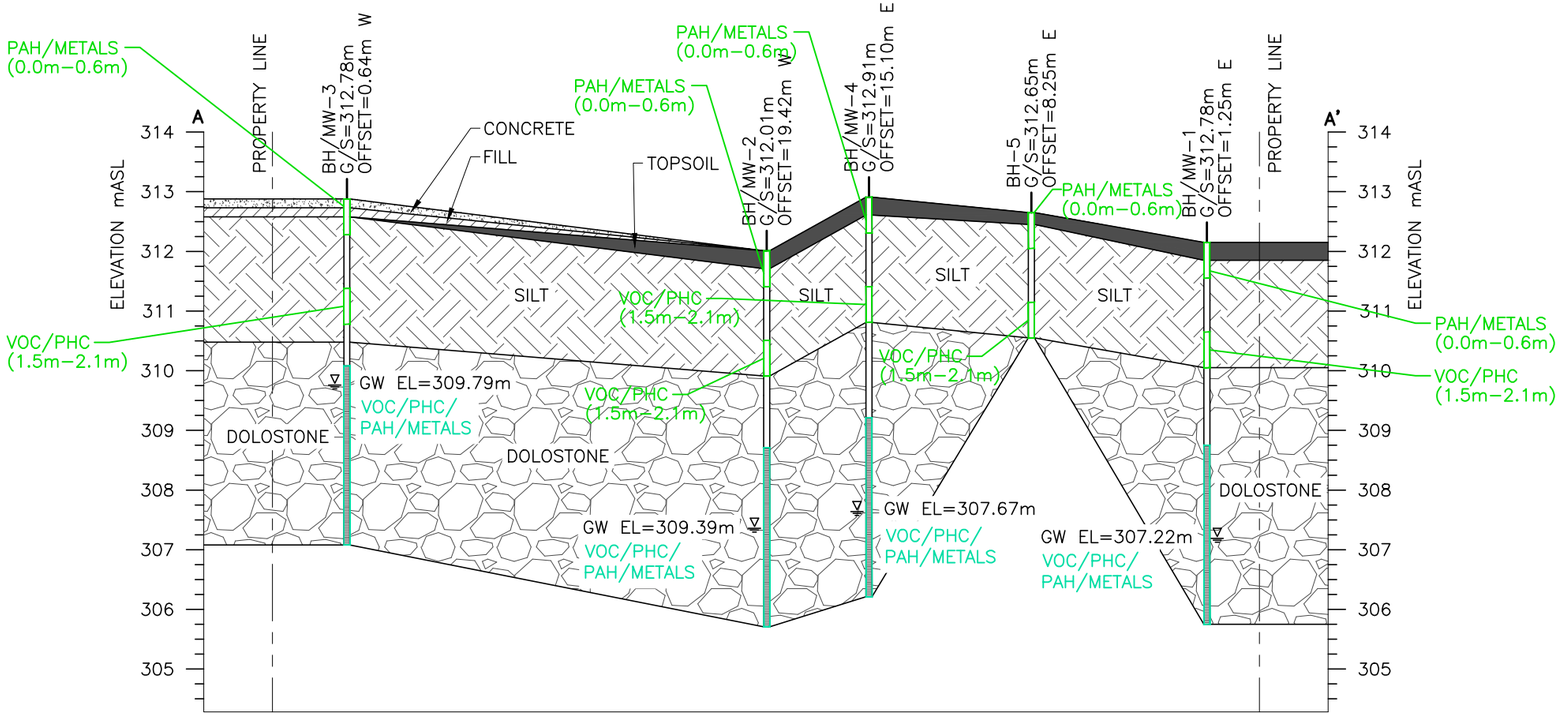
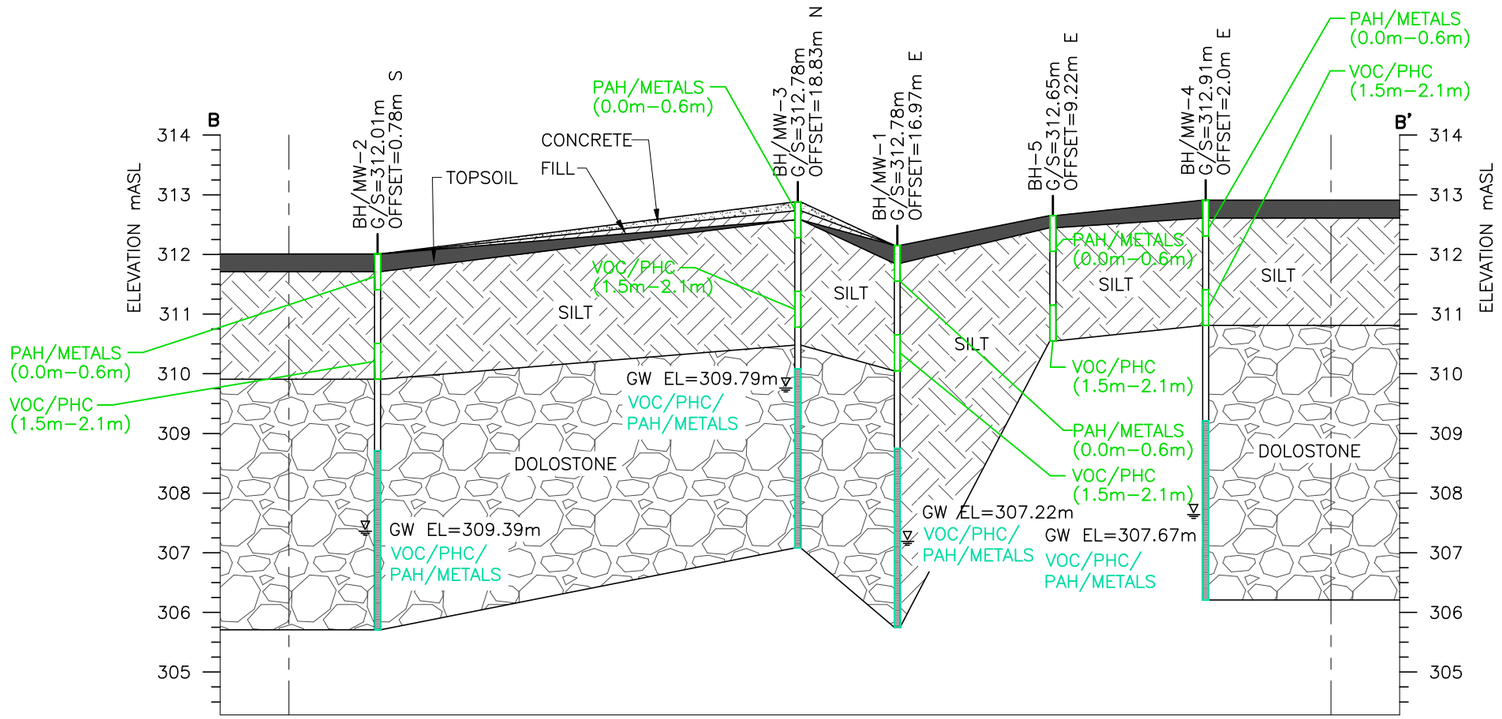
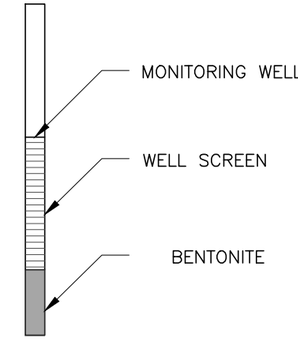




LEGEND:

- WL=307.39 — GW ELEVATION (DECEMBER 16, 2024) masl
- SOIL SAMPLE MEETS TABLE 2 RPI SCS
- SOIL SAMPLE EXCEEDS TABLE 2 RPI SCS
- GROUNDWATER SAMPLE MEETS TABLE 2 SCS
- GROUNDWATER SAMPLE EXCEEDS TABLE 2 SCS



NOTE:

SITE IS LOCATED AT PART LOTS 11 AND 12, PLAN NO. 274; CITY OF GUELPH, COUNTY OF WELLINGTON.

VERTICAL SCALE BAR

0 4m 8m 12m

HORIZONTAL SCALE BAR

0 5m 10m 15m

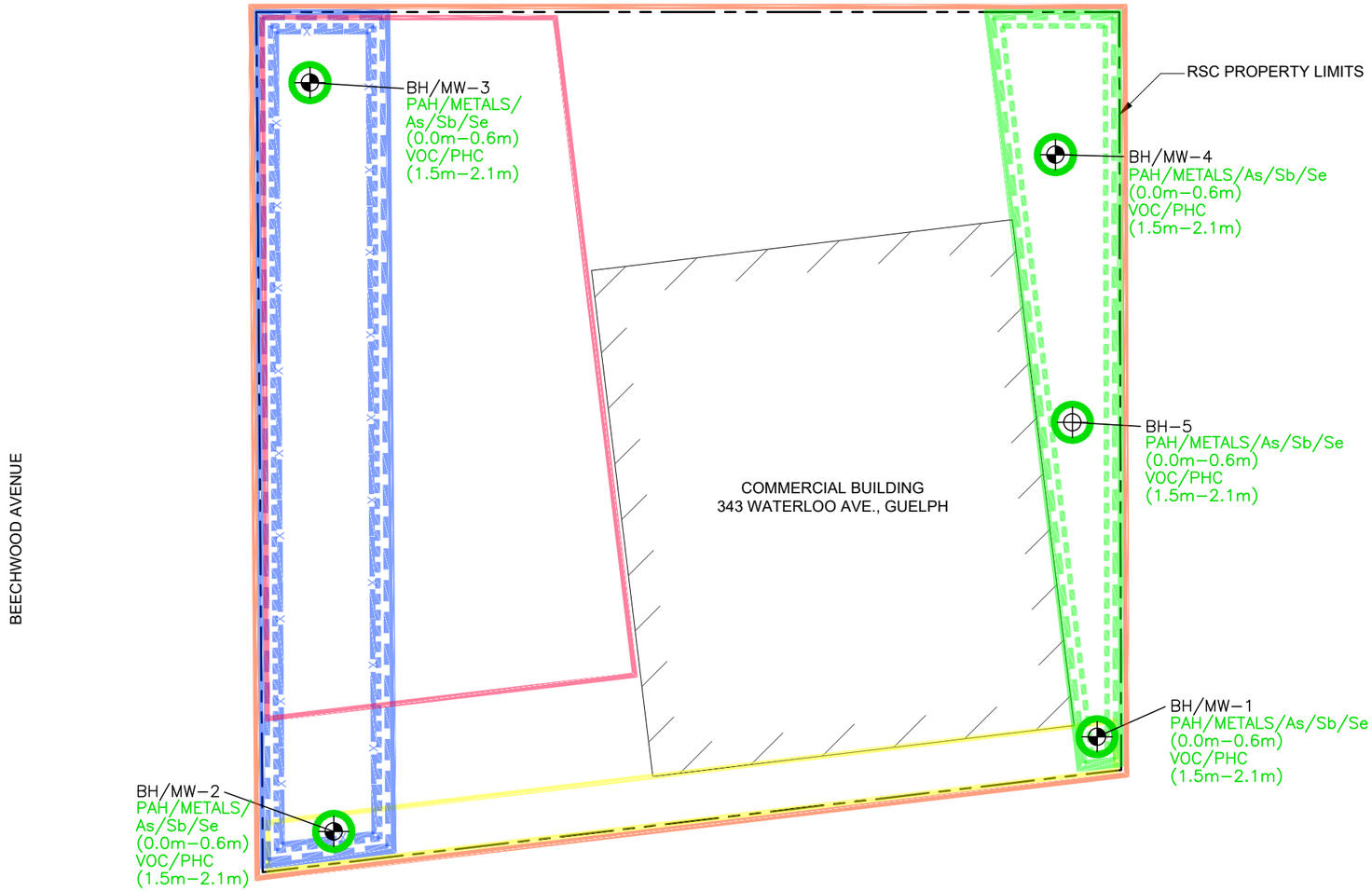
BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

CROSS SECTIONS

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	9
DESIGNED BY:	DATE:	SCALE:	
BL	JAN 10/25	AS SHOWN	



TRUE NORTH

SITE NORTH

LEGEND:

- RSC PROPERTY BOUNDARY
- BH/MW–1 — BLUEWATER BOREHOLE/MONITORING WELL
- BH–5 — BLUEWATER BOREHOLE
- SOIL SAMPLE MEETS TABLE 2 RPI SCS
- SOIL SAMPLE EXCEEDS TABLE 2 RPI SCS

SCALE BAR (1 : 200)

0 5m 10m 15m

SOURCE: CITY OF GUELPH, IMAGE DATED 2025.

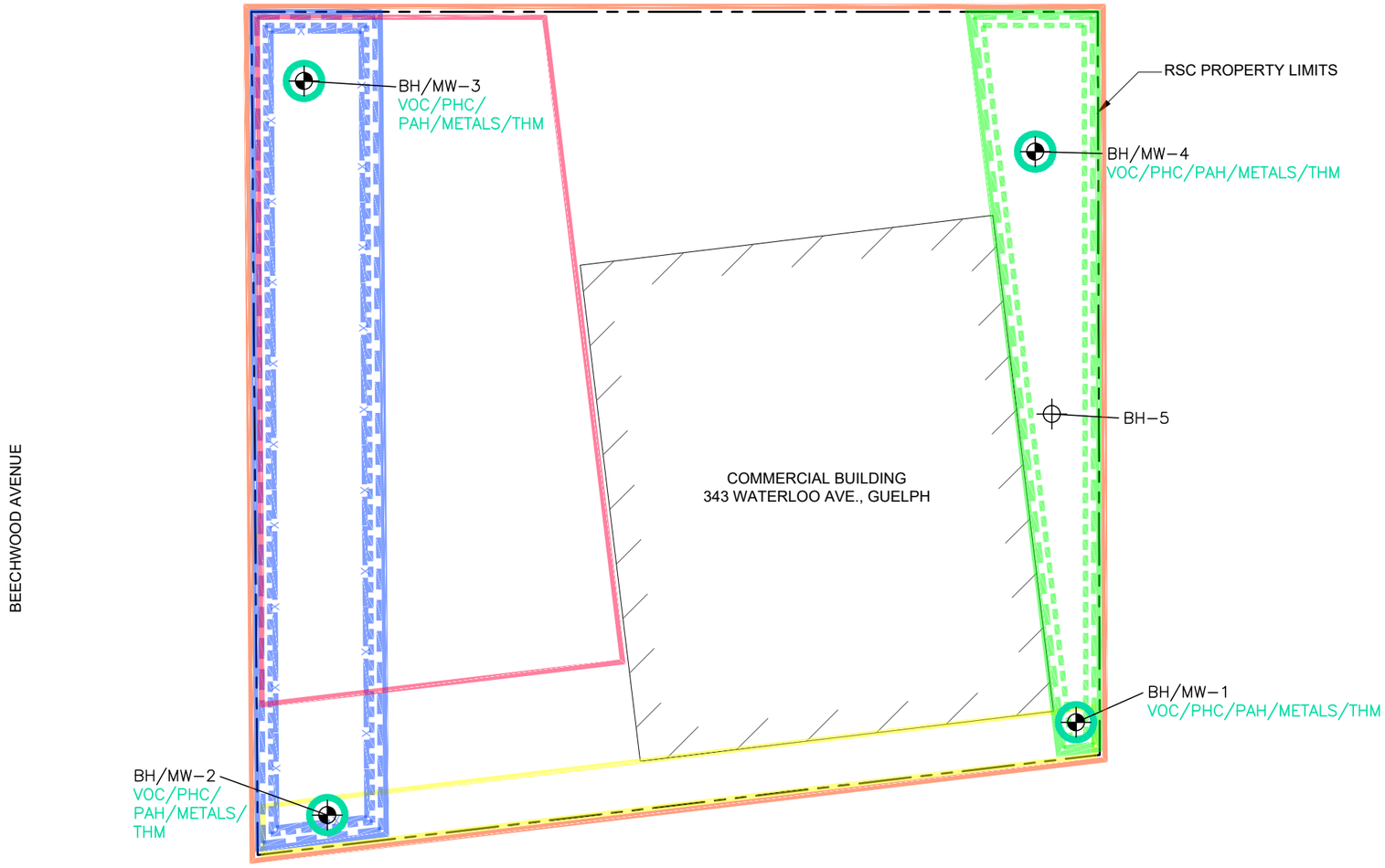
BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

RSC PHASE TWO ESA

SOIL PARAMETER PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	10
DESIGNED BY:	DATE:	SCALE:	
BL	JAN 10/25	1 : 200	



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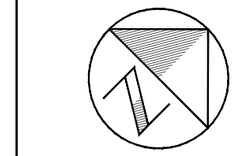
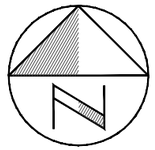


TRUE NORTH



SITE NORTH

LEGEND:

- RSC PROPERTY BOUNDARY
- BH/MW–1 — BLUEWATER BOREHOLE/MONITORING WELL
- BH–5 — BLUEWATER BOREHOLE
- GROUNDWATER SAMPLE MEETS TABLE 2 SCS
- GROUNDWATER SAMPLE EXCEEDS TABLE 2 SCS

SCALE BAR (1 : 200)

0 5m 10m 15m

BLUEWATER
GEOSCIENCE CONSULTANTS Inc.

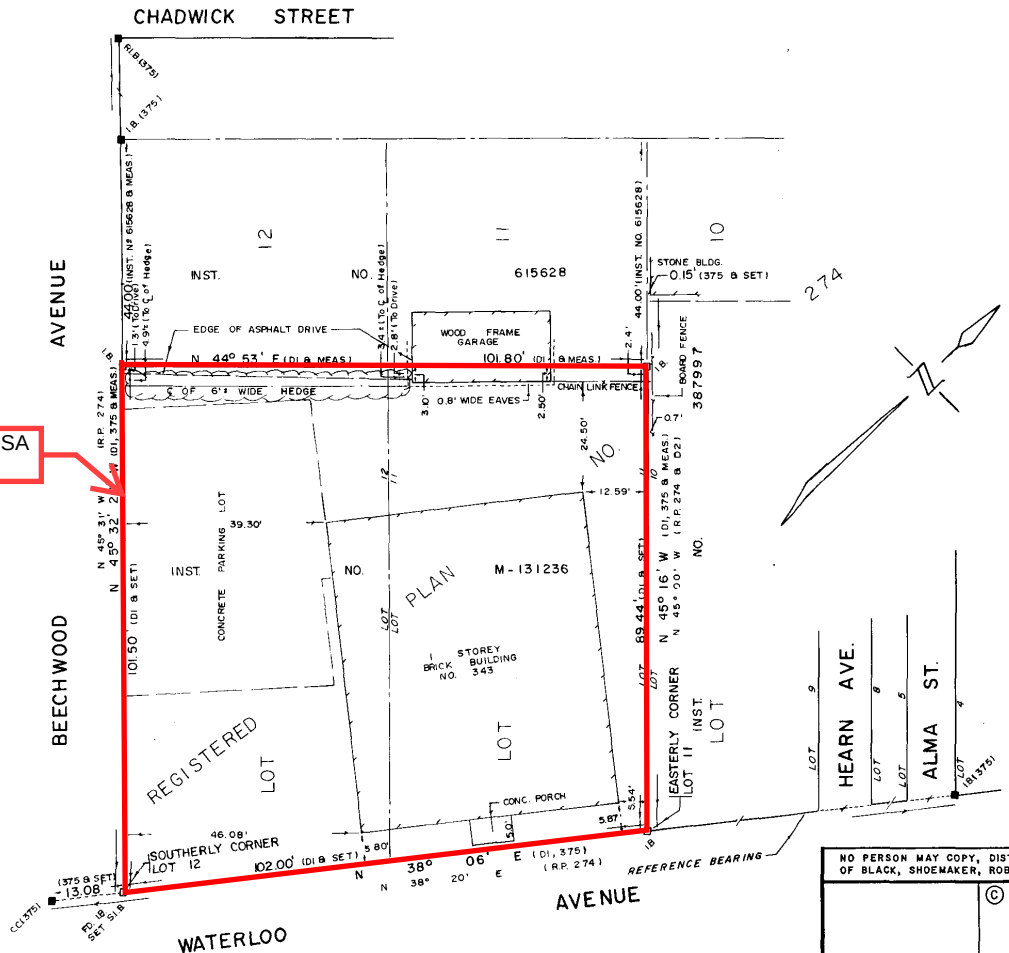
RSC PHASE TWO ESA

GROUNDWATER PARAMETER PLAN

343 WATERLOO AVE., GUELPH

DRAWN BY:	APPROVED BY:	PROJECT NO:	FIGURE NO.
JY	BL	BG-915	11
DESIGNED BY:	DATE:	SCALE:	
BL	JAN 10/25	1 : 200	

Phase One and Two ESA and RSC Property



PLAN OF SURVEY OF
PART OF LOTS 11 AND 12
REGISTERED PLAN NO. 274
CITY OF GUELPH
COUNTY OF WELLINGTON

SCALE : 1 INCH = 20 FEET

0 5 10 20 30 40 50
FEET

R. L. SHOEMAKER, O.L.S.

1990

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

THE FIELD SURVEY REPRESENTED ON THIS PLAN WAS COMPLETED ON THE 9TH. DAY OF JULY, 1990.

NOTE:
BEARINGS ARE REFERRED TO THE NORTHWESTERLY LIMIT OF WATERLOO AVE AS BEING N 38° 06' E AS SHOWN IN INST. NO. M-131236.

375	DENOTES BLACK, SHOEMAKER, ROBINSON & DONALDSON LTD.
□	DENOTES SURVEY MONUMENT PLANTED
■	DENOTES SURVEY MONUMENT FOUND
IB	DENOTES IRON BAR
OU	ORIGIN UNKNOWN
R.I.B.	ROUND IRON BAR
S.I.B.	STANDARD IRON BAR
D1	INST. NO M-131236
D2	INST. NO. 387997

© BLACK, SHOEMAKER, ROBINSON & DONALDSON LIMITED
ONTARIO LAND SURVEYORS
351 SPEEDVALE AVE. WEST, GUELPH, ONTARIO 822-4031

DATE: JULY 10, 1990. | SCALE: 1 INCH = 20 FEET | R.E.G. C.S.T.

PER: R. L. Shoemaker
ONTARIO LAND SURVEYOR

SEAL

PROJECT 90-7385

APPENDIX B

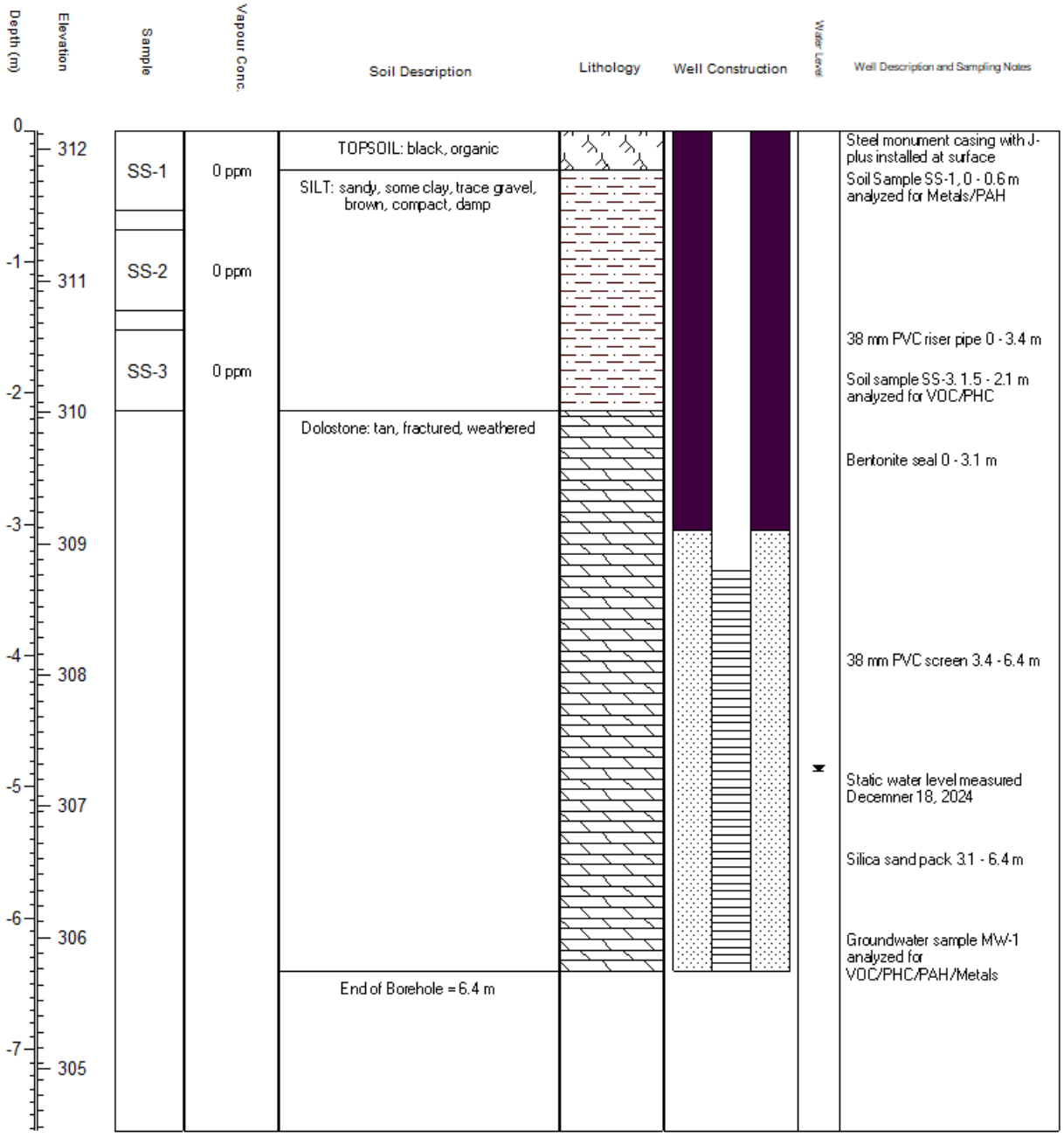
BOREHOLE LOGS
AND
GRAIN SIZE ANALYSIS

BOREHOLE LOG

Borehole #: BH/MW-1
Client: 2448987 Ont. Inc.
Project Location: 343 Waterloo Ave., Guelph
Drilling Contractor: Arrow
Drill Method: HSA/Air Rotary
Logged by: BJL

Bluewater Geoscience

Drill Date: December 16, 2024
Ground Elevation: 312.15 masl
Top of Pipe Elevation: 312.98 masl
Job # - BG-915

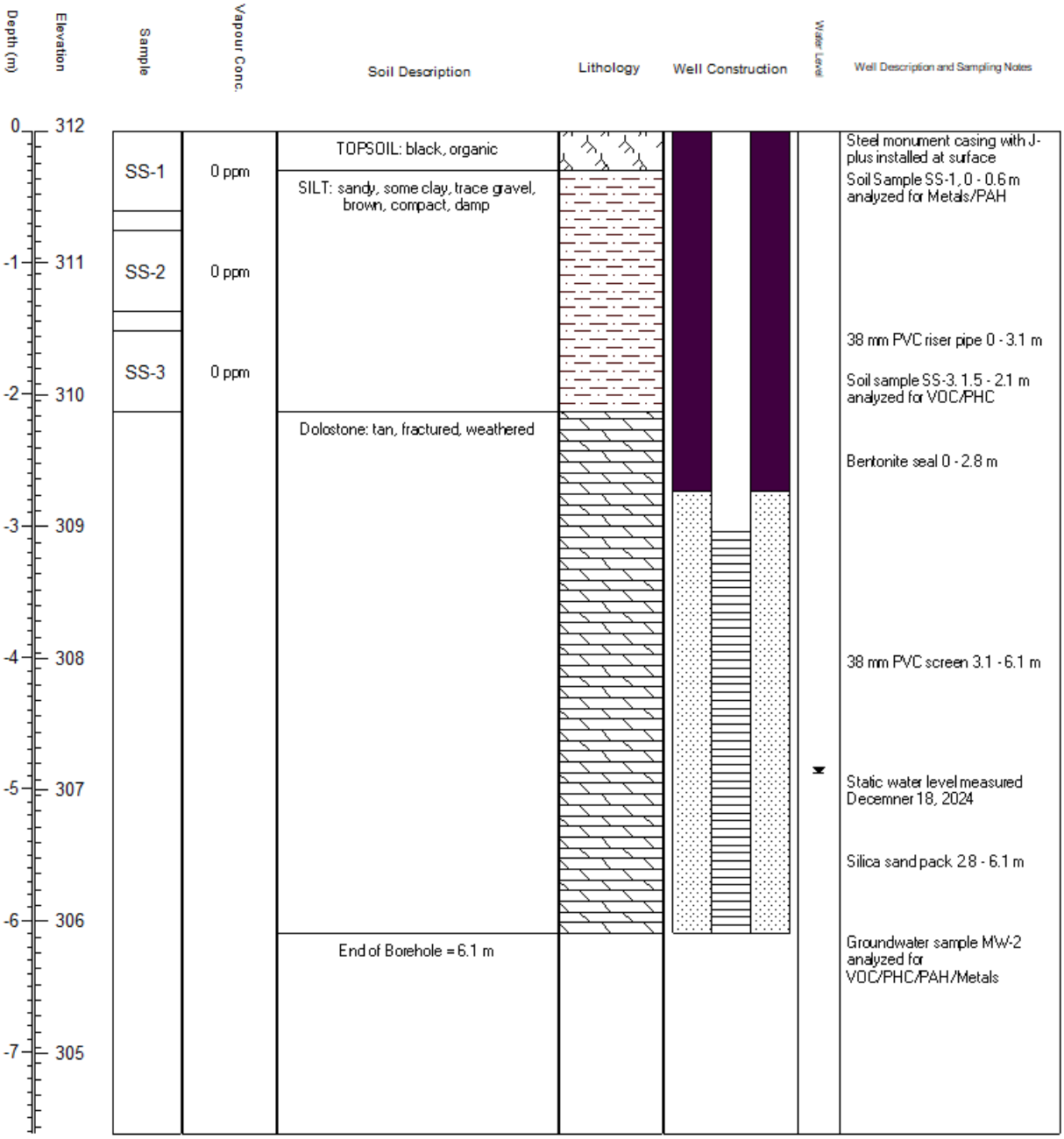


BOREHOLE LOG

Borehole #: BH/MW-2
Client: 2448987 Ont. Inc.
Project Location: 343 Waterloo Ave., Guelph
Drilling Contractor: Arrow
Drill Method: HSA/Air Rotary
Logged by: BJL

Bluewater Geoscience

Drill Date: December 16, 2024
Ground Elevation: 312.01 masl
Top of Pipe Elevation: 312.82 masl
Job # - BG-915

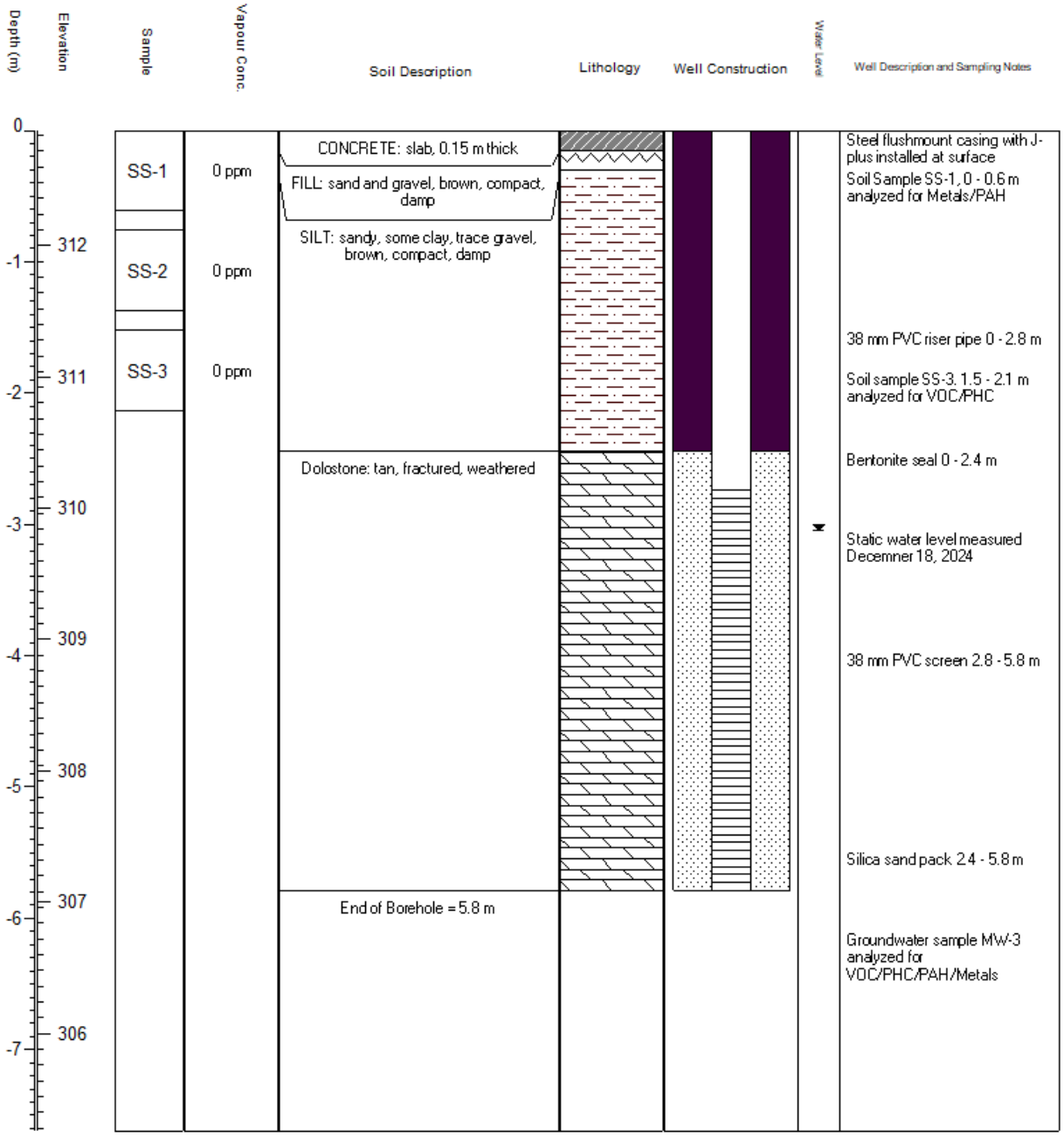


BOREHOLE LOG

Borehole #: BH/MW-3
Client: 2448987 Ont. Inc.
Project Location: 343 Waterloo Ave., Guelph
Drilling Contractor: Arrow
Drill Method: HSA/Air Rotary
Logged by: BJL

Bluewater Geoscience

Drill Date: December 16, 2024
Ground Elevation: 312.88 masl
Top of Pipe Elevation: 312.78 masl
Job # - BG-915

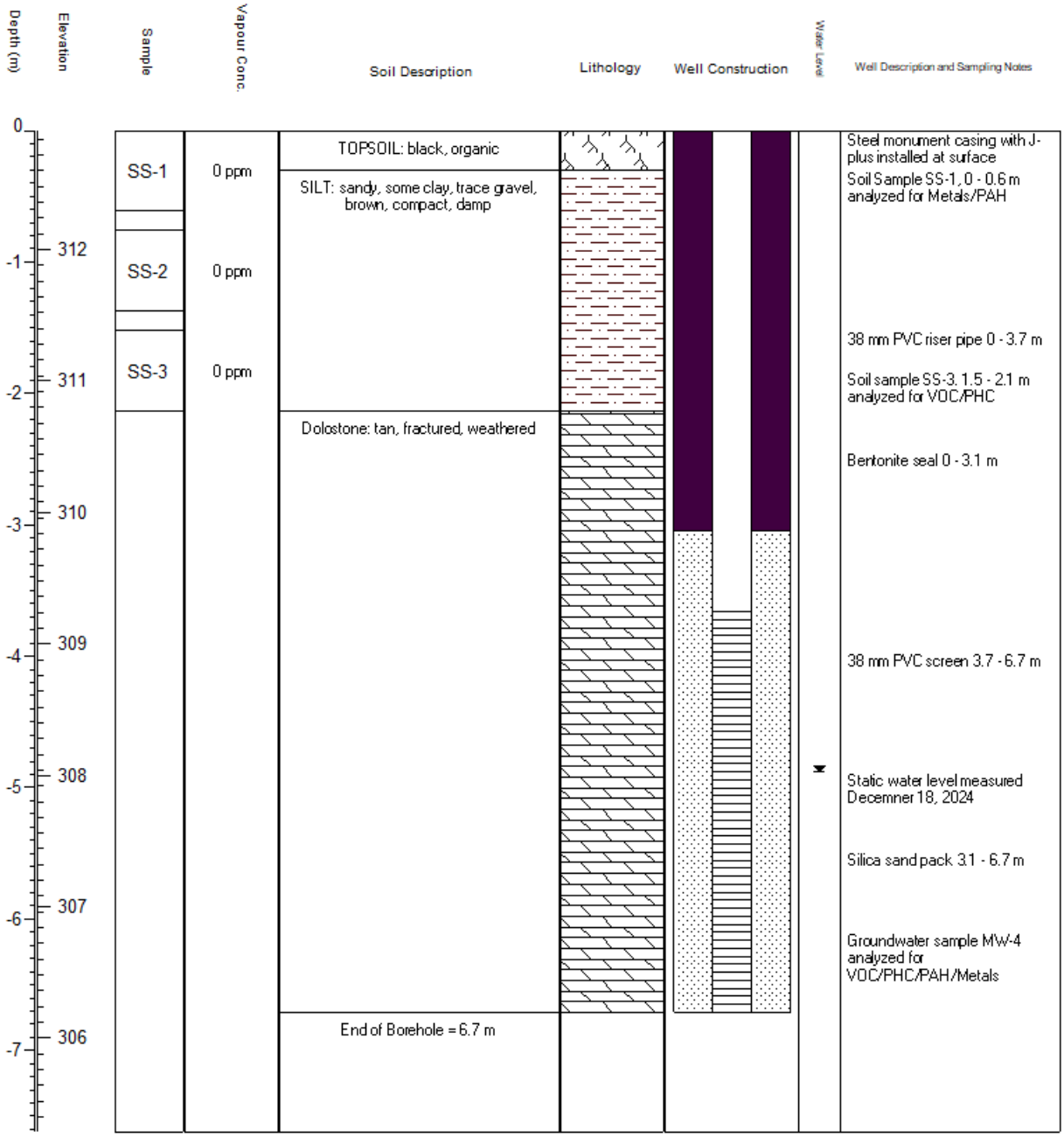


BOREHOLE LOG

Borehole #: BH/MW-4
Client: 2448987 Ont. Inc.
Project Location: 343 Waterloo Ave., Guelph
Drilling Contractor: Arrow
Drill Method: HSA/Air Rotary
Logged by: BJL

Bluewater Geoscience

Drill Date: December 16, 2024
Ground Elevation: 312.91 masl
Top of Pipe Elevation: 313.68 masl
Job # - BG-915

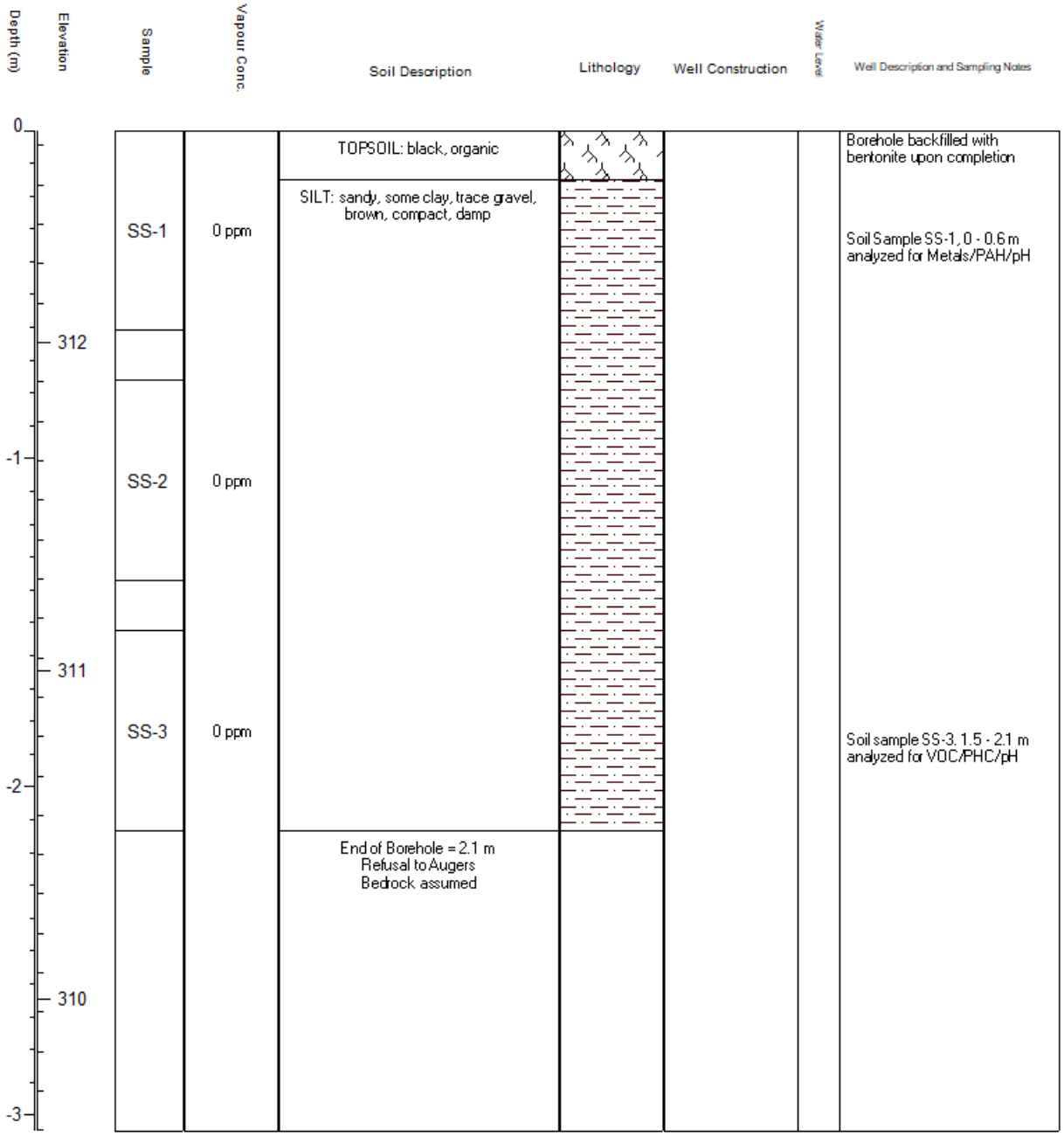


BOREHOLE LOG

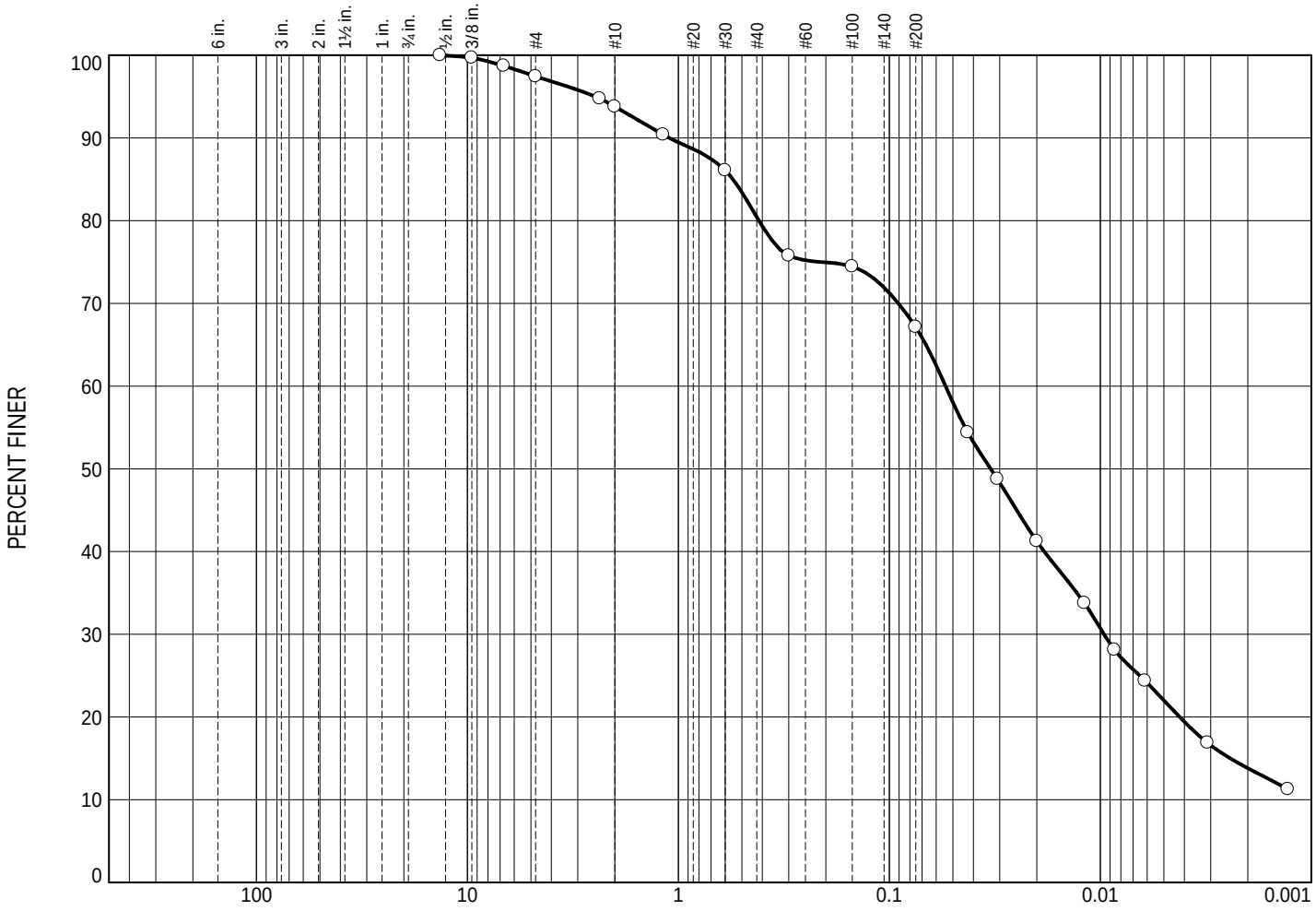
Bluewater Geoscience

Borehole #: BH - 5
Client: 2448987 Ont. Inc.
Project Location: 343 Waterloo Ave., Guelph
Drilling Contractor: Arrow
Drill Method: HSA
Logged by: BJL

Drill Date: December 16, 2024
Ground Elevation: 312.65 masl
Top of Pipe Elevation: NA
Job # - BG-915



Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	2.6	3.6	13.4	13.3	53.3	13.8

SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH6	3		sandy silt, some clay, trace gravel	
				Sampled by Bluewater, December 18, 2024	
				Tested by GS of CMT Engineering December 19, 2024	

CMT Engineering Inc.

St. Clements, ON

Client: Morgan Adams

Project: Proposed 4-Storey Commercial / Residential Building
343 Waterloo Avenue, Guelph, Ontario

Project No.: 24-901

Figure 2

APPENDIX C

DATA SUMMARY TABLES

Table 1: Borehole and Groundwater Monitoring Well Installation Data
343 Waterloo Ave., Guelph
BG-915

BH/MW	Ground Surface Elev (masl)	Stick up/down (m)	Top of Well Pipe Elev. (masl)	Depth to Bottom (m - btp)	Bottom Elevation Base of Screen (masl)	Top of Well Screen Elev (masl)	Screened Formation
1	312.15	0.83	312.98	7.27	305.71	308.81	Dolostone
2	312.01	0.81	312.82	7.86	304.96	308.06	Dolostone
3	312.88	-0.1	312.78	5.74	307.04	310.14	Dolostone
4	312.91	0.77	313.68	7.36	306.32	309.42	Dolostone
5	312.65						

BM - as provided by Van Harten is SW corner of site - 311.77 masl
btp = below top of well pipe
masl = metres above seal level (mean)

Table 2: Groundwater Monitoring Data
343 Waterloo Ave. Guelph
BG-915

BH/MW	Ground Surface Elev (masl)	Stick up/down (m)	Top of Well Pipe Elev. (masl)	Depth to Bottom (m - btp)	Bottom Elevation (masl)	Depth to Water Dec. 18'24	GW elev. Dec. 18'24
1	312.15	0.83	312.98	7.27	305.71	5.76	307.22
2	312.01	0.81	312.82	7.86	304.96	5.43	307.39
3	312.88	-0.1	312.78	5.74	307.04	2.99	309.79
4	312.91	0.77	313.68	7.36	306.32	6.01	307.67
5	312.65						

BH/MW	Ground Surface Elev (masl)	Stick up/down (m)	Top of Well Pipe Elev. (masl)	Depth to Bottom (m - btp)	Bottom Elevation (masl)	Depth to Water Jan. 8' 25	GW elev. Jan. 8' 25
1	312.15	0.83	312.98	7.27	305.71	5.78	307.2
2	312.01	0.81	312.82	7.86	304.96	5.46	307.36
3	312.88	-0.1	312.78	5.74	307.04	3.18	309.6
4	312.91	0.77	313.68	7.36	306.32	5.95	307.73
5	312.65						

BM - as provided by Van Harten is SW corner of site - 311.77 masl
btp = below top of well pipe
masl = metres above seal level (mean)

Table 3: Laboratory VOC Soil Analysis
343 Waterloo Ave., Guelph
BG-915

Parameter	Ont. Reg. 153/04 Table 2 ICC SCS (ug/g)	BH-1, CS-3 1.5 - 2.1 m (ug/g)	BH-2, CS-3 1.5 - 2.1 m (ug/g)	BH-3, CS-3 1.5 - 2.1 m (ug/g)
Acetone	28	<0.5	<0.5	<0.5
Benzene	0.17	<0.0068	<0.0068	<0.0068
Bromodichloromethane	1.9	<0.05	<0.05	<0.05
Bromoform	0.26	<0.05	<0.05	<0.05
Bromomethane	0.05	<0.05	<0.05	<0.05
Carbon tetrachloride	0.12	<0.05	<0.05	<0.05
Chlorobenzene	2.7	<0.05	<0.05	<0.05
Dibromochloromethane	2.9	<0.05	<0.05	<0.05
Chloroform	0.18	<0.04	<0.04	<0.04
1,2-Dibromomethane	0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	1.7	<0.05	<0.05	<0.05
1.3-Dichlorobenzene	6	<0.05	<0.05	<0.05
1,4-dichlorobenzene	0.097	<0.05	<0.05	<0.05
Dichlorodifluoromethane	25	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.6	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05	<0.05	<0.05	<0.05
cis-1,2Dichloroethylene	2.5	<0.05	<0.05	<0.05
trans-1,2Dichloroethylene	0.75	<0.05	<0.05	<0.05
1,3-Dichloropropene	0.081	<0.042	<0.042	<0.042
Methylene Chloride	2	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.085	<0.05	<0.05	<0.05
cis-1,3-Dichloropropene		<0.03	<0.03	<0.03
trans-1,3-Dichloropropene		<0.03	<0.03	<0.03
Ethyl benzene	1.6	<0.015	<0.015	<0.015
Hexane	34	<0.05	<0.05	<0.05
Methyl ethyl ketone	44	<0.5	<0.5	<0.5
Methyl isobutyl Ketone	4.3	<0.5	<0.5	<0.5
MTBE	1.4	<0.05	<0.05	<0.05
Styrene	2.2	<0.05	<0.05	<0.05
1,1,1,2-tetrachloroethane	0.05	<0.05	<0.05	<0.05
1,1,2,2-tetrachloroethane	0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	2.3	<0.05	<0.05	<0.05
Toluene	6	<0.08	<0.08	<0.08
1,1,1-trichloroethane	3.4	<0.05	<0.05	<0.05
1,1,2-trichloroethane	0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.52	<0.01	<0.01	<0.01
Trichlorofluoromethane	5.8	<0.05	<0.05	<0.05
Vinyl Chloride	0.022	<0.02	<0.02	<0.02
Xylenes)Total)	25	<0.05	<0.05	<0.05

Table 3: Laboratory VOC Soil Analysis
343 Waterloo Ave., Guelph
BG-915

Parameter	Ont. Reg. 153/04 Table 2 ICC SCS (ug/g)	BH-4, CS-3 1.5- 2.1 m (ug/g)	BH-5, CS-3 1.5 - 2.1 m (ug/g)	DUP-2 Dupe of BH-5, CS-3 (ug/g)
Acetone	28	<0.5	<0.5	<0.5
Benzene	0.17	<0.0068	<0.0068	<0.0068
Bromodichloromethane	1.9	<0.05	<0.05	<0.05
Bromoform	0.26	<0.05	<0.05	<0.05
Bromomethane	0.05	<0.05	<0.05	<0.05
Carbon tetrachloride	0.12	<0.05	<0.05	<0.05
Chlorobenzene	2.7	<0.05	<0.05	<0.05
Dibromochloromethane	2.9	<0.05	<0.05	<0.05
Chloroform	0.18	<0.04	<0.04	<0.04
1,2-Dibromomethane	0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	1.7	<0.05	<0.05	<0.05
1.3-Dichlorobenzene	6	<0.05	<0.05	<0.05
1,4-dichlorobenzene	0.097	<0.05	<0.05	<0.05
Dichlorodifluoromethane	25	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.6	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05	<0.05	<0.05	<0.05
cis-1,2Dichloroethylene	2.5	<0.05	<0.05	<0.05
trans-1,2Dichloroethylene	0.75	<0.05	<0.05	<0.05
1,3-Dichloropropene	0.081	<0.042	<0.042	<0.042
Methylene Chloride	2	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.085	<0.05	<0.05	<0.05
cis-1,3-Dichloropropene		<0.03	<0.03	<0.03
trans-1,3-Dichloropropene		<0.03	<0.03	<0.03
Ethyl benzene	1.6	<0.015	<0.015	<0.015
Hexane	34	<0.05	<0.05	<0.05
Methyl ethyl ketone	44	<0.5	<0.5	<0.5
Methyl isobutyl Ketone	4.3	<0.5	<0.5	<0.5
MTBE	1.4	<0.05	<0.05	<0.05
Styrene	2.2	<0.05	<0.05	<0.05
1,1,1,2-tetrachloroethane	0.05	<0.05	<0.05	<0.05
1,1,2,2-tetrachloroethane	0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	2.3	<0.05	<0.05	<0.05
Toluene	6	<0.08	<0.08	<0.08
1,1,1-trichloroethane	3.4	<0.05	<0.05	<0.05
1,1,2-trichloroethane	0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.52	<0.01	<0.01	<0.01
Trichlorofluoromethane	5.8	<0.05	<0.05	<0.05
Vinyl Chloride	0.022	<0.02	<0.02	<0.02
Xylenes)Total)	25	<0.05	<0.05	<0.05

Table 4: Laboratory Soil PHC Analysis
343 Waterloo Ave., Guelph
BG-915

Parameter	Ont. Reg. 153/04 Table 2 RPI SCS (ug/g)	BH-1, CS-3 1.5 - 2.1 m (ug/g)	BH-2, CS-3 1.5 - 2.1 m (ug/g)	BH-3, CS-3 1.5 - 2.1 m (ug/g)	BH-4, CS-3 1.5- 2.1 m (ug/g)	BH-5, CS-3 1.5 - 2.1 m (ug/g)	DUP-2 Dupe of BH-5, CS-3 (ug/g)
PHC-F1 (C6-C10)	65	<5	<5	<5	<5	<5	<5
PHC F1-BTEX	65	<5	<5	<5	<5	<5	<5
PHC-F2	150	<10	<10	<10	<10	<10	<10
PHC-F3	1300	<50	<50	<50	<50	<50	<50
PHC-F4	5600	<50	<50	<50	<50	<50	<50

Table 5: Laboratory Heavy Metals Soil Analysis
343 Waterloo Ave., Guelph
BG-915

Parameter	Reg. 153/04 Table 2 SCS Coarse soil RPI Land Use	BH-1, SS-1 0.0 - 0.6 m (ug/g)	BH-2, SS-1 0.0 - 0.6 m (ug/g)	BH-3, SS-1 0.0 - 0.6 m (ug/g)	BH-4, SS-1 0.0 - 0.6 m (ug/g)	BH-5, SS-1 0.0 - 0.6 m (ug/g)	DUP-1 Dupe of BH-5, SS-1 0.0 - 0.6 m (ug/g)
Antimony	7.5	0.13	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	18	3.74	1.02	1.70	1.92	2.56	2.64
Barium	390	41.2	9.5	10.9	12.2	18.2	18.8
Beryllium	1.5	0.22	<0.1	0.11	0.15	0.22	0.23
Boron	120	<5	<5	<5	5.2	<5	5
Cadmium	1.2	0.31	0.08	0.28	0.21	0.22	0.22
Chromium	160	13.1	5.94	7.7	8.32	16.1	13.9
Cobalt	22	3.55	1.28	1.81	2.49	4.94	4.79
Copper	160	10.9	5.3	8.81	7.45	23.3	16.3
Lead	120	25.30	6.21	11.70	22.20	17.90	19.10
Molybdenum	6.9	0.44	0.14	0.5	0.3	0.31	0.29
Nickel	130	7.39	2.95	4.54	5.55	12.50	9.50
Selenium	2.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Silver	25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	1	0.069	<0.050	<0.050	<0.050	0.071	0.072
Uranium	23	0.80	0.29	0.35	0.42	0.37	0.40
Vanadium	86	31.2	11.4	9.64	17.1	35.7	32.1
Zinc	340	82.70	29.10	125.00	106.00	104.00	96.30

RPI = residential/parkland/institutional

Table 6: Laboratory PAH Soil Analysis
343 Waterloo Ave., Guelph
BG-915

Parameter	Ont. Reg. 153/04 Table 2 SCS Coarse soil RPI Land Use	BH-1, SS-1 0.0 - 0.6 m	BH-2, SS-1 0.0 - 0.6 m	BH-3, SS-1 0.0 - 0.6 m	BH-4, SS-1 0.0 - 0.6 m	BH-5, SS-1 0.0 - 0.6 m	DUP-1 Dupe of BH-5, SS-1 0.0 - 0.6 m
	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)
Acenaphthene	29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	0.74	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.63	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	7.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	7.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(ah)anthracene	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123,cd)pyrene	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1+2 Methylnaphthalene	3.4	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
1-Methylnaphthalene	3.4	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
2-Methylnaphthalene	3.4	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	0.75	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013
Phenanthrene	7.8	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
Pyrene	78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table 7: Soil QA/QC Heavy Metals Relative Percent Difference
343 Waterloo Ave., Guelph
BG-915

Parameter	BH-5, SS-1 0.0 - 0.6 m (ug/g)	DUP-1 Dupe of BH-5, SS-1 (ug/g)	Relative Percent Difference (%)
Antimony	0.1	0.1	0
Arsenic	2.56	2.64	-3.076923077
Barium	18.2	18.8	-3.243243243
Beryllium	0.22	0.23	-4.444444444
Boron	5	5	0
Cadmium	0.22	0.22	0.904977376
Chromium	16.1	13.9	14.66666667
Cobalt	4.94	4.79	3.083247688
Copper	23.3	16.3	35.35353535
Lead	17.90	19.10	-6.486486486
Molybdenum	0.31	0.29	6.666666667
Nickel	12.50	9.50	27.27272727
Selenium	0.2	0.2	0
Silver	0.10	0.10	0
Thallium	0.071	0.072	-1.398601399
Uranium	0.37	0.40	-8.311688312
Vanadium	35.7	32.1	10.61946903
Zinc	104.00	96.30	7.688467299

Table 8: Laboratory VOC Groundwater Analysis
343 Waterloo Ave, Guelph
BG-915

Parameter	O. Reg. 153/04 Table 2 SCS	BH/MW-1 Dec. 18'24	BH/MW-2 Dec. 18'24	BH/MW-3 Dec. 18'24	BH/MW-4 Dec. 18'24	DUP-1 Dupe of MW-3 Dec. 18'24
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acetone	2700	<20	<20	<20	<20	<20
Benzene	5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	16	<0.5	3.36	12.8	0.55	12.4
Bromoform	25	<0.5	<0.5	2.15	<0.5	2.18
Bromomethane	0.89	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	0.79	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	30	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	25	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	2.4	**13.1**	**16**	**14.5**	**18.7**	**14**
1,2-Dibromomethane	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	3	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	59	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	1	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	590	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	1.6	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	1.6	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2Dichloroethylene	1.6	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2Dichloroethylene	1.6	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	50	<5	<5	<5	<5	<5
1,2-Dichloropropane	5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene		<0.3	<0.3	<0.3	<0.3	<0.3
trans-1,3-Dichloropropene		<0.3	<0.3	<0.3	<0.3	<0.3
1,3-Dichloropropene (cis&trans)	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl benzene	2.4	<0.5	<0.5	<0.5	<0.5	<0.5
Hexane	51	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl ethyl ketone	1800	<20	<20	<20	<20	<20
Methyl isobutyl Ketone	640	<20	<20	<20	<20	<20
MTBE	15	<0.5	<0.5	<0.5	<0.5	<0.5
Styrene	5.4	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-tetrachloroethane	1.1	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	1	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	1.6	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	24	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	200	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	4.7	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	1.6	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	150	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes)Total)	300	<0.5	<0.5	<0.5	<0.5	<0.5

Table 9: Laboratory Groundwater PHC Analysis
343 Waterloo Ave, Guelph
BG-915

Parameter	Ont. Reg. 153/05 Table 2 SCS ug/L	BH/MW-1 Dec. 18'24 ug/L	BH/MW-2 Dec. 18'24 ug/L	BH/MW-3 Dec. 18'24 ug/L	BH/MW-4 Dec. 18'24 ug/L	DUP-1 Dec. 18'24 ug/L	Trip Blank Dec. 18'24 ug/L
PHC-F1 (C6-C10)	750	<25	<25	<25	<25	<25	<25
PHC F1 - BTEX	750	<25	<25	<25	<25	<25	<25
PHC - F2	150	<100	<100	<100	<100	<100	NA
PHC - F3	500	<250	<250	<250	<250	<250	NA
PHC - F4	500	<250	<250	<250	<250	<250	NA

NA - Not Analyzed

Table 10: Laboratory Heavy Metals Groundwater Analysis
343 Waterloo Ave, Guelph
BG-915

Parameter	Ont. Reg. 153/04 Table 2 SCS	BH/MW-1 Dec. 18'24	BH/MW-2 Dec. 18'24	BH/MW-3 Dec. 18'24	BH/MW-4 Dec. 18'24	DUP-1 Dupe of MW-3 Dec. 18'24
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Antimony	6	0.15	0.1	0.26	0.18	0.27
Arsenic	25	0.18	<0.1	0.13	0.12	0.13
Barium	1,000	53.1	45.1	53.7	50.2	53.8
Beryllium	4	<0.020	<0.200	<0.020	<0.020	<0.020
Boron	5,000	32	22	23	26	23
Cadmium	2.7	0.01	0.04	0.04	<0.05	0.04
Chromium	50	<0.5	<5.00	<0.50	<0.50	<0.5
Cobalt	3.8	0.16	<1.00	<0.1	0.11	<0.1
Copper	87	2.66	1.5	1.32	1	1.35
Lead	10	0.08	0.11	0.05	0.05	0.07
Molybdenum	70	1.98	0.491	1.47	1.7	1.48
Nickel	100	0.88	0.59	3.38	1.20	3.46
Selenium	10	0.321	0.365	0.264	0.278	0.243
Silver	1.5	<0.010	<0.100	<0.010	<0.010	<0.010
Sodium	490,000	65000	136000	58100	80900	57500
Thallium	2	0.03	0.01	<0.01	0.02	<0.01
Uranium	20	0.475	0.628	0.933	0.439	0.958
Vanadium	6.2	<0.50	<0.5	<0.50	<0.50	<0.50
Zinc	1,100	3.4	14.8	58.9	1.9	58.7

Table 11: Laboratory PAH Groundwater Analysis
343 Waterloo Ave, Guelph
BG-915

Parameter	Ont. Reg. 153/04 Table 2 SCS	BH/MW-1 Dec. 18'24	BH/MW-2 Dec. 18'24	BH/MW-3 Dec. 18'24	BH/MW-4 Dec. 18'24	DUP-1 Dupe of MW-3 Dec. 18'24
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Acenaphthene	4.1	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4	<0.010	<0.010	<0.010	<0.010	<0.010
Banzo(a)anthracene	1	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene	0.2	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41	0.026	<0.010	<0.010	<0.010	0.010
Fluorene	120	0.01	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2	<0.010	<0.010	<0.010	<0.010	<0.010
1+2 Methylnapthalenes	3.2	0.68	<0.015	<0.015	0.09	<0.015
1-Methylnaphthalene	3.2	0.3	<0.01	<0.01	0.036	<0.01
2-Methylnaphthalene	3.2	0.38	0.01	0.024	0.06	0.025
Naphthalene	11	0.057	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1	0.05	<0.020	<0.020	<0.02	<0.020
Pyrene	4.1	0.037	<0.010	<0.010	0.037	<0.010

Values shown in **BOLD** exceed the Table 2 SCS

Table 12: Groundwater QA/QC Heavy Metals Relative Percent Difference
343 Waterloo Ave, Guelph
BG-915

Parameter	MW-3 ug/L	DUP-1 Dupe of MW-3 ug/L	Relative Percent Difference (%)
Antimony	0.26	0.27	-3.773584906
Arsenic	0.13	0.13	0
Barium	53.7	53.8	-0.186046512
Beryllium	0.02	0.02	0
Boron	23	23	0
Cadmium	0.04	0.04	-1.699716714
Chromium	0.5	0.5	0
Cobalt	0.10	0.10	0
Copper	1.32	1.35	-2.247191011
Lead	0.05	0.07	-31.74603175
Molybdenum	1.47	1.48	-0.677966102
Nickel	3.38	3.46	-2.339181287
Selenium	0.264	0.243	8.284023669
Silver	0.01	0.01	0
Sodium	58100	57500	1.038062284
Thallium	0.01	0.01	0
Uranium	0.933	0.958	-2.644103649
Vanadium	0.50	0.50	0
Zinc	58.9	58.7	0.340136054

Table 13 - Maximum Determined Soil Concentrations - VOC

Parameter	Sample ID	Depth Interval (m-bgl)	Maximum Conc (ug/g)	Measured (M) or Minimum Detectable (MD)
Acetone	BH-1, CS-3	1.5 - 2.1	<0.5	MD
Benzene	BH-1, CS-3	1.5 - 2.1	<0.0068	MD
Bromodichloromethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Bromoform	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Bromomethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Carbon tetrachloride	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Chlorobenzene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Dibromochloromethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Chloroform	BH-1, CS-3	1.5 - 2.1	<0.04	MD
1,2-Dibromomethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,2-Dichlorobenzene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1.3-Dichlorobenzene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,4-dichlorobenzene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Dichlorodifluoromethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,1-Dichloroethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,2-Dichloroethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,1-Dichloroethylene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
cis-1,2Dichloroethylene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
trans-1,2Dichloroethylene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,3-Dichloropropene	BH-1, CS-3	1.5 - 2.1	<0.042	MD
Methylene Chloride	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,2-Dichloropropane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
cis-1,3-Dichloropropene	BH-1, CS-3	1.5 - 2.1	<0.03	MD
trans-1,3-Dichloropropene	BH-1, CS-3	1.5 - 2.1	<0.03	MD
Ethyl benzene	BH-1, CS-3	1.5 - 2.1	<0.015	MD
Hexane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Methyl ethyl ketone	BH-1, CS-3	1.5 - 2.1	<0.5	MD
Methyl isobutyl Ketone	BH-1, CS-3	1.5 - 2.1	<0.5	MD
MTBE	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Styrene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,1,1,2-tetrachloroethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,1,2,2-tetrachloroethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Tetrachloroethylene	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Toluene	BH-1, CS-3	1.5 - 2.1	<0.08	MD
1,1,1-trichloroethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
1,1,2-trichloroethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Trichloroethylene	BH-1, CS-3	1.5 - 2.1	<0.01	MD
Trichlorofluoromethane	BH-1, CS-3	1.5 - 2.1	<0.05	MD
Vinyl Chloride	BH-1, CS-3	1.5 - 2.1	<0.02	MD
Xylenes)Total)	BH-1, CS-3	1.5 - 2.1	<0.05	MD

Table 13 cont'd - Maximum Determined Soil Concentrations - PHC

Parameter	Sample ID	Depth Interval (m-bgl)	Maximum Conc (ug/g) (ug/g)	Measured (M) or Minimum Detectable (MD)
PHC-F1 (C6-C10)	BH-1, CS-3	1.5 - 2.1	<5	MD
PHC F1-BTEX	BH-1, CS-3	1.5 - 2.1	<5	MD
PHC-F2	BH-1, CS-3	1.5 - 2.1	<10	MD
PHC-F3	BH-1, CS-3	1.5 - 2.1	<50	MD
PHC-F4	BH-1, CS-3	1.5 - 2.1	<50	MD

Table 13 cont'd - Maximum Determined Soil Concentrations - Metals

Parameter	Sample ID	Depth Interval (m-bgl)	Maximum Conc (ug/g)	Measured (M) or Minimum Detectable (MD)
Antimony	BH-1, SS-1	0.0 - 0.6	0.13	M
Arsenic	BH-1, SS-1	0.0 - 0.6	3.74	M
Barium	BH-1, SS-1	0.0 - 0.6	41.20	M
Beryllium	BH-1, SS-1 (Dupe)	0.0 - 0.6	0.23	M
Boron	BH-4, SS-1	0.0 - 0.6	5.20	M
Cadmium	BH-1, SS-1	0.0 - 0.6	0.31	M
Chromium	BH-5, SS-1	0.0 - 0.6	16.10	M
Cobalt	BH-5, SS-1	0.0 - 0.6	4.94	M
Copper	BH-5, SS-1	0.0 - 0.6	23.30	M
Lead	BH-1, SS-1	0.0 - 0.6	25.30	M
Molybdenum	BH-1, SS-1	0.0 - 0.6	0.44	M
Nickel	BH-5, SS-1	0.0 - 0.6	12.50	M
Selenium	BH-1, SS-1	0.0 - 0.6	<0.2	MD
Silver	BH-1, SS-1	0.0 - 0.6	<0.1	MD
Thallium	BH-1, SS-1 (Dupe)	0.0 - 0.6	0.07	M
Uranium	BH-1, SS-1	0.0 - 0.6	0.80	M
Vanadium	BH-5, SS-1	0.0 - 0.6	35.70	M
Zinc	BH-4, SS-1	0.0 - 0.6	106.00	M

Table 13 cont'd -Maximum Determined Soil Concentrations - PAH

Parameter	Sample ID	Depth Interval	Maximum Conc. (ug/g)	Measured (M) or Minimum Detectable (MD)
Acenaphthene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Acenaphthylene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Anthracene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Benzo(a)anthracene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Benzo(a)pyrene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Benzo(b)fluoranthene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Benzo(ghi)perylene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Benzo(k)fluoranthene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Chrysene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Dibenzo(ah)anthracene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Fluoranthene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Fluorene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Indeno(1,2,3-cd)pyrene	BH-1, CS-1	0.0 - 0.6	<0.05	MD
Methylnaphthalene 1	BH-1, CS-1	0.0 - 0.6	<0.042	MD
Methylnaphthalene 2	BH-1, CS-1	0.0 - 0.6	<0.03	MD
Methylnaphthalene 1-2	BH-1, CS-1	0.0 - 0.6	<0.03	MD
Naphthalene	BH-1, CS-1	0.0 - 0.6	<0.013	MD
Phenanthrene	BH-1, CS-1	0.0 - 0.6	<0.046	MD
Pyrene	BH-1, CS-1	0.0 - 0.6	<0.05	MD

Table 14 - Maximum Determined Groundwater Concentrations-VOC

Parameter	Sample ID	Maximum Conc (ug/g)	Measured (M) or Minimum Detectable (MD)
Acetone	BH/MW-1	<20	MD
Benzene	BH/MW-1	<0.5	MD
Bromodichloromethane	BH/MW-3	12.8	M
Bromoform	DUP-1	2.18	M
Bromomethane	BH/MW-1	<0.5	MD
Carbon tetrachloride	BH/MW-1	<0.2	MD
Chlorobenzene	BH/MW-1	<0.5	MD
Dibromochloromethane	BH/MW-1	<0.5	MD
Chloroform	BH/MW-4	2.4	M
1,2-Dibromomethane	BH/MW-1	<0.2	MD
1,2-Dichlorobenzene	BH/MW-1	<0.5	MD
1.3-Dichlorobenzene	BH/MW-1	<0.5	MD
1,4-dichlorobenzene	BH/MW-1	<0.5	MD
Dichlorodifluoromethane	BH/MW-1	<0.5	MD
1,1-Dichloroethane	BH/MW-1	<0.5	MD
1,2-Dichloroethane	BH/MW-1	<0.5	MD
1,1-Dichloroethylene	BH/MW-1	<0.5	MD
cis-1,2Dichloroethylene	BH/MW-1	<0.5	MD
trans-1,2Dichloroethylene	BH/MW-1	<0.5	MD
Methylene Chloride	BH/MW-1	<5	MD
1,2-Dichloropropane	BH/MW-1	<0.5	MD
cis-1,3-Dichloropropene	BH/MW-1	<0.3	MD
trans-1,3-Dichloropropene	BH/MW-1	<0.3	MD
1,3-Dichloropropene (cis&trans)	BH/MW-1	<0.5	MD
Ethyl benzene	BH/MW-1	<0.5	MD
Hexane	BH/MW-1	<0.5	MD
Methyl ethyl ketone	BH/MW-1	<20	MD
Methyl isobutyl Ketone	BH/MW-1	<20	MD
MTBE	BH/MW-1	<0.5	MD
Styrene	BH/MW-1	<0.5	MD
1,1,1,2-tetrachloroethane	BH/MW-1	<0.5	MD
1,1,2,2-tetrachloroethane	BH/MW-1	<0.5	MD
Tetrachloroethylene	BH/MW-1	<0.5	MD
Toluene	BH/MW-1	<0.5	MD
1,1,1-trichloroethane	BH/MW-1	<0.5	MD
1,1,2-trichloroethane	BH/MW-1	<0.5	MD
Trichloroethylene	BH/MW-1	<0.5	MD
Trichlorofluoromethane	BH/MW-1	<0.5	MD
Vinyl Chloride	BH/MW-1	<0.5	MD
Xylenes)Total)	BH/MW-1	<0.5	MD

Table 14 cont'd - Maximum Determined Groundwater Concentrations - PHC

Parameter	Sample ID	Maximum Conc (ug/L) (ug/g)	Measured (M) or Minimum Detectable (MD)
PHC-F1 (C6-C10)	BH/MW-1	<25	MD
PHC F1 - BTEX	BH/MW-1	<25	MD
PHC - F2	BH/MW-1	<100	MD
PHC - F3	BH/MW-1	<250	MD
PHC - F4	BH/MW-1	<250	MD

Table 14 cont'd - Maximum Determined Groundwater Concentrations-Metals

Parameter	Sample ID	Maximum Conc (ug/L)	Measured (M) or Minimum Detectable (MD)
Antimony	MW-3	0.26	M
Arsenic	MW-1	0.18	M
Barium	DUP-1	53.8	M
Beryllium	MW-1	0.02	MD
Boron	MW-1	32	M
Cadmium	MW-2	0.04	M
Chromium	MW-1	0.5	MD
Cobalt	MW-1	0.16	M
Copper	MW-1	2.66	M
Lead	MW-2	0.11	M
Molybdenum	MW-1	1.98	M
Nickel	DUP-1	3.46	M
Selenium	MW-2	0.365	M
Silver	MW-1	0.01	MD
Sodium	MW-2	136,000	M
Thallium	MW-1	0.03	M
Uranium	DUP-1	0.958	M
Vanadium	MW-1	0.5	MD
Zinc	MW-3	58.9	M

Table 14 cont'd - Maximum Determined Groundwater Concentrations - PAH

Parameter	Sample ID	Maximum Conc. (ug/L)	Measured (M) or Minimum Detectable (MD)
Acenaphthene	BH/MW-1	<0.01	MD
Acenaphthylene	BH/MW-1	<0.01	MD
Anthracene	BH/MW-1	<0.01	MD
Benzo(a)anthracene	BH/MW-1	<0.01	MD
Benzo(a)pyrene	BH/MW-1	<0.005	MD
Benzo(b)fluoranthene	BH/MW-1	<0.01	MD
Benzo(ghi)perylene	BH/MW-1	<0.01	MD
Benzo(k)fluoranthene	BH/MW-1	<0.01	MD
Chrysene	BH/MW-1	<0.01	MD
Dibenzo(ah)anthracene	BH/MW-1	<0.005	MD
Fluoranthene	BH/MW-4	0.026	M
Fluorene	BH/MW-1	0.01	M
Indeno(1,2,3-cd)pyrene	BH/MW-1	<0.01	MD
Methylnaphthalene 1	BH/MW-1	0.3	M
Methylnaphthalene 2	BH/MW-1	0.38	M
Methylnaphthalene 1-2	BH/MW-1	0.68	M
Naphthalene	BH/MW-1	0.057	M
Phenanthrene	BH/MW-1	0.05	M
Pyrene	BH/MW-1	0.037	M

APPENDIX D

LABORATORY CERTIFICATES OF ANALYSIS

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2437497**	Page	: 1 of 34
Client	: **Bluewater Geoscience Consultants Inc.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Breton Lemieux	Account Manager	: Gayle Braun
Address	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 519 744 4123	Telephone	: +1 519 886 6910
Project	: BG-915	Date Samples Received	: 18-Dec-2024 13:15
PO	: ----	Date Analysis Commenced	: 19-Dec-2024
C-O-C number	: 20-1081601	Issue Date	: 03-Jan-2025 09:44
Sampler	: BJL		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 13		
No. of samples analysed	: 13		

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
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

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

Signatories	*Position*	*Laboratory Department*
Andrea Armstrong	Department Manager - Air Quality and Volatiles	VOC, Waterloo, Ontario
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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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

>: greater than.
<: less than.
Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit .

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH1, SS-1 Sampling date/time: 16-Dec-2024 00:00 WT2437497-001	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	10.8	--	--	--	--	--	--
pH (1:2 soil:CaCl2-aq)	E108A/WT	0.10	pH units	7.55	--	--	--	--	--	--
Metals										
Antimony	E440C/WT	0.10	mg/kg	0.13	7.5 mg/kg	7.5 mg/kg	--	--	--	--
Arsenic	E440C/WT	0.10	mg/kg	3.74	18 mg/kg	18 mg/kg	--	--	--	--
Barium	E440C/WT	0.50	mg/kg	41.2	390 mg/kg	390 mg/kg	--	--	--	--
Beryllium	E440C/WT	0.10	mg/kg	0.22	4 mg/kg	5 mg/kg	--	--	--	--
Boron	E440C/WT	5.0	mg/kg	<5.0	120 mg/kg	120 mg/kg	--	--	--	--
Cadmium	E440C/WT	0.020	mg/kg	0.310	1.2 mg/kg	1.2 mg/kg	--	--	--	--
Chromium	E440C/WT	0.50	mg/kg	13.1	160 mg/kg	160 mg/kg	--	--	--	--
Cobalt	E440C/WT	0.10	mg/kg	3.55	22 mg/kg	22 mg/kg	--	--	--	--
Copper	E440C/WT	0.50	mg/kg	10.9	140 mg/kg	180 mg/kg	--	--	--	--
Lead	E440C/WT	0.50	mg/kg	25.3	120 mg/kg	120 mg/kg	--	--	--	--
Molybdenum	E440C/WT	0.10	mg/kg	0.44	6.9 mg/kg	6.9 mg/kg	--	--	--	--
Nickel	E440C/WT	0.50	mg/kg	7.39	100 mg/kg	130 mg/kg	--	--	--	--
Selenium	E440C/WT	0.20	mg/kg	<0.20	2.4 mg/kg	2.4 mg/kg	--	--	--	--
Silver	E440C/WT	0.10	mg/kg	<0.10	20 mg/kg	25 mg/kg	--	--	--	--
Thallium	E440C/WT	0.050	mg/kg	0.069	1 mg/kg	1 mg/kg	--	--	--	--
Uranium	E440C/WT	0.050	mg/kg	0.799	23 mg/kg	23 mg/kg	--	--	--	--
Vanadium	E440C/WT	0.20	mg/kg	31.2	86 mg/kg	86 mg/kg	--	--	--	--
Zinc	E440C/WT	2.0	mg/kg	82.7	340 mg/kg	340 mg/kg	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.050	mg/kg	<0.050	7.9 mg/kg	29 mg/kg	--	--	--	--
Acenaphthylene	E641A/WT	0.050	mg/kg	<0.050	0.15 mg/kg	0.17 mg/kg	--	--	--	--
Anthracene	E641A/WT	0.050	mg/kg	<0.050	0.67 mg/kg	0.74 mg/kg	--	--	--	--
Benz(a)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.5 mg/kg	0.63 mg/kg	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.3 mg/kg	0.3 mg/kg	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.050	mg/kg	<0.050	6.6 mg/kg	7.8 mg/kg	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Chrysene	E641A/WT	0.050	mg/kg	<0.050	7 mg/kg	7.8 mg/kg	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.1 mg/kg	0.1 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-001 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Polycyclic Aromatic Hydrocarbons - Continued										
Fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.69 mg/kg	0.69 mg/kg	--	--	--	--
Fluorene	E641A/WT	0.050	mg/kg	<0.050	62 mg/kg	69 mg/kg	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.38 mg/kg	0.48 mg/kg	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.050	mg/kg	<0.050	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Naphthalene	E641A/WT	0.010	mg/kg	<0.010	0.6 mg/kg	0.75 mg/kg	--	--	--	--
Phenanthrene	E641A/WT	0.050	mg/kg	<0.050	6.2 mg/kg	7.8 mg/kg	--	--	--	--
Pyrene	E641A/WT	0.050	mg/kg	<0.050	78 mg/kg	78 mg/kg	--	--	--	--
Acridine-d9	E641A/WT	0.1	%	92.1	--	--	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	95.0	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	101	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	98.2	--	--	--	--	--	--

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)				Client sample ID	BH-1, SS-3					
				Sampling date/time	16-Dec-2024 00:00					
Analyte	Method/Lab	LOR	Unit	WT2437497-002	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	9.24	--	--	--	--	--	--
pH (1:2 soil:CaCl2-aq)	E108A/WT	0.10	pH units	8.08	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-002 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F2 (C10-C16)	E601.SG-L/WT	10	mg/kg	<10	98 mg/kg	150 mg/kg	--	--	--	--
F3 (C16-C34)	E601.SG-L/WT	50	mg/kg	<50	300 mg/kg	1300 mg/kg	--	--	--	--
F4 (C34-C50)	E601.SG-L/WT	50	mg/kg	<50	2800 mg/kg	5600 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581/WT	80	mg/kg	<80	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG-L/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG-L/WT	1.0	%	95.2	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	97.4	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	94.2	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	99.0	--	--	--	--	--	--

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-2, SS-1 Sampling date/time: 16-Dec-2024 00:00 WT2437497-003	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	7.92	--	--	--	--	--	--
Metals										
Antimony	E440C/WT	0.10	mg/kg	<0.10	7.5 mg/kg	7.5 mg/kg	--	--	--	--
Arsenic	E440C/WT	0.10	mg/kg	1.02	18 mg/kg	18 mg/kg	--	--	--	--
Barium	E440C/WT	0.50	mg/kg	9.50	390 mg/kg	390 mg/kg	--	--	--	--
Beryllium	E440C/WT	0.10	mg/kg	<0.10	4 mg/kg	5 mg/kg	--	--	--	--
Boron	E440C/WT	5.0	mg/kg	<5.0	120 mg/kg	120 mg/kg	--	--	--	--
Cadmium	E440C/WT	0.020	mg/kg	0.078	1.2 mg/kg	1.2 mg/kg	--	--	--	--
Chromium	E440C/WT	0.50	mg/kg	5.94	160 mg/kg	160 mg/kg	--	--	--	--
Cobalt	E440C/WT	0.10	mg/kg	1.28	22 mg/kg	22 mg/kg	--	--	--	--
Copper	E440C/WT	0.50	mg/kg	5.30	140 mg/kg	180 mg/kg	--	--	--	--
Lead	E440C/WT	0.50	mg/kg	6.21	120 mg/kg	120 mg/kg	--	--	--	--
Molybdenum	E440C/WT	0.10	mg/kg	0.14	6.9 mg/kg	6.9 mg/kg	--	--	--	--
Nickel	E440C/WT	0.50	mg/kg	2.95	100 mg/kg	130 mg/kg	--	--	--	--
Selenium	E440C/WT	0.20	mg/kg	<0.20	2.4 mg/kg	2.4 mg/kg	--	--	--	--
Silver	E440C/WT	0.10	mg/kg	<0.10	20 mg/kg	25 mg/kg	--	--	--	--
Thallium	E440C/WT	0.050	mg/kg	<0.050	1 mg/kg	1 mg/kg	--	--	--	--
Uranium	E440C/WT	0.050	mg/kg	0.292	23 mg/kg	23 mg/kg	--	--	--	--
Vanadium	E440C/WT	0.20	mg/kg	11.4	86 mg/kg	86 mg/kg	--	--	--	--
Zinc	E440C/WT	2.0	mg/kg	29.1	340 mg/kg	340 mg/kg	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.050	mg/kg	<0.050	7.9 mg/kg	29 mg/kg	--	--	--	--
Acenaphthylene	E641A/WT	0.050	mg/kg	<0.050	0.15 mg/kg	0.17 mg/kg	--	--	--	--
Anthracene	E641A/WT	0.050	mg/kg	<0.050	0.67 mg/kg	0.74 mg/kg	--	--	--	--
Benz(a)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.5 mg/kg	0.63 mg/kg	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.3 mg/kg	0.3 mg/kg	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.050	mg/kg	<0.050	6.6 mg/kg	7.8 mg/kg	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Chrysene	E641A/WT	0.050	mg/kg	<0.050	7 mg/kg	7.8 mg/kg	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.1 mg/kg	0.1 mg/kg	--	--	--	--
Fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.69 mg/kg	0.69 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-003 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Polycyclic Aromatic Hydrocarbons - Continued										
Fluorene	E641A/WT	0.050	mg/kg	<0.050	62 mg/kg	69 mg/kg	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.38 mg/kg	0.48 mg/kg	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.050	mg/kg	<0.050	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Naphthalene	E641A/WT	0.010	mg/kg	<0.010	0.6 mg/kg	0.75 mg/kg	--	--	--	--
Phenanthrene	E641A/WT	0.050	mg/kg	<0.050	6.2 mg/kg	7.8 mg/kg	--	--	--	--
Pyrene	E641A/WT	0.050	mg/kg	<0.050	78 mg/kg	78 mg/kg	--	--	--	--
Acridine-d9	E641A/WT	0.1	%	91.9	--	--	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	94.9	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	99.2	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	94.8	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-2, SS-3 Sampling date/time: 16-Dec-2024 00:00 WT2437497-004	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	9.04	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-004 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F2 (C10-C16)	E601.SG-L/WT	10	mg/kg	<10	98 mg/kg	150 mg/kg	--	--	--	--
F3 (C16-C34)	E601.SG-L/WT	50	mg/kg	<50	300 mg/kg	1300 mg/kg	--	--	--	--
F4 (C34-C50)	E601.SG-L/WT	50	mg/kg	<50	2800 mg/kg	5600 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581/WT	80	mg/kg	<80	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG-L/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG-L/WT	1.0	%	94.5	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	93.8	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	96.2	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	101	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-3, SS-1 Sampling date/time: 16-Dec-2024 00:00 WT2437497-005	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	5.45	--	--	--	--	--	--
Metals										
Antimony	E440C/WT	0.10	mg/kg	<0.10	7.5 mg/kg	7.5 mg/kg	--	--	--	--
Arsenic	E440C/WT	0.10	mg/kg	1.70	18 mg/kg	18 mg/kg	--	--	--	--
Barium	E440C/WT	0.50	mg/kg	10.9	390 mg/kg	390 mg/kg	--	--	--	--
Beryllium	E440C/WT	0.10	mg/kg	0.11	4 mg/kg	5 mg/kg	--	--	--	--
Boron	E440C/WT	5.0	mg/kg	<5.0	120 mg/kg	120 mg/kg	--	--	--	--
Cadmium	E440C/WT	0.020	mg/kg	0.281	1.2 mg/kg	1.2 mg/kg	--	--	--	--
Chromium	E440C/WT	0.50	mg/kg	7.70	160 mg/kg	160 mg/kg	--	--	--	--
Cobalt	E440C/WT	0.10	mg/kg	1.81	22 mg/kg	22 mg/kg	--	--	--	--
Copper	E440C/WT	0.50	mg/kg	8.81	140 mg/kg	180 mg/kg	--	--	--	--
Lead	E440C/WT	0.50	mg/kg	11.7	120 mg/kg	120 mg/kg	--	--	--	--
Molybdenum	E440C/WT	0.10	mg/kg	0.50	6.9 mg/kg	6.9 mg/kg	--	--	--	--
Nickel	E440C/WT	0.50	mg/kg	4.54	100 mg/kg	130 mg/kg	--	--	--	--
Selenium	E440C/WT	0.20	mg/kg	<0.20	2.4 mg/kg	2.4 mg/kg	--	--	--	--
Silver	E440C/WT	0.10	mg/kg	<0.10	20 mg/kg	25 mg/kg	--	--	--	--
Thallium	E440C/WT	0.050	mg/kg	<0.050	1 mg/kg	1 mg/kg	--	--	--	--
Uranium	E440C/WT	0.050	mg/kg	0.346	23 mg/kg	23 mg/kg	--	--	--	--
Vanadium	E440C/WT	0.20	mg/kg	9.64	86 mg/kg	86 mg/kg	--	--	--	--
Zinc	E440C/WT	2.0	mg/kg	125	340 mg/kg	340 mg/kg	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.050	mg/kg	<0.050	7.9 mg/kg	29 mg/kg	--	--	--	--
Acenaphthylene	E641A/WT	0.050	mg/kg	<0.050	0.15 mg/kg	0.17 mg/kg	--	--	--	--
Anthracene	E641A/WT	0.050	mg/kg	<0.050	0.67 mg/kg	0.74 mg/kg	--	--	--	--
Benz(a)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.5 mg/kg	0.63 mg/kg	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.3 mg/kg	0.3 mg/kg	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.050	mg/kg	<0.050	6.6 mg/kg	7.8 mg/kg	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Chrysene	E641A/WT	0.050	mg/kg	<0.050	7 mg/kg	7.8 mg/kg	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.1 mg/kg	0.1 mg/kg	--	--	--	--
Fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.69 mg/kg	0.69 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-005 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Polycyclic Aromatic Hydrocarbons - Continued										
Fluorene	E641A/WT	0.050	mg/kg	<0.050	62 mg/kg	69 mg/kg	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.38 mg/kg	0.48 mg/kg	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.050	mg/kg	<0.050	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Naphthalene	E641A/WT	0.010	mg/kg	<0.010	0.6 mg/kg	0.75 mg/kg	--	--	--	--
Phenanthrene	E641A/WT	0.050	mg/kg	<0.050	6.2 mg/kg	7.8 mg/kg	--	--	--	--
Pyrene	E641A/WT	0.050	mg/kg	<0.050	78 mg/kg	78 mg/kg	--	--	--	--
Acridine-d9	E641A/WT	0.1	%	90.3	--	--	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	96.0	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	97.9	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	95.1	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-3, SS-3 Sampling date/time: 16-Dec-2024 00:00 WT2437497-006	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	7.41	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-006 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F2 (C10-C16)	E601.SG-L/WT	10	mg/kg	<10	98 mg/kg	150 mg/kg	--	--	--	--
F3 (C16-C34)	E601.SG-L/WT	50	mg/kg	<50	300 mg/kg	1300 mg/kg	--	--	--	--
F4 (C34-C50)	E601.SG-L/WT	50	mg/kg	<50	2800 mg/kg	5600 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581/WT	80	mg/kg	<80	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG-L/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG-L/WT	1.0	%	95.2	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	97.6	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	97.0	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	102	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-4, SS-1 Sampling date/time: 16-Dec-2024 00:00 WT2437497-007	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	5.80	--	--	--	--	--	--
pH (1:2 soil:CaCl2-aq)	E108A/WT	0.10	pH units	8.05	--	--	--	--	--	--
Metals										
Antimony	E440C/WT	0.10	mg/kg	<0.10	7.5 mg/kg	7.5 mg/kg	--	--	--	--
Arsenic	E440C/WT	0.10	mg/kg	1.92	18 mg/kg	18 mg/kg	--	--	--	--
Barium	E440C/WT	0.50	mg/kg	12.2	390 mg/kg	390 mg/kg	--	--	--	--
Beryllium	E440C/WT	0.10	mg/kg	0.15	4 mg/kg	5 mg/kg	--	--	--	--
Boron	E440C/WT	5.0	mg/kg	5.2	120 mg/kg	120 mg/kg	--	--	--	--
Cadmium	E440C/WT	0.020	mg/kg	0.209	1.2 mg/kg	1.2 mg/kg	--	--	--	--
Chromium	E440C/WT	0.50	mg/kg	8.32	160 mg/kg	160 mg/kg	--	--	--	--
Cobalt	E440C/WT	0.10	mg/kg	2.49	22 mg/kg	22 mg/kg	--	--	--	--
Copper	E440C/WT	0.50	mg/kg	7.45	140 mg/kg	180 mg/kg	--	--	--	--
Lead	E440C/WT	0.50	mg/kg	22.2	120 mg/kg	120 mg/kg	--	--	--	--
Molybdenum	E440C/WT	0.10	mg/kg	0.30	6.9 mg/kg	6.9 mg/kg	--	--	--	--
Nickel	E440C/WT	0.50	mg/kg	5.55	100 mg/kg	130 mg/kg	--	--	--	--
Selenium	E440C/WT	0.20	mg/kg	<0.20	2.4 mg/kg	2.4 mg/kg	--	--	--	--
Silver	E440C/WT	0.10	mg/kg	<0.10	20 mg/kg	25 mg/kg	--	--	--	--
Thallium	E440C/WT	0.050	mg/kg	<0.050	1 mg/kg	1 mg/kg	--	--	--	--
Uranium	E440C/WT	0.050	mg/kg	0.424	23 mg/kg	23 mg/kg	--	--	--	--
Vanadium	E440C/WT	0.20	mg/kg	17.1	86 mg/kg	86 mg/kg	--	--	--	--
Zinc	E440C/WT	2.0	mg/kg	106	340 mg/kg	340 mg/kg	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.050	mg/kg	<0.050	7.9 mg/kg	29 mg/kg	--	--	--	--
Acenaphthylene	E641A/WT	0.050	mg/kg	<0.050	0.15 mg/kg	0.17 mg/kg	--	--	--	--
Anthracene	E641A/WT	0.050	mg/kg	<0.050	0.67 mg/kg	0.74 mg/kg	--	--	--	--
Benz(a)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.5 mg/kg	0.63 mg/kg	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.3 mg/kg	0.3 mg/kg	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.050	mg/kg	<0.050	6.6 mg/kg	7.8 mg/kg	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Chrysene	E641A/WT	0.050	mg/kg	<0.050	7 mg/kg	7.8 mg/kg	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.1 mg/kg	0.1 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-007 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Polycyclic Aromatic Hydrocarbons - Continued										
Fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.69 mg/kg	0.69 mg/kg	--	--	--	--
Fluorene	E641A/WT	0.050	mg/kg	<0.050	62 mg/kg	69 mg/kg	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.38 mg/kg	0.48 mg/kg	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.050	mg/kg	<0.050	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Naphthalene	E641A/WT	0.010	mg/kg	<0.010	0.6 mg/kg	0.75 mg/kg	--	--	--	--
Phenanthrene	E641A/WT	0.050	mg/kg	<0.050	6.2 mg/kg	7.8 mg/kg	--	--	--	--
Pyrene	E641A/WT	0.050	mg/kg	<0.050	78 mg/kg	78 mg/kg	--	--	--	--
Acridine-d9	E641A/WT	0.1	%	87.2	--	--	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	97.0	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	98.9	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	98.7	--	--	--	--	--	--

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-4, SS-3 Sampling date/time: 16-Dec-2024 00:00 WT2437497-008	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	7.05	--	--	--	--	--	--
pH (1:2 soil:CaCl2-aq)	E108A/WT	0.10	pH units	8.09	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-008 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F2 (C10-C16)	E601.SG-L/WT	10	mg/kg	<10	98 mg/kg	150 mg/kg	--	--	--	--
F3 (C16-C34)	E601.SG-L/WT	50	mg/kg	<50	300 mg/kg	1300 mg/kg	--	--	--	--
F4 (C34-C50)	E601.SG-L/WT	50	mg/kg	<50	2800 mg/kg	5600 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581/WT	80	mg/kg	<80	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG-L/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG-L/WT	1.0	%	93.1	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	95.7	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	94.2	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	98.6	--	--	--	--	--	--

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-5, SS-1 Sampling date/time: 16-Dec-2024 00:00 WT2437497-009	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	8.50	--	--	--	--	--	--
Metals										
Antimony	E440C/WT	0.10	mg/kg	<0.10	7.5 mg/kg	7.5 mg/kg	--	--	--	--
Arsenic	E440C/WT	0.10	mg/kg	2.56	18 mg/kg	18 mg/kg	--	--	--	--
Barium	E440C/WT	0.50	mg/kg	18.2	390 mg/kg	390 mg/kg	--	--	--	--
Beryllium	E440C/WT	0.10	mg/kg	0.22	4 mg/kg	5 mg/kg	--	--	--	--
Boron	E440C/WT	5.0	mg/kg	<5.0	120 mg/kg	120 mg/kg	--	--	--	--
Cadmium	E440C/WT	0.020	mg/kg	0.222	1.2 mg/kg	1.2 mg/kg	--	--	--	--
Chromium	E440C/WT	0.50	mg/kg	16.1	160 mg/kg	160 mg/kg	--	--	--	--
Cobalt	E440C/WT	0.10	mg/kg	4.94	22 mg/kg	22 mg/kg	--	--	--	--
Copper	E440C/WT	0.50	mg/kg	23.3	140 mg/kg	180 mg/kg	--	--	--	--
Lead	E440C/WT	0.50	mg/kg	17.9	120 mg/kg	120 mg/kg	--	--	--	--
Molybdenum	E440C/WT	0.10	mg/kg	0.31	6.9 mg/kg	6.9 mg/kg	--	--	--	--
Nickel	E440C/WT	0.50	mg/kg	12.5	100 mg/kg	130 mg/kg	--	--	--	--
Selenium	E440C/WT	0.20	mg/kg	<0.20	2.4 mg/kg	2.4 mg/kg	--	--	--	--
Silver	E440C/WT	0.10	mg/kg	<0.10	20 mg/kg	25 mg/kg	--	--	--	--
Thallium	E440C/WT	0.050	mg/kg	0.071	1 mg/kg	1 mg/kg	--	--	--	--
Uranium	E440C/WT	0.050	mg/kg	0.390	23 mg/kg	23 mg/kg	--	--	--	--
Vanadium	E440C/WT	0.20	mg/kg	35.7	86 mg/kg	86 mg/kg	--	--	--	--
Zinc	E440C/WT	2.0	mg/kg	104	340 mg/kg	340 mg/kg	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.050	mg/kg	<0.050	7.9 mg/kg	29 mg/kg	--	--	--	--
Acenaphthylene	E641A/WT	0.050	mg/kg	<0.050	0.15 mg/kg	0.17 mg/kg	--	--	--	--
Anthracene	E641A/WT	0.050	mg/kg	<0.050	0.67 mg/kg	0.74 mg/kg	--	--	--	--
Benz(a)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.5 mg/kg	0.63 mg/kg	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.3 mg/kg	0.3 mg/kg	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.050	mg/kg	<0.050	6.6 mg/kg	7.8 mg/kg	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Chrysene	E641A/WT	0.050	mg/kg	<0.050	7 mg/kg	7.8 mg/kg	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.1 mg/kg	0.1 mg/kg	--	--	--	--
Fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.69 mg/kg	0.69 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-009 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Polycyclic Aromatic Hydrocarbons - Continued										
Fluorene	E641A/WT	0.050	mg/kg	<0.050	62 mg/kg	69 mg/kg	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.38 mg/kg	0.48 mg/kg	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.050	mg/kg	<0.050	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Naphthalene	E641A/WT	0.010	mg/kg	<0.010	0.6 mg/kg	0.75 mg/kg	--	--	--	--
Phenanthrene	E641A/WT	0.050	mg/kg	<0.050	6.2 mg/kg	7.8 mg/kg	--	--	--	--
Pyrene	E641A/WT	0.050	mg/kg	<0.050	78 mg/kg	78 mg/kg	--	--	--	--
Acridine-d9	E641A/WT	0.1	%	87.2	--	--	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	97.4	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	97.4	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	95.7	--	--	--	--	--	--

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: BH-5, SS-3 Sampling date/time: 16-Dec-2024 00:00 WT2437497-010	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	6.40	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-010 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F2 (C10-C16)	E601.SG-L/WT	10	mg/kg	<10	98 mg/kg	150 mg/kg	--	--	--	--
F3 (C16-C34)	E601.SG-L/WT	50	mg/kg	<50	300 mg/kg	1300 mg/kg	--	--	--	--
F4 (C34-C50)	E601.SG-L/WT	50	mg/kg	<50	2800 mg/kg	5600 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581/WT	80	mg/kg	<80	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG-L/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG-L/WT	1.0	%	94.1	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	113	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	101	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	104	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: DUP-1 Sampling date/time: 16-Dec-2024 00:00 WT2437497-011	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	7.94	--	--	--	--	--	--
Metals										
Antimony	E440C/WT	0.10	mg/kg	<0.10	7.5 mg/kg	7.5 mg/kg	--	--	--	--
Arsenic	E440C/WT	0.10	mg/kg	2.64	18 mg/kg	18 mg/kg	--	--	--	--
Barium	E440C/WT	0.50	mg/kg	18.8	390 mg/kg	390 mg/kg	--	--	--	--
Beryllium	E440C/WT	0.10	mg/kg	0.23	4 mg/kg	5 mg/kg	--	--	--	--
Boron	E440C/WT	5.0	mg/kg	5.0	120 mg/kg	120 mg/kg	--	--	--	--
Cadmium	E440C/WT	0.020	mg/kg	0.220	1.2 mg/kg	1.2 mg/kg	--	--	--	--
Chromium	E440C/WT	0.50	mg/kg	13.9	160 mg/kg	160 mg/kg	--	--	--	--
Cobalt	E440C/WT	0.10	mg/kg	4.79	22 mg/kg	22 mg/kg	--	--	--	--
Copper	E440C/WT	0.50	mg/kg	16.3	140 mg/kg	180 mg/kg	--	--	--	--
Lead	E440C/WT	0.50	mg/kg	19.1	120 mg/kg	120 mg/kg	--	--	--	--
Molybdenum	E440C/WT	0.10	mg/kg	0.29	6.9 mg/kg	6.9 mg/kg	--	--	--	--
Nickel	E440C/WT	0.50	mg/kg	9.50	100 mg/kg	130 mg/kg	--	--	--	--
Selenium	E440C/WT	0.20	mg/kg	<0.20	2.4 mg/kg	2.4 mg/kg	--	--	--	--
Silver	E440C/WT	0.10	mg/kg	<0.10	20 mg/kg	25 mg/kg	--	--	--	--
Thallium	E440C/WT	0.050	mg/kg	0.072	1 mg/kg	1 mg/kg	--	--	--	--
Uranium	E440C/WT	0.050	mg/kg	0.401	23 mg/kg	23 mg/kg	--	--	--	--
Vanadium	E440C/WT	0.20	mg/kg	32.1	86 mg/kg	86 mg/kg	--	--	--	--
Zinc	E440C/WT	2.0	mg/kg	96.3	340 mg/kg	340 mg/kg	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.050	mg/kg	<0.050	7.9 mg/kg	29 mg/kg	--	--	--	--
Acenaphthylene	E641A/WT	0.050	mg/kg	<0.050	0.15 mg/kg	0.17 mg/kg	--	--	--	--
Anthracene	E641A/WT	0.050	mg/kg	<0.050	0.67 mg/kg	0.74 mg/kg	--	--	--	--
Benz(a)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.5 mg/kg	0.63 mg/kg	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.3 mg/kg	0.3 mg/kg	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.050	mg/kg	<0.050	6.6 mg/kg	7.8 mg/kg	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.78 mg/kg	0.78 mg/kg	--	--	--	--
Chrysene	E641A/WT	0.050	mg/kg	<0.050	7 mg/kg	7.8 mg/kg	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.050	mg/kg	<0.050	0.1 mg/kg	0.1 mg/kg	--	--	--	--
Fluoranthene	E641A/WT	0.050	mg/kg	<0.050	0.69 mg/kg	0.69 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-011 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Polycyclic Aromatic Hydrocarbons - Continued										
Fluorene	E641A/WT	0.050	mg/kg	<0.050	62 mg/kg	69 mg/kg	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.050	mg/kg	<0.050	0.38 mg/kg	0.48 mg/kg	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.050	mg/kg	<0.050	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.030	mg/kg	<0.030	0.99 mg/kg	3.4 mg/kg	--	--	--	--
Naphthalene	E641A/WT	0.010	mg/kg	<0.010	0.6 mg/kg	0.75 mg/kg	--	--	--	--
Phenanthrene	E641A/WT	0.050	mg/kg	<0.050	6.2 mg/kg	7.8 mg/kg	--	--	--	--
Pyrene	E641A/WT	0.050	mg/kg	<0.050	78 mg/kg	78 mg/kg	--	--	--	--
Acridine-d9	E641A/WT	0.1	%	91.0	--	--	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	101	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	101	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	98.4	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: DUP-2 Sampling date/time: 16-Dec-2024 00:00 WT2437497-012	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	6.31	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-012 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F2 (C10-C16)	E601.SG-L/WT	10	mg/kg	<10	98 mg/kg	150 mg/kg	--	--	--	--
F3 (C16-C34)	E601.SG-L/WT	50	mg/kg	<50	300 mg/kg	1300 mg/kg	--	--	--	--
F4 (C34-C50)	E601.SG-L/WT	50	mg/kg	<50	2800 mg/kg	5600 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581/WT	80	mg/kg	<80	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG-L/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG-L/WT	1.0	%	82.6	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	120	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	109	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	112	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: TRIP BLANK Sampling date/time: 16-Dec-2024 00:00 WT2437497-013	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Physical Tests										
Moisture	E144/WT	0.25	%	<0.25	--	--	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	28 mg/kg	--	--	--	--
Benzene	E611D/WT	0.0050	mg/kg	<0.0050	0.21 mg/kg	0.17 mg/kg	--	--	--	--
Bromodichloromethane	E611D/WT	0.050	mg/kg	<0.050	1.5 mg/kg	1.9 mg/kg	--	--	--	--
Bromoform	E611D/WT	0.050	mg/kg	<0.050	0.27 mg/kg	0.26 mg/kg	--	--	--	--
Bromomethane	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Carbon tetrachloride	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.12 mg/kg	--	--	--	--
Chlorobenzene	E611D/WT	0.050	mg/kg	<0.050	2.4 mg/kg	2.7 mg/kg	--	--	--	--
Chloroform	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.18 mg/kg	--	--	--	--
Dibromochloromethane	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	2.9 mg/kg	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.050	mg/kg	<0.050	1.2 mg/kg	1.7 mg/kg	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.050	mg/kg	<0.050	4.8 mg/kg	6 mg/kg	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.050	mg/kg	<0.050	0.083 mg/kg	0.097 mg/kg	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.050	mg/kg	<0.050	16 mg/kg	25 mg/kg	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.47 mg/kg	0.6 mg/kg	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.050	mg/kg	<0.050	1.9 mg/kg	2.5 mg/kg	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.050	mg/kg	<0.050	0.084 mg/kg	0.75 mg/kg	--	--	--	--
Dichloromethane	E611D/WT	0.045	mg/kg	<0.045	0.1 mg/kg	0.96 mg/kg	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.085 mg/kg	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.081 mg/kg	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.015	mg/kg	<0.015	1.1 mg/kg	1.6 mg/kg	--	--	--	--
Hexane, n-	E611D/WT	0.050	mg/kg	<0.050	2.8 mg/kg	34 mg/kg	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	0.50	mg/kg	<0.50	16 mg/kg	44 mg/kg	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	0.50	mg/kg	<0.50	1.7 mg/kg	4.3 mg/kg	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.040	mg/kg	<0.040	0.75 mg/kg	1.4 mg/kg	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437497-013 (Continued)	ON153/04 T2-RPI-C	ON153/04 T2-RPI-F	--	--	--	--
Volatile Organic Compounds - Continued										
Styrene	E611D/WT	0.050	mg/kg	<0.050	0.7 mg/kg	2.2 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.058 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Tetrachloroethylene	E611D/WT	0.050	mg/kg	<0.050	0.28 mg/kg	2.3 mg/kg	--	--	--	--
Toluene	E611D/WT	0.050	mg/kg	<0.050	2.3 mg/kg	6 mg/kg	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.050	mg/kg	<0.050	0.38 mg/kg	3.4 mg/kg	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.050	mg/kg	<0.050	0.05 mg/kg	0.05 mg/kg	--	--	--	--
Trichloroethylene	E611D/WT	0.010	mg/kg	<0.010	0.061 mg/kg	0.52 mg/kg	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.050	mg/kg	<0.050	4 mg/kg	5.8 mg/kg	--	--	--	--
Vinyl chloride	E611D/WT	0.020	mg/kg	<0.020	0.02 mg/kg	0.022 mg/kg	--	--	--	--
Xylene, m+p-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.030	mg/kg	<0.030	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.050	mg/kg	<0.050	3.1 mg/kg	25 mg/kg	--	--	--	--
BTEX, total	E611D/WT	0.10	mg/kg	<0.10	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
F1-BTEX	EC580/WT	5.0	mg/kg	<5.0	55 mg/kg	65 mg/kg	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1/WT	1.0	%	126	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	0.10	%	109	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	0.10	%	112	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-RPI-C	153 T2-Soil-Res/Park/Inst. Property Use (Coarse)
T2-RPI-F	153 T2-Soil-Res/Park/Inst. Property Use (Fine)

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2437497**	Page	: 1 of 11
Client	: **Bluewater Geoscience Consultants Inc.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Breton Lemieux	Account Manager	: Gayle Braun
Address	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 519 744 4123	Telephone	: +1 519 886 6910
Project	: BG-915	Date Samples Received	: 18-Dec-2024 13:15
PO	: ----	Issue Date	: 03-Jan-2025 09:44
C-O-C number	: 20-1081601		
Sampler	: BJL		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 13		
No. of samples analysed	: 13		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] BH-1, SS-3	E581.F1	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] BH-2, SS-3	E581.F1	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] BH-3, SS-3	E581.F1	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] BH-4, SS-3	E581.F1	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] BH-5, SS-3	E581.F1	16-Dec-2024	20-Dec-2024	14 days	4 days	✓	20-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] DUP-2	E581.F1	16-Dec-2024	20-Dec-2024	14 days	4 days	✓	20-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP] TRIP BLANK	E581.F1	16-Dec-2024	20-Dec-2024	14 days	4 days	✓	20-Dec-2024	40 days	0 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-1, SS-3	E601.SG-L	16-Dec-2024	24-Dec-2024	14 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-2, SS-3	E601.SG-L	16-Dec-2024	24-Dec-2024	14 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-3, SS-3	E601.SG-L	16-Dec-2024	24-Dec-2024	14 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-3	E601.SG-L	16-Dec-2024	24-Dec-2024	14 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-5, SS-3	E601.SG-L	16-Dec-2024	24-Dec-2024	14 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
DUP-2	E601.SG-L	16-Dec-2024	23-Dec-2024	14 days	8 days	✓	27-Dec-2024	40 days	4 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH1, SS-1	E440C	16-Dec-2024	02-Jan-2025	180 days	17 days	✓	02-Jan-2025	180 days	17 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-2, SS-1	E440C	16-Dec-2024	02-Jan-2025	180 days	17 days	✓	02-Jan-2025	180 days	17 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-3, SS-1	E440C	16-Dec-2024	02-Jan-2025	180 days	17 days	✓	02-Jan-2025	180 days	17 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-1	E440C	16-Dec-2024	02-Jan-2025	180 days	17 days	✓	02-Jan-2025	180 days	17 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-5, SS-1	E440C	16-Dec-2024	02-Jan-2025	180 days	17 days	✓	02-Jan-2025	180 days	17 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
DUP-1	E440C	16-Dec-2024	02-Jan-2025	180 days	17 days	✓	02-Jan-2025	180 days	17 days	✓
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH1, SS-1	E144	16-Dec-2024	----	----	----		22-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-1, SS-3	E144	16-Dec-2024	----	----	----		22-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-2, SS-1	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-2, SS-3	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-3, SS-1	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-3, SS-3	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-1	E144	16-Dec-2024	----	----	----		22-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-3	E144	16-Dec-2024	----	----	----		22-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-5, SS-1	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-5, SS-3	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
DUP-1	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
DUP-2	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil methanol vial [ON MECP]										
TRIP BLANK	E144	16-Dec-2024	----	----	----		23-Dec-2024	----	7 days	
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH1, SS-1	E108A	16-Dec-2024	23-Dec-2024	30 days	7 days	✓	24-Dec-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-1, SS-3	E108A	16-Dec-2024	23-Dec-2024	30 days	7 days	✓	24-Dec-2024	30 days	9 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-1	E108A	16-Dec-2024	23-Dec-2024	30 days	7 days	✓	24-Dec-2024	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-3	E108A	16-Dec-2024	23-Dec-2024	30 days	7 days	✓	24-Dec-2024	30 days	9 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
BH1, SS-1	E641A	16-Dec-2024	24-Dec-2024	60 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-2, SS-1	E641A	16-Dec-2024	24-Dec-2024	60 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-3, SS-1	E641A	16-Dec-2024	24-Dec-2024	60 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-4, SS-1	E641A	16-Dec-2024	24-Dec-2024	60 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
BH-5, SS-1	E641A	16-Dec-2024	24-Dec-2024	60 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
DUP-1	E641A	16-Dec-2024	24-Dec-2024	60 days	8 days	✓	27-Dec-2024	40 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP]										
BH-1, SS-3	E611D	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] BH-2, SS-3	E611D	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] BH-3, SS-3	E611D	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] BH-4, SS-3	E611D	16-Dec-2024	19-Dec-2024	14 days	4 days	✓	19-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] BH-5, SS-3	E611D	16-Dec-2024	20-Dec-2024	14 days	4 days	✓	20-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] DUP-2	E611D	16-Dec-2024	20-Dec-2024	14 days	4 days	✓	20-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] TRIP BLANK	E611D	16-Dec-2024	20-Dec-2024	14 days	4 days	✓	20-Dec-2024	40 days	0 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
CCME PHC - F1 by Headspace GC-FID	E581.F1	1817052	2	39	5.1	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1820756	2	24	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C	1820476	1	19	5.2	5.0	✓
Moisture Content by Gravimetry	E144	1820486	2	31	6.4	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1820466	1	9	11.1	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	1820459	1	17	5.8	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1817404	2	38	5.2	5.0	✓
Laboratory Control Samples (LCS)							
CCME PHC - F1 by Headspace GC-FID	E581.F1	1817052	2	39	5.1	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1820756	2	24	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C	1820476	2	19	10.5	10.0	✓
Moisture Content by Gravimetry	E144	1820486	2	31	6.4	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1820466	1	9	11.1	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	1820459	1	17	5.8	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1817404	2	38	5.2	5.0	✓
Method Blanks (MB)							
CCME PHC - F1 by Headspace GC-FID	E581.F1	1817052	2	39	5.1	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1820756	2	24	8.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C	1820476	1	19	5.2	5.0	✓
Moisture Content by Gravimetry	E144	1820486	2	31	6.4	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1820466	1	9	11.1	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1817404	2	38	5.2	5.0	✓
Matrix Spikes (MS)							
CCME PHC - F1 by Headspace GC-FID	E581.F1	1817052	2	39	5.1	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1820756	2	24	8.3	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1820466	1	9	11.1	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1817404	2	38	5.2	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
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A ALS Environmental - Waterloo	Soil/Solid	MECP E3530	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C) and is carried out in accordance with procedures described in the Analytical Protocol (prescriptive method). A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling, or decanting and then analyzed using a pH meter and electrode. This method is equivalent to ASTM D4972 and is acceptable for topsoil analysis.
Moisture Content by Gravimetry	E144 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C ALS Environmental - Waterloo	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 355 µm sieve, and digested with HNO3 and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
CCME PHC - F1 by Headspace GC-FID	E581.F1 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	CCME Fraction 1 (F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Test results are expressed on a dry weight basis. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	Sample extracts are subjected to in-situ silica gel treatment prior to analysis by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Test results are expressed on a dry weight basis. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Waterloo	Soil/Solid	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs in Soil/solid by Hex:Ace GC-MS	E641A ALS Environmental - Waterloo	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
F1-BTEX	EC580 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil : 0.01CaCl2 - As Received for pH	EP108A ALS Environmental - Waterloo	Soil/Solid	MOEE E3137A	A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling or decanting and then analyzed using a pH meter and electrode.
Digestion for Metals and Mercury (355 µm Sieve)	EP440C ALS Environmental - Waterloo	Soil/Solid	EPA 200.2 (mod)	Samples are sieved through a 355 µm sieve, and digested with HNO3 and HCl. This method is intended to liberate metals that may be environmentally available.
VOCs Methanol Extraction for Headspace Analysis	EP581 ALS Environmental - Waterloo	Soil/Solid	EPA 5035A (mod)	VOCs in samples are extracted with methanol. Extracts are then prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.

QUALITY CONTROL REPORT

Work Order	: **WT2437497**	Page	: 1 of 21
Client	: Bluewater Geoscience Consultants Inc.	Laboratory	: ALS Environmental - Waterloo
Contact	: Breton Lemieux	Account Manager	: Gayle Braun
Address	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 519 744 4123	Telephone	: +1 519 886 6910
Project	: BG-915	Date Samples Received	: 18-Dec-2024 13:15
PO	: ----	Date Analysis Commenced	: 19-Dec-2024
C-O-C number	: 20-1081601	Issue Date	: 03-Jan-2025 09:44
Sampler	: BJL		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 13		
No. of samples analysed	: 13		

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
- Reference Material (RM) 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*
Andrea Armstrong	Department Manager - Air Quality and Volatiles	Waterloo VOC, Waterloo, Ontario
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Waterloo Metals, Waterloo, Ontario
Niral Patel		Waterloo Centralized Prep, Waterloo, Ontario

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: **Soil/Solid**

					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*
Physical Tests (QC Lot: 1820459)											
WT2437348-001	Anonymous	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	8.11	8.09	0.247%	5%	----
Physical Tests (QC Lot: 1820460)											
WT2437497-001	BH1, SS-1	Moisture	----	E144	0.25	%	10.8	11.4	5.14%	20%	----
Physical Tests (QC Lot: 1820486)											
WT2437497-003	BH-2, SS-1	Moisture	----	E144	0.25	%	7.92	8.94	12.0%	20%	----
Metals (QC Lot: 1820476)											
WT2437465-001	Anonymous	Antimony	7440-36-0	E440C	2.00	mg/kg	133	126	5.22%	30%	----
		Arsenic	7440-38-2	E440C	2.00	mg/kg	11.2	11.3	0.09	Diff <2x LOR	----
		Barium	7440-39-3	E440C	10.0	mg/kg	1010	1010	0.768%	40%	----
		Beryllium	7440-41-7	E440C	2.00	mg/kg	<2.00	<2.00	0	Diff <2x LOR	----
		Boron	7440-42-8	E440C	100	mg/kg	251	231	20.2	Diff <2x LOR	----
		Cadmium	7440-43-9	E440C	0.400	mg/kg	3.14	3.02	3.76%	30%	----
		Chromium	7440-47-3	E440C	200	mg/kg	20900	20800	0.649%	30%	----
		Cobalt	7440-48-4	E440C	2.00	mg/kg	42.4	39.9	5.99%	30%	----
		Copper	7440-50-8	E440C	10.0	mg/kg	1240	1280	2.99%	30%	----
		Lead	7439-92-1	E440C	10.0	mg/kg	9120	10000	9.60%	40%	----
		Molybdenum	7439-98-7	E440C	2.00	mg/kg	18.6	18.3	1.44%	40%	----
		Nickel	7440-02-0	E440C	200	mg/kg	25800	24700	4.27%	30%	----
		Selenium	7782-49-2	E440C	4.00	mg/kg	<4.00	<4.00	0	Diff <2x LOR	----
		Silver	7440-22-4	E440C	2.00	mg/kg	<2.00	<2.00	0	Diff <2x LOR	----
		Thallium	7440-28-0	E440C	1.00	mg/kg	<1.00	<1.00	0	Diff <2x LOR	----
		Uranium	7440-61-1	E440C	1.00	mg/kg	<1.00	<1.00	0	Diff <2x LOR	----
		Vanadium	7440-62-2	E440C	4.00	mg/kg	15.6	16.1	0.51	Diff <2x LOR	----
		Zinc	7440-66-6	E440C	40.0	mg/kg	3810	3700	2.93%	30%	----
Volatile Organic Compounds (QC Lot: 1817053)											
WT2437356-001	Anonymous	Acetone	67-64-1	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----

Sub-Matrix: **Soil/Solid**

					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*
Volatile Organic Compounds (QC Lot: 1817053) - continued											
WT2437356-001	Anonymous	Carbon tetrachloride	56-23-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	0.045	mg/kg	<0.045	<0.045	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.015	mg/kg	<0.015	<0.015	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.040	mg/kg	<0.040	<0.040	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.020	mg/kg	<0.020	<0.020	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----

Sub-Matrix: **Soil/Solid**

					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*
Volatile Organic Compounds (QC Lot: 1817053) - continued											
WT2437356-001	Anonymous	Xylene, o-	95-47-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1817404)											
WT2437649-001	Anonymous	Acetone	67-64-1	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	0.045	mg/kg	<0.045	<0.045	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.015	mg/kg	<0.015	<0.015	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.040	mg/kg	<0.040	<0.040	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----

Sub-Matrix: **Soil/Solid**

					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*
Volatile Organic Compounds (QC Lot: 1817404) - continued											
WT2437649-001	Anonymous	Toluene	108-88-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.020	mg/kg	<0.020	<0.020	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1817052)											
WT2437356-001	Anonymous	F1 (C6-C10)	----	E581.F1	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1817405)											
WT2437649-001	Anonymous	F1 (C6-C10)	----	E581.F1	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1820465)											
WT2437402-001	Anonymous	F2 (C10-C16)	----	E601.SG-L	10	mg/kg	<10	<10	0	Diff <2x LOR	----
		F3 (C16-C34)	----	E601.SG-L	50	mg/kg	124	124	0.002	Diff <2x LOR	----
		F4 (C34-C50)	----	E601.SG-L	50	mg/kg	58	67	9	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1820756)											
WT2437348-001	Anonymous	F2 (C10-C16)	----	E601.SG-L	10	mg/kg	<10	<10	0	Diff <2x LOR	----
		F3 (C16-C34)	----	E601.SG-L	50	mg/kg	<50	<50	0	Diff <2x LOR	----
		F4 (C34-C50)	----	E601.SG-L	50	mg/kg	<50	<50	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 1820466)											
WT2437402-001	Anonymous	Acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Acenaphthylene	208-96-8	E641A	0.050	mg/kg	0.063	<0.050	0.013	Diff <2x LOR	J
		Anthracene	120-12-7	E641A	0.050	mg/kg	0.214	0.211	1.23%	50%	----
		Benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	0.526	0.477	9.75%	50%	----
		Benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	0.564	0.485	15.1%	50%	----
		Benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.687	0.612	11.5%	50%	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.301	0.265	12.7%	50%	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	0.284	0.267	6.24%	50%	----
		Chrysene	218-01-9	E641A	0.050	mg/kg	0.554	0.475	15.2%	50%	----
		Dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	0.080	<0.050	0.030	Diff <2x LOR	J
		Fluoranthene	206-44-0	E641A	0.050	mg/kg	1.47	1.35	8.70%	50%	----
		Fluorene	86-73-7	E641A	0.050	mg/kg	0.078	0.084	0.006	Diff <2x LOR	J
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	0.359	0.318	12.3%	50%	----

Sub-Matrix: **Soil/Solid**

					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*
Polycyclic Aromatic Hydrocarbons (QC Lot: 1820466) - continued											
WT2437402-001	Anonymous	Methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E641A	0.010	mg/kg	0.025	0.030	0.004	Diff <2x LOR	J
		Phenanthrene	85-01-8	E641A	0.050	mg/kg	0.751	0.727	3.21%	50%	----
		Pyrene	129-00-0	E641A	0.050	mg/kg	1.24	1.10	11.3%	50%	----

Qualifiers

Qualifier	*Description*
J	*Duplicate results and limits are expressed in terms of absolute difference.*

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.

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1820460)						
Moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 1820486)						
Moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 1820476)						
Antimony	7440-36-0	E440C	0.1	mg/kg	<0.10	----
Arsenic	7440-38-2	E440C	0.1	mg/kg	<0.10	----
Barium	7440-39-3	E440C	0.5	mg/kg	<0.50	----
Beryllium	7440-41-7	E440C	0.1	mg/kg	<0.10	----
Boron	7440-42-8	E440C	5	mg/kg	<5.0	----
Cadmium	7440-43-9	E440C	0.02	mg/kg	<0.020	----
Chromium	7440-47-3	E440C	0.5	mg/kg	<0.50	----
Cobalt	7440-48-4	E440C	0.1	mg/kg	<0.10	----
Copper	7440-50-8	E440C	0.5	mg/kg	<0.50	----
Lead	7439-92-1	E440C	0.5	mg/kg	<0.50	----
Molybdenum	7439-98-7	E440C	0.1	mg/kg	<0.10	----
Nickel	7440-02-0	E440C	0.5	mg/kg	<0.50	----
Selenium	7782-49-2	E440C	0.2	mg/kg	<0.20	----
Silver	7440-22-4	E440C	0.1	mg/kg	<0.10	----
Thallium	7440-28-0	E440C	0.05	mg/kg	<0.050	----
Uranium	7440-61-1	E440C	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440C	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440C	2	mg/kg	<2.0	----
Volatile Organic Compounds (QCLot: 1817053)						
Acetone	67-64-1	E611D	0.5	mg/kg	<0.50	----
Benzene	71-43-2	E611D	0.005	mg/kg	<0.0050	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	<0.050	----
Bromoform	75-25-2	E611D	0.05	mg/kg	<0.050	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	<0.050	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	<0.050	----
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	<0.050	----
Chloroform	67-66-3	E611D	0.05	mg/kg	<0.050	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	<0.050	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1817053) - continued						
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	<0.050	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	<0.050	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	<0.050	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	<0.050	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	<0.045	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	<0.050	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	<0.030	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	<0.030	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	<0.015	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	<0.050	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	<0.50	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	<0.040	----
Styrene	100-42-5	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	<0.050	----
Toluene	108-88-3	E611D	0.05	mg/kg	<0.050	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	<0.050	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	<0.050	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	<0.010	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	<0.050	----
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	<0.020	----
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	<0.030	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	<0.030	----
Volatile Organic Compounds (QCLot: 1817404)						
Acetone	67-64-1	E611D	0.5	mg/kg	<0.50	----
Benzene	71-43-2	E611D	0.005	mg/kg	<0.0050	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	<0.050	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1817404) - continued						
Bromoform	75-25-2	E611D	0.05	mg/kg	<0.050	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	<0.050	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	<0.050	----
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	<0.050	----
Chloroform	67-66-3	E611D	0.05	mg/kg	<0.050	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	<0.050	----
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	<0.050	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	<0.050	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	<0.050	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	<0.050	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	<0.045	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	<0.050	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	<0.030	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	<0.030	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	<0.015	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	<0.050	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	<0.50	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	<0.040	----
Styrene	100-42-5	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	<0.050	----
Toluene	108-88-3	E611D	0.05	mg/kg	<0.050	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	<0.050	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	<0.050	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	<0.010	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	<0.050	----
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	<0.020	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1817404) - continued						
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	<0.030	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	<0.030	----
Hydrocarbons (QCLot: 1817052)						
F1 (C6-C10)	----	E581.F1	5	mg/kg	<5.0	----
Hydrocarbons (QCLot: 1817405)						
F1 (C6-C10)	----	E581.F1	5	mg/kg	<5.0	----
Hydrocarbons (QCLot: 1820465)						
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	<10	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	<50	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	<50	----
Hydrocarbons (QCLot: 1820756)						
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	<10	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	<50	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	<50	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1820466)						
Acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
Anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
Chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
Fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
Fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
Naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
Phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
Pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----

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: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1820459)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1820460)									
Moisture	----	E144	0.25	%	50 %	99.2	90.0	110	----
Physical Tests (QCLot: 1820486)									
Moisture	----	E144	0.25	%	50 %	99.2	90.0	110	----
Metals (QCLot: 1820476)									
Antimony	7440-36-0	E440C	0.1	mg/kg	100 mg/kg	108	80.0	120	----
Arsenic	7440-38-2	E440C	0.1	mg/kg	100 mg/kg	110	80.0	120	----
Barium	7440-39-3	E440C	0.5	mg/kg	25 mg/kg	102	80.0	120	----
Beryllium	7440-41-7	E440C	0.1	mg/kg	10 mg/kg	91.9	80.0	120	----
Boron	7440-42-8	E440C	5	mg/kg	100 mg/kg	91.9	80.0	120	----
Cadmium	7440-43-9	E440C	0.02	mg/kg	10 mg/kg	102	80.0	120	----
Chromium	7440-47-3	E440C	0.5	mg/kg	25 mg/kg	106	80.0	120	----
Cobalt	7440-48-4	E440C	0.1	mg/kg	25 mg/kg	104	80.0	120	----
Copper	7440-50-8	E440C	0.5	mg/kg	25 mg/kg	104	80.0	120	----
Lead	7439-92-1	E440C	0.5	mg/kg	50 mg/kg	100	80.0	120	----
Molybdenum	7439-98-7	E440C	0.1	mg/kg	25 mg/kg	105	80.0	120	----
Nickel	7440-02-0	E440C	0.5	mg/kg	50 mg/kg	104	80.0	120	----
Selenium	7782-49-2	E440C	0.2	mg/kg	100 mg/kg	102	80.0	120	----
Silver	7440-22-4	E440C	0.1	mg/kg	10 mg/kg	97.4	80.0	120	----
Thallium	7440-28-0	E440C	0.05	mg/kg	100 mg/kg	102	80.0	120	----
Uranium	7440-61-1	E440C	0.05	mg/kg	0.5 mg/kg	96.2	80.0	120	----
Vanadium	7440-62-2	E440C	0.2	mg/kg	50 mg/kg	107	80.0	120	----
Zinc	7440-66-6	E440C	2	mg/kg	50 mg/kg	102	80.0	120	----
Volatile Organic Compounds (QCLot: 1817053)									
Acetone	67-64-1	E611D	0.5	mg/kg	3.48 mg/kg	105	60.0	140	----
Benzene	71-43-2	E611D	0.005	mg/kg	3.48 mg/kg	93.0	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	3.48 mg/kg	98.5	50.0	140	----
Bromoform	75-25-2	E611D	0.05	mg/kg	3.48 mg/kg	105	70.0	130	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	3.48 mg/kg	66.3	50.0	140	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	3.48 mg/kg	102	70.0	130	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1817053) - continued									
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	3.48 mg/kg	93.9	70.0	130	----
Chloroform	67-66-3	E611D	0.05	mg/kg	3.48 mg/kg	97.9	70.0	130	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	3.48 mg/kg	104	60.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	3.48 mg/kg	88.8	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	3.48 mg/kg	92.8	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	3.48 mg/kg	91.0	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	3.48 mg/kg	90.9	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	3.48 mg/kg	59.1	50.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	3.48 mg/kg	92.1	60.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	3.48 mg/kg	87.5	60.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	3.48 mg/kg	87.4	60.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	3.48 mg/kg	95.6	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	3.48 mg/kg	104	60.0	130	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	3.48 mg/kg	94.3	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	3.48 mg/kg	89.5	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	3.48 mg/kg	80.0	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	3.48 mg/kg	78.0	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	3.48 mg/kg	90.5	70.0	130	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	3.48 mg/kg	93.7	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	3.48 mg/kg	90.0	60.0	140	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	3.48 mg/kg	83.4	60.0	140	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	3.48 mg/kg	84.6	70.0	130	----
Styrene	100-42-5	E611D	0.05	mg/kg	3.48 mg/kg	92.6	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	3.48 mg/kg	94.4	60.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	3.48 mg/kg	96.0	60.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	3.48 mg/kg	106	60.0	130	----
Toluene	108-88-3	E611D	0.05	mg/kg	3.48 mg/kg	91.7	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	3.48 mg/kg	92.0	60.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	3.48 mg/kg	88.4	60.0	130	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	3.48 mg/kg	96.0	60.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	3.48 mg/kg	88.5	50.0	140	----
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	3.48 mg/kg	76.1	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	6.95 mg/kg	92.8	70.0	130	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	3.48 mg/kg	91.4	70.0	130	----
Volatile Organic Compounds (QCLot: 1817404)									
Acetone	67-64-1	E611D	0.5	mg/kg	3.48 mg/kg	128	60.0	140	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1817404) - continued									
Benzene	71-43-2	E611D	0.005	mg/kg	3.48 mg/kg	104	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	3.48 mg/kg	107	50.0	140	----
Bromoform	75-25-2	E611D	0.05	mg/kg	3.48 mg/kg	113	70.0	130	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	3.48 mg/kg	82.9	50.0	140	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	3.48 mg/kg	107	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	3.48 mg/kg	102	70.0	130	----
Chloroform	67-66-3	E611D	0.05	mg/kg	3.48 mg/kg	108	70.0	130	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	3.48 mg/kg	119	60.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	3.48 mg/kg	111	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	3.48 mg/kg	103	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	3.48 mg/kg	101	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	3.48 mg/kg	102	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	3.48 mg/kg	93.9	50.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	3.48 mg/kg	106	60.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	3.48 mg/kg	106	60.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	3.48 mg/kg	106	60.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	3.48 mg/kg	107	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	3.48 mg/kg	108	60.0	130	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	3.48 mg/kg	107	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	3.48 mg/kg	106	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	3.48 mg/kg	100.0	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	3.48 mg/kg	103	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	3.48 mg/kg	103	70.0	130	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	3.48 mg/kg	112	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	3.48 mg/kg	111	60.0	140	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	3.48 mg/kg	116	60.0	140	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	3.48 mg/kg	101	70.0	130	----
Styrene	100-42-5	E611D	0.05	mg/kg	3.48 mg/kg	105	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	3.48 mg/kg	106	60.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	3.48 mg/kg	110	60.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	3.48 mg/kg	108	60.0	130	----
Toluene	108-88-3	E611D	0.05	mg/kg	3.48 mg/kg	103	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	3.48 mg/kg	102	60.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	3.48 mg/kg	108	60.0	130	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	3.48 mg/kg	108	60.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	3.48 mg/kg	104	50.0	140	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1817404) - continued									
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	3.48 mg/kg	99.7	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	6.95 mg/kg	104	70.0	130	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	3.48 mg/kg	104	70.0	130	----
Hydrocarbons (QCLot: 1817052)									
F1 (C6-C10)	----	E581.F1	5	mg/kg	69.2 mg/kg	93.2	80.0	120	----
Hydrocarbons (QCLot: 1817405)									
F1 (C6-C10)	----	E581.F1	5	mg/kg	69.2 mg/kg	85.8	80.0	120	----
Hydrocarbons (QCLot: 1820465)									
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	671 mg/kg	103	70.0	130	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	1380 mg/kg	104	70.0	130	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	748 mg/kg	105	70.0	130	----
Hydrocarbons (QCLot: 1820756)									
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	671 mg/kg	86.5	70.0	130	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	1380 mg/kg	86.2	70.0	130	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	748 mg/kg	79.8	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1820466)									
Acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	95.3	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	98.1	60.0	130	----
Anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	90.6	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	95.4	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	97.4	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	91.2	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	95.5	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	98.7	60.0	130	----
Chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
Fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	97.1	60.0	130	----
Fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	98.3	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	100	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	95.3	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	97.2	60.0	130	----
Naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	95.0	60.0	130	----
Phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	91.7	60.0	130	----
Pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	95.2	60.0	130	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier

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: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1817053)										
WT2437356-001	Anonymous	Acetone	67-64-1	E611D	3.47 mg/kg	3.12 mg/kg	111	50.0	140	----
		Benzene	71-43-2	E611D	3.05 mg/kg	3.12 mg/kg	97.7	50.0	140	----
		Bromodichloromethane	75-27-4	E611D	3.24 mg/kg	3.12 mg/kg	104	50.0	140	----
		Bromoform	75-25-2	E611D	3.56 mg/kg	3.12 mg/kg	114	50.0	140	----
		Bromomethane	74-83-9	E611D	2.36 mg/kg	3.12 mg/kg	75.8	50.0	140	----
		Carbon tetrachloride	56-23-5	E611D	3.32 mg/kg	3.12 mg/kg	106	50.0	140	----
		Chlorobenzene	108-90-7	E611D	3.04 mg/kg	3.12 mg/kg	97.7	50.0	140	----
		Chloroform	67-66-3	E611D	3.22 mg/kg	3.12 mg/kg	103	50.0	140	----
		Dibromochloromethane	124-48-1	E611D	3.43 mg/kg	3.12 mg/kg	110	50.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	2.95 mg/kg	3.12 mg/kg	94.6	50.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	3.04 mg/kg	3.12 mg/kg	97.6	50.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	2.97 mg/kg	3.12 mg/kg	95.4	50.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	2.96 mg/kg	3.12 mg/kg	95.0	50.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	3.37 mg/kg	3.12 mg/kg	108	50.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	3.04 mg/kg	3.12 mg/kg	97.4	50.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	2.92 mg/kg	3.12 mg/kg	93.5	50.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	2.95 mg/kg	3.12 mg/kg	94.6	50.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	3.15 mg/kg	3.12 mg/kg	101	50.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	3.39 mg/kg	3.12 mg/kg	109	50.0	140	----
		Dichloromethane	75-09-2	E611D	3.15 mg/kg	3.12 mg/kg	101	50.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	2.95 mg/kg	3.12 mg/kg	94.7	50.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	2.60 mg/kg	3.12 mg/kg	83.5	50.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	2.56 mg/kg	3.12 mg/kg	82.0	50.0	140	----
		Ethylbenzene	100-41-4	E611D	2.92 mg/kg	3.12 mg/kg	93.8	50.0	140	----
		Hexane, n-	110-54-3	E611D	3.24 mg/kg	3.12 mg/kg	104	50.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	3.04 mg/kg	3.12 mg/kg	97.5	50.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	2.72 mg/kg	3.12 mg/kg	87.2	50.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	2.83 mg/kg	3.12 mg/kg	90.7	50.0	140	----
		Styrene	100-42-5	E611D	2.99 mg/kg	3.12 mg/kg	95.9	50.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	3.10 mg/kg	3.12 mg/kg	99.6	50.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	3.20 mg/kg	3.12 mg/kg	102	50.0	140	----
		Tetrachloroethylene	127-18-4	E611D	3.38 mg/kg	3.12 mg/kg	108	50.0	140	----
		Toluene	108-88-3	E611D	2.99 mg/kg	3.12 mg/kg	95.9	50.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	3.00 mg/kg	3.12 mg/kg	96.4	50.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	2.94 mg/kg	3.12 mg/kg	94.2	50.0	140	----
		Trichloroethylene	79-01-6	E611D	3.10 mg/kg	3.12 mg/kg	99.4	50.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	3.09 mg/kg	3.12 mg/kg	99.2	50.0	140	----
		Vinyl chloride	75-01-4	E611D	2.85 mg/kg	3.12 mg/kg	91.4	50.0	140	----
		Xylene, m+p-	179601-23-1	E611D	5.94 mg/kg	6.24 mg/kg	95.2	50.0	140	----
		Xylene, o-	95-47-6	E611D	2.95 mg/kg	3.12 mg/kg	94.8	50.0	140	----

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1817404)										
WT2437649-001	Anonymous	Acetone	67-64-1	E611D	2.80 mg/kg	2.23 mg/kg	126	50.0	140	----
		Benzene	71-43-2	E611D	2.49 mg/kg	2.23 mg/kg	112	50.0	140	----
		Bromodichloromethane	75-27-4	E611D	2.52 mg/kg	2.23 mg/kg	113	50.0	140	----
		Bromoform	75-25-2	E611D	2.72 mg/kg	2.23 mg/kg	122	50.0	140	----
		Bromomethane	74-83-9	E611D	1.95 mg/kg	2.23 mg/kg	87.8	50.0	140	----
		Carbon tetrachloride	56-23-5	E611D	2.63 mg/kg	2.23 mg/kg	118	50.0	140	----
		Chlorobenzene	108-90-7	E611D	2.40 mg/kg	2.23 mg/kg	108	50.0	140	----
		Chloroform	67-66-3	E611D	2.57 mg/kg	2.23 mg/kg	116	50.0	140	----
		Dibromochloromethane	124-48-1	E611D	2.78 mg/kg	2.23 mg/kg	125	50.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	2.51 mg/kg	2.23 mg/kg	113	50.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	2.44 mg/kg	2.23 mg/kg	110	50.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	2.40 mg/kg	2.23 mg/kg	108	50.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	2.40 mg/kg	2.23 mg/kg	108	50.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	2.87 mg/kg	2.23 mg/kg	129	50.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	2.56 mg/kg	2.23 mg/kg	115	50.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	2.46 mg/kg	2.23 mg/kg	110	50.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	2.56 mg/kg	2.23 mg/kg	115	50.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	2.54 mg/kg	2.23 mg/kg	114	50.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	2.54 mg/kg	2.23 mg/kg	114	50.0	140	----
		Dichloromethane	75-09-2	E611D	2.49 mg/kg	2.23 mg/kg	112	50.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	2.50 mg/kg	2.23 mg/kg	112	50.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	2.20 mg/kg	2.23 mg/kg	99.0	50.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	2.27 mg/kg	2.23 mg/kg	102	50.0	140	----
		Ethylbenzene	100-41-4	E611D	2.47 mg/kg	2.23 mg/kg	111	50.0	140	----
		Hexane, n-	110-54-3	E611D	2.75 mg/kg	2.23 mg/kg	124	50.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	2.30 mg/kg	2.23 mg/kg	103	50.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	2.51 mg/kg	2.23 mg/kg	113	50.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	2.40 mg/kg	2.23 mg/kg	108	50.0	140	----
		Styrene	100-42-5	E611D	2.47 mg/kg	2.23 mg/kg	111	50.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	2.52 mg/kg	2.23 mg/kg	113	50.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	2.54 mg/kg	2.23 mg/kg	114	50.0	140	----
		Tetrachloroethylene	127-18-4	E611D	2.56 mg/kg	2.23 mg/kg	115	50.0	140	----
		Toluene	108-88-3	E611D	2.47 mg/kg	2.23 mg/kg	111	50.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	2.48 mg/kg	2.23 mg/kg	111	50.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	2.49 mg/kg	2.23 mg/kg	112	50.0	140	----
		Trichloroethylene	79-01-6	E611D	2.54 mg/kg	2.23 mg/kg	114	50.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	2.63 mg/kg	2.23 mg/kg	118	50.0	140	----
		Vinyl chloride	75-01-4	E611D	2.49 mg/kg	2.23 mg/kg	112	50.0	140	----
		Xylene, m+p-	179601-23-1	E611D	4.95 mg/kg	4.45 mg/kg	111	50.0	140	----
		Xylene, o-	95-47-6	E611D	2.48 mg/kg	2.23 mg/kg	111	50.0	140	----
Hydrocarbons (QCLot: 1817052)										
WT2437356-001	Anonymous	F1 (C6-C10)	----	E581.F1	61.2 mg/kg	62.4 mg/kg	98.1	60.0	140	----
Hydrocarbons (QCLot: 1817405)										

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Hydrocarbons (QCLot: 1817405) - continued										
WT2437649-001	Anonymous	F1 (C6-C10)	----	E581.F1	44.8 mg/kg	44.5 mg/kg	100	60.0	140	----
Hydrocarbons (QCLot: 1820465)										
WT2437402-001	Anonymous	F2 (C10-C16)	----	E601.SG-L	540 mg/kg	540 mg/kg	100	60.0	140	----
		F3 (C16-C34)	----	E601.SG-L	1120 mg/kg	1110 mg/kg	101	60.0	140	----
		F4 (C34-C50)	----	E601.SG-L	552 mg/kg	603 mg/kg	91.7	60.0	140	----
Hydrocarbons (QCLot: 1820756)										
WT2437348-001	Anonymous	F2 (C10-C16)	----	E601.SG-L	507 mg/kg	529 mg/kg	95.9	60.0	140	----
		F3 (C16-C34)	----	E601.SG-L	1060 mg/kg	1090 mg/kg	97.6	60.0	140	----
		F4 (C34-C50)	----	E601.SG-L	590 mg/kg	590 mg/kg	100	60.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1820466)										
WT2437402-001	Anonymous	Acenaphthene	83-32-9	E641A	0.396 mg/kg	0.401 mg/kg	98.9	50.0	140	----
		Acenaphthylene	208-96-8	E641A	0.386 mg/kg	0.401 mg/kg	96.3	50.0	140	----
		Anthracene	120-12-7	E641A	0.342 mg/kg	0.401 mg/kg	85.4	50.0	140	----
		Benz(a)anthracene	56-55-3	E641A	0.354 mg/kg	0.401 mg/kg	88.2	50.0	140	----
		Benzo(a)pyrene	50-32-8	E641A	ND mg/kg	----	ND	50.0	140	----
		Benzo(b+j)fluoranthene	n/a	E641A	ND mg/kg	----	ND	50.0	140	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.261 mg/kg	0.401 mg/kg	65.2	50.0	140	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.378 mg/kg	0.401 mg/kg	94.5	50.0	140	----
		Chrysene	218-01-9	E641A	ND mg/kg	----	ND	50.0	140	----
		Dibenz(a,h)anthracene	53-70-3	E641A	0.377 mg/kg	0.401 mg/kg	94.2	50.0	140	----
		Fluoranthene	206-44-0	E641A	ND mg/kg	----	ND	50.0	140	----
		Fluorene	86-73-7	E641A	0.402 mg/kg	0.401 mg/kg	100	50.0	140	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.294 mg/kg	0.401 mg/kg	73.3	50.0	140	----
		Methylnaphthalene, 1-	90-12-0	E641A	0.381 mg/kg	0.401 mg/kg	95.2	50.0	140	----
		Methylnaphthalene, 2-	91-57-6	E641A	0.419 mg/kg	0.401 mg/kg	104	50.0	140	----
		Naphthalene	91-20-3	E641A	0.399 mg/kg	0.401 mg/kg	99.7	50.0	140	----
		Phenanthrene	85-01-8	E641A	ND mg/kg	----	ND	50.0	140	----
		Pyrene	129-00-0	E641A	ND mg/kg	----	ND	50.0	140	----

Reference Material (RM) Report

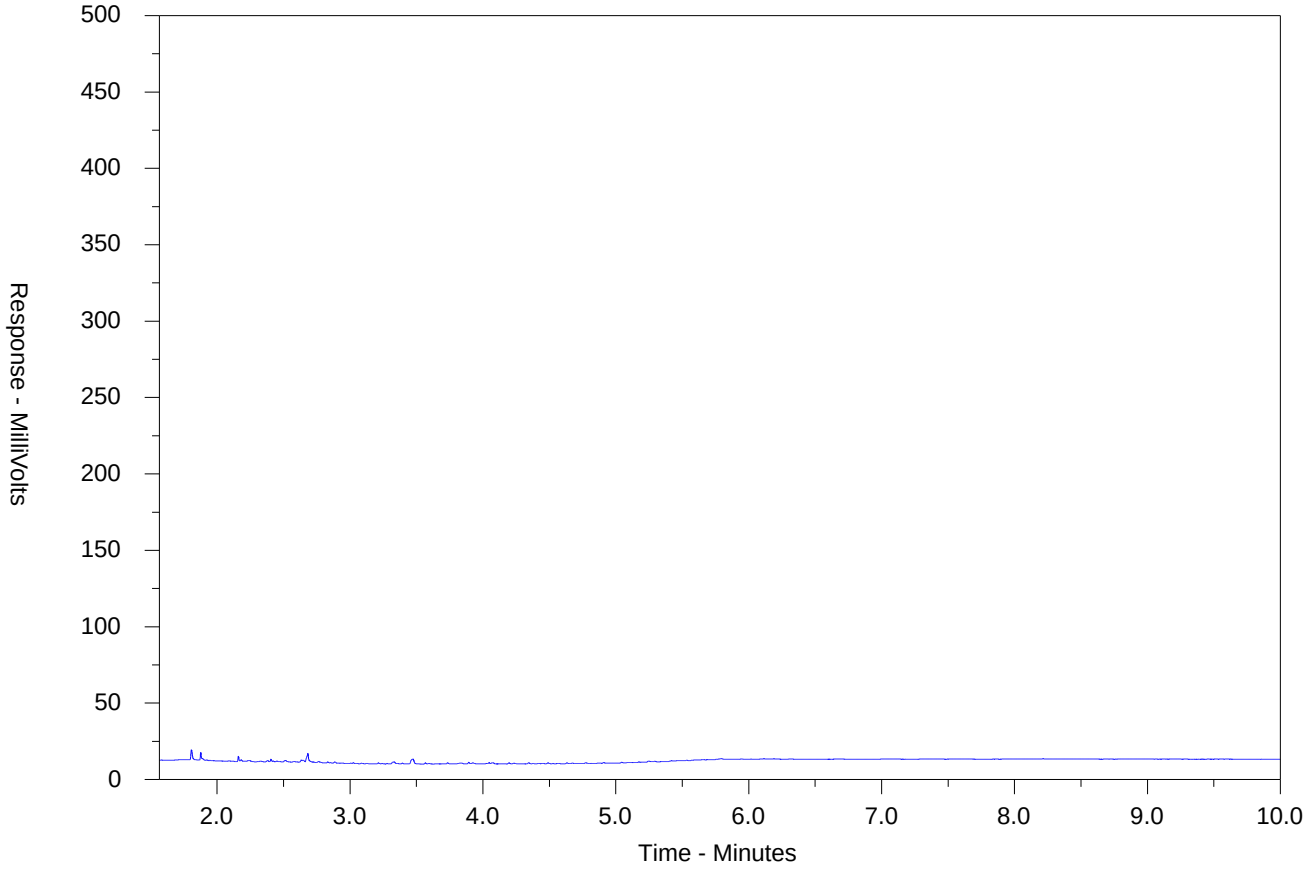
A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 1820476)									
QC-1820476-003	RM	Antimony	7440-36-0	E440C	24.8 mg/kg	98.8	70.0	130	----
QC-1820476-003	RM	Arsenic	7440-38-2	E440C	21.2 mg/kg	102	70.0	130	----
QC-1820476-003	RM	Barium	7440-39-3	E440C	788 mg/kg	101	70.0	130	----
QC-1820476-003	RM	Beryllium	7440-41-7	E440C	1.82 mg/kg	96.2	70.0	130	----
QC-1820476-003	RM	Cadmium	7440-43-9	E440C	2.15 mg/kg	97.8	70.0	130	----
QC-1820476-003	RM	Chromium	7440-47-3	E440C	56.9 mg/kg	106	70.0	130	----
QC-1820476-003	RM	Cobalt	7440-48-4	E440C	32 mg/kg	102	70.0	130	----
QC-1820476-003	RM	Copper	7440-50-8	E440C	969 mg/kg	111	70.0	130	----
QC-1820476-003	RM	Lead	7439-92-1	E440C	919 mg/kg	97.0	70.0	130	----
QC-1820476-003	RM	Molybdenum	7439-98-7	E440C	25.1 mg/kg	104	70.0	130	----
QC-1820476-003	RM	Nickel	7440-02-0	E440C	1000 mg/kg	112	70.0	130	----
QC-1820476-003	RM	Selenium	7782-49-2	E440C	1.04 mg/kg	118	60.0	140	----
QC-1820476-003	RM	Silver	7440-22-4	E440C	8.98 mg/kg	100	70.0	130	----
QC-1820476-003	RM	Thallium	7440-28-0	E440C	0.907 mg/kg	97.9	70.0	130	----
QC-1820476-003	RM	Uranium	7440-61-1	E440C	3.97 mg/kg	87.1	70.0	130	----
QC-1820476-003	RM	Vanadium	7440-62-2	E440C	66.2 mg/kg	103	70.0	130	----
QC-1820476-003	RM	Zinc	7440-66-6	E440C	828 mg/kg	101	70.0	130	----

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437497-002-E601.SG-L
Client Sample ID: BH-1, SS-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

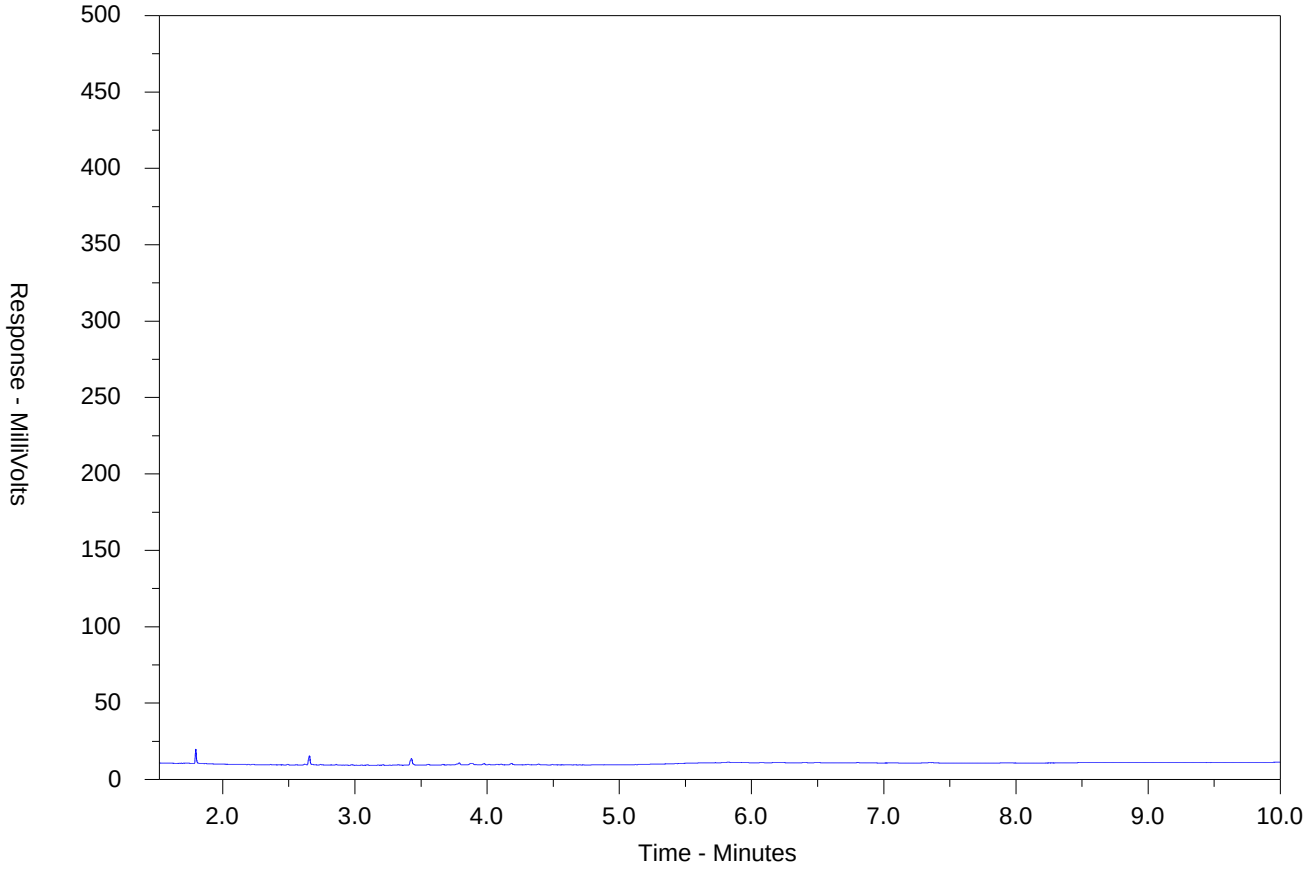
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437497-004-E601.SG-L
Client Sample ID: BH-2, SS-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

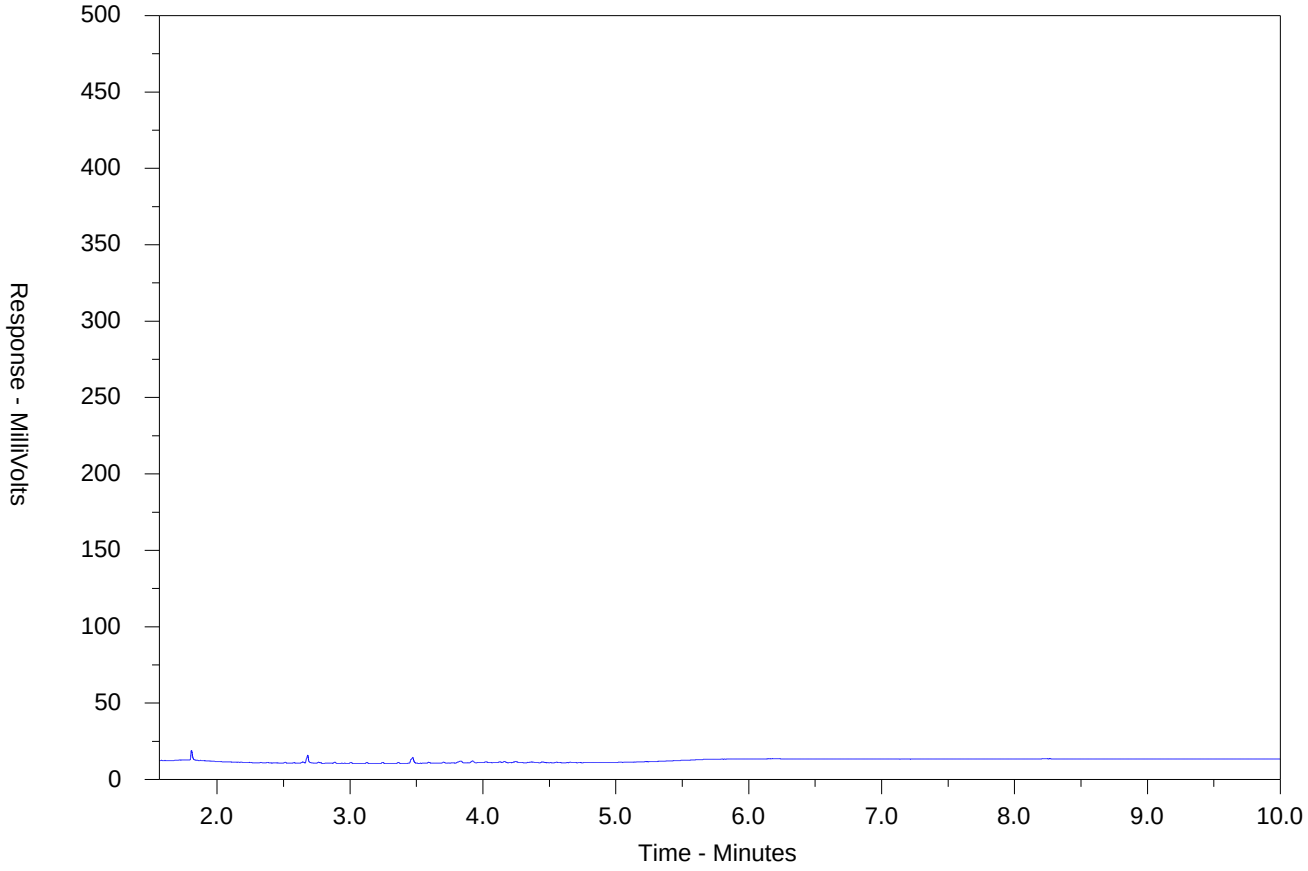
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437497-006-E601.SG-L
Client Sample ID: BH-3, SS-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

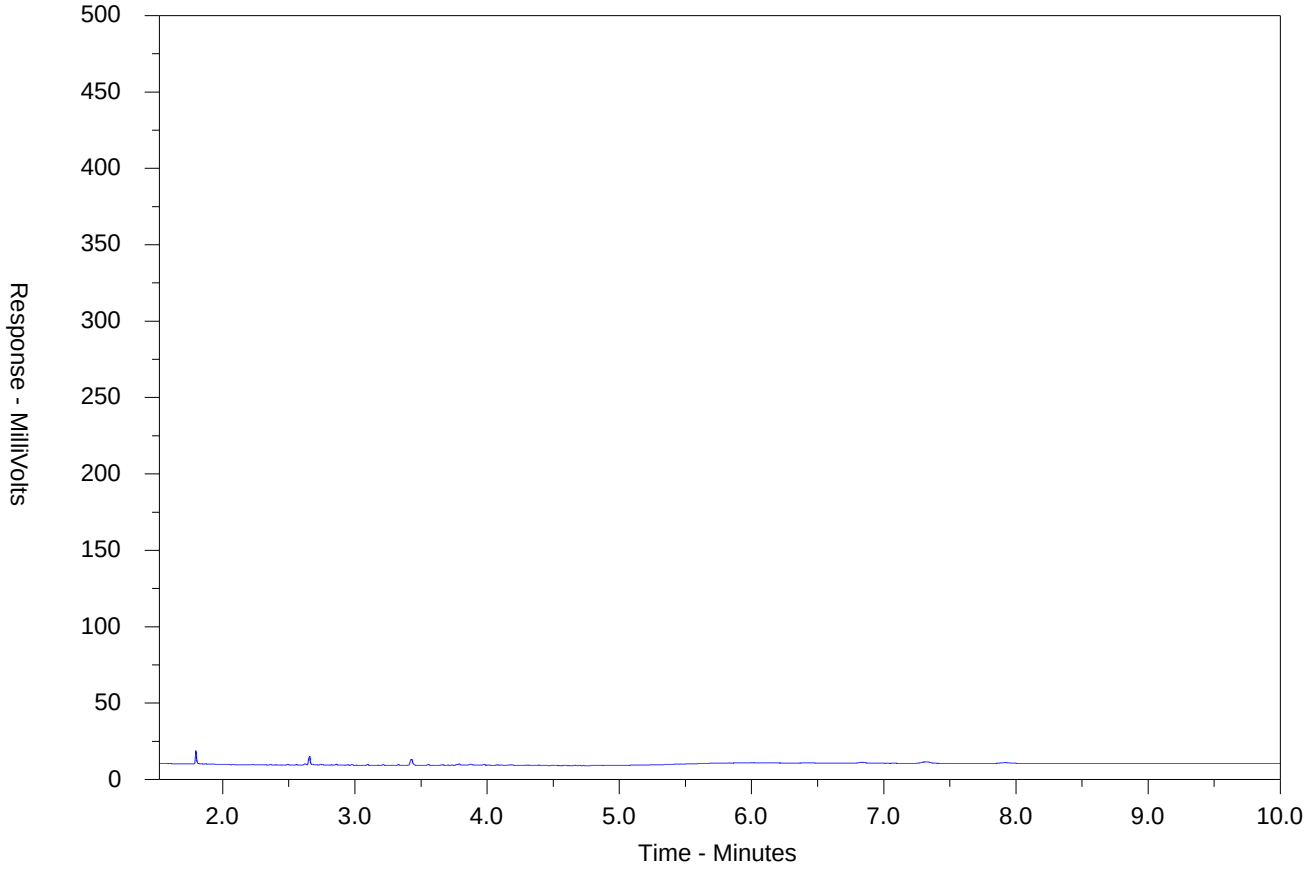
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437497-008-E601.SG-L
Client Sample ID: BH-4, SS-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

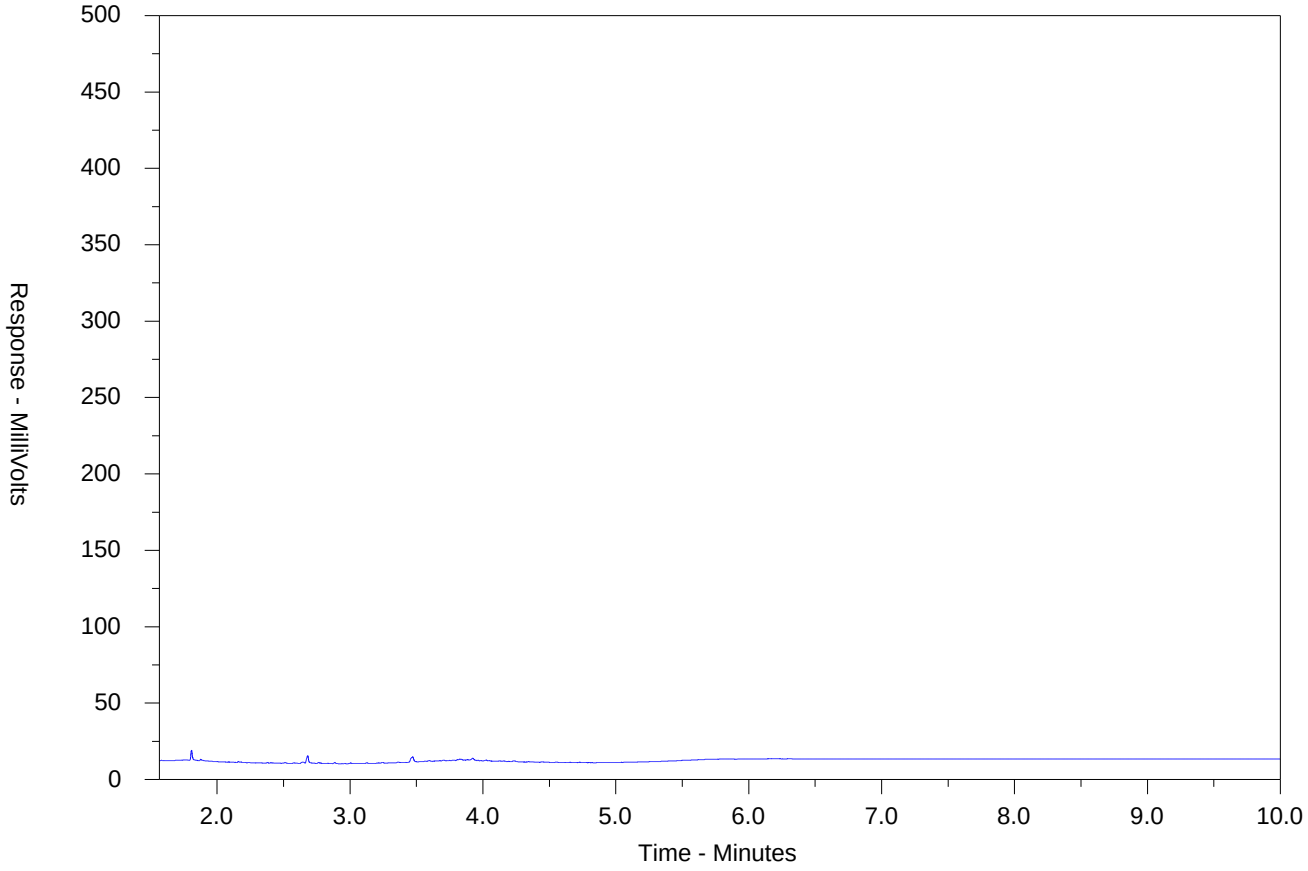
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437497-010-E601.SG-L
Client Sample ID: BH-5, SS-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

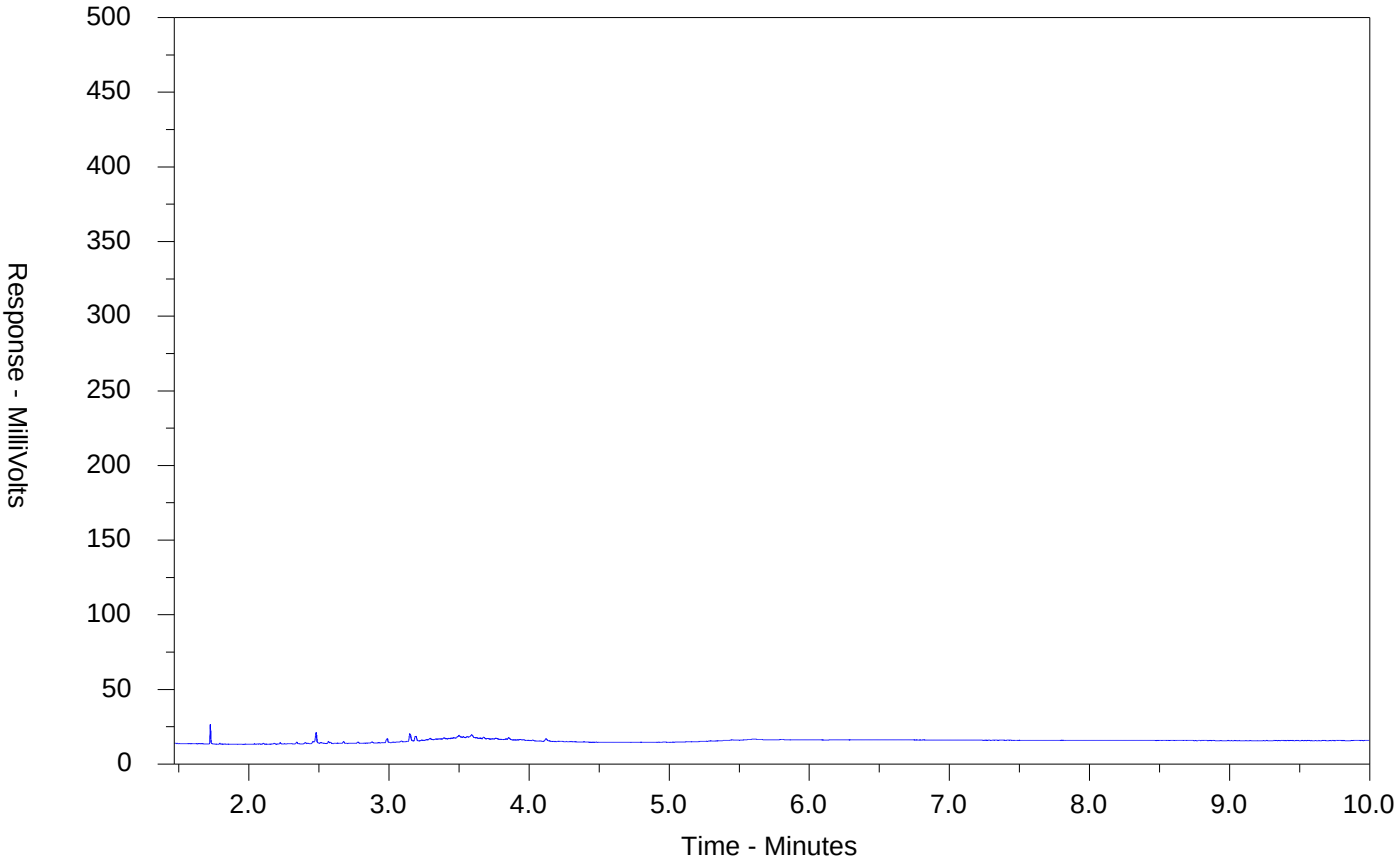
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437497-012-E601.SG-L
Client Sample ID: DUP-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

SOL-794/795
VS-208 AL12

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number

Environmental Division Waterloo
Work Order Reference
WT2437497

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Bluewater Geoscience
Contact:	B. LEMIEUX
Phone:	
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☒ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☒ YES ☐ NO ☐ N/A
☒ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2
Email 3

Invoice Recipients

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Turnaround Time (TAT) Requested

☒ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge r
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge
☐ Same day [E2] if received by 10am M-S - 200% rush surchar may apply to rush requests on weekends, statutory holidays an

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:
Job #: BG-915
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (ALS use only): WT2437497 FH

ALS Contact: GAYLE Sampler: BJL

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOC/F1-F4/PHCs	MetALS	PAH	pH	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	BH-1, SS-1	16/12/24		SOIL	1		X	X	X			
	BH-1, SS-3				3	X			X			
	BH-2, SS-1				1		X	X				
	BH-2, SS-3				3	X						
	BH-3, SS-1				1		X	X				
	BH-3, SS-3				3	X						
	BH-4, SS-1				1		X	X	X			
	BH-4, SS-2				3	X			X			
	BH-5, SS-1				1		X	X				
	BH-5, SS-3				3	X						
	DUP-1				1		X	X				
	DUP-2				3	X						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☐ NO
Are samples for human consumption/ use?
☐ YES ☐ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Table 2 RPI

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☒ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO
Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.2			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
BJL	DEC. 18/24	

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
VM	DEC. 18	13:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2437471**	Page	: 1 of 24
Client	: **Bluewater Geoscience Consultants Inc.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Breton Lemieux	Account Manager	: Gayle Braun
Address	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 519 744 4123	Telephone	: +1 519 886 6910
Project	: BG-915	Date Samples Received	: 18-Dec-2024 13:15
PO	: ----	Date Analysis Commenced	: 19-Dec-2024
C-O-C number	: 20-887769	Issue Date	: 31-Dec-2024 15:00
Sampler	: BJL		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

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

Signatories	*Position*	*Laboratory Department*
Andrea Armstrong	Department Manager - Air Quality and Volatiles	VOC, Waterloo, Ontario
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Organics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.
Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
µg/L	micrograms per litre
mg/L	milligrams per litre

>: greater than.
<: less than.
Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit .

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DLQ	*Detection Limit raised due to co-eluting interference. Mass Spectrometry qualifier ion ratio did not meet acceptance criteria.*
SFPR	*Suspected False Positive Result, based on detection in Lab Blanks and/or Field Blanks, or other known issues.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: MW-1 Sampling date/time: 18-Dec-2024 10:00 WT2437471-001	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Dissolved Metals										
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00015	0.006 mg/L	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00018	0.025 mg/L	0.025 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0531	1 mg/L	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	0.004 mg/L	0.004 mg/L	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.032	5 mg/L	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000060	0.0027 mg/L	0.0027 mg/L	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.05 mg/L	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00016	0.0038 mg/L	0.0038 mg/L	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00266	0.087 mg/L	0.087 mg/L	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000076	0.01 mg/L	0.01 mg/L	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00198	0.07 mg/L	0.07 mg/L	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00088	0.1 mg/L	0.1 mg/L	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000321	0.01 mg/L	0.01 mg/L	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	65.0	490 mg/L	490 mg/L	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000025	0.002 mg/L	0.002 mg/L	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000475	0.02 mg/L	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.0062 mg/L	0.0062 mg/L	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0034	1.1 mg/L	1.1 mg/L	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	20	µg/L	<20	2700 µg/L	2700 µg/L	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	16 µg/L	16 µg/L	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	0.89 µg/L	0.89 µg/L	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	0.79 µg/L	5 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	30 µg/L	--	--	--	--
Chloroform	E611D/WT	0.50	µg/L	13.1	2.4 µg/L	22 µg/L	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	0.2 µg/L	0.2 µg/L	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	3 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	59 µg/L	59 µg/L	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-001 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Volatile Organic Compounds - Continued										
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	590 µg/L	590 µg/L	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	50 µg/L	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	0.5 µg/L	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	2.4 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	51 µg/L	520 µg/L	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	1800 µg/L	1800 µg/L	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	640 µg/L	640 µg/L	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	15 µg/L	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	5.4 µg/L	5.4 µg/L	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	1.1 µg/L	1.1 µg/L	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	24 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	200 µg/L	200 µg/L	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	4.7 µg/L	5 µg/L	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	150 µg/L	150 µg/L	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	1.7 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	300 µg/L	--	--	--	--
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1-L/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
F2 (C10-C16)	E601.SG/WT	100	µg/L	<100	150 µg/L	150 µg/L	--	--	--	--
F2-Naphthalene	EC600SG/WT	100	µg/L	<100	--	--	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-001 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Hydrocarbons - Continued										
F3 (C16-C34)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F3-PAH	EC600SG/WT	250	µg/L	<250	--	--	--	--	--	--
F4 (C34-C50)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F1-BTEX	EC580/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581SG/WT	240	µg/L	<370	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG/WT	1.0	%	88.4	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1-L/WT	1.0	%	98.9	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	1.0	%	95.0	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	95.2	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Acenaphthylene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Anthracene	E641A/WT	0.010	µg/L	<0.010	2.4 µg/L	2.4 µg/L	--	--	--	--
Benz(a)anthracene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.0050	µg/L	<0.0050	0.01 µg/L	0.01 µg/L	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Chrysene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.0050	µg/L	<0.0050	0.2 µg/L	0.2 µg/L	--	--	--	--
Fluoranthene	E641A/WT	0.010	µg/L	0.026	0.41 µg/L	0.41 µg/L	--	--	--	--
Fluorene	E641A/WT	0.010	µg/L	0.012	120 µg/L	120 µg/L	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.015	µg/L	0.679	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.010	µg/L	0.300	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.010	µg/L	0.379	3.2 µg/L	3.2 µg/L	--	--	--	--
Naphthalene	E641A/WT	0.050	µg/L	0.057	11 µg/L	11 µg/L	--	--	--	--
Phenanthrene	E641A/WT	0.020	µg/L	0.043	1 µg/L	1 µg/L	--	--	--	--
Pyrene	E641A/WT	0.010	µg/L	0.037	4.1 µg/L	4.1 µg/L	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	106	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	104	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	98.3	--	--	--	--	--	--

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.

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
MW-1	Water	Chloroform		ON153/04	T2-GW-C-All	13.1 µg/L	2.4 µg/L

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-GW-C-All	153 T2-Ground Water (Coarse Soil)-All Types of Property Use
T2-GW-F-All	153 T2-Ground Water (Fine Soil)-All Types of Property Use

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: MW-2 Sampling date/time: 18-Dec-2024 10:25 WT2437471-002	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Dissolved Metals										
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00010	0.006 mg/L	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	<0.00010	0.025 mg/L	0.025 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0451	1 mg/L	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	0.004 mg/L	0.004 mg/L	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.022	5 mg/L	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000443	0.0027 mg/L	0.0027 mg/L	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.05 mg/L	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	<0.00010	0.0038 mg/L	0.0038 mg/L	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00150	0.087 mg/L	0.087 mg/L	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000105	0.01 mg/L	0.01 mg/L	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000491	0.07 mg/L	0.07 mg/L	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00059	0.1 mg/L	0.1 mg/L	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000365	0.01 mg/L	0.01 mg/L	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	136	490 mg/L	490 mg/L	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000011	0.002 mg/L	0.002 mg/L	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000628	0.02 mg/L	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.0062 mg/L	0.0062 mg/L	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0148	1.1 mg/L	1.1 mg/L	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	20	µg/L	<20	2700 µg/L	2700 µg/L	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	3.36	16 µg/L	16 µg/L	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	0.89 µg/L	0.89 µg/L	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	0.79 µg/L	5 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	30 µg/L	--	--	--	--
Chloroform	E611D/WT	0.50	µg/L	16.0	2.4 µg/L	22 µg/L	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	0.2 µg/L	0.2 µg/L	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	3 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	59 µg/L	59 µg/L	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-002 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Volatile Organic Compounds - Continued										
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	590 µg/L	590 µg/L	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.3 SFPR	50 µg/L	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	0.5 µg/L	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	2.4 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	51 µg/L	520 µg/L	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	1800 µg/L	1800 µg/L	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	640 µg/L	640 µg/L	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	15 µg/L	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	5.4 µg/L	5.4 µg/L	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	1.1 µg/L	1.1 µg/L	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	24 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	200 µg/L	200 µg/L	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	4.7 µg/L	5 µg/L	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	150 µg/L	150 µg/L	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	1.7 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	300 µg/L	--	--	--	--
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1-L/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
F2 (C10-C16)	E601.SG/WT	100	µg/L	<100	150 µg/L	150 µg/L	--	--	--	--
F2-Naphthalene	EC600SG/WT	100	µg/L	<100	--	--	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-002 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Hydrocarbons - Continued										
F3 (C16-C34)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F3-PAH	EC600SG/WT	250	µg/L	<250	--	--	--	--	--	--
F4 (C34-C50)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F1-BTEX	EC580/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581SG/WT	240	µg/L	<370	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG/WT	1.0	%	87.4	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1-L/WT	1.0	%	103	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	1.0	%	94.4	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	95.5	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Acenaphthylene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Anthracene	E641A/WT	0.010	µg/L	<0.010	2.4 µg/L	2.4 µg/L	--	--	--	--
Benz(a)anthracene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.0050	µg/L	<0.0050	0.01 µg/L	0.01 µg/L	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Chrysene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.0050	µg/L	<0.0240 DLM	0.2 µg/L	0.2 µg/L	--	--	--	--
Fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.41 µg/L	0.41 µg/L	--	--	--	--
Fluorene	E641A/WT	0.010	µg/L	<0.010	120 µg/L	120 µg/L	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.015	µg/L	<0.015	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.010	µg/L	<0.010	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.010	µg/L	0.012	3.2 µg/L	3.2 µg/L	--	--	--	--
Naphthalene	E641A/WT	0.050	µg/L	<0.050	11 µg/L	11 µg/L	--	--	--	--
Phenanthrene	E641A/WT	0.020	µg/L	<0.020	1 µg/L	1 µg/L	--	--	--	--
Pyrene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	107	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	98.2	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	98.9	--	--	--	--	--	--

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.

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
MW-2	Water	Chloroform		ON153/04	T2-GW-C-All	16.0 µg/L	2.4 µg/L

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-GW-C-All	153 T2-Ground Water (Coarse Soil)-All Types of Property Use
T2-GW-F-All	153 T2-Ground Water (Fine Soil)-All Types of Property Use

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: MW-3 Sampling date/time: 18-Dec-2024 10:55 WT2437471-003	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Dissolved Metals										
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00026	0.006 mg/L	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00013	0.025 mg/L	0.025 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0537	1 mg/L	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	0.004 mg/L	0.004 mg/L	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.023	5 mg/L	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000350	0.0027 mg/L	0.0027 mg/L	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.05 mg/L	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	<0.00010	0.0038 mg/L	0.0038 mg/L	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00132	0.087 mg/L	0.087 mg/L	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000053	0.01 mg/L	0.01 mg/L	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00147	0.07 mg/L	0.07 mg/L	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00338	0.1 mg/L	0.1 mg/L	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000264	0.01 mg/L	0.01 mg/L	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	58.1	490 mg/L	490 mg/L	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.002 mg/L	0.002 mg/L	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000933	0.02 mg/L	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.0062 mg/L	0.0062 mg/L	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0589	1.1 mg/L	1.1 mg/L	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	20	µg/L	<20	2700 µg/L	2700 µg/L	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	12.8	16 µg/L	16 µg/L	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	2.15	25 µg/L	25 µg/L	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	0.89 µg/L	0.89 µg/L	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	0.79 µg/L	5 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	30 µg/L	--	--	--	--
Chloroform	E611D/WT	0.50	µg/L	14.5	2.4 µg/L	22 µg/L	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	9.63	25 µg/L	25 µg/L	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	0.2 µg/L	0.2 µg/L	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	3 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	59 µg/L	59 µg/L	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-003 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Volatile Organic Compounds - Continued										
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	590 µg/L	590 µg/L	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	50 µg/L	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	0.5 µg/L	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	2.4 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	51 µg/L	520 µg/L	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	1800 µg/L	1800 µg/L	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	640 µg/L	640 µg/L	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	15 µg/L	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	5.4 µg/L	5.4 µg/L	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	1.1 µg/L	1.1 µg/L	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	24 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	200 µg/L	200 µg/L	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	4.7 µg/L	5 µg/L	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	150 µg/L	150 µg/L	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	1.7 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	300 µg/L	--	--	--	--
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1-L/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
F2 (C10-C16)	E601.SG/WT	100	µg/L	<100	150 µg/L	150 µg/L	--	--	--	--
F2-Naphthalene	EC600SG/WT	100	µg/L	<100	--	--	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-003 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Hydrocarbons - Continued										
F3 (C16-C34)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F3-PAH	EC600SG/WT	250	µg/L	<250	--	--	--	--	--	--
F4 (C34-C50)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F1-BTEX	EC580/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581SG/WT	240	µg/L	<370	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG/WT	1.0	%	81.0	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1-L/WT	1.0	%	102	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	1.0	%	94.6	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	95.6	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Acenaphthylene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Anthracene	E641A/WT	0.010	µg/L	<0.010	2.4 µg/L	2.4 µg/L	--	--	--	--
Benz(a)anthracene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.0050	µg/L	<0.0050	0.01 µg/L	0.01 µg/L	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Chrysene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.0050	µg/L	<0.0050	0.2 µg/L	0.2 µg/L	--	--	--	--
Fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.41 µg/L	0.41 µg/L	--	--	--	--
Fluorene	E641A/WT	0.010	µg/L	<0.010	120 µg/L	120 µg/L	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.015	µg/L	<0.015	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.010	µg/L	<0.010	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.010	µg/L	<0.010	3.2 µg/L	3.2 µg/L	--	--	--	--
Naphthalene	E641A/WT	0.050	µg/L	<0.050	11 µg/L	11 µg/L	--	--	--	--
Phenanthrene	E641A/WT	0.020	µg/L	<0.020	1 µg/L	1 µg/L	--	--	--	--
Pyrene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	104	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	96.1	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	97.5	--	--	--	--	--	--

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
MW-3	Water	Chloroform		ON153/04	T2-GW-C-All	14.5 µg/L	2.4 µg/L

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-GW-C-All	153 T2-Ground Water (Coarse Soil)-All Types of Property Use
T2-GW-F-All	153 T2-Ground Water (Fine Soil)-All Types of Property Use

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: MW-4 Sampling date/time: 18-Dec-2024 11:30 WT2437471-004	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Dissolved Metals										
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00018	0.006 mg/L	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00012	0.025 mg/L	0.025 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0502	1 mg/L	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	0.004 mg/L	0.004 mg/L	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.026	5 mg/L	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050	0.0027 mg/L	0.0027 mg/L	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.05 mg/L	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00011	0.0038 mg/L	0.0038 mg/L	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00100	0.087 mg/L	0.087 mg/L	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000054	0.01 mg/L	0.01 mg/L	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00170	0.07 mg/L	0.07 mg/L	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00120	0.1 mg/L	0.1 mg/L	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000278	0.01 mg/L	0.01 mg/L	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	80.9	490 mg/L	490 mg/L	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000016	0.002 mg/L	0.002 mg/L	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000439	0.02 mg/L	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.0062 mg/L	0.0062 mg/L	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0019	1.1 mg/L	1.1 mg/L	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	20	µg/L	<20	2700 µg/L	2700 µg/L	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	0.55	16 µg/L	16 µg/L	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	0.89 µg/L	0.89 µg/L	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	0.79 µg/L	5 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	30 µg/L	--	--	--	--
Chloroform	E611D/WT	0.50	µg/L	18.7	2.4 µg/L	22 µg/L	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	0.2 µg/L	0.2 µg/L	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	3 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	59 µg/L	59 µg/L	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-004 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Volatile Organic Compounds - Continued										
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	590 µg/L	590 µg/L	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	50 µg/L	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	0.5 µg/L	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	2.4 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	51 µg/L	520 µg/L	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	1800 µg/L	1800 µg/L	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	640 µg/L	640 µg/L	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	15 µg/L	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	5.4 µg/L	5.4 µg/L	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	1.1 µg/L	1.1 µg/L	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	24 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	200 µg/L	200 µg/L	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	4.7 µg/L	5 µg/L	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	150 µg/L	150 µg/L	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	1.7 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	300 µg/L	--	--	--	--
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1-L/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
F2 (C10-C16)	E601.SG/WT	100	µg/L	<100	150 µg/L	150 µg/L	--	--	--	--
F2-Naphthalene	EC600SG/WT	100	µg/L	<100	--	--	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-004 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Hydrocarbons - Continued										
F3 (C16-C34)	E601.SG/WT	250	µg/L	290	500 µg/L	500 µg/L	--	--	--	--
F3-PAH	EC600SG/WT	250	µg/L	290	--	--	--	--	--	--
F4 (C34-C50)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F1-BTEX	EC580/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581SG/WT	240	µg/L	<370	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG/WT	1.0	%	71.8	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1-L/WT	1.0	%	100.0	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	1.0	%	94.9	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	95.2	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.010	µg/L	<0.023 DLQ	4.1 µg/L	4.1 µg/L	--	--	--	--
Acenaphthylene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Anthracene	E641A/WT	0.010	µg/L	<0.010	2.4 µg/L	2.4 µg/L	--	--	--	--
Benz(a)anthracene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.0050	µg/L	<0.0050	0.01 µg/L	0.01 µg/L	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Chrysene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.0050	µg/L	<0.0050	0.2 µg/L	0.2 µg/L	--	--	--	--
Fluoranthene	E641A/WT	0.010	µg/L	0.016	0.41 µg/L	0.41 µg/L	--	--	--	--
Fluorene	E641A/WT	0.010	µg/L	<0.010	120 µg/L	120 µg/L	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.015	µg/L	0.092	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.010	µg/L	0.036	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.010	µg/L	0.056	3.2 µg/L	3.2 µg/L	--	--	--	--
Naphthalene	E641A/WT	0.050	µg/L	<0.050	11 µg/L	11 µg/L	--	--	--	--
Phenanthrene	E641A/WT	0.020	µg/L	<0.020	1 µg/L	1 µg/L	--	--	--	--
Pyrene	E641A/WT	0.010	µg/L	0.037	4.1 µg/L	4.1 µg/L	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	104	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	101	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	102	--	--	--	--	--	--

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.

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
MW-4	Water	Chloroform		ON153/04	T2-GW-C-All	18.7 µg/L	2.4 µg/L

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-GW-C-All	153 T2-Ground Water (Coarse Soil)-All Types of Property Use
T2-GW-F-All	153 T2-Ground Water (Fine Soil)-All Types of Property Use

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	Method/Lab	LOR	Unit	Client sample ID: DUP-1 Sampling date/time: 18-Dec-2024 00:00 WT2437471-005	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Dissolved Metals										
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00027	0.006 mg/L	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00013	0.025 mg/L	0.025 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0538	1 mg/L	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	0.004 mg/L	0.004 mg/L	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.023	5 mg/L	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000356	0.0027 mg/L	0.0027 mg/L	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.05 mg/L	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	<0.00010	0.0038 mg/L	0.0038 mg/L	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00135	0.087 mg/L	0.087 mg/L	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000073	0.01 mg/L	0.01 mg/L	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00148	0.07 mg/L	0.07 mg/L	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00346	0.1 mg/L	0.1 mg/L	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000243	0.01 mg/L	0.01 mg/L	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	57.5	490 mg/L	490 mg/L	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	0.002 mg/L	0.002 mg/L	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000958	0.02 mg/L	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	0.0062 mg/L	0.0062 mg/L	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0587	1.1 mg/L	1.1 mg/L	--	--	--	--
Volatile Organic Compounds										
Acetone	E611D/WT	20	µg/L	<20	2700 µg/L	2700 µg/L	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	12.4	16 µg/L	16 µg/L	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	2.18	25 µg/L	25 µg/L	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	0.89 µg/L	0.89 µg/L	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	0.79 µg/L	5 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	30 µg/L	--	--	--	--
Chloroform	E611D/WT	0.50	µg/L	14.0	2.4 µg/L	22 µg/L	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	9.42	25 µg/L	25 µg/L	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	0.2 µg/L	0.2 µg/L	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	3 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	59 µg/L	59 µg/L	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-005 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Volatile Organic Compounds - Continued										
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	590 µg/L	590 µg/L	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	50 µg/L	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	0.5 µg/L	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	2.4 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	51 µg/L	520 µg/L	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	1800 µg/L	1800 µg/L	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	640 µg/L	640 µg/L	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	15 µg/L	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	5.4 µg/L	5.4 µg/L	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	1.1 µg/L	1.1 µg/L	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	24 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	200 µg/L	200 µg/L	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	4.7 µg/L	5 µg/L	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	150 µg/L	150 µg/L	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	1.7 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	300 µg/L	--	--	--	--
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1-L/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
F2 (C10-C16)	E601.SG/WT	100	µg/L	<100	150 µg/L	150 µg/L	--	--	--	--
F2-Naphthalene	EC600SG/WT	100	µg/L	<100	--	--	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-005 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Hydrocarbons - Continued										
F3 (C16-C34)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F3-PAH	EC600SG/WT	250	µg/L	<250	--	--	--	--	--	--
F4 (C34-C50)	E601.SG/WT	250	µg/L	<250	500 µg/L	500 µg/L	--	--	--	--
F1-BTEX	EC580/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
Hydrocarbons, total (C6-C50)	EC581SG/WT	240	µg/L	<370	--	--	--	--	--	--
Chromatogram to baseline at nC50	E601.SG/WT		-	YES	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	E601.SG/WT	1.0	%	78.5	--	--	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1-L/WT	1.0	%	101	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	1.0	%	93.8	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	95.2	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Acenaphthylene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Anthracene	E641A/WT	0.010	µg/L	<0.010	2.4 µg/L	2.4 µg/L	--	--	--	--
Benz(a)anthracene	E641A/WT	0.010	µg/L	<0.010	1 µg/L	1 µg/L	--	--	--	--
Benzo(a)pyrene	E641A/WT	0.0050	µg/L	<0.0050	0.01 µg/L	0.01 µg/L	--	--	--	--
Benzo(b+j)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Benzo(g,h,i)perylene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Benzo(k)fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Chrysene	E641A/WT	0.010	µg/L	<0.010	0.1 µg/L	0.1 µg/L	--	--	--	--
Dibenz(a,h)anthracene	E641A/WT	0.0050	µg/L	<0.0050	0.2 µg/L	0.2 µg/L	--	--	--	--
Fluoranthene	E641A/WT	0.010	µg/L	<0.010	0.41 µg/L	0.41 µg/L	--	--	--	--
Fluorene	E641A/WT	0.010	µg/L	<0.010	120 µg/L	120 µg/L	--	--	--	--
Indeno(1,2,3-c,d)pyrene	E641A/WT	0.010	µg/L	<0.010	0.2 µg/L	0.2 µg/L	--	--	--	--
Methylnaphthalene, 1+2-	E641A/WT	0.015	µg/L	<0.015	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 1-	E641A/WT	0.010	µg/L	<0.010	3.2 µg/L	3.2 µg/L	--	--	--	--
Methylnaphthalene, 2-	E641A/WT	0.010	µg/L	<0.010	3.2 µg/L	3.2 µg/L	--	--	--	--
Naphthalene	E641A/WT	0.050	µg/L	<0.050	11 µg/L	11 µg/L	--	--	--	--
Phenanthrene	E641A/WT	0.020	µg/L	<0.020	1 µg/L	1 µg/L	--	--	--	--
Pyrene	E641A/WT	0.010	µg/L	<0.010	4.1 µg/L	4.1 µg/L	--	--	--	--
Chrysene-d12	E641A/WT	0.1	%	104	--	--	--	--	--	--
Naphthalene-d8	E641A/WT	0.1	%	96.8	--	--	--	--	--	--
Phenanthrene-d10	E641A/WT	0.1	%	98.9	--	--	--	--	--	--

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.

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
DUP-1	Water	Chloroform		ON153/04	T2-GW-C-All	14.0 µg/L	2.4 µg/L

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-GW-C-All	153 T2-Ground Water (Coarse Soil)-All Types of Property Use
T2-GW-F-All	153 T2-Ground Water (Fine Soil)-All Types of Property Use

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

				Client sample ID	TRIP BLANK					
				Sampling date/time	18-Dec-2024 00:00					
Analyte	*Method/Lab*	*LOR*	*Unit*	WT2437471-006	**ON153/04 T2-GW-C-All**	**ON153/04 T2-GW-F-All**	**--**	**--**	**--**	**--**
Volatile Organic Compounds										
Acetone	E611D/WT	20	µg/L	<20	2700 µg/L	2700 µg/L	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	16 µg/L	16 µg/L	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	0.89 µg/L	0.89 µg/L	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	0.79 µg/L	5 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	30 µg/L	--	--	--	--
Chloroform	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	22 µg/L	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	25 µg/L	25 µg/L	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	0.2 µg/L	0.2 µg/L	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	3 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	59 µg/L	59 µg/L	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	590 µg/L	590 µg/L	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	50 µg/L	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	5 µg/L	5 µg/L	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	0.5 µg/L	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	2.4 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	51 µg/L	520 µg/L	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	1800 µg/L	1800 µg/L	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	640 µg/L	640 µg/L	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	15 µg/L	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	5.4 µg/L	5.4 µg/L	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	1.1 µg/L	1.1 µg/L	--	--	--	--

Analyte	Method/Lab	LOR	Unit	WT2437471-006 (Continued)	ON153/04 T2-GW-C-All	ON153/04 T2-GW-F-All	--	--	--	--
Volatile Organic Compounds - Continued										
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	1 µg/L	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	17 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	24 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	200 µg/L	200 µg/L	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	4.7 µg/L	5 µg/L	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	1.6 µg/L	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	150 µg/L	150 µg/L	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	0.5 µg/L	1.7 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	300 µg/L	--	--	--	--
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
Hydrocarbons										
F1 (C6-C10)	E581.F1-L/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
F1-BTEX	EC580/WT	25	µg/L	<25	750 µg/L	750 µg/L	--	--	--	--
Dichlorotoluene, 3,4-	E581.F1-L/WT	1.0	%	104	--	--	--	--	--	--
Bromofluorobenzene, 4-	E611D/WT	1.0	%	93.7	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	95.4	--	--	--	--	--	--

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.

No Breaches Found

Key:

ON153/04	Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
T2-GW-C-All	153 T2-Ground Water (Coarse Soil)-All Types of Property Use
T2-GW-F-All	153 T2-Ground Water (Fine Soil)-All Types of Property Use

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2437471**	Page	: 1 of 10
Client	: **Bluewater Geoscience Consultants Inc.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Breton Lemieux	Account Manager	: Gayle Braun
Address	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 519 744 4123	Telephone	: +1 519 886 6910
Project	: BG-915	Date Samples Received	: 18-Dec-2024 13:15
PO	: ----	Issue Date	: 31-Dec-2024 15:00
C-O-C number	: 20-887769		
Sampler	: BJL		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Polycyclic Aromatic Hydrocarbons	QC-MRG2-1824236 001	----	Benzo(k)fluoranthene	207-08-9	E641A	0.023 µg/L MB-LOR	0.01 µg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
MB-LOR	*Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-1	E421	18-Dec-2024	19-Dec-2024	180 days	1 days	✓	19-Dec-2024	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW-1	E421	18-Dec-2024	19-Dec-2024	180 days	1 days	✓	19-Dec-2024	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW-2	E421	18-Dec-2024	19-Dec-2024	180 days	1 days	✓	19-Dec-2024	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW-3	E421	18-Dec-2024	19-Dec-2024	180 days	1 days	✓	19-Dec-2024	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW-4	E421	18-Dec-2024	19-Dec-2024	180 days	1 days	✓	19-Dec-2024	180 days	1 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate)										
DUP-1	E581.F1-L	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate)										
MW-1	E581.F1-L	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate) MW-2	E581.F1-L	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate) MW-3	E581.F1-L	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate) MW-4	E581.F1-L	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate) TRIP BLANK	E581.F1-L	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) DUP-1	E601.SG	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) MW-1	E601.SG	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) MW-2	E601.SG	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) MW-3	E601.SG	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) MW-4	E601.SG	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) MW-1	E641A	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) MW-2	E641A	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) MW-3	E641A	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	30-Dec-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) DUP-1	E641A	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	31-Dec-2024	40 days	1 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) MW-4	E641A	18-Dec-2024	30-Dec-2024	14 days	12 days	✓	31-Dec-2024	40 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-1	E611D	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW-1	E611D	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW-2	E611D	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW-3	E611D	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
MW-4	E611D	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
TRIP BLANK	E611D	18-Dec-2024	21-Dec-2024	14 days	3 days	✓	21-Dec-2024	14 days	3 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	1819359	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1815557	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1819358	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	1819359	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1815557	1	20	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1824236	2	16	12.5	5.0	✓
Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID	E601.SG	1824237	2	25	8.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1819358	1	16	6.2	5.0	✓
Method Blanks (MB)							
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	1819359	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1815557	1	20	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1824236	2	16	12.5	5.0	✓
Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID	E601.SG	1824237	2	25	8.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1819358	1	16	6.2	5.0	✓
Matrix Spikes (MS)							
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	1819359	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1815557	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1819358	1	16	6.2	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
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.
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1 (mod)	CCME Fraction 1 (F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID	E601.SG ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1 (mod)	Sample extracts are subjected to in-situ silica gel treatment prior to analysis by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs in Water by Hexane LVI GC-MS	E641A ALS Environmental - Waterloo	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
F1-BTEX	EC580 ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
SUM F1 to F4 where F2-F4 is SG treated	EC581SG ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fraction F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50), where F2-F4 have been treated with silica gel. F4G-sg is not used within this calculation due to overlap with other fractions.
F2-F4 (sg) minus PAH	EC600SG ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1	F2-F4 (sg) minus PAH is calculated as follows: F2-F4 minus PAH = Sum of CCME Fraction 2 (C10-C16), CCME Fraction 3 (C16-C34), and CCME Fraction 4 (C34-C50), minus select Polycyclic Aromatic Hydrocarbons (PAH).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Waterloo	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Waterloo	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

QUALITY CONTROL REPORT

Work Order	: **WT2437471**	Page	: 1 of 14
Client	: Bluewater Geoscience Consultants Inc.	Laboratory	: ALS Environmental - Waterloo
Contact	: Breton Lemieux	Account Manager	: Gayle Braun
Address	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 519 744 4123	Telephone	: +1 519 886 6910
Project	: BG-915	Date Samples Received	: 18-Dec-2024 13:15
PO	: ----	Date Analysis Commenced	: 19-Dec-2024
C-O-C number	: 20-887769	Issue Date	: 31-Dec-2024 15:00
Sampler	: BJL		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This 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*
Andrea Armstrong	Department Manager - Air Quality and Volatiles	Waterloo VOC, Waterloo, Ontario
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Waterloo Organics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

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						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1815557)											
WT2437382-003	Anonymous	Antimony, dissolved	7440-36-0	E421	0.00100	mg/L	<1.00 µg/L	<0.00100	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00100	mg/L	6.17 µg/L	0.00603	0.00014	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00100	mg/L	133 µg/L	0.134	0.837%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000200	mg/L	<0.200 µg/L	<0.000200	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.100	mg/L	170 µg/L	0.168	0.002	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000500	mg/L	<0.0500 µg/L	<0.0000500	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00500	mg/L	<5.00 µg/L	<0.00500	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00100	mg/L	<1.00 µg/L	<0.00100	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00200	mg/L	<2.00 µg/L	<0.00200	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000500	mg/L	<0.500 µg/L	<0.000500	0	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000500	mg/L	1.22 µg/L	0.00131	0.000091	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00500	mg/L	<5.00 µg/L	<0.00500	0	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000500	mg/L	<0.500 µg/L	<0.000500	0	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E421	0.000100	mg/L	<0.100 µg/L	<0.000100	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.500	mg/L	548000 µg/L	557	1.57%	20%	----
		Thallium, dissolved	7440-28-0	E421	0.000100	mg/L	<0.100 µg/L	<0.000100	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000100	mg/L	0.214 µg/L	0.000213	0.0000005	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00500	mg/L	<5.00 µg/L	<0.00500	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0100	mg/L	<10.0 µg/L	<0.0100	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1819358)											
WT2437471-001	MW-1	Acetone	67-64-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.50	µg/L	13.1	12.5	5.07%	30%	----
		Dibromochloromethane	124-48-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----

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*
Volatile Organic Compounds (QC Lot: 1819358) - continued											
WT2437471-001	MW-1	Dichlorobenzene, 1,2-	95-50-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1819359)											
WT2437471-001	MW-1	F1 (C6-C10)	----	E581.F1-L	25	µg/L	<25	<25	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.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1815557)						
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
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	----
Volatile Organic Compounds (QCLot: 1819358)						
Acetone	67-64-1	E611D	20	µg/L	<20	----
Benzene	71-43-2	E611D	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611D	0.5	µg/L	<0.50	----
Bromomethane	74-83-9	E611D	0.5	µg/L	<0.50	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	<0.20	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611D	0.5	µg/L	<0.50	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	<0.50	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1819358) - continued						
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611D	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	<0.30	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	<0.30	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	<0.50	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	<0.50	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611D	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1819359)						
F1 (C6-C10)	----	E581.F1-L	25	µg/L	<25	----
Hydrocarbons (QCLot: 1824234)						
F2 (C10-C16)	----	E601.SG	100	µg/L	<100	----
F3 (C16-C34)	----	E601.SG	250	µg/L	<250	----
F4 (C34-C50)	----	E601.SG	250	µg/L	<250	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Hydrocarbons (QCLot: 1824237)						
F2 (C10-C16)	----	E601.SG	100	µg/L	<100	----
F3 (C16-C34)	----	E601.SG	250	µg/L	<250	----
F4 (C34-C50)	----	E601.SG	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1824235)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1824236)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	# 0.023	MB-LOR
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1824236) - continued						
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----

Qualifiers

Qualifier	Description
MB-LOR	*Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.*

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 (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1815557)									
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	99.8	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	107	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	100	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.012 mg/L	99.9	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	100	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.012 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	99.4	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	99.5	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	106	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0 mg/L	106	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	101	80.0	120	----
Volatile Organic Compounds (QCLot: 1819358)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	93.6	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	93.6	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	96.4	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	70.3	60.0	140	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	109	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	96.5	70.0	130	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	85.2	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	98.7	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1819358) - continued									
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	98.0	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	89.3	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	92.1	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	83.0	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	91.3	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	94.1	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	117	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	95.1	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	87.7	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	80.7	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	79.8	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	95.1	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	98.4	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	80.4	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	72.8	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	88.7	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	94.6	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	97.4	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	90.5	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	118	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	95.3	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	96.8	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	85.5	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	98.4	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.5	µg/L	100 µg/L	83.0	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	97.5	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	94.3	70.0	130	----
Hydrocarbons (QCLot: 1819359)									
F1 (C6-C10)	----	E581.F1-L	25	µg/L	2000 µg/L	103	80.0	120	----
Hydrocarbons (QCLot: 1824234)									
F2 (C10-C16)	----	E601.SG	100	µg/L	3770 µg/L	101	70.0	130	----
F3 (C16-C34)	----	E601.SG	250	µg/L	7760 µg/L	103	70.0	130	----
F4 (C34-C50)	----	E601.SG	250	µg/L	4200 µg/L	109	70.0	130	----
Hydrocarbons (QCLot: 1824237)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Hydrocarbons (QCLot: 1824237) - continued									
F2 (C10-C16)	----	E601.SG	100	µg/L	3770 µg/L	97.2	70.0	130	----
F3 (C16-C34)	----	E601.SG	250	µg/L	7760 µg/L	99.0	70.0	130	----
F4 (C34-C50)	----	E601.SG	250	µg/L	4200 µg/L	101	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1824235)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.526 µg/L	85.6	50.0	140	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.526 µg/L	86.8	50.0	140	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.526 µg/L	86.9	50.0	140	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.526 µg/L	84.8	50.0	140	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.526 µg/L	90.1	50.0	140	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.526 µg/L	75.0	50.0	140	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.526 µg/L	91.6	50.0	140	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.526 µg/L	96.2	50.0	140	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.526 µg/L	105	50.0	140	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.526 µg/L	91.0	50.0	140	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.526 µg/L	92.5	50.0	140	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.526 µg/L	87.1	50.0	140	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.526 µg/L	88.2	50.0	140	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.526 µg/L	82.5	50.0	140	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.526 µg/L	79.0	50.0	140	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.526 µg/L	80.9	50.0	140	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.526 µg/L	87.0	50.0	140	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.526 µg/L	91.2	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1824236)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.526 µg/L	116	50.0	140	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.526 µg/L	110	50.0	140	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.526 µg/L	109	50.0	140	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.526 µg/L	117	50.0	140	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.526 µg/L	123	50.0	140	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.526 µg/L	114	50.0	140	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.526 µg/L	122	50.0	140	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.526 µg/L	136	50.0	140	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.526 µg/L	129	50.0	140	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.526 µg/L	121	50.0	140	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.526 µg/L	131	50.0	140	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.526 µg/L	118	50.0	140	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1824236) - continued									
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.526 µg/L	128	50.0	140	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.526 µg/L	112	50.0	140	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.526 µg/L	112	50.0	140	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.526 µg/L	104	50.0	140	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.526 µg/L	119	50.0	140	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.526 µg/L	122	50.0	140	----

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**

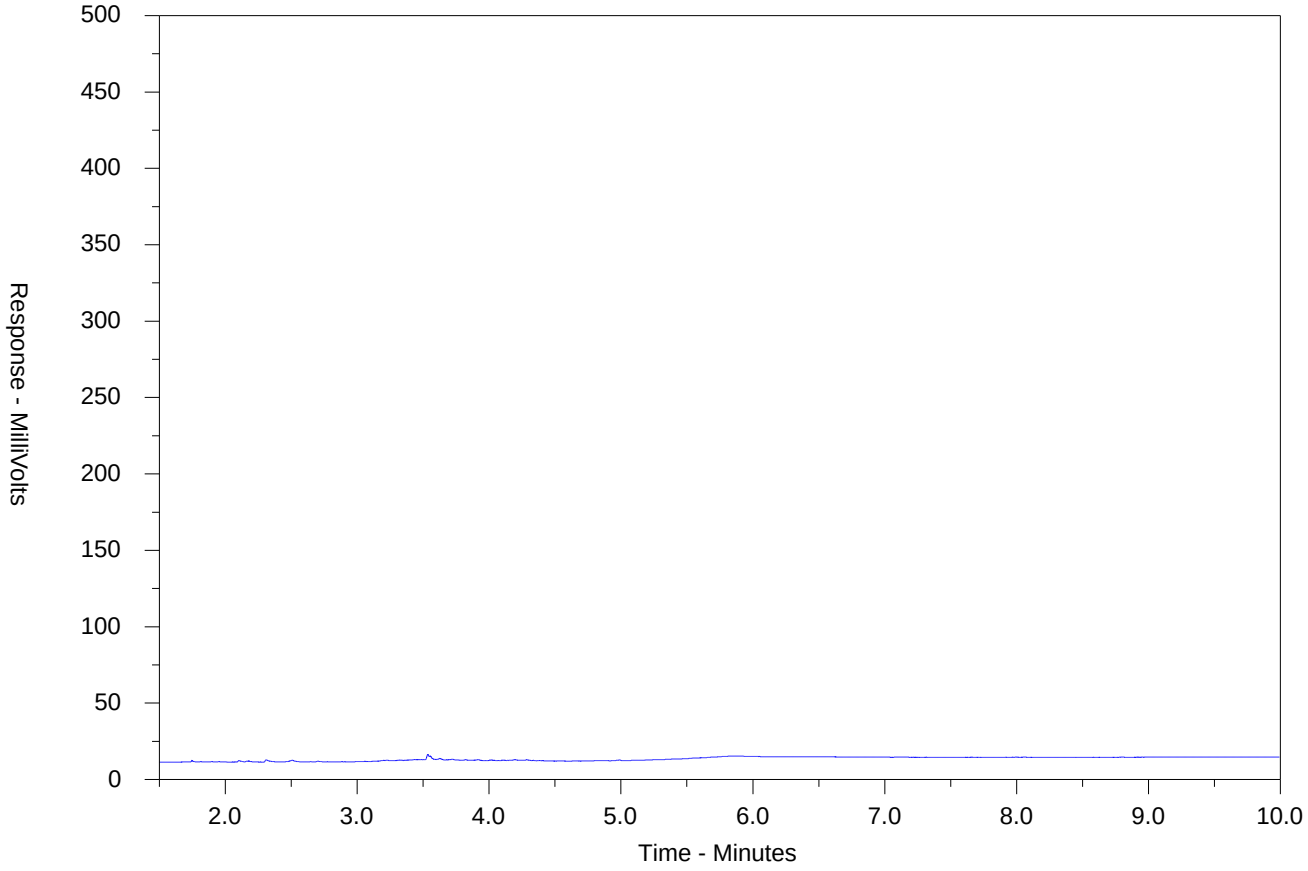
					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1815557)										
WT2437382-005	Anonymous	Antimony, dissolved	7440-36-0	E421	0.482 mg/L	0.5 mg/L	96.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.504 mg/L	0.5 mg/L	101	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0486 mg/L	0.05 mg/L	97.2	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.455 mg/L	0.5 mg/L	91.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.0452 mg/L	0.05 mg/L	90.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.118 mg/L	0.125 mg/L	94.6	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.115 mg/L	0.125 mg/L	92.1	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.114 mg/L	0.125 mg/L	91.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.235 mg/L	0.25 mg/L	94.0	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.128 mg/L	0.125 mg/L	102	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.225 mg/L	0.25 mg/L	89.9	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.464 mg/L	0.5 mg/L	92.8	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.0465 mg/L	0.05 mg/L	93.0	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.459 mg/L	0.5 mg/L	91.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00247 mg/L	0.002 mg/L	98.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.241 mg/L	0.25 mg/L	96.4	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.228 mg/L	0.25 mg/L	91.2	70.0	130	----
Volatile Organic Compounds (QCLot: 1819358)										
WT2437471-001	MW-1	Acetone	67-64-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Benzene	71-43-2	E611D	93.8 µg/L	100 µg/L	93.8	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	99.7 µg/L	100 µg/L	99.7	60.0	140	----
		Bromoform	75-25-2	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Bromomethane	74-83-9	E611D	65.8 µg/L	100 µg/L	65.8	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Chlorobenzene	108-90-7	E611D	94.4 µg/L	100 µg/L	94.4	60.0	140	----
		Chloroform	67-66-3	E611D	98.0 µg/L	100 µg/L	98.0	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	88.4 µg/L	100 µg/L	88.4	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	95.9 µg/L	100 µg/L	95.9	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	95.6 µg/L	100 µg/L	95.6	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	65.7 µg/L	100 µg/L	65.7	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	89.3 µg/L	100 µg/L	89.3	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	86.5 µg/L	100 µg/L	86.5	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	96.3 µg/L	100 µg/L	96.3	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	114 µg/L	100 µg/L	114	60.0	140	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1819358) - continued										
WT2437471-001	MW-1	Dichloromethane	75-09-2	E611D	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	90.9 µg/L	100 µg/L	90.9	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	82.6 µg/L	100 µg/L	82.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	80.4 µg/L	100 µg/L	80.4	60.0	140	----
		Ethylbenzene	100-41-4	E611D	91.1 µg/L	100 µg/L	91.1	60.0	140	----
		Hexane, n-	110-54-3	E611D	90.8 µg/L	100 µg/L	90.8	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	92 µg/L	100 µg/L	92.2	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	82 µg/L	100 µg/L	81.6	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	86.2 µg/L	100 µg/L	86.2	60.0	140	----
		Styrene	100-42-5	E611D	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	96.2 µg/L	100 µg/L	96.2	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Toluene	108-88-3	E611D	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	92.8 µg/L	100 µg/L	92.8	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	88.4 µg/L	100 µg/L	88.4	60.0	140	----
		Trichloroethylene	79-01-6	E611D	98.1 µg/L	100 µg/L	98.1	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	88.1 µg/L	100 µg/L	88.1	60.0	140	----
		Vinyl chloride	75-01-4	E611D	74.3 µg/L	100 µg/L	74.3	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	189 µg/L	200 µg/L	94.5	60.0	140	----
		Xylene, o-	95-47-6	E611D	91.4 µg/L	100 µg/L	91.4	60.0	140	----
Hydrocarbons (QCLot: 1819359)										
WT2437471-001	MW-1	F1 (C6-C10)	----	E581.F1-L	1790 µg/L	2000 µg/L	89.7	60.0	140	----

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437471-001-E601.SG
Client Sample ID: MW-1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

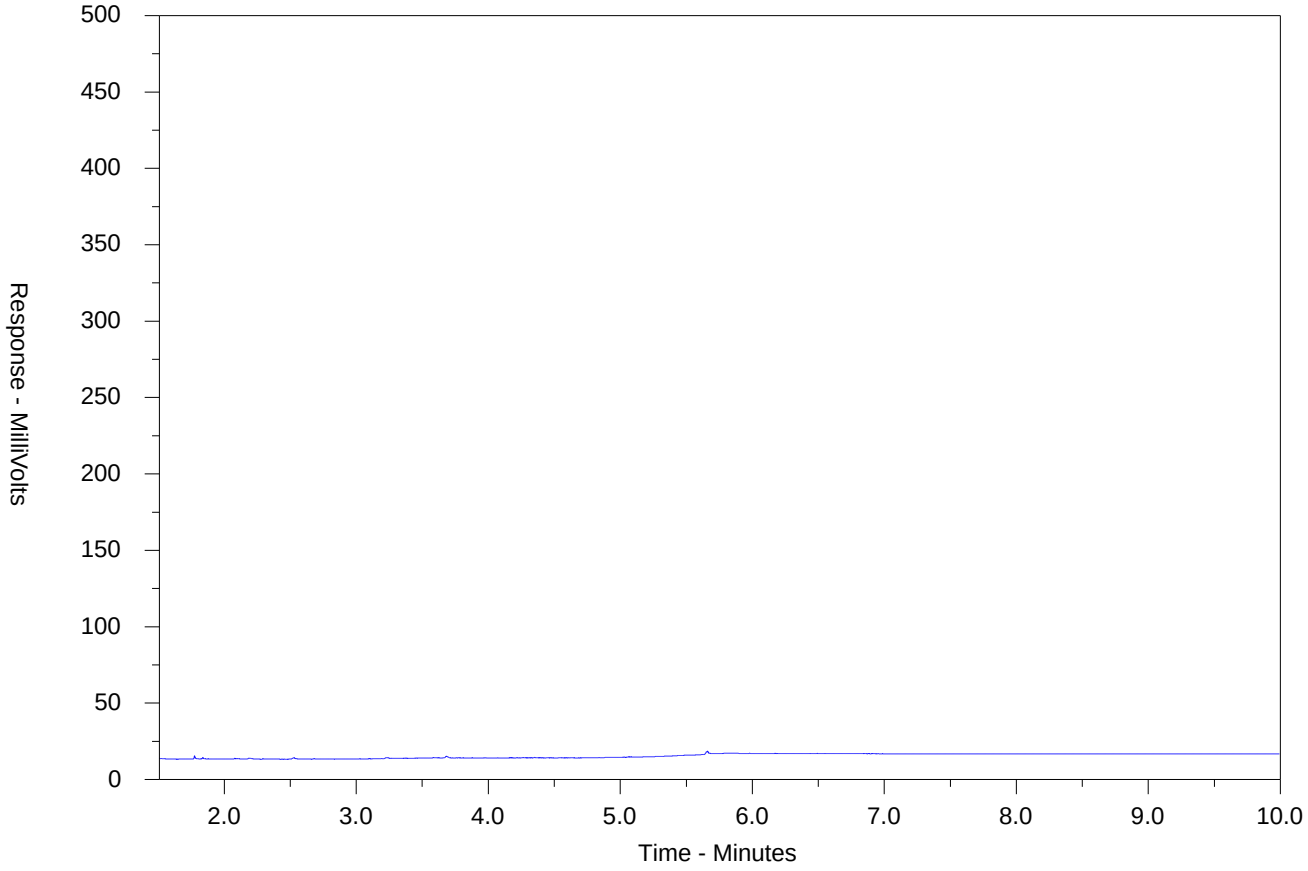
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437471-002-E601.SG
Client Sample ID: MW-2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

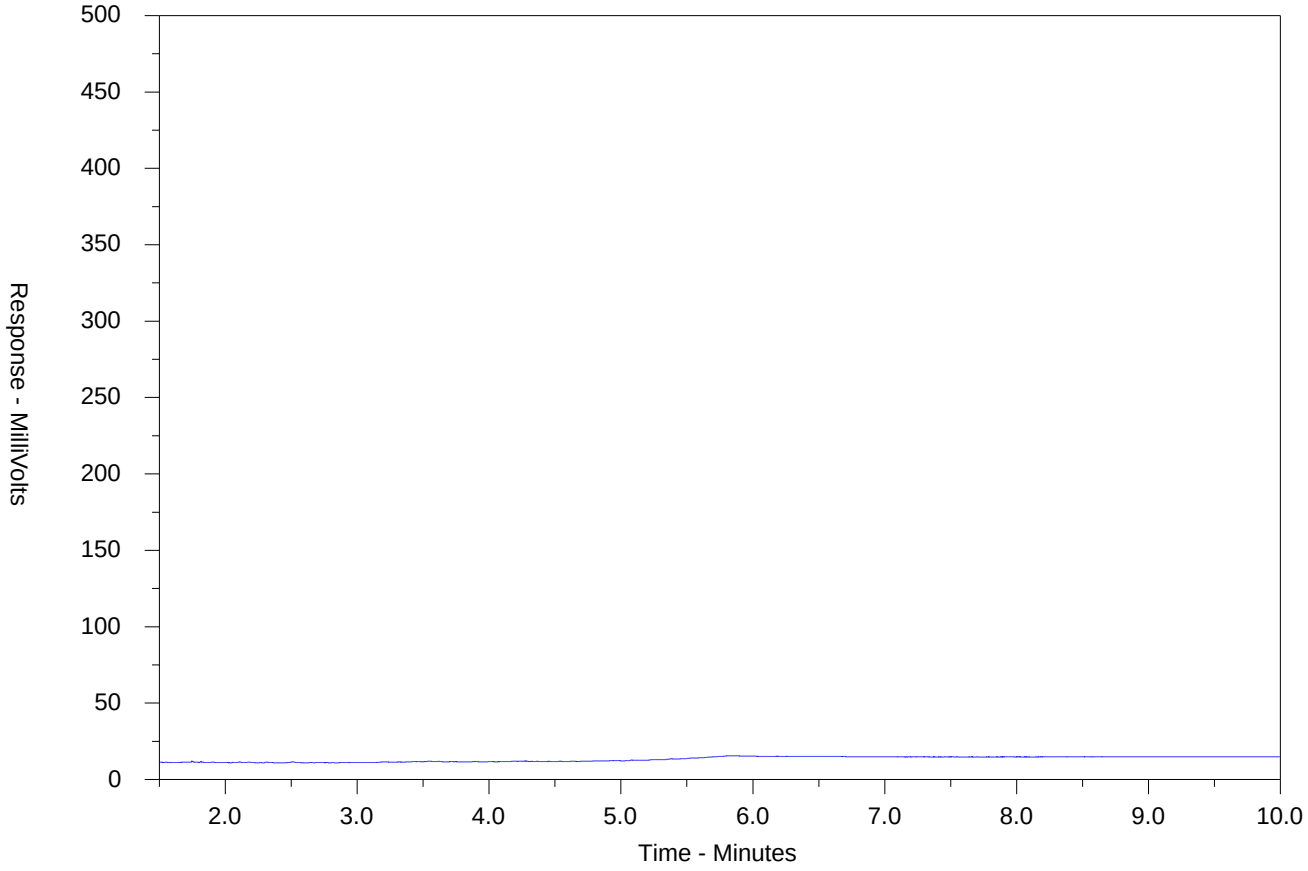
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437471-003-E601.SG
Client Sample ID: MW-3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

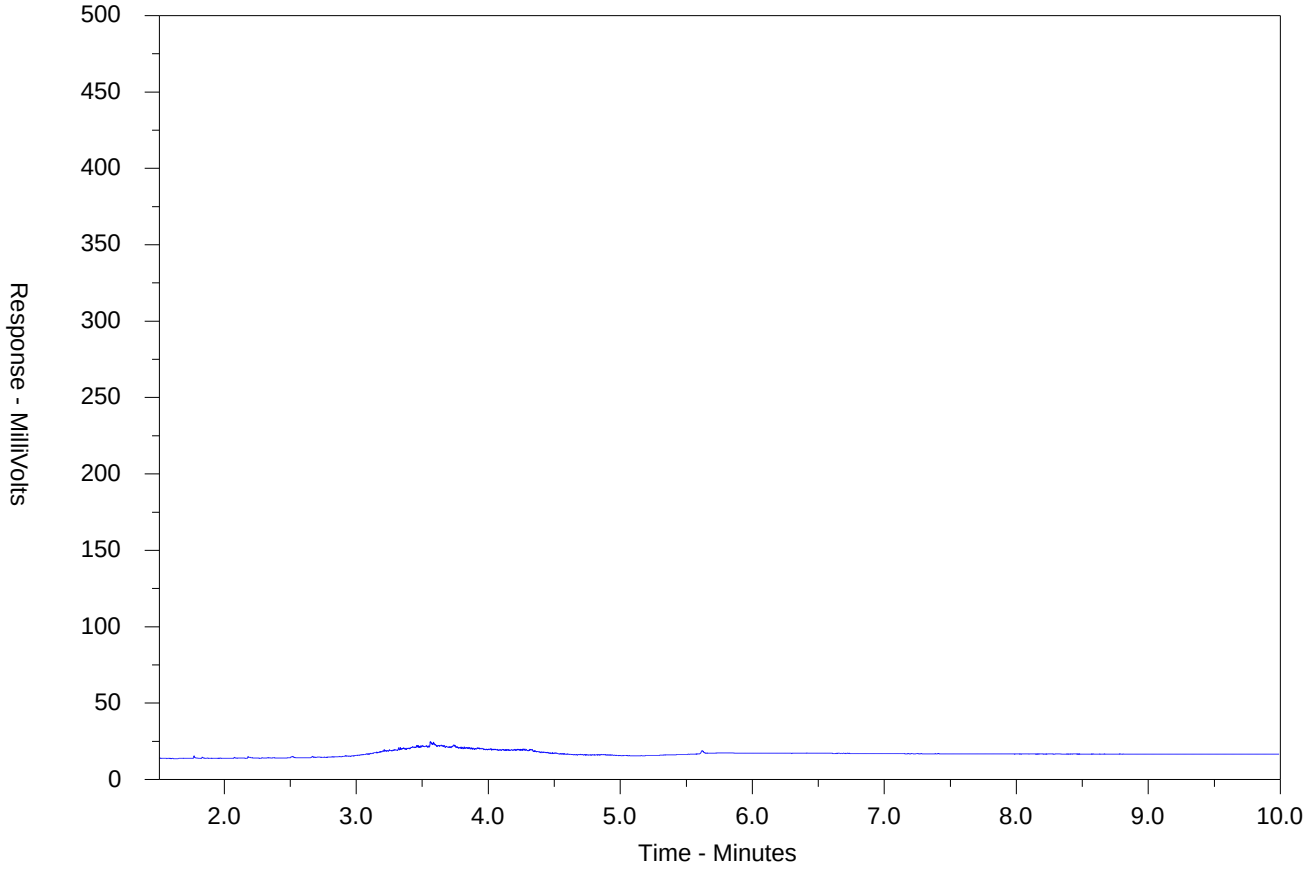
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437471-004-E601.SG
Client Sample ID: MW-4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

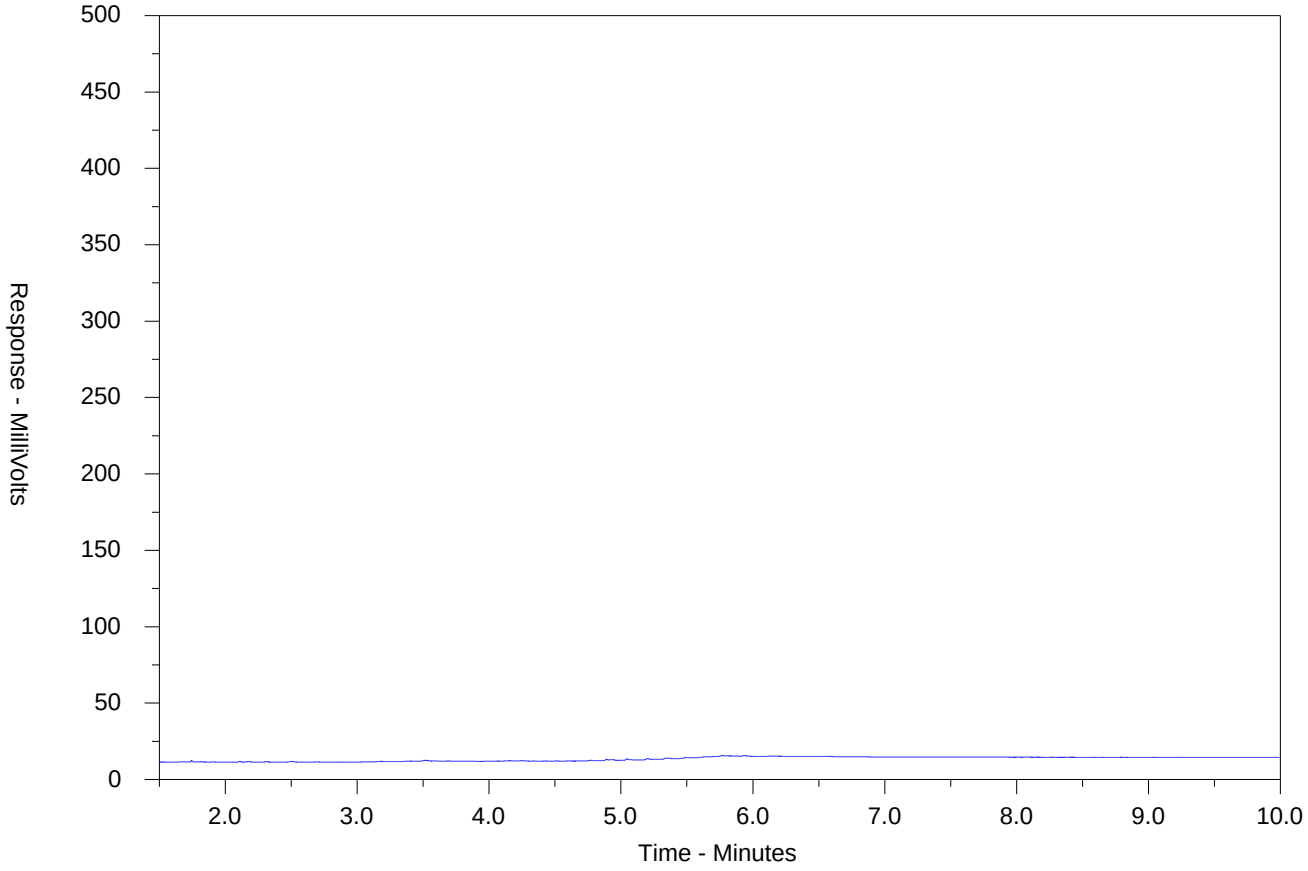
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2437471-005-E601.SG
Client Sample ID: DUP-1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

VW-098. OR-255 MM-541

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 887769

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Bluewater Geoscience
Contact:	B. Lemieux
Phone:	
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☒ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☒ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Email 3

Invoice Recipients

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Turnaround Time (TAT) Requested

☒ Routine [R] if received by 3pm M-F - no surcharges app

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharg

☐ 3 day [P3] if received by 3pm M-F - 25% rush surchar

☐ 2 day [P2] if received by 3pm M-F - 50% rush surchar

☐ 1 day [E] if received by 3pm M-F - 100% rush surchar

☐ Same day [E2] if received by 10am M-S - 200% rush surc may apply to rush requests on weekends, statutory holiday

Date and Time Required for all E&P TATs:

For all tests with rush TATs reques

An

Environmental Division
Waterloo
Work Order Reference
WT2437471

Telephone : +1 519 886 6910

Project Information	
ALS Account # / Quote #:	
Job #:	BG-915
PO / AFE:	
LSD:	
ALS Lab Work Order # (ALS use only):	WT2437471 FH

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: GAYLE Sampler: BJL

Indicate Filtered (F), Preserved (P) c

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOC/F1-F4/PHC	METALS	PAH	VOC F1	SAMPLES ON HOL	EXTENDED STORAGE R	SUSPECTED HAZARD (see notes)
	MW-1	18/12/24	1000	GW	5	X	X	X				
	MW-2		1025		5	X	X	X				
	MW-3		1055		5	X	X	X				
	MW-4		1130		5	X	X	X				
	DUP-1				5	X	X	X				
	Trip Blank			QA/QC	1				X			

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☒ NO	Table 2 SCS
Are samples for human consumption/ use? ☐ YES ☒ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C				
				7.3				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: BJL	Date: Dec. 18/24	Time:	Received by:	Date:	Time:	Received by: VM	Date: Dec 18	Time: 15:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS 2020 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.